

SimFQT

0.1.3

Generated by Doxygen 1.7.4

Mon Dec 5 2011 21:12:44

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1 SimFQT Documentation

1.1 Getting Started

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- [Installation](#)
- [Linking with SimFQT](#)
- [Users Guide](#)
- [Tutorials](#)
- [Copyright and License](#)
- [Make a Difference](#)
- [Make a new release](#)
- [People](#)

1.2 SimFQT at SourceForge

- [Project page](#)
- [Download SimFQT](#)
- [Open a ticket for a bug or feature](#)
- [Mailing lists](#)
- [Forums](#)
 - [Discuss about Development issues](#)
 - [Ask for Help](#)
 - [Discuss SimFQT](#)

1.3 SimFQT Development

- [Git Repository](#) (Subversion is deprecated)
- [Coding Rules](#)
- [Documentation Rules](#)
- [Test Rules](#)

1.4 External Libraries

- [Boost](#) (C++ STL extensions)
- [Python](#)
- [MySQL client](#)
- [SOCHI](#) (C++ DB API)

1.5 Support SimFQT

1.6 About SimFQT

SimFQT is a C++ project of airline pricing classes and functions, mainly targeting simulation purposes. [N](#)

SimFQT makes an extensive use of existing open-source libraries for increased functionality, speed and accuracy. In particular [Boost](#) (C++ STL Extensions) library is used.

The SimFQT project originates from the department of Operational Research and Innovation at [Amadeus](#), Sophia Antipolis, France. SimFQT is released under the terms of the [GNU Lesser General Public License](#) (LGPLv2.1) for you to enjoy.

SimFQT should work on [GNU/Linux](#), [Sun Solaris](#), Microsoft Windows (with [Cygwin](#), [MinGW/MSYS](#), or [Microsoft Visual C++ .NET](#)) and [Mac OS X](#) operating systems.

Note

(N) - The SimFQT library is **NOT** intended, in any way, to be used by airlines for production systems. If you want to report issue, bug or feature request, or if you just want to give feedback, have a look on the right-hand side of this page for the preferred reporting methods. In any case, please do not contact Amadeus directly for any matter related to SimFQT.

2 People

2.1 Project Admins (and Developers)

- Gabrielle Sabatier <gsabatier@users.sourceforge.net> (N)
- Denis Arnaud <denis_arnaud@users.sourceforge.net> (N)
- Anh Quan Nguyen <quannaus@users.sourceforge.net> (N)

2.2 Retired Developers

- Mehdi Ayouni <mehdi.ayouni@gmail.com>
- Son Nguyen Kim <snguyenkim@users.sourceforge.net> (N)

2.3 Contributors

- Emmanuel Bastien <ebastien@users.sourceforge.net> (N)

2.4 Distribution Maintainers

- **Fedora/RedHat**: Denis Arnaud <denis_arnaud@users.sourceforge.net> (N)
- **Debian**: Emmanuel Bastien <ebastien@users.sourceforge.net> (N)

Note

(N) - **Amadeus** employees.

3 Coding Rules

In the following sections we describe the naming conventions which are used for files, classes, structures, local variables, and global variables.

3.1 Default Naming Rules for Variables

Variables names follow Java naming conventions. Examples:

- `lNumberOfPassengers`
- `lSeatAvailability`

3.2 Default Naming Rules for Functions

Function names follow Java naming conventions. Example:

- `int myFunctionName (const int& a, int b)`

3.3 Default Naming Rules for Classes and Structures

Each new word in a class or structure name should always start with a capital letter and the words should be separated with an under-score. Abbreviations are written with capital letters. Examples:

- `MyClassName`
- `MyStructName`

3.4 Default Naming Rules for Files

Files are named after the C++ class names.

Source files are named using `.cpp` suffix, whereas header files end with `.hpp` extension. Examples:

- `FlightDate.hpp`
- `SegmentDate.cpp`

3.5 Default Functionality of Classes

All classes that are configured by input parameters should include:

- default empty constructor
- one or more additional constructor(s) that takes input parameters and initializes the class instance
- setup function, preferably named `'setup'` or `'set_parameters'`

Explicit destructor functions are not required, unless they are needed. It shall not be possible to use any of the other member functions unless the class has been properly initiated with the input parameters.

4 Copyright and License

4.1 GNU LESSER GENERAL PUBLIC LICENSE

4.1.1 Version 2.1, February 1999

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51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts
as the successor of the GNU Library Public License, version 2, hence
the version number 2.1.]

4.2 Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that

any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

4.3 TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

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A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and

data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

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- a) The modified work must itself be a software library.
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- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent

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Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

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This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

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14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

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4.3.2 END OF TERMS AND CONDITIONS

4.4 How to Apply These Terms to Your New Programs

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>
```

```
This library is free software; you can redistribute it and/or
modify it under the terms of the GNU Lesser General Public
License as published by the Free Software Foundation; either
version 2.1 of the License, or (at your option) any later version.
```

```
This library is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU
Lesser General Public License for more details.
```

```
You should have received a copy of the GNU Lesser General Public
License along with this library; if not, write to the Free Software
Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
```

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the
library 'Frob' (a library for tweaking knobs) written by James Random Hacker.
```

```
<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice
```

That's all there is to it!

Source

5 Documentation Rules

5.1 General Rules

All classes in SimFQT should be properly documented with Doxygen comments in include (.hpp) files. Source (.cpp) files should be documented according to a normal standard for well documented C++ code.

An example of how the interface of a class shall be documented in SimFQT is shown here:

```

/*!
 * \brief Brief description of MyClass here
 *
 * Detailed description of MyClass here. With example code if needed.
 */
class MyClass {
public:
    ///! Default constructor
    MyClass(void) { setup_done = false; }

    /*!
     * \brief Constructor that initializes the class with parameters
     *
     * Detailed description of the constructor here if needed
     *
     * \param[in] param1 Description of \a param1 here
     * \param[in] param2 Description of \a param2 here
     */
    MyClass(TYPE1 param1, TYPE2 param2) { setup(param1, param2); }

    /*!
     * \brief Setup function for MyClass
     *
     * Detailed description of the setup function here if needed
     *
     * \param[in] param1 Description of \a param1 here
     * \param[in] param2 Description of \a param2 here
     */
    void setup(TYPE1 param1, TYPE2 param2);

    /*!
     * \brief Brief description of memberFunction1
     *
     * Detailed description of memberFunction1 here if needed
     *
     * \param[in] param1 Description of \a param1 here
     * \param[in] param2 Description of \a param2 here
     * \param[in,out] param3 Description of \a param3 here
     * \return Description of the return value here
     */
    TYPE4 memberFunction1(TYPE1 param1, TYPE2 param2, TYPE3 &param3);

private:
    bool _setupDone;          /*!< Variable that checks if the class is properly
                               initialized with parameters */
    TYPE1 _privateVariable1; /*!< Short description of _privateVariable1 here
    TYPE2 _privateVariable2; /*!< Short description of _privateVariable2 here
};

```

5.2 File Header

All files should start with the following header, which include Doxygen's `\file`, `\brief` and `\author` tags, `$Date$` and `$Revisions$` CVS tags, and a common copyright note:

```

/*!
 * \file
 * \brief Brief description of the file here
 * \author Names of the authors who contributed to this code
 * \date Date
 *
 * Detailed description of the file here if needed.
 *
 * -----
 *
 * SimFQT - C++ Standard Airline IT Object Library
 *
 * Copyright (C) 2009-2010 (\see authors file for a list of contributors)
 *
 * \see copyright file for license information
 *
 * -----
 */

```

5.3 Grouping Various Parts

All functions must be added to a Doxygen group in order to appear in the documentation. The following code example defines the group `'my_group'`:

```

/*!
 * \defgroup my_group Brief description of the group here
 *
 * Detailed description of the group here
 */

```

The following example shows how to document the function `myFunction` and how to add it to the group `my_group`:

```

/*!
 * \brief Brief description of myFunction here
 * \ingroup my_group
 *
 * Detailed description of myFunction here
 *
 * \param[in] param1 Description of \a param1 here
 * \param[in] param2 Description of \a param2 here
 * \return Description of the return value here
 */
TYPE3 myFunction(TYPE1 param1, TYPE2 &param2);

```

6 Main features

A short list of the main features of SimFQT is given below sorted in different categories. Many more features and functions exist and for these we refer to the reference documentation.

6.1 Fare calculation

- Calculation of fare from statistics on tickets/coupons

6.2 Fare rule engine

- Fare rules: storage, engine, management

6.3 Fare retrieval

- Retrieval of fares for specific booking requests or product assesment

6.4 Other features

- CSV input file parsing
- Memory handling

7 Make a Difference

Do not ask what SimFQT can do for you. Ask what you can do for SimFQT.

You can help us to develop the SimFQT library. There are always a lot of things you can do:

- Start using SimFQT
- Tell your friends about SimFQT and help them to get started using it
- If you find a bug, report it to us. Without your help we can never hope to produce a bug free code.
- Help us to improve the documentation by providing information about documentation bugs
- Answer support requests in the SimFQT discussion forums on SourceForge. If you know the answer to a question, help others to overcome their SimFQT problems.
- Help us to improve our algorithms. If you know of a better way (e.g., that is faster or requires less memory) to implement some of our algorithms, then let us know.

- Help to port SimFQT to new platforms. If you manage to compile SimFQT on a new platform, then tell how you did it.
- Send us your code. If you have a good SimFQT compatible code, which you can release under the LGPL, and you think it should be included in SimFQT, then send it to the community.
- Become an SimFQT developer. Send us an e-mail and tell what you can do for SimFQT.

8 Make a new release

8.1 Introduction

This document describes briefly the recommended procedure of releasing a new version of SimFQT using a Linux development machine and the SourceForge project site.

The following steps are required to make a release of the distribution package.

8.2 Initialisation

Clone locally the full [Git project](#):

```
cd ~
mkdir -p dev/sim
cd ~/dev/sim
git clone git://simfqt.git.sourceforge.net/gitroot/simfqt/simfqt simfqtgit
cd simfqtgit
git checkout trunk
```

8.3 Release branch maintenance

Switch to the release branch, on your local clone, and merge the latest updates from the trunk. Decide about the new version to be released.

```
cd ~/dev/sim/simfqtgit
git checkout releases
git merge trunk
```

Update the version in the various build system files, replacing the old version numbers by the correct ones:

```
vi CMakeLists.txt
vi autogen.sh
vi README
```

Update the version, add some news in the NEWS file, add a change-log in the ChangeLog file and in the RPM specification files:

```
vi NEWS
vi ChangeLog
vi simfqt.spec
```

8.4 Commit and publish the release branch

Commit the new release:

```
cd ~/dev/sim/simfqtgit
git add -A
git commit -m "[Release 0.5.0] Release of the 0.5.0 version of SimFQT."
git push
```

8.5 Create distribution packages

Create the distribution packages using the following command:

```
cd ~/dev/sim/simfqtgit
git checkout releases
rm -rf build && mkdir -p build
cd build
export INSTALL_BASEDIR=/home/user/dev/deliveries
export LIBSUFFIX_4_CMAKE="-DLIB_SUFFIX=64"
cmake -DCMAKE_INSTALL_PREFIX=${INSTALL_BASEDIR}/simfqt-0.5.0 \
  -DWITH_STDPAIR_PREFIX=${INSTALL_BASEDIR}/stdair-stable \
  -DWITH_AIRAC_PREFIX=${INSTALL_BASEDIR}/airac-stable \
  -DWITH_AIRAC_PREFIX=${INSTALL_BASEDIR}/airrac-stable \
  -DWITH_RMOL_PREFIX=${INSTALL_BASEDIR}/rmol-stable \
  -DWITH_RMOL_PREFIX=${INSTALL_BASEDIR}/airinv-stable \
  -DWITH_RMOL_PREFIX=${INSTALL_BASEDIR}/simfqt-stable \
  -DCMAKE_BUILD_TYPE:STRING=Debug -DINSTALL_DOC:BOOL=ON \
  ${LIBSUFFIX_4_CMAKE} ..
make check && make dist
make install
```

This will configure, compile and check the package. The output packages will be named, for instance, `simfqt-0.5.0.tar.gz` and `simfqt-0.5.0.tar.bz2`.

8.6 Upload the HTML documentation to SourceForge

In order to update the Web site files, either:

- **synchronise them with rsync and SSH:** Upload the just generated HTML (and PDF) documentation onto the **SourceForge Web site**.

```
cd ~/dev/sim/simfqtgit/build
git checkout releases
rsync -aiv ${INSTALL_BASEDIR}/simfqt-0.5.0/share/doc/simfqt-0.5.0/html/ \
  your_sf_user,simfqt@web.sourceforge.net:htdocs/
```

where `-aiv` options mean:

- `-a`: archive/mirror mode; equals `-rlptgoD` (no `-H`, `-A`, `-X`)
- `-v`: increase verbosity
- `-i`: output a change-summary for all updates

- Note the trailing slashes (/) at the end of both the source and target directories. It means that the content of the source directory (`doc/html`), rather than the directory itself, has to be copied into the content of the target directory.

- or use the [SourceForge Shell service](#).

8.7 Generate the RPM packages

Optionally, generate the RPM package (for instance, for [Fedora/RedHat](#)):

```
cd ~/dev/sim/simfqtgit/build
git checkout releases
make dist
```

To perform this step, `rpm-build`, `rpmlint` and `rpmdevtools` have to be available on the system.

```
cp ../simfqt.spec ~/dev/packages/SPECS \
  && cp simfqt-0.5.0.tar.bz2 ~/dev/packages/SOURCES
cd ~/dev/packages/SPECS
rpmbuild -ba simfqt.spec
cd ~/dev/packages
rpmlint -i SPECS/simfqt.spec SRPMS/simfqt-0.5.0-1.fc16.src.rpm \
  RPMS/noarch/simfqt-* RPMS/i686/simfqt-*
```

8.8 Update distributed change log

Update the `NEWS` and `ChangeLog` files with appropriate information, including what has changed since the previous release. Then commit and push the changes into the [SimFQT's Git repository](#).

8.9 Create the binary package, including the documentation

Create the binary package, which includes HTML and PDF documentation, using the following command:

```
cd ~/dev/sim/simfqtgit/build
git checkout releases
make package
```

The output binary package will be named, for instance, `simfqt-0.5.0-Linux.tar.bz2`. That package contains both the HTML and PDF documentation. The binary package contains also the executables and shared libraries, as well as C++ header files, but all of those do not interest us for now.

8.10 Upload the files to SourceForge

Upload the distribution and documentation packages to the SourceForge server. Check [SourceForge help page on uploading software](#).

8.11 Make a new post

- submit a new entry in the [SourceForge project-related news feed](#)
- make a new post on the [SourceForge hosted WordPress blog](#)
- and update, if necessary, [Trac tickets](#).

8.12 Send an email on the announcement mailing-list

Finally, you should send an announcement to simfqt-announce@lists.sourceforge.net (see <https://lists.sourceforge.net/lists/listinfo/simfqt-announce> for the archives)

9 Installation

9.1 Table of Contents

- [Fedora/RedHat Linux distributions](#)
- [SimFQT Requirements](#)
- [Basic Installation](#)
- [Compilers and Options](#)
- [Compiling For Multiple Architectures](#)
- [Installation Names](#)
- [Optional Features](#)
- [Particular systems](#)
- [Specifying the System Type](#)
- [Sharing Defaults](#)
- [Defining Variables](#)
- ['cmake' Invocation](#)

9.2 Fedora/RedHat Linux distributions

Note that on [Fedora/RedHat](#) Linux distributions, RPM packages are available and can be installed with your usual package manager. For instance:

```
yum -y install simfqt-devel simfqt-doc
```

RPM packages can also be available on the [SourceForge download site](#).

9.3 SimFQT Requirements

SimFQT should compile without errors or warnings on most GNU/Linux systems, on UNIX systems like Solaris SunOS, and on POSIX based environments for Microsoft Windows like Cygwin or MinGW with MSYS. It can be also built on Microsoft Windows NT/2000/XP/Vista/7 using Microsoft's Visual C++ .NET, but our support for this compiler is limited. For GNU/Linux, SunOS, Cygwin and MinGW we assume that you have at least the following GNU software installed on your computer:

- GNU Autotools:
 - `autoconf`,
 - `automake`,
 - `libtool`,
 - `make`, version 3.72.1 or later (check version with `'make --version'`)
- `GCC` - GNU C++ Compiler (g++), version 4.3.x or later (check version with `'gcc --version'`)
- `Boost` - C++ STL extensions, version 1.35 or later (check version with `'grep "define BOOST_LIB_VERSION" /usr/include/boost/version.hpp'`)
- `MySQL` - Database client libraries, version 5.0 or later (check version with `'mysql --version'`)
- `SOCI` - C++ database client library wrapper, version 3.0.0 or later (check version with `'soci-config --version'`)

Optionally, you might need a few additional programs: `Doxygen`, `LaTeX`, `Dvips` and `Ghostscript`, to generate the HTML and PDF documentation.

We strongly recommend that you use recent stable releases of the GCC, if possible. We do not actively work on supporting older versions of the GCC, and they may therefore (without prior notice) become unsupported in future releases of SimFQT.

9.4 Basic Installation

Briefly, the shell commands `'./cmake .. && make install'` should configure, build, and install this package. The following more-detailed instructions are generic; see the `'README'` file for instructions specific to this package. Some packages provide this `'INSTALL'` file but do not implement all of the features documented below. The lack of an optional feature in a given package is not necessarily a bug. More recommendations for GNU packages can be found in the info page corresponding to "Makefile Conventions: (standards)Makefile Conventions".

The `'cmake'` shell script attempts to guess correct values for various system-dependent variables used during compilation. It uses those values to create a `'Makefile'` in each directory of the package. It may also create one or more `'*.h'` files containing system-dependent definitions. Finally, it creates a `'CMakeCache.txt'` cache file that you can refer to in the future to recreate the current configuration, and a file `'CMakeFiles'` containing compiler output (useful mainly for debugging `'cmake'`).

It can also use an optional file (typically called `'config.cache'` and enabled with `'--cache-file=config.cache'` or simply `'-C'`) that saves the results of its tests to speed up reconfiguring. Caching is disabled by default to prevent problems with accidental use of stale cache files.

If you need to do unusual things to compile the package, please try to figure out how `'configure'` could check whether to do them, and mail diffs or instructions to the address given in the `'README'` so they can be considered for the next release. If you are using the cache, and at some point `'config.cache'` contains results you don't want to keep, you may remove or edit it.

The file `'CMakeLists.txt'` is used to create the `'Makefile'` files.

The simplest way to compile this package is:

1. `'cd'` to the directory containing the package's source code and type `'./cmake ..'` to configure the package for your system. Running `'cmake'` is generally fast. While running, it prints some messages telling which features it is checking for.
2. Type `'make'` to compile the package.
3. Optionally, type `'make check'` to run any self-tests that come with the package, generally using the just-built uninstalled binaries.
4. Type `'make install'` to install the programs and any data files and documentation. When installing into a prefix owned by root, it is recommended that the package be configured and built as a regular user, and only the `'make install'` phase executed with root privileges.
5. You can remove the program binaries and object files from the source code directory by typing `'make clean'`. To also remove the files that `'configure'` created (so you can compile the package for a different kind of computer), type `'make distclean'`. There is also a `'make maintainer-clean'` target, but that is intended mainly for the package's developers. If you use it, you may have to get all sorts of other programs in order to regenerate files that came with the distribution.
6. Often, you can also type `'make uninstall'` to remove the installed files again. In practice, not all packages have tested that uninstallation works correctly, even though it is required by the GNU Coding Standards.

9.5 Compilers and Options

Some systems require unusual options for compilation or linking that the `'cmake'` script does not know about. Run `'./cmake --help'` for details on some of the pertinent environment variables.

You can give 'cmake' initial values for configuration parameters by setting variables in the command line or in the environment. Here is an example:

```
./cmake CC=c99 CFLAGS=-g LIBS=-lpposix
```

See also

[Defining Variables](#) for more details.

9.6 Compiling For Multiple Architectures

You can compile the package for more than one kind of computer at the same time, by placing the object files for each architecture in their own directory. To do this, you can use GNU 'make'. 'cd' to the directory where you want the object files and executables to go and run the 'configure' script. 'configure' automatically checks for the source code in the directory that 'configure' is in and in '..'. This is known as a "VPATH" build.

With a non-GNU 'make', it is safer to compile the package for one architecture at a time in the source code directory. After you have installed the package for one architecture, use 'make distclean' before reconfiguring for another architecture.

On MacOS X 10.5 and later systems, you can create libraries and executables that work on multiple system types--known as "fat" or "universal" binaries--by specifying multiple '-arch' options to the compiler but only a single '-arch' option to the preprocessor. Like this:

```
./configure CC="gcc -arch i386 -arch x86_64 -arch ppc -arch ppc64" \  
CXX="g++ -arch i386 -arch x86_64 -arch ppc -arch ppc64" \  
CPP="gcc -E" CXXCPP="g++ -E"
```

This is not guaranteed to produce working output in all cases, you may have to build one architecture at a time and combine the results using the 'lipo' tool if you have problems.

9.7 Installation Names

By default, 'make install' installs the package's commands under '/usr/local/bin', include files under '/usr/local/include', etc. You can specify an installation prefix other than '/usr/local' by giving 'configure' the option '--prefix=PREFIX', where PREFIX must be an absolute file name.

You can specify separate installation prefixes for architecture-specific files and architecture-independent files. If you pass the option '--exec-prefix=PREFIX' to 'configure', the package uses

PREFIX as the prefix for installing programs and libraries. Documentation and other data files still use the regular prefix.

In addition, if you use an unusual directory layout you can give options like `--bindir=DIR` to specify different values for particular kinds of files. Run `configure --help` for a list of the directories you can set and what kinds of files go in them. In general, the default for these options is expressed in terms of `${prefix}`, so that specifying just `--prefix` will affect all of the other directory specifications that were not explicitly provided.

The most portable way to affect installation locations is to pass the correct locations to `configure`; however, many packages provide one or both of the following shortcuts of passing variable assignments to the `make install` command line to change installation locations without having to reconfigure or recompile.

The first method involves providing an override variable for each affected directory. For example, `make install prefix=/alternate/directory` will choose an alternate location for all directory configuration variables that were expressed in terms of `${prefix}`. Any directories that were specified during `configure`, but not in terms of `${prefix}`, must each be overridden at install time for the entire installation to be relocated. The approach of makefile variable overrides for each directory variable is required by the GNU Coding Standards, and ideally causes no recompilation. However, some platforms have known limitations with the semantics of shared libraries that end up requiring recompilation when using this method, particularly noticeable in packages that use GNU Libtool.

The second method involves providing the `DESTDIR` variable. For example, `make install DESTDIR=/alternate/directory` will prepend `/alternate/directory` before all installation names. The approach of `DESTDIR` overrides is not required by the GNU Coding Standards, and does not work on platforms that have drive letters. On the other hand, it does better at avoiding recompilation issues, and works well even when some directory options were not specified in terms of `${prefix}` at `configure` time.

9.8 Optional Features

If the package supports it, you can cause programs to be installed with an extra prefix or suffix on their names by giving `cmake` the option `--program-prefix=PREFIX` or `--program-suffix=SUFFIX`.

Some packages pay attention to `--enable-FEATURE` options to `configure`, where `FEATURE` indicates an optional part of the package. They may also pay attention to `--with-PACKAGE` options,

where PACKAGE is something like 'gnu-as' or 'x' (for the X Window System). The 'README' should mention any '--enable-' and '--with-' options that the package recognizes.

For packages that use the X Window System, 'configure' can usually find the X include and library files automatically, but if it doesn't, you can use the 'configure' options '--x-includes=DIR' and '--x-libraries=DIR' to specify their locations.

Some packages offer the ability to configure how verbose the execution of 'make' will be. For these packages, running './configure --enable-silent-rules' sets the default to minimal output, which can be overridden with 'make V=1'; while running './configure --disable-silent-rules' sets the default to verbose, which can be overridden with 'make V=0'.

9.9 Particular systems

On HP-UX, the default C compiler is not ANSI C compatible. If GNU CC is not installed, it is recommended to use the following options in order to use an ANSI C compiler:

```
./configure CC="cc -Ae -D_XOPEN_SOURCE=500"
```

and if that doesn't work, install pre-built binaries of GCC for HP-UX.

On OSF/1 a.k.a. Tru64, some versions of the default C compiler cannot parse its '<wchar.h>' header file. The option '-nodtk' can be used as a workaround. If GNU CC is not installed, it is therefore recommended to try

```
./configure CC="cc"
```

and if that doesn't work, try

```
./configure CC="cc -nodtk"
```

On Solaris, don't put '/usr/ucb' early in your 'PATH'. This directory contains several dysfunctional programs; working variants of these programs are available in '/usr/bin'. So, if you need '/usr/ucb' in your 'PATH', put it after '/usr/bin'.

On Haiku, software installed for all users goes in '/boot/common', not '/usr/local'. It is recommended to use the following options:

```
./cmake -DCMAKE_INSTALL_PREFIX=/boot/common
```

9.10 Specifying the System Type

There may be some features `'configure'` cannot figure out automatically, but needs to determine by the type of machine the package will run on. Usually, assuming the package is built to be run on the `_same_` architectures, `'configure'` can figure that out, but if it prints a message saying it cannot guess the machine type, give it the `'--build=TYPE'` option. `TYPE` can either be a short name for the system type, such as `'sun4'`, or a canonical name which has the form `CPU-COMPANY-SYSTEM`

where `SYSTEM` can have one of these forms:

- `OS`
- `KERNEL-OS`

See the file `'config.sub'` for the possible values of each field. If `'config.sub'` isn't included in this package, then this package doesn't need to know the machine type.

If you are `_building_` compiler tools for cross-compiling, you should use the option `'--target=TYPE'` to select the type of system they will produce code for.

If you want to `_use_` a cross compiler, that generates code for a platform different from the build platform, you should specify the `"host"` platform (i.e., that on which the generated programs will eventually be run) with `'--host=TYPE'`.

9.11 Sharing Defaults

If you want to set default values for `'configure'` scripts to share, you can create a site shell script called `'config.site'` that gives default values for variables like `'CC'`, `'cache_file'`, and `'prefix'`. `'configure'` looks for `'PREFIX/share/config.site'` if it exists, then `'PREFIX/etc/config.site'` if it exists. Or, you can set the `'CONFIG_SITE'` environment variable to the location of the site script. A warning: not all `'configure'` scripts look for a site script.

9.12 Defining Variables

Variables not defined in a site shell script can be set in the environment passed to `'configure'`. However, some packages may run `configure` again during the build, and the customized values of these variables may be lost. In order to avoid this problem, you should set them in the `'configure'` command line, using `'VAR=value'`. For example:

```
./configure CC=/usr/local2/bin/gcc
```

causes the specified 'gcc' to be used as the C compiler (unless it is overridden in the site shell script).

Unfortunately, this technique does not work for 'CONFIG_SHELL' due to an Autoconf bug. Until the bug is fixed you can use this workaround:

```
CONFIG_SHELL=/bin/bash /bin/bash ./configure CONFIG_SHELL=/bin/bash
```

9.13 'cmake' Invocation

'cmake' recognizes the following options to control how it operates.

- '--help', '-h' print a summary of all of the options to 'cmake', and exit.
- '--help=short', '--help=recursive' print a summary of the options unique to this package's 'configure', and exit. The 'short' variant lists options used only in the top level, while the 'recursive' variant lists options also present in any nested packages.
- '--version', '-V' print the version of Autoconf used to generate the 'configure' script, and exit.
- '--cache-file=FILE' enable the cache: use and save the results of the tests in FILE, traditionally 'config.cache'. FILE defaults to '/dev/null' to disable caching.
- '--config-cache', '-C' alias for '--cache-file=config.cache'.
- '--quiet', '--silent', '-q' do not print messages saying which checks are being made. To suppress all normal output, redirect it to '/dev/null' (any error messages will still be shown).
- '--srcdir=DIR' look for the package's source code in directory DIR. Usually 'configure' can determine that directory automatically.
- '--prefix=DIR' use DIR as the installation prefix.

See also

[Installation Names](#) for more details, including other options available for fine-tuning the installation locations.

- '--no-create', '-n' run the configure checks, but stop before creating any output files.

'cmake' also accepts some other, not widely useful, options. Run 'cmake' --help' for more details.

The 'cmake' script produces an output like this:

```

-- Requires Git without specifying any version
cmake -DCMAKE_INSTALL_PREFIX=/home/user/dev/deliveries/simfqt-0.5.0 \
  -DWITH_STDAIR_PREFIX=/home/user/dev/deliveries/stdair-stable \
  -DLIB_SUFFIX=64 -DCMAKE_BUILD_TYPE:String=Debug -DINSTALL_DOC:BOOL=ON ..
-- Current Git revision name: 0e31d63879056d26f01eb09757d232d247c42164 trunk
-- Requires Boost-1.41
-- Found Boost version: 1.44.0
-- Requires Readline without specifying any version
-- Found Readline version: 6.1
-- Requires MySQL without specifying any version
-- Using mysql-config: /usr/bin/mysql_config
-- Found MySQL version: 5.1.56
-- Requires SOCI-3.0
-- Using soci-config: /usr/bin/soci-config
-- SOCI headers are buried
-- Found SOCI with MySQL back-end support version: 3.0.0
-- Requires StdAir-0.35
-- Found StdAir version: 99.99.99
-- Requires Doxygen without specifying any version
-- Found Doxygen version: 1.7.4
-- Had to set the linker language for 'simfqtlib' to CXX
-- Test 'FQTTestSuite' to be built with 'FQTTestSuite.cpp'
--
-- =====
-- -----
-- ---      Project Information      ---
-- -----
-- PROJECT_NAME ..... : simfqt
-- PACKAGE_PRETTY_NAME ..... : SimFQT
-- PACKAGE ..... : simfqt
-- PACKAGE_NAME ..... : SIMFQT
-- PACKAGE_BRIEF ..... : C++ Simulated Fare Quote System Library
-- PACKAGE_VERSION ..... : 99.99.99
-- GENERIC_LIB_VERSION ..... : 99.99.99
-- GENERIC_LIB_SOVERSION ..... : 99.99
--
-- -----
-- ---      Build Configuration      ---
-- -----
-- Modules to build ..... : simfqt
-- Libraries to build/install ..... : simfqtlib
-- Binaries to build/install ..... : simfqt;fareQuote
-- Modules to test ..... : simfqt
-- Binaries to test ..... : FQTTestSuitetst
--
-- * Module ..... : simfqt
--   + Layers to build ..... : .;basic;bom;factory;command;service
--   + Dependencies on other layers :
--   + Libraries to build/install . : simfqtlib
--   + Executables to build/install : simfqt;fareQuote
--   + Tests to perform ..... : FQTTestSuitetst
--
-- BUILD_SHARED_LIBS ..... : ON
-- CMAKE_BUILD_TYPE ..... : Debug
-- * CMAKE_C_FLAGS ..... :
-- * CMAKE_CXX_FLAGS ..... : -Wall -Werror
-- * BUILD_FLAGS ..... :
-- * COMPILE_FLAGS ..... :
-- CMAKE_MODULE_PATH ..... : /home/localoriuser/dev/sim/simfqt/simfqtgit/config/
-- CMAKE_INSTALL_PREFIX ..... : /home/localoriuser/dev/deliveries/simfqt-99.99.99
--
-- * Doxygen:

```



```

-- - DOXYGEN_VERSION ..... : 1.7.4
-- - DOXYGEN_EXECUTABLE ..... : /usr/bin/doxygen
-- - DOXYGEN_DOT_EXECUTABLE ..... : DOXYGEN_DOT_EXECUTABLE-NOTFOUND
-- - DOXYGEN_DOT_PATH ..... :
--
-- -----
-- --- Installation Configuration ---
-- -----
-- INSTALL_LIB_DIR ..... : /home/localoriuser/dev/deliveries/simfqt-99.99.99/lib
-- INSTALL_BIN_DIR ..... : /home/localoriuser/dev/deliveries/simfqt-99.99.99/bin
-- INSTALL_INCLUDE_DIR ..... : /home/localoriuser/dev/deliveries/simfqt-99.99.99/include
-- INSTALL_DATA_DIR ..... : /home/localoriuser/dev/deliveries/simfqt-99.99.99/share
-- INSTALL_SAMPLE_DIR ..... : /home/localoriuser/dev/deliveries/simfqt-99.99.99/share/simf
-- INSTALL_DOC ..... : ON
--
-- -----
-- --- Packaging Configuration ---
-- -----
-- CPACK_PACKAGE_CONTACT ..... : Denis Arnaud <denis_arnaud - at - users dot sourceforge dot r
-- CPACK_PACKAGE_VENDOR ..... : Denis Arnaud
-- CPACK_PACKAGE_VERSION ..... : 99.99.99
-- CPACK_PACKAGE_DESCRIPTION_FILE . : /home/localoriuser/dev/sim/simfqt/simfqtgit/README
-- CPACK_RESOURCE_FILE_LICENSE .... : /home/localoriuser/dev/sim/simfqt/simfqtgit/COPYING
-- CPACK_GENERATOR ..... : TBZ2
-- CPACK_DEBIAN_PACKAGE_DEPENDS ... :
-- CPACK_SOURCE_GENERATOR ..... : TBZ2;TGZ
-- CPACK_SOURCE_PACKAGE_FILE_NAME . : simfqt-99.99.99
--
-- -----
-- --- External libraries ---
-- -----
--
-- * Boost:
-- - Boost_VERSION ..... : 104400
-- - Boost_LIB_VERSION ..... : 1_44
-- - Boost_HUMAN_VERSION ..... : 1.44.0
-- - Boost_INCLUDE_DIRS ..... : /usr/include
-- - Boost required components .. : program_options;date_time;iostreams;serialization;filesystem
-- - Boost required libraries ... : optimized;/usr/lib/libboost_iostreams-mt.so;debug;/usr/lib/l
--
-- * Readline:
-- - READLINE_VERSION ..... : 6.1
-- - READLINE_INCLUDE_DIR ..... : /usr/include
-- - READLINE_LIBRARY ..... : /usr/lib/libreadline.so
--
-- * MySQL:
-- - MYSQL_VERSION ..... : 5.1.56
-- - MYSQL_INCLUDE_DIR ..... : /usr/include/mysql
-- - MYSQL_LIBRARIES ..... : /usr/lib/mysql/libmysqlclient_r.so
--
-- * SOCI:
-- - SOCI_VERSION ..... : 3.0.0
-- - SOCI_INCLUDE_DIR ..... : /usr/include/soci
-- - SOCIMYSQL_INCLUDE_DIR ..... : /usr/include/soci
-- - SOCI_LIBRARIES ..... : /usr/lib/libsoci_core.so
-- - SOCIMYSQL_LIBRARIES ..... : /usr/lib/libsoci_mysql.so
--
-- * StdAir:
-- - STDAIR_VERSION ..... : 99.99.99
-- - STDAIR_BINARY_DIRS ..... : /home/localoriuser/dev/deliveries/stdair-0.3.0/bin
-- - STDAIR_EXECUTABLES ..... : stdair
-- - STDAIR_LIBRARY_DIRS ..... : /home/localoriuser/dev/deliveries/stdair-0.3.0/lib

```

```
-- - STDAIR_LIBRARIES ..... : stdairlib;stdairuicllib
-- - STDAIR_INCLUDE_DIRS ..... : /home/localoriuser/dev/deliveries/stdair-0.3.0/include
-- - STDAIR_SAMPLE_DIR ..... : /home/localoriuser/dev/deliveries/stdair-0.3.0/share/stdair/
--
-- Change a value with: cmake -D<Variable>=<Value>
-- =====
--
-- Configuring done
-- Generating done
-- Build files have been written to: /home/localoriuser/dev/sim/simfqt/simfqtgit/build
```

It is recommended that you check if your library has been compiled and linked properly and works as expected. To do so, you should execute the testing process 'make check'. As a result, you should obtain a similar report:

```
[ 0%] Built target hdr_cfg_simfqt
[ 90%] Built target simfqtlib
[100%] Built target FQTTTestSuitetst
Test project /home/localoriuser/dev/sim/simfqt/simfqtgit/build/test/simfqt
  Start 1: FQTTTestSuitetst
1/1 Test #1: FQTTTestSuitetst ..... Passed    0.43 sec

100% tests passed, 0 tests failed out of 1

Total Test time (real) = 0.47 sec
[100%] Built target check_simfqtst
[100%] Built target check
```

Check if all the executed tests PASSED. If not, please contact us by filling a [bug-report](#).

Finally, you should install the compiled and linked library, include files and (optionally) HTML and PDF documentation by typing:

```
make install
```

Depending on the PREFIX settings during configuration, you might need the root (administrator) access to perform this step.

Eventually, you might invoke the following command

```
make clean
```

to remove all files created during compilation process, or even

```
cd ~/dev/sim/simfqtgit
rm -rf build && mkdir build
cd build
```

to remove everything.

10 Linking with SimFQT

10.1 Table of Contents

- [Introduction](#)
- [Dependencies](#)
- [Using the pkg-config command](#)
- [Using the simfqt-config script](#)
- [M4 macro for the GNU Autotools](#)
- [Using SimFQT with dynamic linking](#)

10.2 Introduction

There are two convenient methods of linking your programs with the SimFQT library. The first one employs the `'pkg-config'` command (see <http://pkgconfig.freedesktop.org/>), whereas the second one uses `'simfqt-config'` script. These methods are shortly described below.

10.3 Dependencies

The SimFQT library depends on several other C++ components.

10.3.1 StdAir

Among them, as for now, only StdAir has been packaged. The support for StdAir is taken in charge by a dedicated M4 macro file (namely, `'stdair.m4'`), from the configuration script (generated thanks to `'configure.ac'`).

10.4 Using the pkg-config command

`'pkg-config'` is a helper tool used when compiling applications and libraries. It helps you insert the correct compiler and linker options. The syntax of the `'pkg-config'` is as follows:

```
pkg-config <options> <library_name>
```

For instance, assuming that you need to compile an SimFQT based program `'my_prog.cpp'`, you should use the following command:

```
g++ `pkg-config --cflags simfqt` -o my_prog my_prog.cpp \  
    `pkg-config --libs simfqt`
```

For more information see the `'pkg-config'` man pages.

10.5 Using the simfqt-config script

SimFQT provides a shell script called `'simfqt-config'`, which is installed by default in `'$prefix/bin'` (`'/usr/local/bin'`) directory. It can be used to simplify compilation and linking of SimFQT based programs. The usage of this script is quite similar to the usage of the `'pkg-config'` command.

Assuming that you need to compile the program `'my_prog.cpp'` you can now do that with the following command:

```
g++ `simfqt-config --cflags` -o my_prog my_prog.cpp `simfqt-config --libs`
```

A list of `'simfqt-config'` options can be obtained by typing:

```
simfqt-config --help
```

If the `'simfqt-config'` command is not found by your shell, you should add its location `'$prefix/bin'` to the `PATH` environment variable, e.g.:

```
export PATH=/usr/local/bin:$PATH
```

10.6 M4 macro for the GNU Autotools

A M4 macro file is delivered with SimFQT, namely `'simfqt.m4'`, which can be found in, e.g., `'/usr/share/aclocal'`. When used by a `'configure'` script, thanks to the `'AM_PATH_SIMFQT'` macro (specified in the M4 macro file), the following Makefile variables are then defined:

- `'SIMFQT_VERSION'` (e.g., defined to 0.2.0)
- `'SIMFQT_CFLAGS'` (e.g., defined to `'-I${prefix}/include'`)
- `'SIMFQT_LIBS'` (e.g., defined to `'-L${prefix}/lib -lsimfqt'`)

10.7 Using SimFQT with dynamic linking

When using static linking some of the library routines in SimFQT are copied into your executable program. This can lead to unnecessary large executables. To avoid having too large executable files you may use dynamic linking instead. Dynamic linking means that the actual linking is performed when the program is executed. This requires that the system is able to locate the shared SimFQT library file during your program execution. If you install the SimFQT library using a non-standard prefix, the `'LD_LIBRARY_PATH'` environment variable might be used to inform the linker of the dynamic library location, e.g.:

```
export LD_LIBRARY_PATH=<SimFQT installation prefix>/lib:$LD_LIBRARY_PATH
```

11 Test Rules

This section describes rules how the functionality of the SimFQT library should be verified. In the `'tests'` subdirectory test files are provided. All functionality should be tested using these test files.

11.1 The Test File

Each new SimFQT module/class should be accompanied with a test file. The test file is an implementation in C++ that tests the functionality of a function/class or a group of functions/classes called modules. The test file should test relevant parameter settings and input/output relations to guarantee correct functionality of the corresponding classes/functions. The test files should be maintained using version control and updated whenever new functionality is added to the SimFQT library.

The test file should print relevant data to a standard output that can be used to verify the functionality. All relevant parameter settings should be tested.

The test file should be placed in the `'tests'` subdirectory and should have a name ending with `'_test.cpp'`.

11.2 The Reference File

Consider a test file named `'module_test.cpp'`. A reference file named `'module_test.ref'` should accompany the test file. The reference file contains a reference printout of the standard output generated when running the test program. The reference file should be maintained using version control and updated according to the test file.

11.3 Testing SimFQT Library

One can compile and execute all test programs from `'tests'` subdirectory by typing

```
% make check
```

after successful compilation of the SimFQT library.

12 Users Guide

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12.2 Introduction

The `SimFQT` library contains classes for fare rule management. This document does not cover all the aspects of the `SimFQT` library. It does however explain the most important things you need to know in order to start using `SimFQT`.

12.3 Get Started

12.3.1 Get the SimFQT library

Clone locally the full `Git` project:

```
cd ~
mkdir -p dev/sim
cd ~/dev/sim
git clone git://simfqt.git.sourceforge.net/gitroot/simfqt/simfqt simfqtgit
cd simfqtgit
git checkout trunk
```

12.3.2 Build the SimFQT project

Link with `StdAir`, create the distribution package (say, 0.5.0) and compile using the following commands:

```
cd ~/dev/sim/simfqtgit
rm -rf build && mkdir -p build
cd build
cmake -DCMAKE_INSTALL_PREFIX=~/dev/deliveries/simfqt-0.5.0 \
      -DWITH_STDAIR_PREFIX=~/dev/deliveries/stdair-stable \
      -DCMAKE_BUILD_TYPE:String=Debug -DINSTALL_DOC:BOOL=ON ..
make
```

12.3.3 Run the Tests

After building the SimFQT project, the following commands run the tests:

```
cd ~/dev/sim/simfqtgit
cd build
make check
```

As a result, you should obtain a similar report:

```
[ 0%] Built target hdr_cfg_simfqt
[ 90%] Built target simfqtlib
[100%] Built target FQTestSuitetst
Test project /home/localoriuser/dev/sim/simfqt/simfqtgit/build/test/simfqt
Start 1: FQTestSuitetst
1/1 Test #1: FQTestSuitetst ..... Passed    0.15 sec

100% tests passed, 0 tests failed out of 1

Total Test time (real) = 0.16 sec
[100%] Built target check_simfqtst
[100%] Built target check
```

12.3.4 Install the SimFQT Project (Binaries, Documentation)

After the step [Build the SimFQT project](#), to install the library and its header files, type:

```
cd ~/dev/sim/simfqtgit
cd build
make install
```

You can check that the executables and other required files have been copied into the given final directory:

```
cd ~/dev/deliveries/simfqt-0.5.0
```

To generate the SimFQT project documentation, the commands are:

```
cd ~/dev/sim/simfqtgit
cd build
make doc
```

The SimFQT project documentation is available in the following formats: HTML, LaTeX. Those documents are available in a subdirectory:

```
cd ~/dev/sim/simfqtgit
cd build
cd doc
```

12.4 Input file of SimFQT Project

The fare input file structure should look like the following sample:

```
// Fares: fare ID; OriginCity; DestinationCity; TripType; DateRangeStart; DateRangeEnd;
//      DepartureTimeRangeStart; DepartureTimeRangeEnd; POS; CabinCode; Channel; AdvancePurchase;
//      SaturdayNight; ChangeFees; NonRefundable; MinimumStay; Price; nb Segments
// Segment: AirlineCode; Class;
1; SIN; BKK; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; SIN; Y; IN; 7; T; T; T; 3;
   150.0; SQ; Y;
2; SIN; BKK; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; BKK; Y; IN; 7; T; T; T; 3;
   150.0; SQ; Y;
3; SIN; HND; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; SIN; Y; IN; 7; T; T; T; 3;
   150.0; SQ; Y;
4; SIN; HND; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; HND; Y; IN; 7; T; T; T; 3;
   150.0; SQ; Y;
5; SIN; HND; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; ROW; Y; IN; 7; T; T; T; 3;
   150.0; SQ; Y;
6; SIN; BKK; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; SIN; Y; IF; 7; T; T; T; 3;
   150.0; SQ; Y;
7; SIN; BKK; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; BKK; Y; IF; 7; T; T; T; 3;
   150.0; SQ; Y;
8; SIN; HND; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; SIN; Y; IF; 7; T; T; T; 3;
   150.0; SQ; Y;
9; SIN; HND; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; HND; Y; IF; 7; T; T; T; 3;
   150.0; SQ; Y;
10; SIN; HND; OW; 2010-01-15; 2010-12-31; 00:00; 23:59; ROW; Y; IF; 7; T; T; T; 3;
    ; 150.0; SQ; Y;
```

Each line represents a fare rule (see `SIMFQT::FareRuleStruct`), i.e., each line tells us the price a customer will be asked according to a lot of criteria such as:

- the origin and destination of his travel (for instance from Singapour to Bangok in the first fare rule).
- the type of his travel, i.e. one-way "OW" or round trip "RT".
- the date and time he is willing to travel (each fare rule has a date range and a time range of validity).
- the place where he is buying the ticket, i.e. the point of sale.
- his preferred cabin.
- the channel of the booking described by a two letters code: direct(D)/indirect(I) and online(N)/offline(F).
- the date when he wants to buy the ticket, i.e. the advanced purchase required in number of days.
- the saturday night stay option, i.e. is he staying a saturday night between his inbound trip and his outbound one? "T" stands for true and "F" stands for false.
- the change fees option, i.e. are there fees to change his ticket? "T" stands for true and "F" stands for false.

- the refundable criterion, i.e. is the ticket refundable? "T" stands for true and "F" stands for false.
- the number of days he is willing to stay at the destination location (each fare rule has a minimum stay requirement in number of days).

Some fare input examples (including the example above named fare01.csv) are given in the `stdair::samples` directory.

12.5 The fare quoting BOM Tree

The Fare Quoting Business Object Model (BOM) tree is a structure permitting to store all the `SIMFQT::FareRuleStruct` objects of the simulation. That is why, the BOM tree is built parsing the fare file containing all the fare rules (as described in the previous section [Input file of SimFQT Project](#)). For convenience and first use of SimFQT (the input fare file building can be long and heavy), SimFQT API enables to build a small default BOM tree.

12.5.1 Build of the fare quoting BOM tree

First, a BOM root object (i.e., a root for all the classes in the project) is instantiated by the `stdair::STDAIR_ServiceContext` context object, when the `stdair::STDAIR_Service` is itself instantiated, that is to say during the instantiation of the `simfqt::SIMFQT_Service` object. The corresponding type (class) `stdair::BomRoot` is defined in the `StdAir` library.

Then, the BOM root can be either constructed thanks to the `simfqt::SIMFQT_Service::buildSampleBom()` method:

```
void buildSampleBom();
```

or can be constructed using the fare dump file described above thanks to the `simfqt::SIMFQT_Service::parseAndLoad (const stdair::Filename_T&)` method:

```
void parseAndLoad (const FareFilePath& iFareFilename);
```

12.5.2 Display of the fare quoting BOM tree

The fare quoting BOM tree can be displayed as done in the `batches::simfqt.cpp` program:

When the default bom tree is used (`-b` option of the main program `simfqt.cpp`), the fare quoting BOM tree display should look like:

```

=====
BomRoot:  --  ROOT  --
=====
+++++
AirportPair: LHR, SYD
+++++
-----
DatePeriod: [2011-Jan-15/2011-Dec-30]
-----
*****
PosChannel: LHR,DN
*****
-----
TimePeriod: 00:00:00-23:00:00
-----
-----
Fare-Features: RT -- 0-1-1-1-0
-----
-----
AirlineClassList: BA Y
-----

```

Here the fare quoting BOM tree is just composed of one fare rule.

12.5.3 Structure of the fare quoting BOM tree

As one can guess looking at the BOM tree display above, the tree is constructed as follow:

- At the top of the tree, we find a `stdair::BomRoot` object (i.e., a root for all the classes in the project).
- Just under the root, at the first level, we find `stdair::AirportPair` objects (i.e., all the possible combinations of origin-destination). In the instance above, the only combination possible is from London to Sydney.
- At the next level, under a particular `stdair::AirportPair`, we find all the date periods of the fare rules applicable for this origin-destination.
- Then, under a particular `stdair::DatePeriod`, we find all the possible combinations of point-of-sale and channel applicable.
- Under a particular `stdair::PosChannel` object, we have the corresponding `stdair::TimePeriod` objects.
- At the next-to-last level, we have `stdair::FareFeatures` objects, that is to say the trip type, the advanced purchase and stay duration required, ...
- Finally we find the code of the airline publishing the current fare rule and the applicable class code.

12.6 The fare quoting procedure

The project SimFQT aims at fare quoting a list of **travel solutions** corresponding to a **booking request**. The fare quoter looks for all the fare rules matching a travel

solution: when a fare rule matches, it creates a `fare option` object and adds this object to the current travel solution.

A few steps:

- [Instantiate the default booking request](#)
- [Instantiate the default travel solution list](#)
- [Fare Quoting a list of travel solution](#)

12.6.1 Instantiate the default booking request

A default booking request can be built using the `simfqt::SIMFQT_Service::buildBookingRequest` method:

```
stdair::BookingRequestStruct buildBookingRequest(const bool isForCRS = false)
;
```

12.6.2 Instantiate the default travel solution list

In the following sample, a list of travel solutions is given as input/output parameter of the `simfqt::SIMFQT_Service::buildSampleTravelSolutions` method:

```
void buildSampleTravelSolutions (stdair::TravelSolutionList_T&);
```

12.6.3 Fare Quoting a list of travel solution

Once a booking request, its corresponding list of travel solutions and the fare Quote BOM tree are constructed, the main fonction of the module can be called:

```
void quotePrices (const stdair::BookingRequestStruct&,
                 stdair::TravelSolutionList_T&);
```

For each travel solution of the list, the applicable fare rules are picked from the BOM tree (information such as the trip type or the booking request date are only contained into the booking request, that is why we need this object too).

Each chosen fare rule enables to create a fare option structure which is finally stored into the travel solution.

12.7 Error Messages

This section lists the fatal errors you may encounter when using SimFQT:

- [Fare input file not found](#)

- [Fare input file can not be parsed](#)
- [Error Messages for missing fare rules](#)

12.7.1 Fare input file not found

In this case, the output error message will be similar to:

```
terminate called after throwing an instance of 'SIMFQT::FareInputFileNotFoundException'  
  what(): The fare input file '~/<YourFileName>.csv' does not exist or can not be read  
Aborted
```

You can check:

- the given path to your input file is correct.
- the specified file name <YourFileName> is correct.
- the file permission settings: is the file "readable"?

12.7.2 Fare input file can not be parsed

This error message means that your input file has been opened but has not been fully read.

```
terminate called after throwing an instance of 'SIMFQT::FareFileParsingFailedException'  
  what(): Parsing of fare input file: ~/<YourFileName>.csv failed  
Aborted
```

Your input file structure is somehow incorrect. See the tutorial section [How to build a fare input file?](#).

12.7.3 Error Messages for missing fare rules

If you obtain one of the error messages below and you are currently using your own input file, that means it has been fully read. However, at least one fare rule is missing to complete the fare quote.

- If your error message is about a missing airport pair, you should obtain a similar report:

```
terminate called after throwing an instance of 'SIMFQT::AirportPairNotFoundException'  
  what(): No available fare rule for the Origin-Destination pair: xxx, xxx  
Aborted
```

You need to be sure that all your travel solutions have at least one corresponding origin-destination fare rule. It seems you should add one origin-destination (i.e., xxx, xxx) fare rule into your input file.

- If your error message is about a missing fare rule for a flight date, you should obtain a similar report:

You need to be sure that all your travel solutions have at least one corresponding fare rule: same origin-destination and valid date range. It seems you should add/change a fare rule with the Origin-Destination pair: xxx, xxx: its date range must include the flight date xxxx-xxx-xx.

- You need to be sure that all your travel solutions have at least one corresponding fare rule: same origin-destination, valid date range, same point-of-sale and same channel. It seems you should add/change a fare rule to have the same combination as given in the output error message: "the point of sale xxx, the channel xx, the flight date x, xxxx-xxx-xx and the Origin-Destination pair: xxx, xxx".

- You need to be sure that all your travel solutions have at least one corresponding fare rule: same origin-destination, valid date range, same point-of-sale, same channel and valid time range. Add/change a fare rule if necessary.

- You need to be sure that all your travel solutions have at least one corresponding fare rule: same origin-destination, valid date range, same point-of-sale, same channel, valid time range and valid features. The features are:

- If your error message is about a missing fare rule for an airline, you should obtain a similar report:

```

terminate called after throwing an instance of 'SIMFQT::AirlineNotFoundException'
  what(): No available fare rule corresponding to 'xx; x, xxxx-xxx-xx; xxx, xxx; xx:xx' (par
Aborted

```

At least one of your fare rules is correct except that the fare into question must be defined by the airline operating (see the first two letters of the parsed key in the error message to know which airline is operating).

13 Supported Systems

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13.2 Introduction

This page is intended to provide a list of SimFQT supported systems, i.e. the systems on which configuration, installation and testing process of the SimFQT library has been successful. Results are grouped based on minor release number. Therefore, only the

latest tests for bug-fix releases are included. Besides, the information on this page is divided into sections dependent on the operating system.

Where necessary, some extra information is given for each tested configuration, e.g. external libraries installed, configuration commands used, etc.

If you manage to compile, install and test the SimFQT library on a system not mentioned below, please let us know, so we could update this database.

13.3 SimFQT 3.10.x

13.3.1 Linux Systems

13.3.1.1 Fedora Core 4 with ATLAS

- **Platform:** Intel Pentium 4
- **Operating System:** Fedora Core 4 (x86)
- **Compiler:** g++ (GCC) 4.0.2 20051125
- **SimFQT release:** 3.10.0
- **External Libraries:** From FC4 distribution:
 - `fftw3.i386-3.0.1-3`
 - `fftw3-devel.i386-3.0.1-3`
 - `atlas-sse2.i386-3.6.0-8.fc4`
 - `atlas-sse2-devel.i386-3.6.0-8.fc4`
 - `blas.i386-3.0-35.fc4`
 - `lapack.i386-3.0-35.fc4`
- **Tests Status:** All tests PASSED
- **Comments:** SimFQT configured with:

```
% CXXFLAGS="-O3 -pipe -march=pentium4" ./configure
```
- **Date:** March 7, 2006
- **Tester:** Tony Ottosson

13.3.1.2 Gentoo Linux with ACML

- **Platform:** AMD Sempron 3000+
- **Operating System:** Gentoo Linux 2006.0 (x86 arch)
- **Compiler(s):** g++ (GCC) 3.4.5
- **SimFQT release:** 3.10.1

- **External Libraries:** Compiled and installed from portage tree:

```
- sci-libs/acml-3.0.0
```

- **Tests Status:** All tests PASSED

- **Comments:** BLAS and LAPACK libs set by using the following system commands:

```
% eselect blas set ACML
% eselect lapack set ACML
```

SimFQT configured with:

```
% export CPPFLAGS="-I/usr/include/acml"
% ./configure --with-blas="-lblas"
```

- **Date:** March 31, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.1.3 Gentoo Linux with ATLAS

- **Platform:** Intel Pentium M Centrino
- **Operating System:** Gentoo Linux 2006.0 (x86)
- **Compiler:** g++ (GCC) 3.4.5
- **SimFQT release:** 3.10.1
- **External Libraries:** Compiled and installed from portage tree:

```
- sci-libs/fftw-3.1
- sci-libs/blas-atlas-3.6.0-r1
- sci-libs/lapack-atlas-3.6.0
```

- **Tests Status:** All tests PASSED

- **Comments:** BLAS and LAPACK libs set by using the following system commands:

```
% eselect blas set ATLAS
% eselect lapack set ATLAS
```

SimFQT configured with:

```
% ./configure --with-blas="-lblas"
```

- **Date:** March 31, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.1.4 Gentoo Linux with MKL

- **Platform:** Intel Pentium M Centrino
- **Operating System:** Gentoo Linux 2006.0 (x86 arch)
- **Compiler:** g++ (GCC) 3.4.5
- **SimFQT release:** 3.10.0
- **External Libraries:** Intel Math Kernel Library (MKL) 8.0.1 installed manually in the following directory: `/opt/intel/mkl/8.0.1`
- **Tests Status:** All tests PASSED
- **Comments:** SimFQT configured using the following commands:

```
% export LDFLAGS="-L/opt/intel/mkl/8.0.1/lib/32"
% export CPPFLAGS="-I/opt/intel/mkl/8.0.1/include"
% ./configure
```
- **Date:** February 28, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.1.5 Gentoo Linux with NetLib's BLAS and LAPACK

- **Platform:** Intel Pentium M Centrino
- **Operating System:** Gentoo Linux 2006.0 (x86)
- **Compiler:** g++ (GCC) 3.4.5
- **SimFQT release:** 3.10.1
- **External Libraries:** Compiled and installed from portage tree:
 - `sci-libs/fftw-3.1`
 - `sci-libs/blas-reference-19940131-r2`
 - `sci-libs/cblas-reference-20030223`
 - `sci-libs/lapack-reference-3.0-r2`
- **Tests Status:** All tests PASSED
- **Comments:** BLAS and LAPACK libs set by using the following system commands:

```
% blas-config reference
% lapack-config reference
```

SimFQT configured with:

```
% ./configure --with-blas="-lblas"
```
- **Date:** March 31, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.1.6 Red Hat Enterprise Linux with SimFQT External

- **Platform:** Intel Pentium 4
- **Operating System:** Red Hat Enterprise Linux AS release 4 (Nahant Update 2)
- **Compiler:** g++ (GCC) 3.4.4 20050721 (Red Hat 3.4.4-2)
- **SimFQT release:** 3.10.0
- **External Libraries:** BLAS, CBLAS, LAPACK and FFTW libraries from SimFQT External 2.1.1 package
- **Tests Status:** All tests PASSED
- **Date:** March 7, 2006
- **Tester:** Erik G. Larsson

13.3.1.7 SUSE Linux 10.0 with NetLib's BLAS and LAPACK

- **Platform:** Intel Pentium 4 CPU 3.20GHz (64-bit)
- **Operating System:** SUSE Linux 10.0 (x86_64)
- **Compiler(s):** g++ (GCC) 4.0.2
- **SimFQT release:** 3.10.0
- **External Libraries:** BLAS, LAPACK and FFTW libraries installed from OpenSuse 10.0 RPM repository:
 - blas-3.0-926
 - lapack-3.0-926
 - fftw3-3.0.1-114
 - fftw3-threads-3.0.1-114
 - fftw3-devel-3.0.1-114
- **Tests Status:** All tests PASSED
- **Comments:** SimFQT configured with:

```
% export CXXFLAGS="-m64 -march=nocona -O3 -pipe"
% ./configure --with-lapack="/usr/lib64/liblapack.so.3"
```
- **Date:** March 1, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.1.8 SUSE Linux 10.0 with MKL

- **Platform:** Intel Pentium 4 CPU 3.20GHz (64-bit)
- **Operating System:** SUSE Linux 10.0 (x86_64)
- **Compiler(s):** g++ (GCC) 4.0.2
- **SimFQT release:** 3.10.0
- **External Libraries:** Intel Math Kernel Library (MKL) 8.0.1 installed manually in the following directory: /opt/intel/mkl/8.0.1
- **Tests Status:** All tests PASSED
- **Comments:** SimFQT configured with:

```
% export CXXFLAGS="-m64 -march=nocona -O3 -pipe"
% export LDFLAGS="-L/opt/intel/mkl/8.0.1/lib/em64t"
% export CPPFLAGS="-I/opt/intel/mkl/8.0.1/include"
% ./configure
```
- **Date:** March 1, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.2 Windows Systems

13.3.2.1 Microsoft Windows XP with Cygwin

- **Platform:** AMD Sempron 3000+
- **Operating System:** Microsoft Windows XP SP2, Cygwin 1.5.19-4
- **Compiler(s):** g++ (GCC) 3.4.4 (cygming special)
- **SimFQT release:** 3.10.1
- **External Libraries:** Installed from Cygwin's repository:
 - fftw-3.0.1-2
 - fftw-dev-3.0.1-1
 - lapack-3.0-4
- **Tests Status:** All tests PASSED
- **Comments:** Only static library can be built. SimFQT configured with:

```
% ./configure
```
- **Date:** March 31, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.2.2 Microsoft Windows XP with Cygwin and ATLAS

- **Platform:** AMD Sempron 3000+
- **Operating System:** Microsoft Windows XP SP2, Cygwin 1.5.19-4
- **Compiler(s):** g++ (GCC) 3.4.4 (cygming special)
- **SimFQT release:** 3.10.1
- **External Libraries:** Installed from Cygwin's repository:

```
- fftw-3.0.1-2
- fftw-dev-3.0.1-1
```

ATLAS BLAS and LAPACK libraries from SimFQT External 2.1.1 package configured using:

```
% ./configure --enable-atlas --disable-fftw
```

- **Tests Status:** All tests PASSED
- **Comments:** Only static library can be built. SimFQT configured with:

```
% export LDFLAGS="-L/usr/local/lib"
% ./configure
```

- **Date:** March 31, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.2.3 Microsoft Windows XP with Cygwin and ACML

- **Platform:** AMD Sempron 3000+
- **Operating System:** Microsoft Windows XP SP2, Cygwin 1.5.19-4
- **Compiler(s):** g++ (GCC) 3.4.4 (cygming special)
- **SimFQT release:** 3.10.2
- **External Libraries:** ACML version 3.1.0 (acml3.1.0-32-win32-g77.exe) installed into a default directory, i.e. "c:\Program Files\AMD\acml3.1.0"
- **Tests Status:** All tests PASSED
- **Comments:** Only static library can be built. SimFQT configured with:

```
% export LDFLAGS="-L/cygdrive/c/Progra~1/AMD/acml3.1.0/gnu32/lib"
% export CPPFLAGS="-I/cygdrive/c/Progra~1/AMD/acml3.1.0/gnu32/include"
% ./configure --enable-debug
```

- **Date:** May 15, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.2.4 Microsoft Windows XP with MinGW, MSYS and ACML

- **Platform:** AMD Sempron 3000+
- **Operating System:** Microsoft Windows XP SP2, MinGW 5.0.2, MSYS 1.0.10
- **Compiler(s):** g++ (GCC) 3.4.4 (mingw special)
- **SimFQT release:** 3.10.2
- **External Libraries:** ACML version 3.1.0 (acml3.1.0-32-win32-g77.exe) installed into a default directory, i.e. "c:\Program Files\AMD\acml3.1.0"
- **Tests Status:** All tests PASSED
- **Comments:** Only static library can be built. SimFQT configured with:

```
% export LDFLAGS="-L/c/Progra~1/AMD/acml3.1.0/gnu32/lib"
% export CPPFLAGS="-I/c/Progra~1/AMD/acml3.1.0/gnu32/include"
% ./configure --enable-debug
```
- **Date:** May 15, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.2.5 Microsoft Windows XP with MinGW, MSYS and SimFQT External

- **Platform:** AMD Sempron 3000+
- **Operating System:** Microsoft Windows XP SP2, MinGW 5.0.2, MSYS 1.0.10
- **Compiler(s):** g++ (GCC) 3.4.4 (mingw special)
- **SimFQT release:** 3.10.5
- **External Libraries:** BLAS, CBLAS, LAPACK and FFTW libraries from SimFQT External 2.2.0 package
- **Tests Status:** All tests PASSED
- **Comments:** Only static library can be built. SimFQT configured with:

```
% export LDFLAGS="-L/usr/local/lib"
% export CPPFLAGS="-I/usr/local/include"
% export CXXFLAGS="-Wall -O3 -march=athlon-tbird -pipe"
% ./configure --disable-html-doc
```
- **Date:** August 11, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.2.6 Microsoft Windows XP with MS Visual C++ and Intel MKL

- **Platform:** AMD Sempron 3000+
- **Operating System:** Microsoft Windows XP SP2
- **Compiler(s):** Microsoft Visual C++ 2005 .NET
- **SimFQT release:** 3.10.5
- **External Libraries:** Intel Math Kernel Library (MKL) 8.1 installed manually in the following directory: "C:\Program Files\Intel\MKL\8.1"
- **Tests Status:** Not fully tested. Some SimFQT based programs compiled and run with success.
- **Comments:** Only static library can be built. SimFQT built by opening the "win32\simfqt.vcproj" project file in MSVC++ and executing "Build -> Build Solution" command from menu.
- **Date:** August 11, 2006
- **Tester:** Adam Piatyszek (ediap)

13.3.3 Unix Systems

13.3.3.1 SunOS 5.9 with SimFQT External

- **Platform:** SUNW, Sun-Blade-100 (SPARC)
- **Operating System:** SunOS 5.9 Generic_112233-10
- **Compiler(s):** g++ (GCC) 3.4.5
- **SimFQT release:** 3.10.2
- **External Libraries:** BLAS, CBLAS, LAPACK and FFTW libraries from SimFQT External 2.1.1 package. The following configuration command has been used:

```
% export CFLAGS="-mcpu=ultrasparc -O2 -pipe -funroll-all-loops"
% ./configure
```

- **Tests Status:** All tests PASSED
- **Comments:** SimFQT configured with:

```
% export LDFLAGS="-L/usr/local/lib"
% export CPPFLAGS="-I/usr/local/include"
% export CXXFLAGS="-mcpu=ultrasparc -O2 -pipe"
% ./configure --enable-debug
```

- **Date:** May 15, 2006
- **Tester:** Adam Piatyszek (ediap)

14 SimFQT Supported Systems (Previous Releases)

14.1 SimFQT 3.9.1

14.2 SimFQT 3.9.0

14.3 SimFQT 3.8.1

15 Tutorials

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15.2 Preparing the SimFQT Project for Development

The source code for these examples can be found in the `batches` and `test/simfqt` directories. They are compiled along with the rest of the SimFQT project. See the [Users Guide](#) for more details on how to build the SimFQT project.

15.3 Your first fareQuote

15.3.1 Summary of the different steps

All the steps below can be found in the same order in the batch `simfqt.cpp` program.

First, we instantiate the `simfqtService` object:

```
std::ofstream logOutputFile;  
const stdair::BasLogParams lLogParams (stdair::LOG::DEBUG, logOutputFile);  
SIMFQT::SIMFQT_Service simfqtService (lLogParams);
```

Then, we construct a default sample list of travel solutions and a default booking request (as mentionned in [Instantiate the default booking request](#) and [Instantiate the default travel solution list](#) parts):

```
stdair::TravelSolutionList_T& ioInteractiveTravelSolutionList,
    return ioBookingRequestStruct;
```

For basic use, the default BOM tree can be built using:

```
simfqtService.buildSampleBom();
```

The main step is the fare quoting (see [The fare quoting procedure](#)):

```
simfqtService.quotePrices (lInteractiveBookingRequest,
```

15.3.2 Result of the Batch Program

When the `simfqt.cpp` program is run (with the `-b` option), the log output file should look like:

```
[D]../../../../simfqt/batches/simfqt.cpp:186: Welcome to Simfqt
[D]../../../../simfqt/batches/simfqt.cpp:212: Travel solutions:
  [0] [0] BA, 9, 2011-06-10, LHR, SYD, 21:45 --- ---
[D]../../../../simfqt/command/FareQuoter.cpp:519: Segment path: BA; 9, 2011-06-10; L
      HR, SYD; 21:45. A corresponding fare option for the 'BA Y' class is: Class path:
      Y; 450 EUR; conditions: 1 1 1
[D]../../../../simfqt/service/SIMFQT_Service.cpp:352: Fare Quote retrieving: 0.00140
      3 - SIMFQT_ServiceContext -- Owns StdAir service: 1
[D]../../../../simfqt/batches/simfqt.cpp:214: BOM tree:
=====
BomRoot:  -- ROOT --
=====
+++++
AirportPair: LHR, SYD
+++++
-----
DatePeriod: [2011-Jan-15/2011-Dec-30]
-----
*****
PosChannel: LHR,DN
*****
-----
TimePeriod: 00:00:00-23:00:00
-----
-----
Fare-Features: RT -- 0-1-1-1-0
-----
-----
AirlineClassList: BA Y
-----

[D]../../../../simfqt/batches/simfqt.cpp:219: Travel solutions:
  [0] [0] BA, 9, 2011-06-10, LHR, SYD, 21:45 --- Y, 450, 1 1 1 ---
```

What is interesting is to compare the travel solution list (here reduced to a single travel solution) displayed before:


```
[0] [0] BA, 9, 2011-06-10, LHR, SYD, 21:45 --- ---
```

and after the fare quoting:

```
[0] [0] BA, 9, 2011-06-10, LHR, SYD, 21:45 --- Y, 450, 1 1 1 ---
```

Between the two groups of dashes, we can see that a fare option structure has been added by the fare quoter: the price is 450 EUR for the Y class, the ticket is refundable but there are exchange fees and the customer must stay over on saturday night.

Let's return to our default BOM tree display: the only fare rule stored was a match for the travel solution into consideration (same origin airport, same destination airport, flight date included in the fare rule date range, same airline "BA", ...).

By looking at the fare rule trip type "RT", we can guess we face a round trip fare: that means the price given in the default bom tree construction in `stdair::CmdBomManager.hpp` has been divided by 2 because we are considering either an inbound trip or an outbound one.

15.4 Fare quoting with an input file

15.4.1 How to build a fare input file?

The objective here is to build a fare input file to fare quote the default travel solution list built using:

```
stdair::TravelSolutionList_T& ioInteractiveTravelSolutionList,
```

This travel solution list, reduced to a singleton, can be displayed as done before:

```
[0] [0] BA, 9, 2011-06-10, LHR, SYD, 21:45 --- ---
```

We deduce:

- we need a fare rule whose origin-destination couple is "LHR, SYD".
- the date range must include the date "2011-06-10".
- the time range must include the time "21:45".
- the airline operating is "BA", so it must be the airline pricing.

We can deduce a part of our fare rule file :

```
// Fares: fare ID; OriginCity; DestinationCity; TripType; DateRangeStart; DateRangeEnd;
// DepartureTimeRangeStart; DepartureTimeRangeEnd; POS; CabinCode; Channel; AdvancePurchase;
// SaturdayNight; ChangeFees; NonRefundable; MinimumStay; Price; nb
```

```

Segments
// Segment: AirlineCode; Class;
1; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; ???; ?; ??; ?; ?; ?; ?; ?;
    ???; BA; ?;

```

We have no information about stay duration and advance purchase (such information are contained into the booking request): so let us put "0" to embrace all the requests possible.

No information for the point-of-sale and the channel too: let us consider all the channels ("IN", "DN", "IF" and "DF") and all the points of sale (the origin "LHR", the destination "SYD" and the rest-of-the-world "ROW") existing. To access this information, we could look into the default booking request.

The input file is now:

```

// Fares: fare ID; OriginCity; DestinationCity; TripType; DateRangeStart; DateRangeEnd;
//      DepartureTimeRangeStart; DepartureTimeRangeEnd; POS; CabinCode; Channel; AdvancePurchase;
//      SaturdayNight; ChangeFees; NonRefundable; MinimumStay; Price; nb Segments
// Segment: AirlineCode; Class;
1; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; ?; IN; 0; ?; ?; ?; 0;
    ???; BA; ?;
2; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; ?; IF; 0; ?; ?; ?; 0;
    ???; BA; ?;
3; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; ?; DN; 0; ?; ?; ?; 0;
    ???; BA; ?;
4; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; ?; DF; 0; ?; ?; ?; 0;
    ???; BA; ?;
5; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; ?; IN; 0; ?; ?; ?; 0;
    ???; BA; ?;
6; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; ?; IF; 0; ?; ?; ?; 0;
    ???; BA; ?;
7; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; ?; DN; 0; ?; ?; ?; 0;
    ???; BA; ?;
8; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; ?; DF; 0; ?; ?; ?; 0;
    ???; BA; ?;
9; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; ?; IN; 0; ?; ?; ?; 0;
    ???; BA; ?;
10; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; ?; IF; 0; ?; ?; ?; 0;
    ; ???; BA; ?;
11; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; ?; DN; 0; ?; ?; ?; 0;
    ; ???; BA; ?;
12; LHR; SYD; ??; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; ?; DF; 0; ?; ?; ?; 0;
    ; ???; BA; ?;

```

Let us say we have just the Economy cabin "Y" and British Airways prices ticket for class "Y".

No information about the trip type, so we duplicate all the fare rules for both type: one-way "OW" and round-trip "RT" (to access this information, we could look to the default booking request).

The fare options are all set to a default value "T" (meaning true) and the fare values are chosen to be all distinct.

We obtain:

```

// Fares: fare ID; OriginCity; DestinationCity; TripType; DateRangeStart; DateRangeEnd;

```

```

geEnd; DepartureTimeRangeStart; DepartureTimeRangeEnd; POS; CabinCode; Channel; AdvancePurchase; SaturdayNight; ChangeFees; NonRefundable; MinimumStay; Price; nb
Segments
// Segment: AirlineCode; Class;
1; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; IN; 0; T; T; T; 0;
    50; BA; Y;
2; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; IF; 0; T; T; T; 0;
    150; BA; Y;
3; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; DN; 0; T; T; T; 0;
    250; BA; Y;
4; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; DF; 0; T; T; T; 0;
    350; BA; Y;
5; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; IN; 0; T; T; T; 0;
    450; BA; Y;
6; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; IF; 0; T; T; T; 0;
    550; BA; Y;
7; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; DN; 0; T; T; T; 0;
    650; BA; Y;
8; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; DF; 0; T; T; T; 0;
    750; BA; Y;
9; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; IN; 0; T; T; T; 0;
    850; BA; Y;
10; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; IF; 0; T; T; T; 0;
    950; BA; Y;
11; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; DN; 0; T; T; T; 0;
    1050; BA; Y;
12; LHR; SYD; OW; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; DF; 0; T; T; T; 0;
    1150; BA; Y;
13; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; IN; 0; T; T; T; 0;
    90; BA; Y;
14; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; IF; 0; T; T; T; 0;
    190; BA; Y;
15; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; DN; 0; T; T; T; 0;
    290; BA; Y;
16; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; LHR; Y; DF; 0; T; T; T; 0;
    390; BA; Y;
17; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; IN; 0; T; T; T; 0;
    490; BA; Y;
18; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; IF; 0; T; T; T; 0;
    590; BA; Y;
19; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; DN; 0; T; T; T; 0;
    690; BA; Y;
20; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; SYD; Y; DF; 0; T; T; T; 0;
    790; BA; Y;
21; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; IN; 0; T; T; T; 0;
    890; BA; Y;
22; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; IF; 0; T; T; T; 0;
    990; BA; Y;
23; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; DN; 0; T; T; T; 0;
    1090; BA; Y;
24; LHR; SYD; RT; 2011-01-01; 2011-12-31; 00:00; 23:59; ROW; Y; DF; 0; T; T; T; 0;
    1190; BA; Y;

```

15.4.2 Building the BOM tree with an input file

The steps are the same as before [Summary of the different steps](#) except the bom tree must be built using the fare input file :

15.4.3 Result of the Batch Program

When the `simfqt.cpp` program is run with the `-f` option linking with the file built just above:

```
~/simfqt -f ~/<YourFileName>.csv
```

the last lines of the log output should look like:

```
[D]~/simfqtgit/simfqt/batches/simfqt.cpp:223: Travel solutions:
    [0] [0] BA, 9, 2011-06-10, LHR, SYD, 21:45 --- Y, 145, 1 1 1 ---
```

We have just one fare option added to the travel solution. We can deduce from the price value 145 that the fare quoter used the fare rule number 15 to price the travel solution. We have an inbound or outbound trip of a round trip: the total price 290 has been divided by 2.

16 Command-Line Test to Demonstrate How To Test the SimFQT Project

```

*/
// //////////////////////////////////////
// Import section
// //////////////////////////////////////
// STL
#include <sstream>
#include <fstream>
#include <string>
// Boost Unit Test Framework (UTF)
#define BOOST_TEST_DYN_LINK
#define BOOST_TEST_MAIN
#define BOOST_TEST_MODULE FQTTestSuite
#include <boost/test/unit_test.hpp>
// StdAir
#include <stdair/basic/BasLogParams.hpp>
#include <stdair/basic/BasDBParams.hpp>
#include <stdair/basic/BasFileMgr.hpp>
#include <stdair/service/Logger.hpp>
#include <stdair/bom/TravelSolutionStruct.hpp>
#include <stdair/bom/BookingRequestStruct.hpp>
// SimFQT
#include <simfqt/SIMFQT_Service.hpp>
#include <simfqt/config/simfqt-paths.hpp>

namespace boost_utf = boost::unit_test;

struct UnitTestConfig {
    UnitTestConfig() {
        static std::ofstream _test_log ("FQTTestSuite_utfresults.xml");
        boost_utf::unit_test_log.set_stream (_test_log);
        boost_utf::unit_test_log.set_format (boost_utf::XML);
        boost_utf::unit_test_log.set_threshold_level (boost_utf::log_test_units);
        //boost_utf::unit_test_log.set_threshold_level (boost_utf::log_successful_test);
    }
}

```

```

~UnitTestConfig() {
}
};

// ////////////////////////////////////////
void testFareQuoterHelper (const unsigned short iTestFlag,
                          const stdair::Filename_T iFareInputFilename,
                          const bool isBuiltin) {

    // Output log File
    std::ostringstream oStr;
    oStr << "FQTTestSuite_" << iTestFlag << ".log";
    const stdair::Filename_T lLogFilename (oStr.str());

    // Set the log parameters
    std::ofstream logOutputFile;
    // Open and clean the log outputfile
    logOutputFile.open (lLogFilename.c_str());
    logOutputFile.clear();

    // Initialise the SimFQT service object
    const stdair::BasLogParams lLogParams (stdair::LOG::DEBUG,
                                           logOutputFile);

    // Initialise the Simfqt service object
    SIMFQT::SIMFQT_Service simfqtService (lLogParams);

    // Check whether or not a (CSV) input file should be read
    if (isBuiltin == true) {

        // Build the default sample BOM tree (filled with fares) for Simfqt
        simfqtService.buildSampleBom();

    } else {

        // Build the BOM tree from parsing the fare input file
        SIMFQT::FareFilePath lFareFilePath (iFareInputFilename);
        simfqtService.parseAndLoad (lFareFilePath);
    }

    // Build a sample list of travel solutions and a booking request.
    stdair::TravelSolutionList_T lTravelSolutionList;
    simfqtService.buildSampleTravelSolutions (lTravelSolutionList);
    stdair::BookingRequestStruct lBookingRequest =
        simfqtService.buildBookingRequest();

    // Try to fareQuote the sample list of travel solutions
    simfqtService.quotePrices (lBookingRequest, lTravelSolutionList);

    // Close the log file
    logOutputFile.close();
}

// //////////////////////////////////////// Main: Unit Test Suite ////////////////////////////////////////

// Set the UTF configuration (re-direct the output to a specific file)
BOOST_GLOBAL_FIXTURE (UnitTestConfig);

// Start the test suite
BOOST_AUTO_TEST_SUITE (master_test_suite)

```

```
BOOST_AUTO_TEST_CASE (simfqt_simple_pricing_test) {

    // Input file name
    const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fare01.csv");

    // State whether the BOM tree should be built-in or parsed from an input file
    const bool isBuiltin = false;

    // Try to fareQuote the sample default list of travel solutions
    BOOST_CHECK_NO_THROW (testFareQuoterHelper (0, lFareInputFilename, isBuiltin));

}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_01) {

    // Input file name
    const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError01.csv");

    // State whether the BOM tree should be built-in or parsed from an input file
    const bool isBuiltin = false;

    // Try to fareQuote the sample default list of travel solutions
    BOOST_CHECK_THROW (testFareQuoterHelper (1, lFareInputFilename, isBuiltin),
                        SIMFQT::AirportPairNotFoundException);

}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_02) {

    // Input file name
    const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError02.csv");

    // State whether the BOM tree should be built-in or parsed from an input file
    const bool isBuiltin = false;

    // Try to fareQuote the sample default list of travel solutions
    BOOST_CHECK_THROW (testFareQuoterHelper (2, lFareInputFilename, isBuiltin),
                        SIMFQT::PosOrChannelNotFoundException);

}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_03) {

    // Input file name
    const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError03.csv");

    // State whether the BOM tree should be built-in or parsed from an input file
    const bool isBuiltin = false;

    // Try to fareQuote the sample default list of travel solutions
    BOOST_CHECK_THROW (testFareQuoterHelper (3, lFareInputFilename, isBuiltin),
                        SIMFQT::FlightDateNotFoundException);

}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_04) {

    // Input file name
    const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError04.csv");
```

```
        v");

    // State whether the BOM tree should be built-in or parsed from an input file
    const bool isBuiltin = false;

    // Try to fareQuote the sample default list of travel solutions
    BOOST_CHECK_THROW (testFareQuoterHelper (4, lFareInputFilename, isBuiltin),
                      SIMFQT::FlightTimeNotFoundException);
}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_05) {

    // Input file name
    const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError05.cs
        v");

    // State whether the BOM tree should be built-in or parsed from an input file
    const bool isBuiltin = false;

    // Try to fareQuote the sample default list of travel solutions
    BOOST_CHECK_THROW (testFareQuoterHelper (5, lFareInputFilename, isBuiltin),
                      SIMFQT::FeaturesNotFoundException);
}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_06) {

    // Input file name
    const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError06.cs
        v");

    // State whether the BOM tree should be built-in or parsed from an input file
    const bool isBuiltin = false;

    // Try to fareQuote the sample default list of travel solutions
    BOOST_CHECK_THROW (testFareQuoterHelper (6, lFareInputFilename, isBuiltin),
                      SIMFQT::AirlineNotFoundException);
}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_07) {

    // Input file name
    const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError07.cs
        v");

    // State whether the BOM tree should be built-in or parsed from an input file
    const bool isBuiltin = false;

    // Try to fareQuote the sample default list of travel solutions
    BOOST_CHECK_THROW (testFareQuoterHelper (7, lFareInputFilename, isBuiltin),
                      SIMFQT::FareFileParsingFailedException);
}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_08) {

    // Input file name
    const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/missingFile.cs
        v");

    // State whether the BOM tree should be built-in or parsed from an input file
    const bool isBuiltin = false;

    // Try to fareQuote the sample default list of travel solutions
```

```
BOOST_CHECK_THROW (testFareQuoterHelper (8, lFareInputFilename, isBuiltin),
                   SIMFQT::FareInputFileNotFoundException);
}

BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_09) {

    // Input file name
    const stdair::Filename_T lEmptyInputFilename (STDAIR_SAMPLE_DIR "/" );

    // State whether the BOM tree should be built-in or parsed from an input file
    const bool isBuiltin = true;

    // Try to fareQuote the sample default list of travel solutions
    BOOST_CHECK_NO_THROW(testFareQuoterHelper (9, lEmptyInputFilename, isBuiltin));
}

// End the test suite
BOOST_AUTO_TEST_SUITE_END()

/*!
```

17 Directory Hierarchy

17.1 Directories

This directory hierarchy is sorted roughly, but not completely, alphabetically:

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18 Namespace Index

18.1 Namespace List

Here is a list of all namespaces with brief descriptions:

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19 Class Index

19.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

```
std::basic_fstream< char >
std::basic_fstream< wchar_t >
std::basic_ifstream< char >
std::basic_ifstream< wchar_t >
std::basic_ios< char >
std::basic_ios< wchar_t >
std::basic_iostream< char >
std::basic_iostream< wchar_t >
std::basic_istream< char >
std::basic_istream< wchar_t >
std::basic_istreamstream< char >
std::basic_istreamstream< wchar_t >
std::basic_ofstream< char >
std::basic_ofstream< wchar_t >
std::basic_ostream< char >
std::basic_ostream< wchar_t >
std::basic_ostreamstream< char >
std::basic_ostreamstream< wchar_t >
std::basic_string< char >
std::basic_string< wchar_t >
std::basic_stringstream< char >
std::basic_stringstream< wchar_t >
```

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20 Class Index

20.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

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SIMFQT::FareParserHelper::storeNonRefundable	132
SIMFQT::FareParserHelper::storeOrigin	134
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21.1 File List

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22 Directory Documentation

22.1 simfqt/basic/ Directory Reference

Files

- file [BasConst.cpp](#)
- file [BasConst_General.hpp](#)
- file [BasConst_SIMFQT_Service.hpp](#)

22.2 simfqt/batches/ Directory Reference

Files

- file [simfqt_parseFareRules.cpp](#)

22.3 simfqt/bom/ Directory Reference

Files

- file [FareRuleStruct.cpp](#)
- file [FareRuleStruct.hpp](#)

22.4 simfqt/ui/cmdline/ Directory Reference

Files

- file [simfqt.cpp](#)

22.5 simfqt/command/ Directory Reference

Files

- file [FareParser.cpp](#)
- file [FareParser.hpp](#)
- file [FareParserHelper.cpp](#)
- file [FareParserHelper.hpp](#)
- file [FareQuoter.cpp](#)
- file [FareQuoter.hpp](#)
- file [FareRuleGenerator.cpp](#)
- file [FareRuleGenerator.hpp](#)

22.6 simfqt/config/ Directory Reference

Files

- file [simfqt-paths.hpp](#)

22.7 simfqt/factory/ Directory Reference

Files

- file [FacSimfqtServiceContext.cpp](#)
- file [FacSimfqtServiceContext.hpp](#)

22.8 simfqt/service/ Directory Reference

Files

- file [SIMFQT_Service.cpp](#)
- file [SIMFQT_ServiceContext.cpp](#)
- file [SIMFQT_ServiceContext.hpp](#)

22.9 test/simfqt/ Directory Reference

Files

- file [FQTestSuite.cpp](#)

22.10 simfqt/ Directory Reference

Directories

- directory [basic](#)
- directory [batches](#)
- directory [bom](#)
- directory [command](#)
- directory [config](#)
- directory [factory](#)
- directory [service](#)
- directory [ui](#)

Files

- file [SIMFQT_Service.hpp](#)
- file [SIMFQT_Types.hpp](#)

22.11 test/ Directory Reference

Directories

- directory [simfqt](#)

22.12 simfqt/ui/ Directory Reference

Directories

- directory [cmdline](#)

23 Namespace Documentation

23.1 SIMFQT Namespace Reference

Namespaces

- namespace [FareParserHelper](#)

Classes

- struct [FareRuleStruct](#)
- class [FareParser](#)
- class [FareRuleFileParser](#)
- class [FareQuoter](#)
Command wrapping the pricing request process.
- class [FareRuleGenerator](#)
- class [FacSimfqtServiceContext](#)
Factory for the service context.
- class [SIMFQT_ServiceContext](#)
Class holding the context of the SimFQT services.
- class [SIMFQT_Service](#)
Interface for the [SIMFQT](#) Services.
- class [FareFileParsingFailedException](#)
- class [AirportPairNotFoundException](#)
- class [PosOrChannelNotFoundException](#)
- class [FlightDateNotFoundException](#)
- class [FlightTimeNotFoundException](#)
- class [FeaturesNotFoundException](#)
- class [AirlineNotFoundException](#)
- class [FareInputFileNotFoundException](#)
- class [QuotingException](#)
- class [FareFilePath](#)

Typedefs

- typedef unsigned int [FareQuoteID_T](#)
- typedef boost::shared_ptr< [SIMFQT_Service](#) > [SIMFQT_ServicePtr_T](#)

Variables

- const std::string [DEFAULT_FARE_QUOTER_ID](#) = "IATA"

23.1.1 Typedef Documentation

23.1.1.1 typedef unsigned int SIMFQT::FareQuoteID_T

ID for the Fare Quote system.

Definition at line 143 of file [SIMFQT_Types.hpp](#).

23.1.1.2 typedef boost::shared_ptr<SIMFQT_Service> SIMFQT::SIMFQT_ServicePtr_T

(Smart) Pointer on the SimFQT service handler.

Definition at line 148 of file [SIMFQT_Types.hpp](#).

23.1.2 Variable Documentation

23.1.2.1 const std::string SIMFQT::DEFAULT_FARE_QUOTER_ID = "IATA"

Default ID for the [SIMFQT_Service](#).

Definition at line 10 of file [BasConst.cpp](#).

23.2 SIMFQT::FareParserHelper Namespace Reference

Classes

- struct [FareRuleParser](#)
- struct [ParserSemanticAction](#)
- struct [storeFareId](#)
- struct [storeOrigin](#)
- struct [storeDestination](#)
- struct [storeTripType](#)
- struct [storeDateRangeStart](#)
- struct [storeDateRangeEnd](#)
- struct [storeStartRangeTime](#)
- struct [storeEndRangeTime](#)
- struct [storePOS](#)
- struct [storeCabinCode](#)
- struct [storeChannel](#)
- struct [storeAdvancePurchase](#)
- struct [storeSaturdayStay](#)
- struct [storeChangeFees](#)
- struct [storeNonRefundable](#)
- struct [storeMinimumStay](#)
- struct [storeFare](#)
- struct [storeAirlineCode](#)
- struct [storeClass](#)
- struct [doEndFare](#)

Variables

- [stdair::int1_p_t](#) [int1_p](#)
- [stdair::uint2_p_t](#) [uint2_p](#)
- [stdair::uint4_p_t](#) [uint4_p](#)
- [stdair::uint1_4_p_t](#) [uint1_4_p](#)
- [stdair::hour_p_t](#) [hour_p](#)
- [stdair::minute_p_t](#) [minute_p](#)
- [stdair::second_p_t](#) [second_p](#)
- [stdair::year_p_t](#) [year_p](#)
- [stdair::month_p_t](#) [month_p](#)
- [stdair::day_p_t](#) [day_p](#)

23.2.1 Variable Documentation

23.2.1.1 [stdair::int1_p_t](#) [SIMFQT::FareParserHelper::int1_p](#)

Namespaces. 1-digit-integer parser

Definition at line 444 of file [FareParserHelper.cpp](#).

23.2.1.2 [stdair::uint2_p_t](#) [SIMFQT::FareParserHelper::uint2_p](#)

2-digit-integer parser

Definition at line 447 of file [FareParserHelper.cpp](#).

23.2.1.3 [stdair::uint4_p_t](#) [SIMFQT::FareParserHelper::uint4_p](#)

4-digit-integer parser

Definition at line 450 of file [FareParserHelper.cpp](#).

23.2.1.4 [stdair::uint1_4_p_t](#) [SIMFQT::FareParserHelper::uint1_4_p](#)

Up-to-4-digit-integer parser

Definition at line 453 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

23.2.1.5 [stdair::hour_p_t](#) [SIMFQT::FareParserHelper::hour_p](#)

Time element parsers.

Definition at line 456 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

23.2.1.6 [stdair::minute_p_t](#) [SIMFQT::FareParserHelper::minute_p](#)

Definition at line 457 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

23.2.1.7 stdair::second_p_t SIMFQT::FareParserHelper::second_p

Definition at line 458 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

23.2.1.8 stdair::year_p_t SIMFQT::FareParserHelper::year_p

Date element parsers.

Definition at line 461 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

23.2.1.9 stdair::month_p_t SIMFQT::FareParserHelper::month_p

Definition at line 462 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

23.2.1.10 stdair::day_p_t SIMFQT::FareParserHelper::day_p

Definition at line 463 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

23.3 stdair Namespace Reference

Forward declarations.

23.3.1 Detailed Description

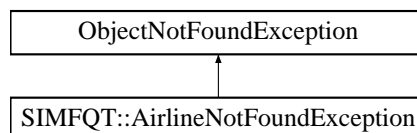
Forward declarations.

24 Class Documentation

24.1 SIMFQT::AirlineNotFoundException Class Reference

```
#include <simfqt/SIMFQT_Types.hpp>
```

Inheritance diagram for SIMFQT::AirlineNotFoundException:



Public Member Functions

- [AirlineNotFoundException](#) (const std::string &iWhat)

24.1.1 Detailed Description

The airline can not be found.

Definition at line 99 of file [SIMFQT_Types.hpp](#).

24.1.2 Constructor & Destructor Documentation

24.1.2.1 SIMFQT::AirlineNotFoundException::AirlineNotFoundException (const std::string &iWhat) [inline]

Constructor.

Definition at line 104 of file [SIMFQT_Types.hpp](#).

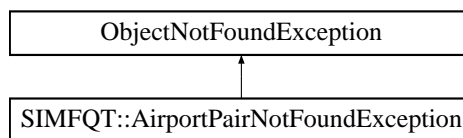
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.2 SIMFQT::AirportPairNotFoundException Class Reference

```
#include <simfqt/SIMFQT_Types.hpp>
```

Inheritance diagram for SIMFQT::AirportPairNotFoundException:



Public Member Functions

- [AirportPairNotFoundException](#) (const std::string &iWhat)

24.2.1 Detailed Description

The given airport pair can not be found.

Definition at line 39 of file [SIMFQT_Types.hpp](#).

24.2.2 Constructor & Destructor Documentation

24.2.2.1 SIMFQT::AirportPairNotFoundException::AirportPairNotFoundException (const std::string & *iWhat*) [inline]

Constructor.

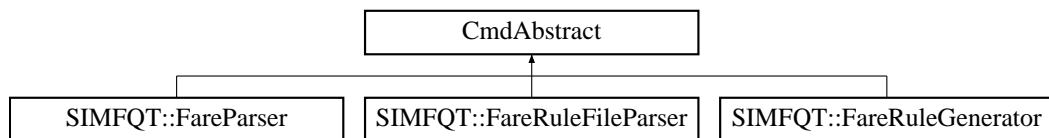
Definition at line 44 of file [SIMFQT_Types.hpp](#).

The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.3 CmdAbstract Class Reference

Inheritance diagram for CmdAbstract:



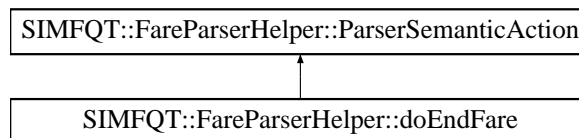
The documentation for this class was generated from the following file:

- [simfqt/command/FareRuleGenerator.hpp](#)

24.4 SIMFQT::FareParserHelper::doEndFare Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::doEndFare:



Public Member Functions

- [doEndFare](#) (stdair::BomRoot &, [FareRuleStruct](#) &)
- void [operator\(\)](#) (boost::spirit::qi::unused_type, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [stdair::BomRoot](#) & [_bomRoot](#)
- [FareRuleStruct](#) & [_fareRule](#)

24.4.1 Detailed Description

Mark the end of the fare-rule parsing.

Definition at line 230 of file [FareParserHelper.hpp](#).

24.4.2 Constructor & Destructor Documentation

24.4.2.1 SIMFQT::FareParserHelper::doEndFare::doEndFare ([stdair::BomRoot](#) & [ioBomRoot](#), [FareRuleStruct](#) & [ioFareRule](#))

Actor Constructor.

Definition at line 417 of file [FareParserHelper.cpp](#).

24.4.3 Member Function Documentation

24.4.3.1 void SIMFQT::FareParserHelper::doEndFare::operator() ([boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#)) const

Actor Function (functor).

Definition at line 424 of file [FareParserHelper.cpp](#).

References [_bomRoot](#), [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::describe\(\)](#).

24.4.4 Member Data Documentation

24.4.4.1 [stdair::BomRoot](#)& [SIMFQT::FareParserHelper::doEndFare::_bomRoot](#)

Actor Specific Context.

Definition at line 238 of file [FareParserHelper.hpp](#).

Referenced by [operator\(\)](#).

24.4.4.2 [FareRuleStruct](#)& [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#) [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#),

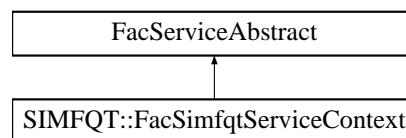
SIMFQT::FareParserHelper::storeMinimumStay::operator()(), SIMFQT::FareParserHelper::storeNonRefundable::operator()
SIMFQT::FareParserHelper::storeChangeFees::operator()(), SIMFQT::FareParserHelper::storeSaturdayStay::operator()
SIMFQT::FareParserHelper::storeAdvancePurchase::operator()(), SIMFQT::FareParserHelper::storeChannel::operator()
SIMFQT::FareParserHelper::storeCabinCode::operator()(), SIMFQT::FareParserHelper::storePOS::operator()(),
SIMFQT::FareParserHelper::storeEndRangeTime::operator()(), SIMFQT::FareParserHelper::storeStartRangeTime::operator()
SIMFQT::FareParserHelper::storeDateRangeEnd::operator()(), SIMFQT::FareParserHelper::storeDateRangeStart::operator()
SIMFQT::FareParserHelper::storeTripType::operator()(), SIMFQT::FareParserHelper::storeDestination::operator()(),
SIMFQT::FareParserHelper::storeOrigin::operator()(), and SIMFQT::FareParserHelper::storeFareId::operator()().

The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.5 FacServiceAbstract Class Reference

Inheritance diagram for FacServiceAbstract:



The documentation for this class was generated from the following file:

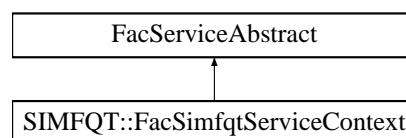
- [simfqt/factory/FacSimfqtServiceContext.hpp](#)

24.6 SIMFQT::FacSimfqtServiceContext Class Reference

Factory for the service context.

```
#include <simfqt/factory/FacSimfqtServiceContext.hpp>
```

Inheritance diagram for SIMFQT::FacSimfqtServiceContext:



Public Member Functions

- [~FacSimfqtServiceContext\(\)](#)
- [SIMFQT_ServiceContext & create\(\)](#)

Static Public Member Functions

- static [FacSimfqtServiceContext](#) & [instance](#) ()

Protected Member Functions

- [FacSimfqtServiceContext](#) ()

24.6.1 Detailed Description

Factory for the service context.

Definition at line 22 of file [FacSimfqtServiceContext.hpp](#).

24.6.2 Constructor & Destructor Documentation

24.6.2.1 SIMFQT::FacSimfqtServiceContext::~~FacSimfqtServiceContext ()

Destructor.

The Destruction put the `_instance` to NULL in order to be clean for the next [FacSimfqtServiceContext::instance\(\)](#).

Definition at line 17 of file [FacSimfqtServiceContext.cpp](#).

24.6.2.2 SIMFQT::FacSimfqtServiceContext::FacSimfqtServiceContext () [inline, protected]

Default Constructor.

This constructor is protected in order to ensure the singleton pattern.

Definition at line 57 of file [FacSimfqtServiceContext.hpp](#).

Referenced by [instance\(\)](#).

24.6.3 Member Function Documentation

24.6.3.1 FacSimfqtServiceContext & SIMFQT::FacSimfqtServiceContext::instance () [static]

Provide the unique instance.

The singleton is instantiated when first used.

Returns

`FacServiceContext&`

Definition at line 22 of file [FacSimfqtServiceContext.cpp](#).

References [FacSimfqtServiceContext\(\)](#).

24.6.3.2 SIMFQT_ServiceContext & SIMFQT::FacSimfqtServiceContext::create ()

Create a new ServiceContext object.

This new object is added to the list of instantiated objects.

Returns

ServiceContext& The newly created object.

Definition at line 34 of file [FacSimfqtServiceContext.cpp](#).

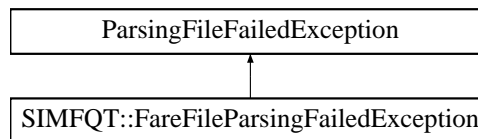
The documentation for this class was generated from the following files:

- [simfqt/factory/FacSimfqtServiceContext.hpp](#)
- [simfqt/factory/FacSimfqtServiceContext.cpp](#)

24.7 SIMFQT::FareFileParsingFailedException Class Reference

```
#include <simfqt/SIMFQT_Types.hpp>
```

Inheritance diagram for SIMFQT::FareFileParsingFailedException:

**Public Member Functions**

- [FareFileParsingFailedException](#) (const std::string &iWhat)

24.7.1 Detailed Description

The fare input file can not be parsed.

Definition at line 26 of file [SIMFQT_Types.hpp](#).

24.7.2 Constructor & Destructor Documentation

24.7.2.1 SIMFQT::FareFileParsingFailedException::FareFileParsingFailedException (const std::string & iWhat) [inline]

Constructor.

Definition at line 32 of file [SIMFQT_Types.hpp](#).

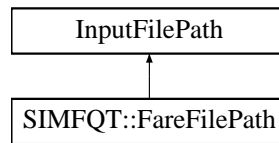
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.8 SIMFQT::FareFilePath Class Reference

```
#include <simfqt/SIMFQT_Types.hpp>
```

Inheritance diagram for SIMFQT::FareFilePath:



Public Member Functions

- [FareFilePath](#) (const stdair::Filename_T &iFilename)

24.8.1 Detailed Description

Fare input file.

Definition at line 130 of file [SIMFQT_Types.hpp](#).

24.8.2 Constructor & Destructor Documentation

24.8.2.1 `SIMFQT::FareFilePath::FareFilePath (const stdair::Filename_T &iFilename)`
[inline, explicit]

Constructor.

Definition at line 135 of file [SIMFQT_Types.hpp](#).

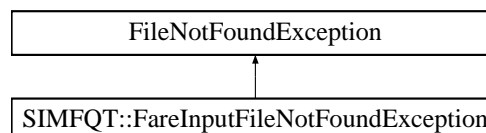
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.9 SIMFQT::FareInputFileNotFoundException Class Reference

```
#include <simfqt/SIMFQT_Types.hpp>
```

Inheritance diagram for SIMFQT::FareInputFileNotFoundException:



Public Member Functions

- [FareInputFileNotFoundException](#) (const std::string &iWhat)

24.9.1 Detailed Description

The fare input file can not be found.

Definition at line 111 of file [SIMFQT_Types.hpp](#).

24.9.2 Constructor & Destructor Documentation

24.9.2.1 SIMFQT::FareInputFileNotFoundException::FareInputFileNotFoundException (const std::string & iWhat) [inline]

Constructor.

Definition at line 116 of file [SIMFQT_Types.hpp](#).

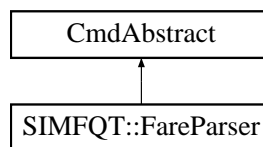
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.10 SIMFQT::FareParser Class Reference

```
#include <simfqt/command/FareParser.hpp>
```

Inheritance diagram for SIMFQT::FareParser:



Static Public Member Functions

- static void [fareRuleGeneration](#) (const [FareFilePath](#) &, stdair::BomRoot &)

24.10.1 Detailed Description

Class wrapping the parser entry point.

Definition at line 23 of file [FareParser.hpp](#).

24.10.2 Member Function Documentation

24.10.2.1 void SIMFQT::FareParser::fareRuleGeneration (const FareFilePath & iFareFilename, stdair::BomRoot & ioBomRoot) [static]

Parses the CSV file describing the fares for the simulator, and generates the fare bom tree accordingly.

Parameters

<i>const</i>	FareFilePath & The file-name of the CSV-formatted fare input file.
	Root of the BOM tree.
<i>stdair::BomRoot</i>	

Definition at line 17 of file [FareParser.cpp](#).

References [SIMFQT::FareRuleFileParser::generateFareRules\(\)](#).

Referenced by [SIMFQT::SIMFQT_Service::parseAndLoad\(\)](#).

The documentation for this class was generated from the following files:

- simfqt/command/[FareParser.hpp](#)
- simfqt/command/[FareParser.cpp](#)

24.11 SIMFQT::FareQuoter Class Reference

Command wrapping the pricing request process.

```
#include <simfqt/command/FareQuoter.hpp>
```

Friends

- class [SIMFQT_Service](#)

24.11.1 Detailed Description

Command wrapping the pricing request process.

Definition at line 29 of file [FareQuoter.hpp](#).

24.11.2 Friends And Related Function Documentation

24.11.2.1 friend class **SIMFQT_Service** [friend]

Friend classes: only the SimFQT service may access to the methods of that command class.

Definition at line 32 of file [FareQuoter.hpp](#).

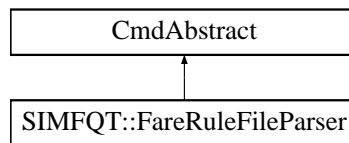
The documentation for this class was generated from the following files:

- [simfqt/command/FareQuoter.hpp](#)
- [simfqt/command/FareQuoter.cpp](#)

24.12 SIMFQT::FareRuleFileParser Class Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareRuleFileParser:



Public Member Functions

- [FareRuleFileParser](#) (stdair::BomRoot & ioBomRoot, const stdair::Filename_T & iFilename)
- void [generateFareRules](#) ()

24.12.1 Detailed Description

Class wrapping the initialisation and entry point of the parser.

The seemingly redundancy is used to force the instantiation of the actual parser, which is a templatised Boost Spirit grammar. Hence, the actual parser is instantiated within that class object code.

Definition at line 254 of file [FareParserHelper.hpp](#).

24.12.2 Constructor & Destructor Documentation

24.12.2.1 `SIMFQT::FareRuleFileParser::FareRuleFileParser (stdair::BomRoot & ioBomRoot, const stdair::Filename_T & iFilename)`

Constructor.

Definition at line 642 of file [FareParserHelper.cpp](#).

24.12.3 Member Function Documentation

24.12.3.1 `void SIMFQT::FareRuleFileParser::generateFareRules ()`

Parse the input file and generate the fare rules.

Definition at line 664 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParser::fareRuleGeneration\(\)](#).

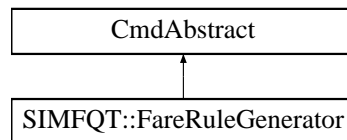
The documentation for this class was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.13 SIMFQT::FareRuleGenerator Class Reference

```
#include <simfqt/command/FareRuleGenerator.hpp>
```

Inheritance diagram for SIMFQT::FareRuleGenerator:



Friends

- class [FareFileParser](#)
- struct [FareParserHelper::doEndFare](#)
- class [FareParser](#)

24.13.1 Detailed Description

Class handling the generation / instantiation of the Fare BOM.

Definition at line 33 of file [FareRuleGenerator.hpp](#).

24.13.2 Friends And Related Function Documentation

24.13.2.1 friend class [FareFileParser](#) [friend]

Definition at line 38 of file [FareRuleGenerator.hpp](#).

24.13.2.2 friend struct [FareParserHelper::doEndFare](#) [friend]

Definition at line 39 of file [FareRuleGenerator.hpp](#).

24.13.2.3 friend class [FareParser](#) [friend]

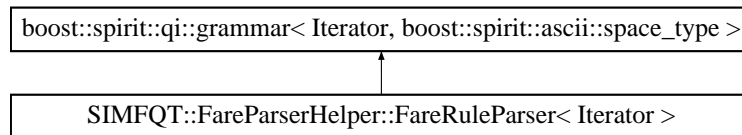
Definition at line 40 of file [FareRuleGenerator.hpp](#).

The documentation for this class was generated from the following files:

- [simfqt/command/FareRuleGenerator.hpp](#)
- [simfqt/command/FareRuleGenerator.cpp](#)

24.14 SIMFQT::FareParserHelper::FareRuleParser< Iterator > Struct Template Reference

Inheritance diagram for SIMFQT::FareParserHelper::FareRuleParser< Iterator >:



Public Member Functions

- [FareRuleParser](#) (stdair::BomRoot &ioBomRoot, [FareRuleStruct](#) &iofareRule)

Public Attributes

- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [start](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [comments](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [fare_rule](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [fare_rule_end](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [fare_key](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [fare_id](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [origin](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [destination](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [tripType](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [dateRangeStart](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [dateRangeEnd](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [date](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [timeRangeStart](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [timeRangeEnd](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [time](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [point_of_sale](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [cabinCode](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [channel](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [advancePurchase](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [saturdayStay](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [changeFees](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [nonRefundable](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [minimumStay](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [fare](#)
- boost::spirit::qi::rule< Iterator, boost::spirit::ascii::space_type > [segment](#)
- stdair::BomRoot & [_bomRoot](#)
- [FareRuleStruct](#) & [_fareRule](#)

24.14.1 Detailed Description

template<typename Iterator>struct SIMFQT::FareParserHelper::FareRuleParser< Iterator >

Fare: fareID; OriginCity; DestinationCity; DateRangeStart; DateRangeEnd; DepartureTimeRangeStart; DepartureTimeRangeEnd; POS; AdvancePurchase; SaturdayNight; ChangeFees; NonRefundable; MinimumStay; Price; AirlineCode; Class;

fareID OriginCity (3-char airport code) DestinationCity (3-char airport code) DateRangeStart (yyyy-mm-dd) DateRangeEnd (yyyy-mm-dd) DepartureTimeRangeStart (hh:mm) DepartureTimeRangeEnd (hh:mm) POS (3-char point_of_sale city) Cabin Code (1-char cabin code) Channel (D=direct, I=indirect, N=online, F=offline) AdvancePurchase SaturdayNight (T=True, F=False) ChangeFees (T=True, F=False) NonRefundable (T=True, F=False) MinimumStay Price AirlineCode (2-char airline code) ClassList (List of 1-char class code) Grammar for the Fare-Rule parser.

Definition at line 500 of file [FareParserHelper.cpp](#).

24.14.2 Constructor & Destructor Documentation

24.14.2.1 template<typename Iterator> SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser (stdair::BomRoot & ioBomRoot, FareRuleStruct & iofareRule) [inline]

Definition at line 504 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::_bomRoot](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::_fareRule](#), [SIMFQT::FareRuleStruct::_itDay](#), [SIMFQT::FareRuleStruct::_itHours](#), [SIMFQT::FareRuleStruct::_itMinutes](#), [SIMFQT::FareRuleStruct::_itMonth](#), [SIMFQT::FareRuleStruct::_itSeconds](#), [SIMFQT::FareRuleStruct::_itYear](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::advancePurchase](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::cabinCode](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::changeFees](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::channel](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::comments](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::date](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::dateRangeEnd](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::dateRangeStart](#), [SIMFQT::FareParserHelper::day_p](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::destination](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::fare](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::fare_id](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::fare_key](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::fare_rule](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::fare_rule_end](#), [SIMFQT::FareParserHelper::hour_p](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::minimumStay](#), [SIMFQT::FareParserHelper::minute_p](#), [SIMFQT::FareParserHelper::month_p](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::nonRefundable](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::origin](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::point_of_sale](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::saturdayStay](#), [SIMFQT::FareParserHelper::second_p](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::segment](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::start](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::time](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::timeRangeEnd](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::timeRangeStart](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::tripType](#), [SIMFQT::FareParserHelper::uint1_4_p](#), and [SIMFQT::FareParserHelper::year_p](#).

24.14.3 Member Data Documentation

24.14.3.1 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::start`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.2 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::comments`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.3 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::fare_rule`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.4 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::fare_rule_end`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.5 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::fare_key`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.6 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::fare_id`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.7 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::origin`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.8 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::destination`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.9 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::tripType`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.10 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::dateRangeStart`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.11 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::dateRangeEnd`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.12 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::date`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.13 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::timeRangeStart`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.14 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::timeRangeEnd`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.15 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::time`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.16 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::point_of_sale`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.17 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::cabinCode`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.18 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::channel`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.19 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::advancePurchase`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.20 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::saturdayStay`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.21 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::changeFees`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.22 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::nonRefundable`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.23 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::minimumStay`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.24 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::fare`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.25 `template<typename Iterator> boost::spirit::qi::rule<Iterator,
boost::spirit::ascii::space_type> SIMFQT::FareParserHelper::FareRuleParser<
Iterator >::segment`

Definition at line 620 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.26 `template<typename Iterator> stdair::BomRoot&
SIMFQT::FareParserHelper::FareRuleParser< Iterator >::_bomRoot`

Definition at line 627 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.14.3.27 `template<typename Iterator> FareRuleStruct&
SIMFQT::FareParserHelper::FareRuleParser< Iterator >::_fareRule`

Definition at line 628 of file [FareParserHelper.cpp](#).

Referenced by [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

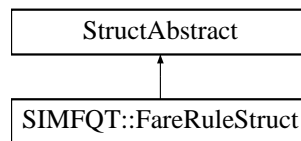
The documentation for this struct was generated from the following file:

- [simfqt/command/FareParserHelper.cpp](#)

24.15 SIMFQT::FareRuleStruct Struct Reference

```
#include <simfqt/bom/FareRuleStruct.hpp>
```

Inheritance diagram for SIMFQT::FareRuleStruct:



Public Member Functions

- [FareRuleStruct](#) ()
- [SIMFQT::FareQuoteID_T getFareID](#) () const
- [stdair::AirportCode_T getOrigin](#) () const
- [stdair::AirportCode_T getDestination](#) () const
- [stdair::TripType_T getTripType](#) () const
- [stdair::Date_T getDateRangeStart](#) () const
- [stdair::Date_T getDateRangeEnd](#) () const
- [stdair::Duration_T getTimeRangeStart](#) () const
- [stdair::Duration_T getTimeRangeEnd](#) () const
- [stdair::CabinCode_T getCabinCode](#) () const
- [const stdair::CityCode_T getPOS](#) () const
- [stdair::ChannelLabel_T getChannel](#) () const
- [stdair::DayDuration_T getAdvancePurchase](#) () const
- [stdair::SaturdayStay_T getSaturdayStay](#) () const
- [stdair::ChangeFees_T getChangeFees](#) () const
- [stdair::NonRefundable_T getNonRefundable](#) () const
- [stdair::DayDuration_T getMinimumStay](#) () const
- [stdair::PriceValue_T getFare](#) () const
- [stdair::AirlineCode_T getAirlineCode](#) () const
- [stdair::ClassCode_T getClassCode](#) () const
- [const unsigned int getAirlineListSize](#) () const
- [const unsigned int getClassCodeListSize](#) () const
- [stdair::AirlineCodeList_T getAirlineList](#) () const
- [stdair::ClassList_StringList_T getClassCodeList](#) () const
- [stdair::Date_T calculateDate](#) () const
- [stdair::Duration_T calculateTime](#) () const
- [const std::string describe](#) () const
- [void setFareID](#) (const [SIMFQT::FareQuoteID_T](#) &iFareQuoteID)
- [void setOrigin](#) (const [stdair::AirportCode_T](#) &iOrigin)
- [void setDestination](#) (const [stdair::AirportCode_T](#) &iDestination)

- void [setTripType](#) (const stdair::TripType_T &iTripType)
- void [setDateRangeStart](#) (const stdair::Date_T &iDateRangeStart)
- void [setDateRangeEnd](#) (const stdair::Date_T &iDateRangeEnd)
- void [setTimeRangeStart](#) (const stdair::Duration_T &iTimeRangeStart)
- void [setTimeRangeEnd](#) (const stdair::Duration_T &iTimeRangeEnd)
- void [setCabinCode](#) (const stdair::CabinCode_T &iCabinCode)
- void [setPOS](#) (const stdair::CityCode_T &iPOS)
- void [setChannel](#) (const stdair::ChannelLabel_T &iChannel)
- void [setAdvancePurchase](#) (const stdair::DayDuration_T &iAdvancePurchase)
- void [setSaturdayStay](#) (const stdair::SaturdayStay_T &iSaturdayStay)
- void [setChangeFees](#) (const stdair::ChangeFees_T &iChangeFees)
- void [setNonRefundable](#) (const stdair::NonRefundable_T &iNonRefundable)
- void [setMinimumStay](#) (const stdair::DayDuration_T &iMinimumStay)
- void [setFare](#) (const stdair::PriceValue_T &iFare)
- void [setAirlineCode](#) (const stdair::AirlineCode_T &iAirlineCode)
- void [setClassCode](#) (const stdair::ClassCode_T &iClassCode)
- void [clearAirlineCodeList](#) ()
- void [clearClassCodeList](#) ()
- void [addAirlineCode](#) (const stdair::AirlineCode_T &iAirlineCode)
- void [addClassCode](#) (const stdair::ClassCode_T &iClassCode)

Public Attributes

- stdair::year_t [_itYear](#)
- stdair::month_t [_itMonth](#)
- stdair::day_t [_itDay](#)
- stdair::hour_t [_itHours](#)
- stdair::minute_t [_itMinutes](#)
- stdair::second_t [_itSeconds](#)

24.15.1 Detailed Description

Utility Structure for the parsing of fare-rule structures.

Definition at line 21 of file [FareRuleStruct.hpp](#).

24.15.2 Constructor & Destructor Documentation

24.15.2.1 SIMFQT::FareRuleStruct::FareRuleStruct ()

Default constructor.

Definition at line 17 of file [FareRuleStruct.cpp](#).

24.15.3 Member Function Documentation

24.15.3.1 `SIMFQT::FareQuoteID_T SIMFQT::FareRuleStruct::getFareID () const`
[inline]

Get the fare ID.

Definition at line 30 of file [FareRuleStruct.hpp](#).

24.15.3.2 `stdair::AirportCode_T SIMFQT::FareRuleStruct::getOrigin () const` [inline]

Get the origin.

Definition at line 35 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storePOS::operator\(\)\(\)](#).

24.15.3.3 `stdair::AirportCode_T SIMFQT::FareRuleStruct::getDestination () const`
[inline]

Get the destination.

Definition at line 40 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storePOS::operator\(\)\(\)](#).

24.15.3.4 `stdair::TripType_T SIMFQT::FareRuleStruct::getTripType () const` [inline]

Get the trip type.

Definition at line 45 of file [FareRuleStruct.hpp](#).

24.15.3.5 `stdair::Date_T SIMFQT::FareRuleStruct::getDateRangeStart () const` [inline]

Get the date range start.

Definition at line 50 of file [FareRuleStruct.hpp](#).

24.15.3.6 `stdair::Date_T SIMFQT::FareRuleStruct::getDateRangeEnd () const` [inline]

Get the date range end.

Definition at line 55 of file [FareRuleStruct.hpp](#).

24.15.3.7 `stdair::Duration_T SIMFQT::FareRuleStruct::getTimeRangeStart () const`
[inline]

Get the time range start.

Definition at line 60 of file [FareRuleStruct.hpp](#).

24.15.3.8 `stdair::Duration_T SIMFQT::FareRuleStruct::getTimeRangeEnd () const`
[inline]

Get the time range end.

Definition at line 65 of file [FareRuleStruct.hpp](#).

24.15.3.9 `stdair::CabinCode_T SIMFQT::FareRuleStruct::getCabinCode () const`
[inline]

Get the cabin code.

Definition at line 70 of file [FareRuleStruct.hpp](#).

24.15.3.10 `const stdair::CityCode_T SIMFQT::FareRuleStruct::getPOS () const` [inline]

Get the point-of-sale.

Definition at line 75 of file [FareRuleStruct.hpp](#).

24.15.3.11 `stdair::ChannelLabel_T SIMFQT::FareRuleStruct::getChannel () const`
[inline]

Get the channel.

Definition at line 80 of file [FareRuleStruct.hpp](#).

24.15.3.12 `stdair::DayDuration_T SIMFQT::FareRuleStruct::getAdvancePurchase () const`
[inline]

Get the advance purchase.

Definition at line 85 of file [FareRuleStruct.hpp](#).

24.15.3.13 `stdair::SaturdayStay_T SIMFQT::FareRuleStruct::getSaturdayStay () const`
[inline]

Get the saturday stay option.

Definition at line 90 of file [FareRuleStruct.hpp](#).

24.15.3.14 `stdair::ChangeFees_T SIMFQT::FareRuleStruct::getChangeFees () const`
[inline]

Get the change fees.

Definition at line 95 of file [FareRuleStruct.hpp](#).

24.15.3.15 `stdair::NonRefundable_T SIMFQT::FareRuleStruct::getNonRefundable () const`
[inline]

Get the refundable option.

Definition at line 100 of file [FareRuleStruct.hpp](#).

24.15.3.16 `stdair::DayDuration_T SIMFQT::FareRuleStruct::getMinimumStay () const`
[inline]

Get the minimum stay.

Definition at line 105 of file [FareRuleStruct.hpp](#).

24.15.3.17 `stdair::PriceValue_T SIMFQT::FareRuleStruct::getFare () const [inline]`

Get the fare.

Definition at line 110 of file [FareRuleStruct.hpp](#).

24.15.3.18 `stdair::AirlineCode_T SIMFQT::FareRuleStruct::getAirlineCode () const [inline]`

Get the airline code.

Definition at line 115 of file [FareRuleStruct.hpp](#).

24.15.3.19 `stdair::ClassCode_T SIMFQT::FareRuleStruct::getClassCode () const [inline]`

Get the class code.

Definition at line 120 of file [FareRuleStruct.hpp](#).

24.15.3.20 `const unsigned int SIMFQT::FareRuleStruct::getAirlineListSize () const [inline]`

Get the size of the airline code list.

Definition at line 125 of file [FareRuleStruct.hpp](#).

24.15.3.21 `const unsigned int SIMFQT::FareRuleStruct::getClassCodeListSize () const [inline]`

Get the size of the class code list.

Definition at line 130 of file [FareRuleStruct.hpp](#).

24.15.3.22 `stdair::AirlineCodeList_T SIMFQT::FareRuleStruct::getAirlineList () const [inline]`

Get the airline code list.

Definition at line 135 of file [FareRuleStruct.hpp](#).

24.15.3.23 `stdair::ClassList_StringList_T SIMFQT::FareRuleStruct::getClassCodeList () const [inline]`

Get the class code list.

Definition at line 140 of file [FareRuleStruct.hpp](#).

24.15.3.24 `stdair::Date_T SIMFQT::FareRuleStruct::calculateDate () const`

Calculate the date from the staging details.

Definition at line 39 of file [FareRuleStruct.cpp](#).

References [_itDay](#), [_itMonth](#), and [_itYear](#).

Referenced by [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)\(\)](#), and [SIM-](#)

[FQT::FareParserHelper::storeDateRangeStart::operator\(\)](#).

24.15.3.25 `stdair::Duration_T SIMFQT::FareRuleStruct::calculateTime () const`

Calculate the time from the staging details.

Definition at line 45 of file [FareRuleStruct.cpp](#).

References [_itHours](#), [_itMinutes](#), and [_itSeconds](#).

Referenced by [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), and [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#).

24.15.3.26 `const std::string SIMFQT::FareRuleStruct::describe () const`

Display of the structure.

Definition at line 54 of file [FareRuleStruct.cpp](#).

Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#).

24.15.3.27 `void SIMFQT::FareRuleStruct::setFareID (const SIMFQT::FareQuoteID_T & iFareQuoteID) [inline]`

Set the fare ID.

Definition at line 158 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

24.15.3.28 `void SIMFQT::FareRuleStruct::setOrigin (const stdair::AirportCode_T & iOrigin) [inline]`

Set the origin.

Definition at line 163 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#).

24.15.3.29 `void SIMFQT::FareRuleStruct::setDestination (const stdair::AirportCode_T & iDestination) [inline]`

Set the destination.

Definition at line 168 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#).

24.15.3.30 `void SIMFQT::FareRuleStruct::setTripType (const stdair::TripType_T & iTripType) [inline]`

Set the trip type.

Definition at line 173 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#).

24.15.3.31 void SIMFQT::FareRuleStruct::setDateRangeStart (const stdair::Date_T & *iDateRangeStart*) [inline]

Set the date range start.

Definition at line 178 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#).

24.15.3.32 void SIMFQT::FareRuleStruct::setDateRangeEnd (const stdair::Date_T & *iDateRangeEnd*) [inline]

Set the date range end.

Definition at line 183 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#).

24.15.3.33 void SIMFQT::FareRuleStruct::setTimeRangeStart (const stdair::Duration_T & *iTimeRangeStart*) [inline]

Set the time range start.

Definition at line 188 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#).

24.15.3.34 void SIMFQT::FareRuleStruct::setTimeRangeEnd (const stdair::Duration_T & *iTimeRangeEnd*) [inline]

Set the time range end.

Definition at line 193 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#).

24.15.3.35 void SIMFQT::FareRuleStruct::setCabinCode (const stdair::CabinCode_T & *iCabinCode*) [inline]

Set the cabin code.

Definition at line 198 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#).

24.15.3.36 void SIMFQT::FareRuleStruct::setPOS (const stdair::CityCode_T & *iPOS*) [inline]

Set the point-of-sale.

Definition at line 203 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storePOS::operator\(\)](#).

24.15.3.37 void SIMFQT::FareRuleStruct::setChannel (const stdair::ChannelLabel_T & *iChannel*) [inline]

Set the channel.

Definition at line 208 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeChannel::operator\(\)\(\)](#).

24.15.3.38 void SIMFQT::FareRuleStruct::setAdvancePurchase (const stdair::DayDuration_T & *iAdvancePurchase*) [inline]

Set the advance purchase.

Definition at line 213 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)\(\)](#).

24.15.3.39 void SIMFQT::FareRuleStruct::setSaturdayStay (const stdair::SaturdayStay_T & *iSaturdayStay*) [inline]

Set the saturday stay option.

Definition at line 218 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)\(\)](#).

24.15.3.40 void SIMFQT::FareRuleStruct::setChangeFees (const stdair::ChangeFees_T & *iChangeFees*) [inline]

Set the change fees.

Definition at line 223 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)\(\)](#).

24.15.3.41 void SIMFQT::FareRuleStruct::setNonRefundable (const stdair::NonRefundable_T & *iNonRefundable*) [inline]

Set the refundable option.

Definition at line 228 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)\(\)](#).

24.15.3.42 void SIMFQT::FareRuleStruct::setMinimumStay (const stdair::DayDuration_T & *iMinimumStay*) [inline]

Set the minimum stay.

Definition at line 233 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)\(\)](#).

24.15.3.43 void SIMFQT::FareRuleStruct::setFare (const stdair::PriceValue_T & *iFare*) [inline]

Set the fare.

Definition at line 238 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFare::operator\(\)\(\)](#).

24.15.3.44 void SIMFQT::FareRuleStruct::setAirlineCode (const stdair::AirlineCode_T & *iAirlineCode*) [inline]

Set the airline code.

Definition at line 243 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

24.15.3.45 void SIMFQT::FareRuleStruct::setClassCode (const stdair::ClassCode_T & *iClassCode*) [inline]

Set the class code.

Definition at line 248 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

24.15.3.46 void SIMFQT::FareRuleStruct::clearAirlineCodeList () [inline]

Empty the airline code list.

Definition at line 253 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

24.15.3.47 void SIMFQT::FareRuleStruct::clearClassCodeList () [inline]

Empty the class code list.

Definition at line 258 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

24.15.3.48 void SIMFQT::FareRuleStruct::addAirlineCode (const stdair::AirlineCode_T & *iAirlineCode*) [inline]

Add an airline code to the list.

Definition at line 263 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#).

24.15.3.49 void SIMFQT::FareRuleStruct::addClassCode (const stdair::ClassCode_T & *iClassCode*) [inline]

Add a class code to the list.

Definition at line 268 of file [FareRuleStruct.hpp](#).

Referenced by [SIMFQT::FareParserHelper::storeClass::operator\(\)](#).

24.15.4 Member Data Documentation

24.15.4.1 stdair::year_t SIMFQT::FareRuleStruct::_itYear

Staging Date.

Definition at line 275 of file [FareRuleStruct.hpp](#).

Referenced by [calculateDate\(\)](#), and [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.15.4.2 stdair::month_t SIMFQT::FareRuleStruct::_itMonth

Definition at line 276 of file [FareRuleStruct.hpp](#).

Referenced by [calculateDate\(\)](#), and [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.15.4.3 stdair::day_t SIMFQT::FareRuleStruct::_itDay

Definition at line 277 of file [FareRuleStruct.hpp](#).

Referenced by [calculateDate\(\)](#), and [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.15.4.4 stdair::hour_t SIMFQT::FareRuleStruct::_itHours

Staging Time.

Definition at line 280 of file [FareRuleStruct.hpp](#).

Referenced by [calculateTime\(\)](#), and [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.15.4.5 stdair::minute_t SIMFQT::FareRuleStruct::_itMinutes

Definition at line 281 of file [FareRuleStruct.hpp](#).

Referenced by [calculateTime\(\)](#), and [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#).

24.15.4.6 stdair::second_t SIMFQT::FareRuleStruct::_itSeconds

Definition at line 282 of file [FareRuleStruct.hpp](#).

Referenced by [calculateTime\(\)](#), [SIMFQT::FareParserHelper::FareRuleParser< Iterator >::FareRuleParser\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

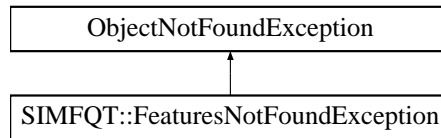
The documentation for this struct was generated from the following files:

- [simfqt/bom/FareRuleStruct.hpp](#)
- [simfqt/bom/FareRuleStruct.cpp](#)

24.16 SIMFQT::FeaturesNotFoundException Class Reference

```
#include <simfqt/SIMFQT_Types.hpp>
```

Inheritance diagram for SIMFQT::FeaturesNotFoundException:



Public Member Functions

- [FeaturesNotFoundException](#) (const std::string &iWhat)

24.16.1 Detailed Description

The fare features can not be found.

Definition at line 87 of file [SIMFQT_Types.hpp](#).

24.16.2 Constructor & Destructor Documentation

24.16.2.1 `SIMFQT::FeaturesNotFoundException::FeaturesNotFoundException (const std::string & iWhat) [inline]`

Constructor.

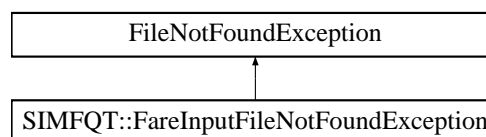
Definition at line 92 of file [SIMFQT_Types.hpp](#).

The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.17 FileNotFoundException Class Reference

Inheritance diagram for FileNotFoundException:



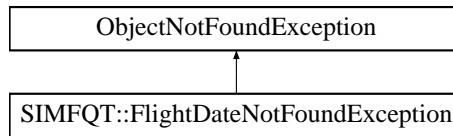
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.18 SIMFQT::FlightDateNotFoundException Class Reference

```
#include <simfqt/SIMFQT_Types.hpp>
```

Inheritance diagram for SIMFQT::FlightDateNotFoundException:



Public Member Functions

- [FlightDateNotFoundException](#) (const std::string &iWhat)

24.18.1 Detailed Description

The departure date of the flight can not be found.

Definition at line 63 of file [SIMFQT_Types.hpp](#).

24.18.2 Constructor & Destructor Documentation

24.18.2.1 `SIMFQT::FlightDateNotFoundException::FlightDateNotFoundException (const std::string & iWhat) [inline]`

Constructor.

Definition at line 68 of file [SIMFQT_Types.hpp](#).

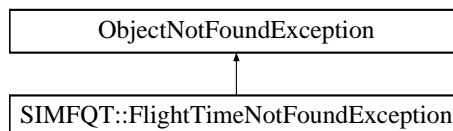
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.19 SIMFQT::FlightTimeNotFoundException Class Reference

```
#include <simfqt/SIMFQT_Types.hpp>
```

Inheritance diagram for SIMFQT::FlightTimeNotFoundException:



Public Member Functions

- [FlightTimeNotFoundException](#) (const std::string &iWhat)

24.19.1 Detailed Description

The departure time of the flight can not be found.

Definition at line 75 of file [SIMFQT_Types.hpp](#).

24.19.2 Constructor & Destructor Documentation

24.19.2.1 SIMFQT::FlightTimeNotFoundException::FlightTimeNotFoundException (const std::string & iWhat) [inline]

Constructor.

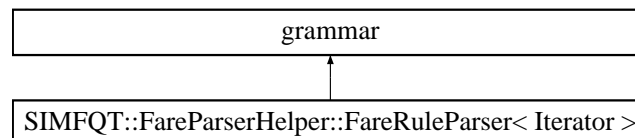
Definition at line 80 of file [SIMFQT_Types.hpp](#).

The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.20 grammar Class Reference

Inheritance diagram for grammar:

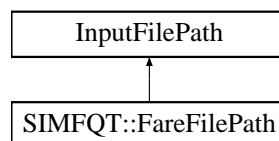


The documentation for this class was generated from the following file:

- [simfqt/command/FareParserHelper.cpp](#)

24.21 InputFilePath Class Reference

Inheritance diagram for InputFilePath:



The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.22 ObjectNotFoundException Class Reference

Inheritance diagram for ObjectNotFoundException:



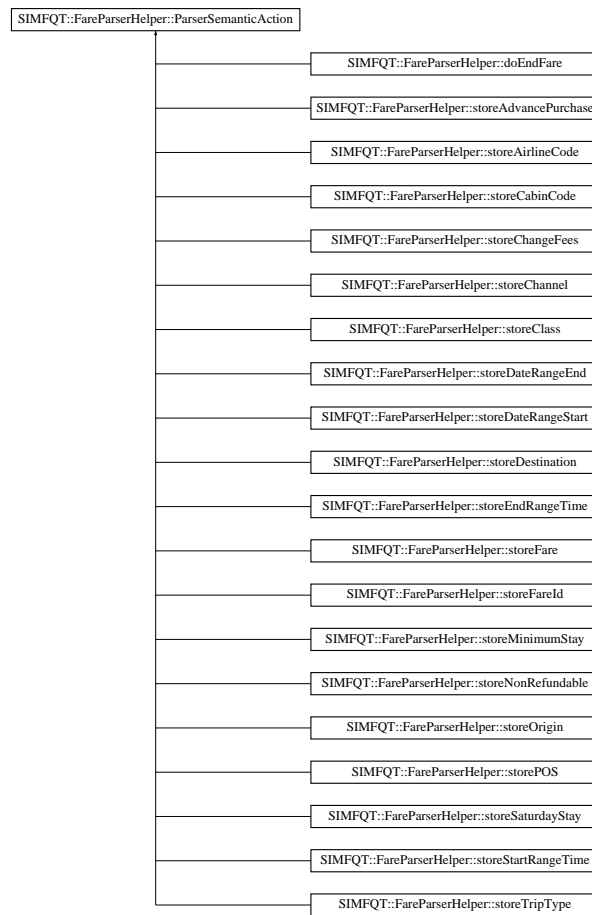
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.23 SIMFQT::FareParserHelper::ParserSemanticAction Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::ParserSemanticAction:



Public Member Functions

- [ParserSemanticAction](#) ([FareRuleStruct](#) &)

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.23.1 Detailed Description

Generic Semantic Action (Actor / Functor) for the Fare Parser.

Definition at line 31 of file [FareParserHelper.hpp](#).

24.23.2 Constructor & Destructor Documentation

24.23.2.1 SIMFQT::FareParserHelper::ParserSemanticAction::ParserSemanticAction (FareRuleStruct & ioFareRule)

Actor Constructor.

Definition at line 29 of file [FareParserHelper.cpp](#).

24.23.3 Member Data Documentation

24.23.3.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

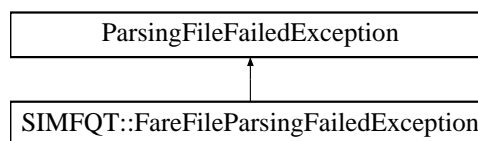
Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.24 ParsingFileFailedException Class Reference

Inheritance diagram for ParsingFileFailedException:



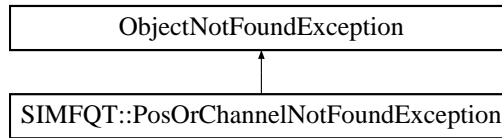
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.25 SIMFQT::PosOrChannelNotFoundException Class Reference

```
#include <simfqt/SIMFQT_Types.hpp>
```

Inheritance diagram for SIMFQT::PosOrChannelNotFoundException:



Public Member Functions

- [PosOrChannelNotFoundException](#) (const std::string &iWhat)

24.25.1 Detailed Description

The given POS/channel can not be found.

Definition at line 51 of file [SIMFQT_Types.hpp](#).

24.25.2 Constructor & Destructor Documentation

24.25.2.1 SIMFQT::PosOrChannelNotFoundEventArgs::PosOrChannelNotFoundEventArgs (const std::string &iWhat) [inline]

Constructor.

Definition at line 56 of file [SIMFQT_Types.hpp](#).

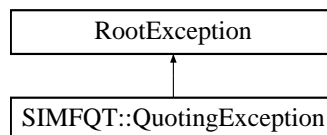
The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.26 SIMFQT::QuotingException Class Reference

```
#include <simfqt/SIMFQT_Types.hpp>
```

Inheritance diagram for SIMFQT::QuotingException:



24.26.1 Detailed Description

The pricing operation fails.

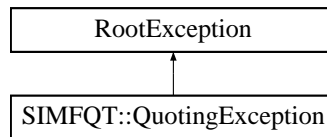
Definition at line 123 of file [SIMFQT_Types.hpp](#).

The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.27 RootException Class Reference

Inheritance diagram for RootException:

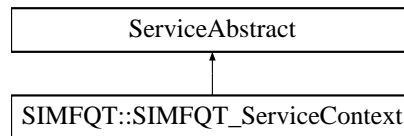


The documentation for this class was generated from the following file:

- [simfqt/SIMFQT_Types.hpp](#)

24.28 ServiceAbstract Class Reference

Inheritance diagram for ServiceAbstract:



The documentation for this class was generated from the following file:

- [simfqt/service/SIMFQT_ServiceContext.hpp](#)

24.29 SIMFQT::SIMFQT_Service Class Reference

Interface for the [SIMFQT](#) Services.

```
#include <simfqt/SIMFQT_Service.hpp>
```

Public Member Functions

- [SIMFQT_Service](#) (const stdair::BasLogParams &)
- [SIMFQT_Service](#) (const stdair::BasLogParams &, const stdair::BasDBParams &)

- [SIMFQT_Service](#) (stdair::STDAIR_ServicePtr_T ioSTDAIR_ServicePtr)
- void [parseAndLoad](#) (const [FareFilePath](#) &iFareFilename)
- [~SIMFQT_Service](#) ()
- void [buildSampleBom](#) ()
- stdair::BookingRequestStruct [buildBookingRequest](#) (const bool isForCRS=false)
- void [buildSampleTravelSolutions](#) (stdair::TravelSolutionList_T &)
- void [quotePrices](#) (const stdair::BookingRequestStruct &, stdair::TravelSolutionList_T &)
- std::string [csvDisplay](#) () const
- std::string [csvDisplay](#) (const stdair::TravelSolutionList_T &) const
- std::string [csvDisplay](#) (const stdair::AirportCode_T &ioOrigin, const stdair::AirportCode_T &ioDestination, const stdair::Date_T &ioDepartureDate) const
- std::string [list](#) () const
- bool [check](#) (const stdair::AirportCode_T &ioOrigin, const stdair::AirportCode_T &ioDestination, const stdair::Date_T &ioDepartureDate) const

24.29.1 Detailed Description

Interface for the [SIMFQT](#) Services.

Definition at line 31 of file [SIMFQT_Service.hpp](#).

24.29.2 Constructor & Destructor Documentation

24.29.2.1 SIMFQT::SIMFQT_Service::SIMFQT_Service (const stdair::BasLogParams & iLogParams)

Constructor.

The `initSimfqtService()` method is called; see the corresponding documentation for more details.

A reference on an output stream is given, so that log outputs can be directed onto that stream.

Parameters

<i>const</i> stdair::BasLogParams& Parameters for the output log stream.
--

Definition at line 36 of file [SIMFQT_Service.cpp](#).

24.29.2.2 SIMFQT::SIMFQT_Service::SIMFQT_Service (const stdair::BasLogParams & iLogParams, const stdair::BasDBParams & iDBParams)

Constructor.

The `initSimfqtService()` method is called; see the corresponding documentation for more details.

A reference on an output stream is given, so that log outputs can be directed onto that stream.

Parameters

<i>const</i>	stdair::BasLogParams& Parameters for the output log stream.
<i>const</i>	stdair::BasDBParams& Parameters for the database access.

Definition at line 56 of file [SIMFQT_Service.cpp](#).

24.29.2.3 SIMFQT::SIMFQT_Service::SIMFQT_Service ([stdair::STDAIR_ServicePtr_T](#) *ioSTDAIR_ServicePtr*)

Constructor.

The `initSimfqtService()` method is called; see the corresponding documentation for more details.

Moreover, as no reference on any output stream is given, it is assumed that the `StdAir` log service has already been initialised with the proper log output stream by some other methods in the calling chain (for instance, when the [SIMFQT_Service](#) is itself being initialised by another library service such as `SIMCRS_Service`).

Parameters

stdair::STDAIR_ServicePtr_T	Reference on the STDAIR service.
---	----------------------------------

Definition at line 78 of file [SIMFQT_Service.cpp](#).

24.29.2.4 SIMFQT::SIMFQT_Service::~~SIMFQT_Service ()

Destructor.

Definition at line 94 of file [SIMFQT_Service.cpp](#).

24.29.3 Member Function Documentation

24.29.3.1 void SIMFQT::SIMFQT_Service::parseAndLoad ([const FareFilePath](#) & *iFareFilename*)

Parse the fare dump and load it into memory.

The CSV file, describing the fare rule for the simulator, is parsed and instantiated in memory accordingly.

Parameters

<i>const</i>	FareFilePath & Filename of the input fare file.
--------------	---

Definition at line 171 of file [SIMFQT_Service.cpp](#).

References [SIMFQT::FareParser::fareRuleGeneration\(\)](#).

Referenced by [main\(\)](#).

24.29.3.2 void SIMFQT::SIMFQT_Service::buildSampleBom ()

Build a sample BOM tree, and attach it to the BomRoot instance.

As for now, two sample BOM trees can be built.

- One BOM tree is based on two actual inventories (one for BA, another for AF). Each inventory contains one flight. One of those flights has two legs (and therefore three segments).
- The other BOM tree is fake, as a hook for RMOL to work.

Definition at line 185 of file [SIMFQT_Service.cpp](#).

Referenced by [main\(\)](#).

24.29.3.3 stdair::BookingRequestStruct SIMFQT::SIMFQT_Service::buildBookingRequest (const bool isForCRS = false)

Build a BookingRequest structure (for test purposes).

Returns

stdair::BookingRequestStruct The created BookingRequest structure.

Definition at line 231 of file [SIMFQT_Service.cpp](#).

Referenced by [main\(\)](#).

24.29.3.4 void SIMFQT::SIMFQT_Service::buildSampleTravelSolutions (stdair::TravelSolutionList_T & ioTravelSolutionList)

Build a sample list of travel solutions.

As of now (March 2011), that list is made of the following travel solutions:

- BA9
- LHR-SYD
- 2011-06-10
- Q
- WTP: 900
- Change fee: 20; Non refundable; Saturday night stay

Parameters

<i>TravelSolutionList_T</i> & Sample list of travel solution structures. It should be given empty. It is altered with the returned sample.

Definition at line 255 of file [SIMFQT_Service.cpp](#).

Referenced by [main\(\)](#).

24.29.3.5 void SIMFQT::SIMFQT_Service::quotePrices (const stdair::BookingRequestStruct & *iBookingRequest*, stdair::TravelSolutionList_T & *ioTravelSolutionList*)

Calculate the prices for a given list of travel solutions.

A stdair::Fare_T attribute is calculated for every travel solution of the list.

Parameters

<i>stdair::BookingRequestStruct</i>	Booking request.
<i>stdair::TravelSolutionList_T</i> &	List of travel solution.

Definition at line 391 of file [SIMFQT_Service.cpp](#).

Referenced by [main\(\)](#).

24.29.3.6 std::string SIMFQT::SIMFQT_Service::csvDisplay () const

Recursively display (dump in the returned string) the objects of the BOM tree.

Returns

std::string Output string in which the BOM tree is logged/dumped.

Definition at line 276 of file [SIMFQT_Service.cpp](#).

Referenced by [main\(\)](#).

24.29.3.7 std::string SIMFQT::SIMFQT_Service::csvDisplay (const stdair::TravelSolutionList_T & *ioTravelSolutionList*) const

Display (dump in the returned string) the full list of travel solution structures.

Returns

std::string Output string in which the list of travel solutions is logged/dumped.

Definition at line 303 of file [SIMFQT_Service.cpp](#).

24.29.3.8 std::string SIMFQT::SIMFQT_Service::csvDisplay (const stdair::AirportCode_T & *ioOrigin*, const stdair::AirportCode_T & *ioDestination*, const stdair::Date_T & *ioDepartureDate*) const

Recursively display (dump in the returned string) the fare-rules corresponding to the parameters given as input.

Parameters

<i>const</i>	stdair::AirportCode_T& Origin airport of the fare-rules to display
<i>const</i>	stdair::AirportCode_T& Destination airport of the fare- rules to display.
<i>const</i>	stdair::Date_T& Departure date of the fare-rules to display.

Returns

std::string Output string in which the BOM tree is logged/dumped.

Definition at line 325 of file [SIMFQT_Service.cpp](#).

24.29.3.9 std::string SIMFQT::SIMFQT_Service::list () const

Display (dump in the returned string) the airport pairs and the corresponding departure dates of the fare rules stored in the BOM tree.

Returns

std::string Output string in which the airport pairs and departure dates are logged/-dumped.

Definition at line 348 of file [SIMFQT_Service.cpp](#).

24.29.3.10 bool SIMFQT::SIMFQT_Service::check (const stdair::AirportCode_T & ioOrigin, const stdair::AirportCode_T & ioDestination, const stdair::Date_T & ioDepartureDate) const

Check whether the given couple airportpair-date is a valid one.

Parameters

<i>const</i>	stdair::AirportCode_T& Origin airport of the fare rule to check.
<i>const</i>	stdair::AirportCode_T& Destination airport of the fare rule to check.
<i>const</i>	stdair::Date_T& Departure date of the fare rule to check.

Returns

bool Whether or not the given airportpair-date couple is a valid one.

Definition at line 369 of file [SIMFQT_Service.cpp](#).

The documentation for this class was generated from the following files:

- [simfqt/SIMFQT_Service.hpp](#)
- [simfqt/service/SIMFQT_Service.cpp](#)

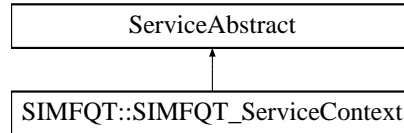
24.30 SIMFQT::SIMFQT_ServiceContext Class Reference

Class holding the context of the SimFQT services.

```
#include <simfqt/service/SIMFQT_ServiceContext.hpp>
```

24.31 SIMFQT::FareParserHelper::storeAdvancePurchase Struct Reference 112

Inheritance diagram for SIMFQT::SIMFQT_ServiceContext:



Friends

- class [SIMFQT_Service](#)
- class [FacSimfqtServiceContext](#)

24.30.1 Detailed Description

Class holding the context of the SimFQT services.

Definition at line 25 of file [SIMFQT_ServiceContext.hpp](#).

24.30.2 Friends And Related Function Documentation

24.30.2.1 friend class SIMFQT_Service [friend]

The [SIMFQT_Service](#) class should be the sole class to get access to ServiceContext content: general users do not want to bother with a context interface.

Definition at line 31 of file [SIMFQT_ServiceContext.hpp](#).

24.30.2.2 friend class FacSimfqtServiceContext [friend]

Definition at line 32 of file [SIMFQT_ServiceContext.hpp](#).

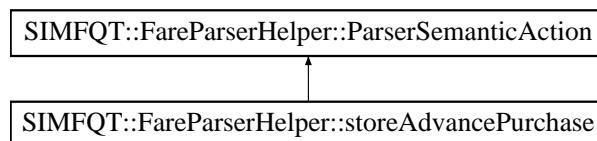
The documentation for this class was generated from the following files:

- [simfqt/service/SIMFQT_ServiceContext.hpp](#)
- [simfqt/service/SIMFQT_ServiceContext.cpp](#)

24.31 SIMFQT::FareParserHelper::storeAdvancePurchase Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeAdvancePurchase:



24.31 SIMFQT::FareParserHelper::storeAdvancePurchase Struct Reference 113

Public Member Functions

- [storeAdvancePurchase](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (unsigned int, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.31.1 Detailed Description

Store the parsed advance purchase days.

Definition at line 150 of file [FareParserHelper.hpp](#).

24.31.2 Constructor & Destructor Documentation

24.31.2.1 SIMFQT::FareParserHelper::storeAdvancePurchase::storeAdvancePurchase ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 251 of file [FareParserHelper.cpp](#).

24.31.3 Member Function Documentation

24.31.3.1 void SIMFQT::FareParserHelper::storeAdvancePurchase::operator() (unsigned int *iAdvancePurchase*, boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 256 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setAdvanceP](#)

24.31.4 Member Data Documentation

24.31.4.1 [FareRuleStruct](#)& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#)

SIMFQT::FareParserHelper::storeChangeFees::operator(), SIMFQT::FareParserHelper::storeSaturdayStay::operator(), operator(), SIMFQT::FareParserHelper::storeChannel::operator(), SIMFQT::FareParserHelper::storeCabinCode::operator(), SIMFQT::FareParserHelper::storePOS::operator(), SIMFQT::FareParserHelper::storeEndRangeTime::operator(), SIMFQT::FareParserHelper::storeStartRangeTime::operator(), SIMFQT::FareParserHelper::storeDateRangeEnd::operator(), SIMFQT::FareParserHelper::storeDateRangeStart::operator(), SIMFQT::FareParserHelper::storeTripType::operator(), SIMFQT::FareParserHelper::storeDestination::operator(), SIMFQT::FareParserHelper::storeOrigin::operator(), and SIMFQT::FareParserHelper::storeFareId::operator().

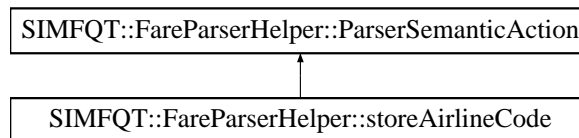
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.32 SIMFQT::FareParserHelper::storeAirlineCode Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeAirlineCode:



Public Member Functions

- [storeAirlineCode](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (std::vector< char >, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.32.1 Detailed Description

Store the parsed airline code.

Definition at line 210 of file [FareParserHelper.hpp](#).

24.32.2 Constructor & Destructor Documentation

24.32.2.1 SIMFQT::FareParserHelper::storeAirlineCode::storeAirlineCode ([FareRuleStruct](#) & [ioFareRule](#))

Actor Constructor.

Definition at line 375 of file [FareParserHelper.cpp](#).

24.32.3 Member Function Documentation

24.32.3.1 void SIMFQT::FareParserHelper::storeAirlineCode::operator() (std::vector< char > iChar, boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 380 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::addAirlineCo](#)

24.32.4 Member Data Documentation

24.32.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

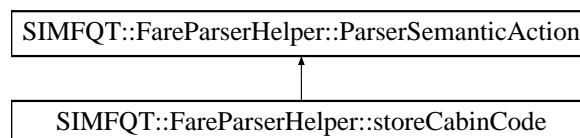
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.33 SIMFQT::FareParserHelper::storeCabinCode Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeCabinCode:



Public Member Functions

- [storeCabinCode](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (char, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.33.1 Detailed Description

Store the cabin code.

Definition at line 130 of file [FareParserHelper.hpp](#).

24.33.2 Constructor & Destructor Documentation

24.33.2.1 SIMFQT::FareParserHelper::storeCabinCode::storeCabinCode ([FareRuleStruct](#) & [ioFareRule](#))

Actor Constructor.

Definition at line 209 of file [FareParserHelper.cpp](#).

24.33.3 Member Function Documentation

24.33.3.1 void SIMFQT::FareParserHelper::storeCabinCode::operator() (char *iChar*, boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 214 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setCabinCode](#).

24.33.4 Member Data Documentation

24.33.4.1 [FareRuleStruct](#)& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#).

SIMFQT::FareParserHelper::storeAdvancePurchase::operator(), SIMFQT::FareParserHelper::storeChannel::operator(), SIMFQT::FareParserHelper::storePOS::operator(), SIMFQT::FareParserHelper::storeEndRangeTime::operator(), SIMFQT::FareParserHelper::storeStartRangeTime::operator(), SIMFQT::FareParserHelper::storeDateRangeEnd::operator(), SIMFQT::FareParserHelper::storeDateRangeStart::operator(), SIMFQT::FareParserHelper::storeTripType::operator(), SIMFQT::FareParserHelper::storeDestination::operator(), SIMFQT::FareParserHelper::storeOrigin::operator(), and SIMFQT::FareParserHelper::storeFareId::operator().

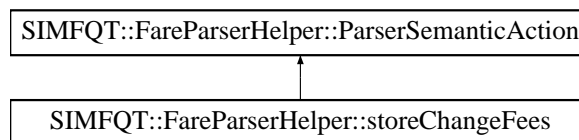
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.34 SIMFQT::FareParserHelper::storeChangeFees Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeChangeFees:



Public Member Functions

- [storeChangeFees](#) ([FareRuleStruct](#) &)
- [operator](#)() (char, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.34.1 Detailed Description

Store the parsed change fees.

Definition at line 170 of file [FareParserHelper.hpp](#).

24.34.2 Constructor & Destructor Documentation

24.34.2.1 SIMFQT::FareParserHelper::storeChangeFees::storeChangeFees ([FareRuleStruct](#) & [ioFareRule](#))

Actor Constructor.

Definition at line 292 of file [FareParserHelper.cpp](#).

24.34.3 Member Function Documentation

24.34.3.1 void SIMFQT::FareParserHelper::storeChangeFees::operator() (char *iChangefees*, boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 297 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setChangeFees](#).

24.34.4 Member Data Documentation

24.34.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)\(\)](#).

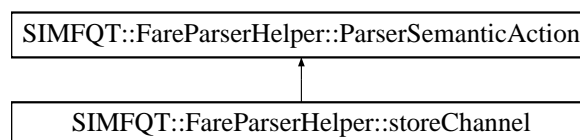
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.35 SIMFQT::FareParserHelper::storeChannel Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeChannel:



Public Member Functions

- [storeChannel](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (std::vector< char >, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.35.1 Detailed Description

Store the channel distribution.

Definition at line 140 of file [FareParserHelper.hpp](#).

24.35.2 Constructor & Destructor Documentation

24.35.2.1 SIMFQT::FareParserHelper::storeChannel::storeChannel ([FareRuleStruct](#) & [ioFareRule](#))

Actor Constructor.

Definition at line 230 of file [FareParserHelper.cpp](#).

24.35.3 Member Function Documentation

24.35.3.1 void SIMFQT::FareParserHelper::storeChannel::operator() (std::vector< char > [iChar](#), boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 235 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setChannel\(\)](#)

24.35.4 Member Data Documentation

24.35.4.1 [FareRuleStruct](#)& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#)

[SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeCabin](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::ope](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

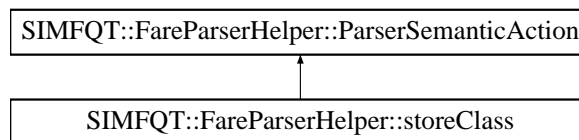
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.36 SIMFQT::FareParserHelper::storeClass Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeClass:



Public Member Functions

- [storeClass](#) ([FareRuleStruct](#) &)
- [void operator\(\)](#) (std::vector< char >, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.36.1 Detailed Description

Store the parsed class code.

Definition at line 220 of file [FareParserHelper.hpp](#).

24.36.2 Constructor & Destructor Documentation

24.36.2.1 SIMFQT::FareParserHelper::storeClass::storeClass ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 393 of file [FareParserHelper.cpp](#).

24.36.3 Member Function Documentation

24.36.3.1 void SIMFQT::FareParserHelper::storeClass::operator() (std::vector< char > *iChar*, boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 398 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::addClassCo](#)

24.36.4 Member Data Documentation

24.36.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)\(\)](#), [operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)\(\)](#).

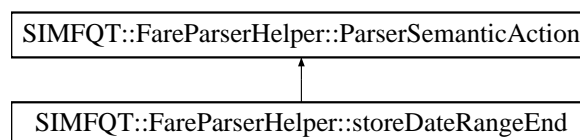
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.37 SIMFQT::FareParserHelper::storeDateRangeEnd Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeDateRangeEnd:



Public Member Functions

- [storeDateRangeEnd](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (boost::spirit::qi::unused_type, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.37.1 Detailed Description

Store the parsed end of the date range.

Definition at line 90 of file [FareParserHelper.hpp](#).

24.37.2 Constructor & Destructor Documentation

24.37.2.1 SIMFQT::FareParserHelper::storeDateRangeEnd::storeDateRangeEnd ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 128 of file [FareParserHelper.cpp](#).

24.37.3 Member Function Documentation

24.37.3.1 void SIMFQT::FareParserHelper::storeDateRangeEnd::operator() (boost::spirit::qi::unused_type , boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 133 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), [SIMFQT::FareRuleStruct::calculateDate\(\)](#), and [SIMFQT::FareRuleStruct::setDateRangeEnd\(\)](#).

24.37.4 Member Data Documentation

24.37.4.1 [FareRuleStruct](#)& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), and [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#).

SIMFQT::FareParserHelper::storeMinimumStay::operator(), SIMFQT::FareParserHelper::storeNonRefundable::operator(), SIMFQT::FareParserHelper::storeChangeFees::operator(), SIMFQT::FareParserHelper::storeSaturdayStay::operator(), SIMFQT::FareParserHelper::storeAdvancePurchase::operator(), SIMFQT::FareParserHelper::storeChannel::operator(), SIMFQT::FareParserHelper::storeCabinCode::operator(), SIMFQT::FareParserHelper::storePOS::operator(), SIMFQT::FareParserHelper::storeEndRangeTime::operator(), SIMFQT::FareParserHelper::storeStartRangeTime::operator(), SIMFQT::FareParserHelper::storeDateRangeStart::operator(), SIMFQT::FareParserHelper::storeTripType::operator(), SIMFQT::FareParserHelper::storeDestination::operator(), SIMFQT::FareParserHelper::storeOrigin::operator(), and SIMFQT::FareParserHelper::storeFareId::operator().

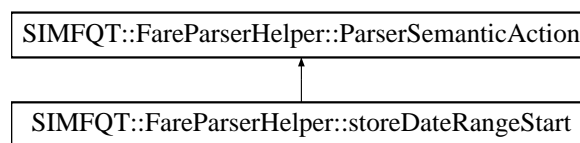
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.38 SIMFQT::FareParserHelper::storeDateRangeStart Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeDateRangeStart:



Public Member Functions

- [storeDateRangeStart](#) ([FareRuleStruct](#) &)
- [void operator\(\)](#) ([boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#)) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.38.1 Detailed Description

Store the parsed start of the date range.

Definition at line 80 of file [FareParserHelper.hpp](#).

24.38.2 Constructor & Destructor Documentation

24.38.2.1 SIMFQT::FareParserHelper::storeDateRangeStart::storeDateRangeStart (FareRuleStruct & *ioFareRule*)

Actor Constructor.

Definition at line 112 of file [FareParserHelper.cpp](#).

24.38.3 Member Function Documentation

24.38.3.1 void SIMFQT::FareParserHelper::storeDateRangeStart::operator()
(boost::spirit::qi::unused_type , boost::spirit::qi::unused_type ,
boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 117 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), [SIMFQT::FareRuleStruct::calculateDate\(\)](#), and [SIMFQT::FareRuleStruct::setDateRangeStart\(\)](#).

24.38.4 Member Data Documentation

24.38.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

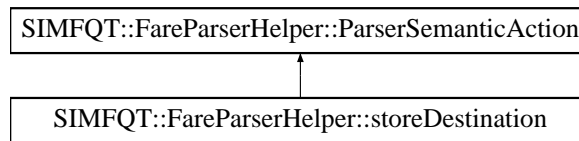
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.39 SIMFQT::FareParserHelper::storeDestination Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeDestination:



Public Member Functions

- [storeDestination](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (std::vector< char >, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.39.1 Detailed Description

Store the parsed destination.

Definition at line 59 of file [FareParserHelper.hpp](#).

24.39.2 Constructor & Destructor Documentation

24.39.2.1 SIMFQT::FareParserHelper::storeDestination::storeDestination ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 74 of file [FareParserHelper.cpp](#).

24.39.3 Member Function Documentation

24.39.3.1 void SIMFQT::FareParserHelper::storeDestination::operator() (std::vector< char > *iChar*, boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 79 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setDestination](#).

24.39.4 Member Data Documentation

24.39.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#) and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

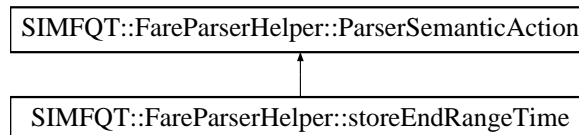
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.40 SIMFQT::FareParserHelper::storeEndRangeTime Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeEndRangeTime:



Public Member Functions

- [storeEndRangeTime](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (boost::spirit::qi::unused_type, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.40.1 Detailed Description

Store the parsed end range time.

Definition at line 110 of file [FareParserHelper.hpp](#).

24.40.2 Constructor & Destructor Documentation

24.40.2.1 SIMFQT::FareParserHelper::storeEndRangeTime::storeEndRangeTime (FareRuleStruct & ioFareRule)

Actor Constructor.

Definition at line 167 of file [FareParserHelper.cpp](#).

24.40.3 Member Function Documentation

24.40.3.1 void SIMFQT::FareParserHelper::storeEndRangeTime::operator() (boost::spirit::qi::unused_type , boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 172 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), [SIMFQT::FareRuleStruct::_itSeconds](#), [SIMFQT::FareRuleStruct::calculateTime\(\)](#), and [SIMFQT::FareRuleStruct::setTimeRangeEnd\(\)](#).

24.40.4 Member Data Documentation

24.40.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRange::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

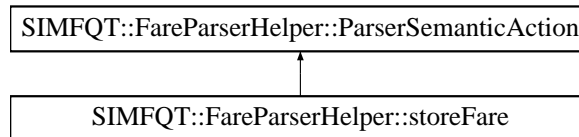
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.41 SIMFQT::FareParserHelper::storeFare Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeFare:



Public Member Functions

- [storeFare](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (double, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.41.1 Detailed Description

Store the parsed fare value.

Definition at line 200 of file [FareParserHelper.hpp](#).

24.41.2 Constructor & Destructor Documentation

24.41.2.1 SIMFQT::FareParserHelper::storeFare::storeFare ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 359 of file [FareParserHelper.cpp](#).

24.41.3 Member Function Documentation

24.41.3.1 void SIMFQT::FareParserHelper::storeFare::operator() (double *iFare*, boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 364 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setFare\(\)](#).

24.41.4 Member Data Documentation

24.41.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

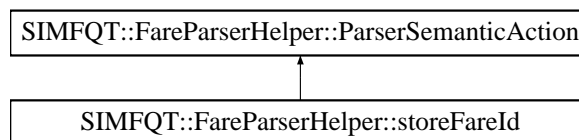
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.42 SIMFQT::FareParserHelper::storeFareId Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeFareId:



Public Member Functions

- [storeFareId](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (unsigned int, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.42.1 Detailed Description

Store the parsed fare Id.

Definition at line 39 of file [FareParserHelper.hpp](#).

24.42.2 Constructor & Destructor Documentation

24.42.2.1 SIMFQT::FareParserHelper::storeFareId::storeFareId (FareRuleStruct & ioFareRule)

Actor Constructor.

Definition at line 35 of file [FareParserHelper.cpp](#).

24.42.3 Member Function Documentation

24.42.3.1 void SIMFQT::FareParserHelper::storeFareId::operator() (unsigned int iFareId, boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 40 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), [SIMFQT::FareRuleStruct::_itSeconds](#), [SIMFQT::FareRuleStruct::clearAirlineCodeList\(\)](#), [SIMFQT::FareRuleStruct::clearClassCodeList\(\)](#), [SIMFQT::FareRuleStruct::setAirlineCode\(\)](#), [SIMFQT::FareRuleStruct::setClassCode\(\)](#), and [SIMFQT::FareRuleStruct::setFareID\(\)](#).

24.42.4 Member Data Documentation

24.42.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [operator\(\)](#).

The documentation for this struct was generated from the following files:

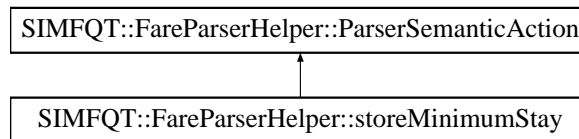
- [simfqt/command/FareParserHelper.hpp](#)

- [simfqt/command/FareParserHelper.cpp](#)

24.43 SIMFQT::FareParserHelper::storeMinimumStay Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeMinimumStay:



Public Member Functions

- [storeMinimumStay](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (unsigned int, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.43.1 Detailed Description

Store the parsed minimum stay.

Definition at line 190 of file [FareParserHelper.hpp](#).

24.43.2 Constructor & Destructor Documentation

24.43.2.1 SIMFQT::FareParserHelper::storeMinimumStay::storeMinimumStay ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 343 of file [FareParserHelper.cpp](#).

24.43.3 Member Function Documentation

24.43.3.1 void SIMFQT::FareParserHelper::storeMinimumStay::operator() (unsigned int *iMinStay*, boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 348 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setMinimumS](#)

24.43.4 Member Data Documentation

24.43.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeF](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::ope](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::ope](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

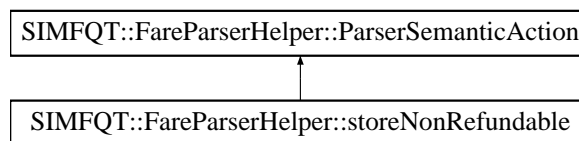
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.44 SIMFQT::FareParserHelper::storeNonRefundable Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeNonRefundable:



Public Member Functions

- [storeNonRefundable](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (char, [boost::spirit::qi::unused_type](#), [boost::spirit::qi::unused_type](#)) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.44.1 Detailed Description

Store the parsed refundable option

Definition at line 180 of file [FareParserHelper.hpp](#).

24.44.2 Constructor & Destructor Documentation

24.44.2.1 SIMFQT::FareParserHelper::storeNonRefundable::storeNonRefundable (
 FareRuleStruct & ioFareRule)

Actor Constructor.

Definition at line 318 of file [FareParserHelper.cpp](#).

24.44.3 Member Function Documentation

24.44.3.1 void SIMFQT::FareParserHelper::storeNonRefundable::operator() (char
 iNonRefundable, boost::spirit::qi::unused_type , boost::spirit::qi::unused_type)
 const

Actor Function (functor).

Definition at line 323 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setNonRefundable](#).

24.44.4 Member Data Documentation

24.44.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_
 fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFee::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

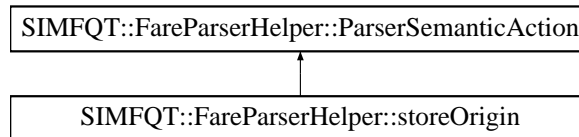
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.45 SIMFQT::FareParserHelper::storeOrigin Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeOrigin:



Public Member Functions

- [storeOrigin](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (std::vector< char >, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.45.1 Detailed Description

Store the parsed origin.

Definition at line 49 of file [FareParserHelper.hpp](#).

24.45.2 Constructor & Destructor Documentation

24.45.2.1 SIMFQT::FareParserHelper::storeOrigin::storeOrigin ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 58 of file [FareParserHelper.cpp](#).

24.45.3 Member Function Documentation

24.45.3.1 void SIMFQT::FareParserHelper::storeOrigin::operator() (std::vector< char > *iChar*, boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 63 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setOrigin\(\)](#).

24.45.4 Member Data Documentation

24.45.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

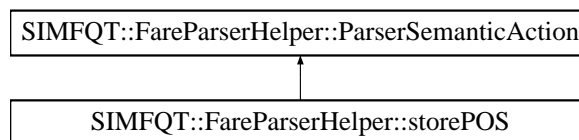
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.46 SIMFQT::FareParserHelper::storePOS Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storePOS:



Public Member Functions

- [storePOS](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (std::vector< char >, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.46.1 Detailed Description

Store the parsed customer point_of_sale.

Definition at line 120 of file [FareParserHelper.hpp](#).

24.46.2 Constructor & Destructor Documentation

24.46.2.1 SIMFQT::FareParserHelper::storePOS::storePOS (FareRuleStruct & ioFareRule)

Actor Constructor.

Definition at line 185 of file [FareParserHelper.cpp](#).

24.46.3 Member Function Documentation

24.46.3.1 void SIMFQT::FareParserHelper::storePOS::operator() (std::vector< char > iChar, boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 190 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), [SIMFQT::FareRuleStruct::getDestination\(\)](#), [SIMFQT::FareRuleStruct::getOrigin\(\)](#), and [SIMFQT::FareRuleStruct::setPOS\(\)](#).

24.46.4 Member Data Documentation

24.46.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

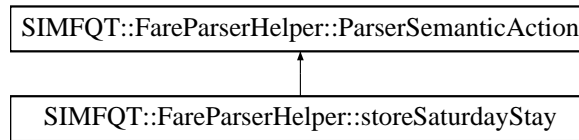
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.47 SIMFQT::FareParserHelper::storeSaturdayStay Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeSaturdayStay:



Public Member Functions

- [storeSaturdayStay](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (char, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.47.1 Detailed Description

Store the parsed saturday night.

Definition at line 160 of file [FareParserHelper.hpp](#).

24.47.2 Constructor & Destructor Documentation

24.47.2.1 SIMFQT::FareParserHelper::storeSaturdayStay::storeSaturdayStay ([FareRuleStruct](#) & *ioFareRule*)

Actor Constructor.

Definition at line 267 of file [FareParserHelper.cpp](#).

24.47.3 Member Function Documentation

24.47.3.1 void SIMFQT::FareParserHelper::storeSaturdayStay::operator() (char *iSaturdayStay*, boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 272 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setSaturdayS](#)

24.47.4 Member Data Documentation

24.47.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

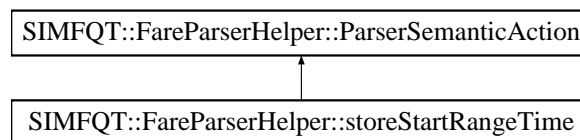
The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.48 SIMFQT::FareParserHelper::storeStartRangeTime Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeStartRangeTime:



Public Member Functions

- [storeStartRangeTime](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (boost::spirit::qi::unused_type, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.48.1 Detailed Description

Store the parsed start range time.

Definition at line 100 of file [FareParserHelper.hpp](#).

24.48.2 Constructor & Destructor Documentation

24.48.2.1 SIMFQT::FareParserHelper::storeStartRangeTime::storeStartRangeTime (
 FareRuleStruct & ioFareRule)

Actor Constructor.

Definition at line 149 of file [FareParserHelper.cpp](#).

24.48.3 Member Function Documentation

24.48.3.1 void SIMFQT::FareParserHelper::storeStartRangeTime::operator() (
 boost::spirit::qi::unused_type , boost::spirit::qi::unused_type ,
 boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 154 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), [SIMFQT::FareRuleStruct::_itSeconds](#), [SIMFQT::FareRuleStruct::calculateTime\(\)](#), and [SIMFQT::FareRuleStruct::setTimeRangeStart\(\)](#).

24.48.4 Member Data Documentation

24.48.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_
 fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRange::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeTripType::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#), and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

The documentation for this struct was generated from the following files:

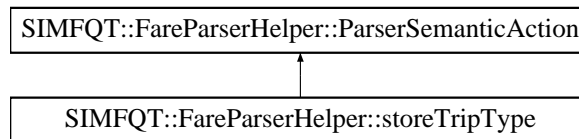
- [simfqt/command/FareParserHelper.hpp](#)

- [simfqt/command/FareParserHelper.cpp](#)

24.49 SIMFQT::FareParserHelper::storeTripType Struct Reference

```
#include <simfqt/command/FareParserHelper.hpp>
```

Inheritance diagram for SIMFQT::FareParserHelper::storeTripType:



Public Member Functions

- [storeTripType](#) ([FareRuleStruct](#) &)
- void [operator\(\)](#) (std::vector< char >, boost::spirit::qi::unused_type, boost::spirit::qi::unused_type) const

Public Attributes

- [FareRuleStruct](#) & [_fareRule](#)

24.49.1 Detailed Description

Store the parsed customer trip type.

Definition at line 69 of file [FareParserHelper.hpp](#).

24.49.2 Constructor & Destructor Documentation

24.49.2.1 SIMFQT::FareParserHelper::storeTripType::storeTripType ([FareRuleStruct](#) & [ioFareRule](#))

Actor Constructor.

Definition at line 90 of file [FareParserHelper.cpp](#).

24.49.3 Member Function Documentation

24.49.3.1 void SIMFQT::FareParserHelper::storeTripType::operator() (std::vector< char > [iChar](#), boost::spirit::qi::unused_type , boost::spirit::qi::unused_type) const

Actor Function (functor).

Definition at line 95 of file [FareParserHelper.cpp](#).

References [SIMFQT::FareParserHelper::ParserSemanticAction::_fareRule](#), and [SIMFQT::FareRuleStruct::setTripType\(\)](#)

24.49.4 Member Data Documentation

24.49.4.1 FareRuleStruct& SIMFQT::FareParserHelper::ParserSemanticAction::_ - fareRule [inherited]

Actor Context.

Definition at line 35 of file [FareParserHelper.hpp](#).

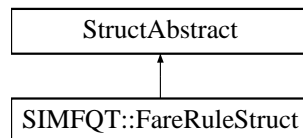
Referenced by [SIMFQT::FareParserHelper::doEndFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeClass::operator\(\)](#), [SIMFQT::FareParserHelper::storeAirlineCode::operator\(\)](#), [SIMFQT::FareParserHelper::storeFare::operator\(\)](#), [SIMFQT::FareParserHelper::storeMinimumStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeNonRefundable::operator\(\)](#), [SIMFQT::FareParserHelper::storeChangeFees::operator\(\)](#), [SIMFQT::FareParserHelper::storeSaturdayStay::operator\(\)](#), [SIMFQT::FareParserHelper::storeAdvancePurchase::operator\(\)](#), [SIMFQT::FareParserHelper::storeChannel::operator\(\)](#), [SIMFQT::FareParserHelper::storeCabinCode::operator\(\)](#), [SIMFQT::FareParserHelper::storePOS::operator\(\)](#), [SIMFQT::FareParserHelper::storeEndRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeStartRangeTime::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeEnd::operator\(\)](#), [SIMFQT::FareParserHelper::storeDateRangeStart::operator\(\)](#), [SIMFQT::FareParserHelper::storeDestination::operator\(\)](#), [SIMFQT::FareParserHelper::storeOrigin::operator\(\)](#) and [SIMFQT::FareParserHelper::storeFareId::operator\(\)](#).

The documentation for this struct was generated from the following files:

- [simfqt/command/FareParserHelper.hpp](#)
- [simfqt/command/FareParserHelper.cpp](#)

24.50 StructAbstract Class Reference

Inheritance diagram for StructAbstract:



The documentation for this class was generated from the following file:

- [simfqt/bom/FareRuleStruct.hpp](#)

25 File Documentation

25.1 doc/local/authors.doc File Reference

25.2 doc/local/codingrules.doc File Reference

25.3 doc/local/copyright.doc File Reference**25.4 doc/local/documentation.doc File Reference****25.5 doc/local/features.doc File Reference****25.6 doc/local/help_wanted.doc File Reference****25.7 doc/local/howto_release.doc File Reference****25.8 doc/local/index.doc File Reference****25.9 doc/local/installation.doc File Reference****25.10 doc/local/linking.doc File Reference****25.11 doc/local/test.doc File Reference****25.12 doc/local/users_guide.doc File Reference****25.13 doc/local/verification.doc File Reference****25.14 doc/tutorial/tutorial.doc File Reference****25.15 simfqt/basic/BasConst.cpp File Reference**

```
#include <simfqt/basic/BasConst_General.hpp>
#include <simfqt/basic/BasConst_SIMFQT_Service.hpp>
```

Namespaces

- namespace [SIMFQT](#)

Variables

- const std::string [SIMFQT::DEFAULT_FARE_QUOTER_ID](#) = "IATA"

25.16 BasConst.cpp

```
00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 #include <simfqt/basic/BasConst_General.hpp>
00005 #include <simfqt/basic/BasConst_SIMFQT_Service.hpp>
00006
```

```

00007 namespace SIMFQT {
00008
00010     const std::string DEFAULT_FARE_QUOTER_ID = "IATA";
00011
00012 }

```

25.17 simfq/basic/BasConst_General.hpp File Reference

Namespaces

- namespace [SIMFQT](#)

25.18 BasConst_General.hpp

```

00001 #ifndef __SIMFQT_BAS_BASCONST_GENERAL_HPP
00002 #define __SIMFQT_BAS_BASCONST_GENERAL_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007
00008 namespace SIMFQT {
00009
00010 }
00011 #endif // __SIMFQT_BAS_BASCONST_GENERAL_HPP

```

25.19 simfq/basic/BasConst_SIMFQT_Service.hpp File Reference

```
#include <string>
```

Namespaces

- namespace [SIMFQT](#)

25.20 BasConst_SIMFQT_Service.hpp

```

00001 #ifndef __SIMFQT_BAS_BASCONST_SIMFQT_SERVICE_HPP
00002 #define __SIMFQT_BAS_BASCONST_SIMFQT_SERVICE_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 #include <string>
00008
00009 namespace SIMFQT {
00010
00012     extern const std::string DEFAULT_FARE_QUOTER_ID;
00013
00014 }
00015 #endif // __SIMFQT_BAS_BASCONST_SIMFQT_SERVICE_HPP

```

25.21 simfqt/batches/simfqt_parseFareRules.cpp File Reference

```
#include <cassert>
#include <iostream>
#include <sstream>
#include <fstream>
#include <vector>
#include <list>
#include <string>
#include <boost/date_time/posix_time/posix_time.hpp>
#include <boost/date_time/gregorian/gregorian.hpp>
#include <boost/tokenizer.hpp>
#include <boost/program_options.hpp>
#include <stdair/STDAIR_Service.hpp>
#include <stdair/bom/TravelSolutionStruct.hpp>
#include <stdair/bom/BookingRequestStruct.hpp>
#include <stdair/service/Logger.hpp>
#include <simfqt/SIMFQT_Service.hpp>
#include <simfqt/config/simfqt-paths.hpp>
```

Typedefs

- typedef std::vector< std::string > [WordList_T](#)

Functions

- const std::string [K_SIMFQT_DEFAULT_LOG_FILENAME](#) ("simfqt_parseFareRules.log")
- const std::string [K_SIMFQT_DEFAULT_FARE_INPUT_FILENAME](#) (STDAIR_SAMPLE_DIR"fare01.csv")
- template<class T >
std::ostream & [operator<<](#) (std::ostream &os, const std::vector< T > &v)
- int [readConfiguration](#) (int argc, char *argv[], bool &iolsBuiltin, stdair::Filename_T &ioFareInputFilename, std::string &ioLogFilename)
- int [main](#) (int argc, char *argv[])

Variables

- const bool [K_SIMFQT_DEFAULT_BUILT_IN_INPUT](#) = false
- const int [K_SIMFQT_EARLY_RETURN_STATUS](#) = 99

25.21.1 Typedef Documentation

25.21.1.1 typedef std::vector<std::string> WordList_T

Definition at line 24 of file [simfqt_parseFareRules.cpp](#).

25.21.2 Function Documentation

25.21.2.1 const std::string K_SIMFQT_DEFAULT_LOG_FILENAME ("simfqt_parseFareRules.log")

Default name and location for the log file.

Referenced by [readConfiguration\(\)](#).

25.21.2.2 const std::string K_SIMFQT_DEFAULT_FARE_INPUT_FILENAME (STDAIR_SAMPLE_DIR"/fare01.csv")

Default name and location for the (CSV) input file.

Referenced by [readConfiguration\(\)](#).

25.21.2.3 template<class T > std::ostream& operator<< (std::ostream & os, const std::vector< T > & v)

Definition at line 44 of file [simfqt_parseFareRules.cpp](#).

25.21.2.4 int readConfiguration (int argc, char * argv[], bool & iolsBuiltin, stdair::Filename.T & ioFareInputFilename, std::string & ioLogFilename)

Read and parse the command line options.

Definition at line 51 of file [simfqt_parseFareRules.cpp](#).

References [K_SIMFQT_DEFAULT_BUILT_IN_INPUT](#), [K_SIMFQT_DEFAULT_FARE_INPUT_FILENAME\(\)](#), [K_SIMFQT_DEFAULT_LOG_FILENAME\(\)](#), [K_SIMFQT_EARLY_RETURN_STATUS](#), [PACKAGE_NAME](#), [PACKAGE_VERSION](#), and [PREFIXDIR](#).

Referenced by [main\(\)](#).

25.21.2.5 int main (int argc, char * argv[])

Definition at line 154 of file [simfqt_parseFareRules.cpp](#).

References [SIMFQT::SIMFQT_Service::buildBookingRequest\(\)](#), [SIMFQT::SIMFQT_Service::buildSampleBom\(\)](#), [SIMFQT::SIMFQT_Service::buildSampleTravelSolutions\(\)](#), [SIMFQT::SIMFQT_Service::csvDisplay\(\)](#), [K_SIMFQT_EARLY_RETURN_STATUS](#), [SIMFQT::SIMFQT_Service::parseAndLoad\(\)](#), [SIMFQT::SIMFQT_Service::quotePrices\(\)](#), and [readConfiguration\(\)](#).

25.21.3 Variable Documentation

25.21.3.1 const bool K_SIMFQT_DEFAULT_BUILT_IN_INPUT = false

Default for the input type. It can be either built-in or provided by an input file. That latter must then be given with the -i option.

Definition at line 37 of file [simfqt_parseFareRules.cpp](#).

Referenced by [readConfiguration\(\)](#).

25.21.3.2 const int K_SIMFQT_EARLY_RETURN_STATUS = 99

Early return status (so that it can be differentiated from an error).

Definition at line 40 of file [simfqt_parseFareRules.cpp](#).

Referenced by [main\(\)](#), and [readConfiguration\(\)](#).

25.22 simfqt_parseFareRules.cpp

```

00001 // STL
00002 #include <cassert>
00003 #include <iostream>
00004 #include <sstream>
00005 #include <fstream>
00006 #include <vector>
00007 #include <list>
00008 #include <string>
00009 // Boost (Extended STL)
00010 #include <boost/date_time/posix_time/posix_time.hpp>
00011 #include <boost/date_time/gregorian/gregorian.hpp>
00012 #include <boost/tokenizer.hpp>
00013 #include <boost/program_options.hpp>
00014 // StdAir
00015 #include <stdair/STDAIR_Service.hpp>
00016 #include <stdair/bom/TravelSolutionStruct.hpp>
00017 #include <stdair/bom/BookingRequestStruct.hpp>
00018 #include <stdair/service/Logger.hpp>
00019 // Simfqt
00020 #include <simfqt/SIMFQT_Service.hpp>
00021 #include <simfqt/config/simfqt-paths.hpp>
00022
00023 // ////////// Type definitions //////////
00024 typedef std::vector<std::string> WordList_T;
00025
00026
00027 // ////////// Constants //////////
00029 const std::string K_SIMFQT_DEFAULT_LOG_FILENAME ("simfqt_parseFareRules.log");
00030
00032 const std::string K_SIMFQT_DEFAULT_FARE_INPUT_FILENAME (STDAIR_SAMPLE_DIR
00033                                                         "/fare01.csv");
00034
00037 const bool K_SIMFQT_DEFAULT_BUILT_IN_INPUT = false;
00038
00040 const int K_SIMFQT_EARLY_RETURN_STATUS = 99;
00041
00042 // ////////// Parsing of Options & Configuration //////////
00043 // A helper function to simplify the main part.
00044 template<class T> std::ostream& operator<< (std::ostream& os,
00045                                           const std::vector<T>& v) {
00046     std::copy (v.begin(), v.end(), std::ostream_iterator<T> (std::cout, " "));

```

```

00047     return os;
00048 }
00049
00051 int readConfiguration (int argc, char* argv[], bool& ioIsBuiltin,
00052                       stdair::Filename_T& ioFareInputFilename,
00053                       std::string& ioLogFilename) {
00054
00055     // Default for the built-in input
00056     ioIsBuiltin = K_SIMFQT_DEFAULT_BUILT_IN_INPUT;
00057
00058     // Declare a group of options that will be allowed only on command line
00059     boost::program_options::options_description generic ("Generic options");
00060     generic.add_options()
00061         ("prefix", "print installation prefix")
00062         ("version,v", "print version string")
00063         ("help,h", "produce help message");
00064
00065     // Declare a group of options that will be allowed both on command
00066     // line and in config file
00067     boost::program_options::options_description config ("Configuration");
00068     config.add_options()
00069         ("builtin,b",
00070          "The sample BOM tree can be either built-in or parsed from an input file. Th
00071          at latter must then be given with the -f/--fare option")
00072         ("fare,f",
00073          boost::program_options::value< std::string >(&ioFareInputFilename)->default_
00074          value(K_SIMFQT_DEFAULT_FARE_INPUT_FILENAME),
00075          "(CSV) input file for the fare rules")
00076         ("log,l",
00077          boost::program_options::value< std::string >(&ioLogFilename)->default_value(
00078          K_SIMFQT_DEFAULT_LOG_FILENAME),
00079          "Filename for the logs")
00080         ;
00081
00082     // Hidden options, will be allowed both on command line and
00083     // in config file, but will not be shown to the user.
00084     boost::program_options::options_description hidden ("Hidden options");
00085     hidden.add_options()
00086         ("copyright",
00087          boost::program_options::value< std::vector<std::string> >(),
00088          "Show the copyright (license)");
00089
00090     boost::program_options::options_description cmdline_options;
00091     cmdline_options.add(generic).add(config).add(hidden);
00092
00093     boost::program_options::options_description config_file_options;
00094     config_file_options.add(config).add(hidden);
00095
00096     boost::program_options::options_description visible ("Allowed options");
00097     visible.add(generic).add(config);
00098
00099     boost::program_options::positional_options_description p;
00100     p.add ("copyright", -1);
00101
00102     boost::program_options::variables_map vm;
00103     boost::program_options::store (boost::program_options::command_line_parser (argc, argv).
00104                                   options (cmdline_options).positional(p).run(), vm);
00105
00106     std::ifstream ifs ("simfqt.cfg");
00107     boost::program_options::store (parse_config_file (ifs, config_file_options),
00108                                   vm);

```



```

00107 boost::program_options::notify (vm); if (vm.count ("help")) {
00108     std::cout << visible << std::endl;
00109     return K_SIMFQT_EARLY_RETURN_STATUS;
00110 }
00111
00112 if (vm.count ("version")) {
00113     std::cout << PACKAGE_NAME << ", version " << PACKAGE_VERSION << std::endl;
00114     return K_SIMFQT_EARLY_RETURN_STATUS;
00115 }
00116
00117 if (vm.count ("prefix")) {
00118     std::cout << "Installation prefix: " << PREFIXDIR << std::endl;
00119     return K_SIMFQT_EARLY_RETURN_STATUS;
00120 }
00121
00122 if (vm.count ("builtin")) {
00123     ioIsBuiltin = true;
00124 }
00125 const std::string isBuiltinStr = (ioIsBuiltin == true)?"yes":"no";
00126 std::cout << "The BOM should be built-in? " << isBuiltinStr << std::endl;
00127
00128 if (ioIsBuiltin == false) {
00129
00130     // The BOM tree should be built from parsing a fare (and O&D) file
00131     if (vm.count ("fare")) {
00132         ioFareInputFilename = vm["fare"].as< std::string >();
00133         std::cout << "Input fare filename is: " << ioFareInputFilename
00134             << std::endl;
00135     } else {
00136         // The built-in option is not selected. However, no fare file
00137         // is specified
00138         std::cerr << "Either one among the -b/--builtin and -f/--fare "
00139             << "options must be specified" << std::endl;
00140     }
00141 }
00142
00143
00144 if (vm.count ("log")) {
00145     ioLogFilename = vm["log"].as< std::string >();
00146     std::cout << "Log filename is: " << ioLogFilename << std::endl;
00147 }
00148
00149 return 0;
00150 }
00151
00152
00153 // ////////////////////////////////// M A I N //////////////////////////////////
00154 int main (int argc, char* argv[]) {
00155
00156     // State whether the BOM tree should be built-in or parsed from an input file
00157     bool isBuiltin;
00158
00159     // Fare input filename
00160     stdair::Filename_T lFareInputFilename;
00161
00162     // Output log File
00163     stdair::Filename_T lLogFilename;
00164
00165     // Call the command-line option parser
00166     const int lOptionParserStatus =
00167         readConfiguration (argc, argv, isBuiltin, lFareInputFilename, lLogFilename);
00168

```

```

00169     if (lOptionParserStatus == K_SIMFQT_EARLY_RETURN_STATUS) {
00170         return 0;
00171     }
00172
00173     // Set the log parameters
00174     std::ofstream logOutputFile;
00175     // Open and clean the log outputfile
00176     logOutputFile.open (lLogFilename.c_str());
00177     logOutputFile.clear();
00178
00179     // Initialise the Simfqt service object
00180     const stdair::BasLogParams lLogParams (stdair::LOG::DEBUG, logOutputFile);
00181
00182     SIMFQT::SIMFQT_Service simfqtService (lLogParams);
00183
00184     // DEBUG
00185     STDAIR_LOG_DEBUG ("Welcome to Simfqt");
00186
00187     // Build a default sample list of travel solutions
00188     stdair::TravelSolutionList_T lTravelSolutionList;
00189     simfqtService.buildSampleTravelSolutions (lTravelSolutionList);
00190
00191     // Build a default booking request
00192     stdair::BookingRequestStruct lBookingRequest =
00193         simfqtService.buildBookingRequest();
00194
00195     // Check wether or not a (CSV) input file should be read
00196     if (isBuiltin == true) {
00197
00198         // Build the default sample BOM tree (filled with fares) for Simfqt
00199         simfqtService.buildSampleBom();
00200
00201     } else {
00202
00203         // Build the BOM tree from parsing a fare file
00204         SIMFQT::FareFilePath lFareFilePath (lFareInputFilename);
00205         simfqtService.parseAndLoad (lFareFilePath);
00206
00207     }
00208
00209     // DEBUG: Display the travel solutions
00210     const std::string& lTSCSVDump =
00211         simfqtService.csvDisplay (lTravelSolutionList);
00212     STDAIR_LOG_DEBUG (lTSCSVDump);
00213
00214     // FareQuote the sample list of travel solutions
00215     simfqtService.quotePrices (lBookingRequest, lTravelSolutionList);
00216
00217     // DEBUG: Display the whole BOM tree
00218     const std::string& lBOMCSVDump = simfqtService.csvDisplay();
00219     STDAIR_LOG_DEBUG ("BOM tree: " << lBOMCSVDump);
00220
00221     // DEBUG: Display the travel solutions
00222     const std::string& lTSCSVDumpEnd
00223         = simfqtService.csvDisplay (lTravelSolutionList);
00224     STDAIR_LOG_DEBUG (lTSCSVDumpEnd);
00225
00226     // Close the Log outputFile
00227     logOutputFile.close();
00228
00229     /*
00230     Note: as that program is not intended to be run on a server in

```

```

00231     production, it is better not to catch the exceptions. When it
00232     happens (that an exception is throwned), that way we get the
00233     call stack.
00234     */
00235
00236     return 0;
00237 }
00238

```

25.23 simfqt/bom/FareRuleStruct.cpp File Reference

```

#include <cassert>
#include <sstream>
#include <vector>
#include <stdair/basic/BasConst_General.hpp>
#include <stdair/service/Logger.hpp>
#include <simfqt/bom/FareRuleStruct.hpp>

```

Namespaces

- namespace [SIMFQT](#)

25.24 FareRuleStruct.cpp

```

00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 #include <sstream>
00007 #include <vector>
00008 // StdAir
00009 #include <stdair/basic/BasConst_General.hpp>
00010 #include <stdair/service/Logger.hpp>
00011 // SIMFQT
00012 #include <simfqt/bom/FareRuleStruct.hpp>
00013
00014 namespace SIMFQT {
00015
00016     // //////////////////////////////////////
00017     FareRuleStruct::FareRuleStruct ()
00018     :_fareId(0),
00019     _origin(""),
00020     _destination(""),
00021     _dateRangeStart(stdair::DEFAULT_DATE),
00022     _dateRangeEnd(stdair::DEFAULT_DATE),
00023     _timeRangeStart(stdair::DEFAULT_EPSILON_DURATION),
00024     _timeRangeEnd(stdair::DEFAULT_EPSILON_DURATION),
00025     _cabinCode (""),
00026     _pos (""),
00027     _advancePurchase(0),
00028     _saturdayStay ("T"),

```

```

00029     _changeFees("T"),
00030     _nonRefundable("T"),
00031     _minimumStay(0),
00032     _fare(0),
00033     _airlineCode(""),
00034     _classCode("") {
00035
00036 }
00037
00038 // //////////////////////////////////////
00039 stdair::Date_T FareRuleStruct::calculateDate() const {
00040     _itYear.check(); _itMonth.check(); _itDay.check();
00041     return stdair::Date_T (_itYear._value, _itMonth._value, _itDay._value);
00042 }
00043
00044 // //////////////////////////////////////
00045 stdair::Duration_T FareRuleStruct::calculateTime() const {
00046     _itHours.check(); _itMinutes.check(); _itSeconds.check();
00047     return boost::posix_time::hours (_itHours._value)
00048         + boost::posix_time::minutes (_itMinutes._value)
00049         + boost::posix_time::seconds (_itSeconds._value);
00050 }
00051
00052
00053 // //////////////////////////////////////
00054 const std::string FareRuleStruct::describe () const {
00055     std::ostringstream oStr;
00056     oStr << "FareRule: " << _fareId << ", ";
00057
00058     oStr << _origin << "-" << _destination << " ("
00059         << _pos << "), " << _channel << ", [";
00060     oStr << _dateRangeStart << "/" << _dateRangeEnd << "]" << "-" << ["
00061         << boost::posix_time::to_simple_string (_timeRangeStart) << "/"
00062         << boost::posix_time::to_simple_string (_timeRangeEnd) << "], ";
00063
00064     oStr << _cabinCode << ", " << _fare << " EUR, ";
00065     oStr << _tripType << ", " << _saturdayStay << ", "
00066         << _changeFees << ", " << _nonRefundable << ", "
00067         << _advancePurchase << ", " << _minimumStay << ", ";
00068
00069     // Sanity check
00070     assert (_airlineCodeList.size() == _classCodeList.size());
00071
00072     // Browse the airline and class pathes
00073     unsigned short idx = 0;
00074     stdair::ClassList_StringList_T::const_iterator itClass =
00075         _classCodeList.begin();
00076     for (stdair::AirlineCodeList_T::const_iterator itAirline =
00077         _airlineCodeList.begin();
00078         itAirline != _airlineCodeList.end(); ++itAirline, ++itClass, ++idx) {
00079         if (idx != 0) {
00080             oStr << " - ";
00081         }
00082         const stdair::AirlineCode_T lAirlineCode = *itAirline;
00083         const stdair::ClassCode_T lClassCode = *itClass;
00084         oStr << lAirlineCode << " / " << lClassCode;
00085     }
00086     return oStr.str();
00087 }
00088
00089 }
00090

```

```
00091 }
00092
```

25.25 simfqt/bom/FareRuleStruct.hpp File Reference

```
#include <string>
#include <vector>
#include <stdair/stdair_demand_types.hpp>
#include <stdair/stdair_inventory_types.hpp>
#include <stdair/basic/StructAbstract.hpp>
#include <stdair/basic/BasParserHelperTypes.hpp>
#include <simfqt/SIMFQT_Types.hpp>
```

Classes

- struct [SIMFQT::FareRuleStruct](#)

Namespaces

- namespace [SIMFQT](#)

25.26 FareRuleStruct.hpp

```
00001 #ifndef __SIMFQT_BOM_FARERULESTRUCT_HPP
00002 #define __SIMFQT_BOM_FARERULESTRUCT_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // STL
00008 #include <string>
00009 #include <vector>
00010 // StdAir
00011 #include <stdair/stdair_demand_types.hpp>
00012 #include <stdair/stdair_inventory_types.hpp>
00013 #include <stdair/basic/StructAbstract.hpp>
00014 #include <stdair/basic/BasParserHelperTypes.hpp>
00015 // SIMFQT
00016 #include <simfqt/SIMFQT_Types.hpp>
00017
00018 namespace SIMFQT {
00019
00021     struct FareRuleStruct : public stdair::StructAbstract {
00022     public:
00023
00025         FareRuleStruct ();
00026
00027     public:
00028         // ////////// Getters //////////
```

```
00030     SIMFQT::FareQuoteID_T getFareID () const {
00031         return _fareId;
00032     }
00033
00035     stdair::AirportCode_T getOrigin () const {
00036         return _origin;
00037     }
00038
00040     stdair::AirportCode_T getDestination () const {
00041         return _destination;
00042     }
00043
00045     stdair::TripType_T getTripType () const {
00046         return _tripType;
00047     }
00048
00050     stdair::Date_T getDateRangeStart () const {
00051         return _dateRangeStart;
00052     }
00053
00055     stdair::Date_T getDateRangeEnd () const {
00056         return _dateRangeEnd;
00057     }
00058
00060     stdair::Duration_T getTimeRangeStart () const {
00061         return _timeRangeStart;
00062     }
00063
00065     stdair::Duration_T getTimeRangeEnd () const {
00066         return _timeRangeEnd;
00067     }
00068
00070     stdair::CabinCode_T getCabinCode () const {
00071         return _cabinCode;
00072     }
00073
00075     const stdair::CityCode_T getPOS () const {
00076         return _pos;
00077     }
00078
00080     stdair::ChannelLabel_T getChannel () const {
00081         return _channel;
00082     }
00083
00085     stdair::DayDuration_T getAdvancePurchase () const {
00086         return _advancePurchase;
00087     }
00088
00090     stdair::SaturdayStay_T getSaturdayStay () const {
00091         return _saturdayStay;
00092     }
00093
00095     stdair::ChangeFees_T getChangeFees () const {
00096         return _changeFees;
00097     }
00098
00100     stdair::NonRefundable_T getNonRefundable () const {
00101         return _nonRefundable;
00102     }
00103
00105     stdair::DayDuration_T getMinimumStay () const {
00106         return _minimumStay;
```

```

00107     }
00108
00110     stdair::PriceValue_T getFare () const {
00111         return _fare;
00112     }
00113
00115     stdair::AirlineCode_T getAirlineCode () const {
00116         return _airlineCode;
00117     }
00118
00120     stdair::ClassCode_T getClassCode () const {
00121         return _classCode;
00122     }
00123
00125     const unsigned int getAirlineListSize () const {
00126         return _airlineCodeList.size();
00127     }
00128
00130     const unsigned int getClassCodeListSize () const {
00131         return _classCodeList.size();
00132     }
00133
00135     stdair::AirlineCodeList_T getAirlineList () const {
00136         return _airlineCodeList;
00137     }
00138
00140     stdair::ClassList_StringList_T getClassCodeList () const {
00141         return _classCodeList;
00142     }
00143
00144     public:
00145         // ////////// Display support methods //////////
00147         stdair::Date_T calculateDate() const;
00148
00150         stdair::Duration_T calculateTime() const;
00151
00153         const std::string describe() const;
00154
00155     public:
00156         // ////////// Setters //////////
00158         void setFareID (const SIMFQT::FareQuoteID_T& iFareQuoteID) {
00159             _fareId = iFareQuoteID;
00160         }
00161
00163         void setOrigin (const stdair::AirportCode_T& iOrigin) {
00164             _origin = iOrigin;
00165         }
00166
00168         void setDestination (const stdair::AirportCode_T& iDestination) {
00169             _destination = iDestination;
00170         }
00171
00173         void setTripType (const stdair::TripType_T& iTripType) {
00174             _tripType = iTripType;
00175         }
00176
00178         void setDateRangeStart (const stdair::Date_T& iDateRangeStart) {
00179             _dateRangeStart = iDateRangeStart;
00180         }
00181
00183         void setDateRangeEnd (const stdair::Date_T& iDateRangeEnd) {
00184             _dateRangeEnd = iDateRangeEnd;

```

```
00185     }
00186
00188     void setTimeRangeStart (const stdair::Duration_T& iTimeRangeStart) {
00189         _timeRangeStart = iTimeRangeStart;
00190     }
00191
00193     void setTimeRangeEnd (const stdair::Duration_T& iTimeRangeEnd) {
00194         _timeRangeEnd = iTimeRangeEnd;
00195     }
00196
00198     void setCabinCode (const stdair::CabinCode_T& iCabinCode) {
00199         _cabinCode = iCabinCode;
00200     }
00201
00203     void setPOS (const stdair::CityCode_T& iPOS) {
00204         _pos = iPOS;
00205     }
00206
00208     void setChannel (const stdair::ChannelLabel_T& iChannel) {
00209         _channel = iChannel;
00210     }
00211
00213     void setAdvancePurchase (const stdair::DayDuration_T& iAdvancePurchase) {
00214         _advancePurchase = iAdvancePurchase;
00215     }
00216
00218     void setSaturdayStay (const stdair::SaturdayStay_T& iSaturdayStay) {
00219         _saturdayStay = iSaturdayStay;
00220     }
00221
00223     void setChangeFees (const stdair::ChangeFees_T& iChangeFees) {
00224         _changeFees = iChangeFees;
00225     }
00226
00228     void setNonRefundable (const stdair::NonRefundable_T& iNonRefundable) {
00229         _nonRefundable = iNonRefundable;
00230     }
00231
00233     void setMinimumStay (const stdair::DayDuration_T& iMinimumStay) {
00234         _minimumStay = iMinimumStay;
00235     }
00236
00238     void setFare (const stdair::PriceValue_T& iFare) {
00239         _fare = iFare;
00240     }
00241
00243     void setAirlineCode (const stdair::AirlineCode_T& iAirlineCode) {
00244         _airlineCode = iAirlineCode;
00245     }
00246
00248     void setClassCode (const stdair::ClassCode_T& iClassCode) {
00249         _classCode = iClassCode;
00250     }
00251
00253     void clearAirlineCodeList () {
00254         _airlineCodeList.clear();
00255     }
00256
00258     void clearClassCodeList () {
00259         _classCodeList.clear();
00260     }
00261
```



```
00263     void addAirlineCode (const stdair::AirlineCode_T& iAirlineCode) {
00264         _airlineCodeList.push_back (iAirlineCode);
00265     }
00266
00267     void addClassCode (const stdair::ClassCode_T& iClassCode) {
00268         _classCodeList.push_back (iClassCode);
00269     }
00270
00271
00272 public:
00273     // ////////////////////////////////// Attributes //////////////////////////////////
00274     stdair::year_t _itYear;
00275     stdair::month_t _itMonth;
00276     stdair::day_t _itDay;
00277
00278     stdair::hour_t _itHours;
00279     stdair::minute_t _itMinutes;
00280     stdair::second_t _itSeconds;
00281
00282 private:
00283     // ////////////////////////////////// Attributes //////////////////////////////////
00284     SIMFQT::FareQuoteID_T _fareId;
00285
00286     stdair::AirportCode_T _origin;
00287
00288     stdair::AirportCode_T _destination;
00289
00290     stdair::TripType_T _tripType;
00291
00292     stdair::Date_T _dateRangeStart;
00293
00294     stdair::Date_T _dateRangeEnd;
00295
00296     stdair::Duration_T _timeRangeStart;
00297
00298     stdair::Duration_T _timeRangeEnd;
00299
00300     stdair::CabinCode_T _cabinCode;
00301
00302     stdair::CityCode_T _pos;
00303
00304     stdair::ChannelLabel_T _channel;
00305
00306     stdair::DayDuration_T _advancePurchase;
00307
00308     stdair::SaturdayStay_T _saturdayStay;
00309
00310     stdair::ChangeFees_T _changeFees;
00311
00312     stdair::NonRefundable_T _nonRefundable;
00313
00314     stdair::DayDuration_T _minimumStay;
00315
00316     stdair::PriceValue_T _fare;
00317
00318     stdair::AirlineCode_T _airlineCode;
00319
00320     stdair::ClassCode_T _classCode;
00321
00322     stdair::AirlineCodeList_T _airlineCodeList;
00323
00324     stdair::ClassList_StringList_T _classCodeList;
```

```

00351     };
00352
00353 }
00354 #endif // __SIMFQT_BOM_FARERULESTRUCT_HPP

```

25.27 simfqt/command/FareParser.cpp File Reference

```

#include <cassert>
#include <string>
#include <stdair/basic/BasFileMgr.hpp>
#include <stdair/service/Logger.hpp>
#include <simfqt/command/FareParserHelper.hpp>
#include <simfqt/command/FareParser.hpp>

```

Namespaces

- namespace [SIMFQT](#)

25.28 FareParser.cpp

```

00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 #include <string>
00007 // StdAir
00008 #include <stdair/basic/BasFileMgr.hpp>
00009 #include <stdair/service/Logger.hpp>
00010 // AirSched
00011 #include <simfqt/command/FareParserHelper.hpp>
00012 #include <simfqt/command/FareParser.hpp>
00013
00014 namespace SIMFQT {
00015
00016     // //////////////////////////////////////
00017     void FareParser::fareRuleGeneration (const FareFilePath& iFareFilename,
00018                                         stdair::BomRoot& ioBomRoot) {
00019
00020         const stdair::Filename_T lFilename = iFareFilename.name();
00021
00022         // Check that the file path given as input corresponds to an actual file
00023         const bool doesExistAndIsReadable =
00024             stdair::BasFileMgr::doesExistAndIsReadable (lFilename);
00025         if (doesExistAndIsReadable == false) {
00026             STDAIR_LOG_ERROR ("The fare input file, '" << lFilename
00027                             << "', can not be retrieved on the file-system");
00028             throw FareInputFileNotFoundException ("The fare input file '" + lFilename
00029                                                  + "' does not exist or can not "
00030                                                  + "be read");
00031         }
00032
00033     }

```

```

00033     // Initialise the fare file parser.
00034     FareRuleFileParser lFareRuleFileParser (ioBomRoot, lFilename);
00035
00036     // Parse the CSV-formatted fare input file and generate the
00037     // corresponding fare rules.
00038     lFareRuleFileParser.generateFareRules ();
00039
00040 }
00041
00042 }
```

25.29 simfqt/command/FareParser.hpp File Reference

```

#include <string>
#include <stdair/stdair_basic_types.hpp>
#include <stdair/command/CmdAbstract.hpp>
#include <simfqt/SIMFQT_Types.hpp>
```

Classes

- class [SIMFQT::FareParser](#)

Namespaces

- namespace [stdair](#)
Forward declarations.
- namespace [SIMFQT](#)

25.30 FareParser.hpp

```

00001 #ifndef __SIMFQT_CMD_FAREPARSER_HPP
00002 #define __SIMFQT_CMD_FAREPARSER_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // STL
00008 #include <string>
00009 // StdAir
00010 #include <stdair/stdair_basic_types.hpp>
00011 #include <stdair/command/CmdAbstract.hpp>
00012 // SimFQT
00013 #include <simfqt/SIMFQT_Types.hpp>
00014
00015 // Forward declarations.
00016 namespace stdair {
00017     class BomRoot;
00018 }
00019
00020 namespace SIMFQT {
00021
```

```

00023     class FareParser : public stdair::CmdAbstract {
00024     public:
00030         static void fareRuleGeneration (const FareFilePath&, stdair::BomRoot&);
00031     };
00032 }
00033 #endif // __SIMFQT_CMD_FAREPARSER_HPP

```

25.31 simfqt/command/FareParserHelper.cpp File Reference

```

#include <cassert>
#include <vector>
#include <fstream>
#include <stdair/basic/BasFileMgr.hpp>
#include <stdair/bom/BomRoot.hpp>
#include <stdair/service/Logger.hpp>
#include <stdair/basic/BasParserTypes.hpp>
#include <simfqt/command/FareParserHelper.hpp>
#include <simfqt/command/FareRuleGenerator.hpp>

```

Classes

- struct [SIMFQT::FareParserHelper::FareRuleParser< Iterator >](#)

Namespaces

- namespace [SIMFQT](#)
- namespace [SIMFQT::FareParserHelper](#)

Variables

- stdair::int1_p_t [SIMFQT::FareParserHelper::int1_p](#)
- stdair::uint2_p_t [SIMFQT::FareParserHelper::uint2_p](#)
- stdair::uint4_p_t [SIMFQT::FareParserHelper::uint4_p](#)
- stdair::uint1_4_p_t [SIMFQT::FareParserHelper::uint1_4_p](#)
- stdair::hour_p_t [SIMFQT::FareParserHelper::hour_p](#)
- stdair::minute_p_t [SIMFQT::FareParserHelper::minute_p](#)
- stdair::second_p_t [SIMFQT::FareParserHelper::second_p](#)
- stdair::year_p_t [SIMFQT::FareParserHelper::year_p](#)
- stdair::month_p_t [SIMFQT::FareParserHelper::month_p](#)
- stdair::day_p_t [SIMFQT::FareParserHelper::day_p](#)

25.32 FareParserHelper.cpp

```

00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 #include <vector>
00007 #include <fstream>
00008 // StdAir
00009 #include <stdair/basic/BasFileMgr.hpp>
00010 #include <stdair/bom/BomRoot.hpp>
00011 #include <stdair/service/Logger.hpp>
00012 // #define BOOST_SPIRIT_DEBUG
00013 #include <stdair/basic/BasParserTypes.hpp>
00014 // SIMFQT
00015 #include <simfqt/command/FareParserHelper.hpp>
00016 #include <simfqt/command/FareRuleGenerator.hpp>
00017
00018
00019
00020 namespace SIMFQT {
00021
00022     namespace FareParserHelper {
00023
00024         // //////////////////////////////////////
00025         // Semantic actions
00026         // //////////////////////////////////////
00027
00028         ParserSemanticAction::
00029         ParserSemanticAction (FareRuleStruct& ioFareRule)
00030             : _fareRule (ioFareRule) {
00031         }
00032
00033         // //////////////////////////////////////
00034         storeFareId::
00035         storeFareId (FareRuleStruct& ioFareRule)
00036             : ParserSemanticAction (ioFareRule) {
00037         }
00038
00039         // //////////////////////////////////////
00040         void storeFareId::operator() (unsigned int iFareId,
00041                                     boost::spirit::qi::unused_type,
00042                                     boost::spirit::qi::unused_type) const {
00043             _fareRule.setFareID (iFareId);
00044
00045             // DEBUG
00046             //STDAIR_LOG_DEBUG ( "Fare Id: " << _fareRule.getFareID ());
00047             const stdair::AirlineCode_T lEmptyAirlineCode ("");
00048             _fareRule.setAirlineCode(lEmptyAirlineCode);
00049             _fareRule.clearAirlineCodeList();
00050             const stdair::ClassCode_T lEmptyClassCode ("");
00051             _fareRule.setClassCode(lEmptyClassCode);
00052             _fareRule.clearClassCodeList();
00053             _fareRule._itSeconds = 0;
00054         }
00055
00056         // //////////////////////////////////////
00057         storeOrigin ::
00058         storeOrigin (FareRuleStruct& ioFareRule)
00059             : ParserSemanticAction (ioFareRule) {
00060         }

```

```

00061
00062 // //////////////////////////////////////
00063 void storeOrigin::operator() (std::vector<char> iChar,
00064                             boost::spirit::qi::unused_type,
00065                             boost::spirit::qi::unused_type) const {
00066     const stdair::AirportCode_T lOrigin (iChar.begin(), iChar.end());
00067     _fareRule.setOrigin (lOrigin);
00068     // DEBUG
00069     //STDAIR_LOG_DEBUG ( "Origin: " << _fareRule.getOrigin () );
00070 }
00071
00072 // //////////////////////////////////////
00073 storeDestination ::
00074 storeDestination (FareRuleStruct& ioFareRule)
00075 : ParserSemanticAction (ioFareRule) {
00076 }
00077
00078 // //////////////////////////////////////
00079 void storeDestination::operator() (std::vector<char> iChar,
00080                                   boost::spirit::qi::unused_type,
00081                                   boost::spirit::qi::unused_type) const {
00082     const stdair::AirportCode_T lDestination (iChar.begin(), iChar.end());
00083     _fareRule.setDestination (lDestination);
00084     // DEBUG
00085     //STDAIR_LOG_DEBUG ( "Destination: " << _fareRule.getDestination () );
00086 }
00087
00088 // //////////////////////////////////////
00089 storeTripType ::
00090 storeTripType (FareRuleStruct& ioFareRule)
00091 : ParserSemanticAction (ioFareRule) {
00092 }
00093
00094 // //////////////////////////////////////
00095 void storeTripType::operator() (std::vector<char> iChar,
00096                                boost::spirit::qi::unused_type,
00097                                boost::spirit::qi::unused_type) const {
00098     const stdair::TripType_T lTripType (iChar.begin(), iChar.end());
00099     if (lTripType == "OW" || lTripType == "RT") {
00100         _fareRule.setTripType (lTripType);
00101     } else {
00102         // ERROR
00103         STDAIR_LOG_ERROR ("Invalid trip type " << lTripType);
00104     }
00105     // DEBUG
00106     //STDAIR_LOG_DEBUG ("TripType: " << _fareRule.getTripType () );
00107 }
00108
00109 // //////////////////////////////////////
00110 storeDateRangeStart::
00111 storeDateRangeStart (FareRuleStruct& ioFareRule)
00112 : ParserSemanticAction (ioFareRule) {
00113 }
00114
00115 // //////////////////////////////////////
00116 void storeDateRangeStart::operator() (boost::spirit::qi::unused_type,
00117                                       boost::spirit::qi::unused_type,
00118                                       boost::spirit::qi::unused_type) const {
00119
00120     const stdair::Date_T& lDateStart = _fareRule.calculateDate ();
00121     _fareRule.setDateRangeStart (lDateStart);

```

```

00122         // DEBUG
00123         //STDAIR_LOG_DEBUG ("Date Range Start: " << _fareRule.getDateRangeStart ())
;
00124     }
00125
00126     // ////////////////////////////////////////
00127     storeDateRangeEnd::
00128     storeDateRangeEnd(FareRuleStruct& ioFareRule)
00129         : ParserSemanticAction (ioFareRule) {
00130     }
00131
00132     // ////////////////////////////////////////
00133     void storeDateRangeEnd::operator() (boost::spirit::qi::unused_type,
00134                                         boost::spirit::qi::unused_type,
00135                                         boost::spirit::qi::unused_type) const {
00136         const stdair::Date_T& lDateEnd = _fareRule.calculateDate ();
00137         // As a Boost date period (DatePeriod_T) defines the last day of
00138         // the period to be end-date - one day, we have to add one day to that
00139         // end date before.
00140         const stdair::DateOffset_T oneDay (1);
00141         const stdair::Date_T lBoostDateEnd = lDateEnd + oneDay;
00142         _fareRule.setDateRangeEnd (lBoostDateEnd);
00143         // DEBUG
00144         //STDAIR_LOG_DEBUG ("Date Range End: " << _fareRule.getDateRangeEnd ());
00145     }
00146
00147     // ////////////////////////////////////////
00148     storeStartRangeTime::
00149     storeStartRangeTime (FareRuleStruct& ioFareRule)
00150         : ParserSemanticAction (ioFareRule) {
00151     }
00152
00153     // ////////////////////////////////////////
00154     void storeStartRangeTime::operator() (boost::spirit::qi::unused_type,
00155                                         boost::spirit::qi::unused_type,
00156                                         boost::spirit::qi::unused_type) const {
00157         const stdair::Duration_T& lTimeStart = _fareRule.calculateTime ();
00158         _fareRule.setTimeRangeStart (lTimeStart);
00159         // DEBUG
00160         //STDAIR_LOG_DEBUG ("Time Range Start: " << _fareRule.getTimeRangeStart ());
;
00161         // Reset the number of seconds
00162         _fareRule._itSeconds = 0;
00163     }
00164
00165     // ////////////////////////////////////////
00166     storeEndRangeTime::
00167     storeEndRangeTime (FareRuleStruct& ioFareRule)
00168         : ParserSemanticAction (ioFareRule) {
00169     }
00170
00171     // ////////////////////////////////////////
00172     void storeEndRangeTime::operator() (boost::spirit::qi::unused_type,
00173                                         boost::spirit::qi::unused_type,
00174                                         boost::spirit::qi::unused_type) const {
00175         const stdair::Duration_T& lTimeEnd = _fareRule.calculateTime ();
00176         _fareRule.setTimeRangeEnd (lTimeEnd);
00177         // DEBUG
00178         //STDAIR_LOG_DEBUG ("Time Range End: " << _fareRule.getTimeRangeEnd ());
00179         // Reset the number of seconds
00180         _fareRule._itSeconds = 0;

```

```

00181     }
00182
00183     // //////////////////////////////////////
00184     storePOS ::
00185     storePOS (FareRuleStruct& ioFareRule)
00186         : ParserSemanticAction (ioFareRule) {
00187     }
00188
00189     // //////////////////////////////////////
00190     void storePOS::operator() (std::vector<char> iChar,
00191                               boost::spirit::qi::unused_type,
00192                               boost::spirit::qi::unused_type) const {
00193         const stdair::CityCode_T lPOS (iChar.begin(), iChar.end());
00194         if (lPOS == _fareRule.getOrigin() || lPOS == _fareRule.getDestination()) {
00195             _fareRule.setPOS (lPOS);
00196         } else if (lPOS == "ROW") {
00197             const stdair::CityCode_T lPOSROW ("ROW");
00198             _fareRule.setPOS (lPOSROW);
00199         } else {
00200             // ERROR
00201             STDAIR_LOG_ERROR ("Invalid point of sale " << lPOS);
00202         }
00203         // DEBUG
00204         //STDAIR_LOG_DEBUG ("POS: " << _fareRule.getPOS ());
00205     }
00206
00207     // //////////////////////////////////////
00208     storeCabinCode ::
00209     storeCabinCode (FareRuleStruct& ioFareRule)
00210         : ParserSemanticAction (ioFareRule) {
00211     }
00212
00213     // //////////////////////////////////////
00214     void storeCabinCode::operator() (char iChar,
00215                                     boost::spirit::qi::unused_type,
00216                                     boost::spirit::qi::unused_type) const {
00217         std::ostream ostr;
00218         ostr << iChar;
00219         const std::string cabinCodeStr = ostr.str();
00220         const stdair::CabinCode_T& lCabinCode (cabinCodeStr);
00221         _fareRule.setCabinCode (lCabinCode);
00222
00223         // DEBUG
00224         //STDAIR_LOG_DEBUG ("Cabin Code: " << _fareRule.getCabinCode ());
00225
00226     }
00227
00228     // //////////////////////////////////////
00229     storeChannel ::
00230     storeChannel (FareRuleStruct& ioFareRule)
00231         : ParserSemanticAction (ioFareRule) {
00232     }
00233
00234     // //////////////////////////////////////
00235     void storeChannel::operator() (std::vector<char> iChar,
00236                                   boost::spirit::qi::unused_type,
00237                                   boost::spirit::qi::unused_type) const {
00238         const stdair::ChannelLabel_T lChannel (iChar.begin(), iChar.end());
00239         if (lChannel != "IN" && lChannel != "IF"
00240             && lChannel != "DN" && lChannel != "DF") {
00241             // ERROR

```



```

00242         STDAIR_LOG_ERROR ("Invalid channel " << lChannel);
00243     }
00244     _fareRule.setChannel (lChannel);
00245     // DEBUG
00246     //STDAIR_LOG_DEBUG ("Channel: " << _fareRule.getChannel ());
00247 }
00248
00249 // //////////////////////////////////////
00250 storeAdvancePurchase ::
00251 storeAdvancePurchase (FareRuleStruct& ioFareRule)
00252 : ParserSemanticAction (ioFareRule) {
00253 }
00254
00255 // //////////////////////////////////////
00256 void storeAdvancePurchase::operator() (unsigned int iAdancePurchase,
00257                                         boost::spirit::qi::unused_type,
00258                                         boost::spirit::qi::unused_type) const
00259 {
00259     const stdair::DayDuration_T& lAdancePurchase = iAdancePurchase;
00260     _fareRule.setAdvancePurchase (lAdancePurchase);
00261     // DEBUG
00262     //STDAIR_LOG_DEBUG ( "Advance Purchase: " << _fareRule.getAdvancePurchase (
00263 ));
00264 }
00265
00266 // //////////////////////////////////////
00267 storeSaturdayStay ::
00267 storeSaturdayStay (FareRuleStruct& ioFareRule)
00268 : ParserSemanticAction (ioFareRule) {
00269 }
00270
00271 // //////////////////////////////////////
00272 void storeSaturdayStay::operator() (char iSaturdayStay,
00273                                     boost::spirit::qi::unused_type,
00274                                     boost::spirit::qi::unused_type) const {
00275     bool lBool = false;
00276     if (iSaturdayStay == 'T') {
00277         lBool = true;
00278     } else {
00279         if (iSaturdayStay != 'F') {
00280             // DEBUG
00281             STDAIR_LOG_DEBUG ("Invalid saturdayStay char " << iSaturdayStay);
00282         }
00283     }
00284     const stdair::SaturdayStay_T lSaturdayStay (lBool);
00285     _fareRule.setSaturdayStay (lSaturdayStay);
00286     // DEBUG
00287     //STDAIR_LOG_DEBUG ("Saturday Stay: " << _fareRule.getSaturdayStay ());
00288 }
00289
00290 // //////////////////////////////////////
00291 storeChangeFees ::
00292 storeChangeFees (FareRuleStruct& ioFareRule)
00293 : ParserSemanticAction (ioFareRule) {
00294 }
00295
00296 // //////////////////////////////////////
00297 void storeChangeFees::operator() (char iChangefees,
00298                                   boost::spirit::qi::unused_type,
00299                                   boost::spirit::qi::unused_type) const {
00300
00301     bool lBool = false;

```

```

00302         if (iChangefees == 'T') {
00303             lBool = true;
00304         } else {
00305             if (iChangefees != 'F') {
00306                 // DEBUG
00307                 STDAIR_LOG_DEBUG ("Invalid change fees char " << iChangefees);
00308             }
00309         }
00310         const stdair::ChangeFees_T lChangefees (lBool);
00311         _fareRule.setChangeFees (lChangefees);
00312         // DEBUG
00313         //STDAIR_LOG_DEBUG ("Change fees: " << _fareRule.getChangeFees ());
00314     }
00315
00316     // //////////////////////////////////////
00317     storeNonRefundable ::
00318     storeNonRefundable (FareRuleStruct& ioFareRule)
00319         : ParserSemanticAction (ioFareRule) {
00320     }
00321
00322     // //////////////////////////////////////
00323     void storeNonRefundable::operator() (char iNonRefundable,
00324                                         boost::spirit::qi::unused_type,
00325                                         boost::spirit::qi::unused_type) const {
00326         bool lBool = false;
00327         if (iNonRefundable == 'T') {
00328             lBool = true;
00329         } else {
00330             if (iNonRefundable != 'F') {
00331                 // DEBUG
00332                 STDAIR_LOG_DEBUG ("Invalid non refundable char " << iNonRefundable);
00333             }
00334         }
00335         const stdair::NonRefundable_T lNonRefundable (lBool);
00336         _fareRule.setNonRefundable (lNonRefundable);
00337         // DEBUG
00338         //STDAIR_LOG_DEBUG ("Non refundable: " << _fareRule.getNonRefundable ());
00339     }
00340
00341     // //////////////////////////////////////
00342     storeMinimumStay ::
00343     storeMinimumStay (FareRuleStruct& ioFareRule)
00344         : ParserSemanticAction (ioFareRule) {
00345     }
00346
00347     // //////////////////////////////////////
00348     void storeMinimumStay::operator() (unsigned int iMinStay,
00349                                       boost::spirit::qi::unused_type,
00350                                       boost::spirit::qi::unused_type) const {
00351         const stdair::DayDuration_T lMinStay = iMinStay;
00352         _fareRule.setMinimumStay (lMinStay);
00353         // DEBUG
00354         //STDAIR_LOG_DEBUG ("Minimum Stay: " << _fareRule.getMinimumStay ());
00355     }
00356
00357     // //////////////////////////////////////
00358     storeFare ::
00359     storeFare (FareRuleStruct& ioFareRule)
00360         : ParserSemanticAction (ioFareRule) {
00361     }
00362
00363     // //////////////////////////////////////

```

```

00364 void storeFare::operator() (double iFare,
00365                             boost::spirit::qi::unused_type,
00366                             boost::spirit::qi::unused_type) const {
00367     const stdair::PriceValue_T lFare = iFare;
00368     _fareRule.setFare (lFare);
00369     // DEBUG
00370     //STDAIR_LOG_DEBUG ("Fare: " << _fareRule.getFare ());
00371 }
00372
00373 // //////////////////////////////////////
00374 storeAirlineCode ::
00375 storeAirlineCode (FareRuleStruct& ioFareRule)
00376 : ParserSemanticAction (ioFareRule) {
00377 }
00378
00379 // //////////////////////////////////////
00380 void storeAirlineCode::operator() (std::vector<char> iChar,
00381                                   boost::spirit::qi::unused_type,
00382                                   boost::spirit::qi::unused_type) const {
00383
00384     const stdair::AirlineCode_T lAirlineCode (iChar.begin(), iChar.end());
00385     // Insertion of this airline Code list in the whole AirlineCode name
00386     _fareRule.addAirlineCode (lAirlineCode);
00387     // DEBUG
00388     //STDAIR_LOG_DEBUG ( "Airline code: " << lAirlineCode);
00389 }
00390
00391 // //////////////////////////////////////
00392 storeClass ::
00393 storeClass (FareRuleStruct& ioFareRule)
00394 : ParserSemanticAction (ioFareRule) {
00395 }
00396
00397 // //////////////////////////////////////
00398 void storeClass::operator() (std::vector<char> iChar,
00399                             boost::spirit::qi::unused_type,
00400                             boost::spirit::qi::unused_type) const {
00401     std::ostringstream ostr;
00402     for (std::vector<char>::const_iterator lItVector = iChar.begin();
00403          lItVector != iChar.end();
00404          lItVector++) {
00405         ostr << *lItVector;
00406     }
00407     const std::string classCodeStr = ostr.str();
00408     const stdair::ClassCode_T lClassCode (classCodeStr);
00409     // Insertion of this class Code list in the whole classCode name
00410     _fareRule.addClassCode (lClassCode);
00411     // DEBUG
00412     //STDAIR_LOG_DEBUG ("Class Code: " << lClassCode);
00413 }
00414
00415 // //////////////////////////////////////
00416 doEndFare::
00417 doEndFare (stdair::BomRoot& ioBomRoot,
00418            FareRuleStruct& ioFareRule)
00419 : ParserSemanticAction (ioFareRule),
00420   _bomRoot (ioBomRoot) {
00421 }
00422
00423 // //////////////////////////////////////
00424 void doEndFare::operator() (boost::spirit::qi::unused_type,
00425                             boost::spirit::qi::unused_type,

```

```

00426                                     boost::spirit::qi::unused_type) const {
00427         // DEBUG
00428         //STDAIR_LOG_DEBUG ("Do End");
00429         // Generation of the fare rule object.
00430         FareRuleGenerator::createAirportPair (_bomRoot, _fareRule);
00431         STDAIR_LOG_DEBUG(_fareRule.describe());
00432     }
00433
00434     // //////////////////////////////////////
00435     //
00436     // Utility Parsers
00437     //
00438     // //////////////////////////////////////
00440     namespace bsq = boost::spirit::qi;
00441     namespace bsa = boost::spirit::ascii;
00442
00444     stdair::int1_p_t int1_p;
00445
00447     stdair::uint2_p_t uint2_p;
00448
00450     stdair::uint4_p_t uint4_p;
00451
00453     stdair::uint1_4_p_t uint1_4_p;
00454
00456     stdair::hour_p_t hour_p;
00457     stdair::minute_p_t minute_p;
00458     stdair::second_p_t second_p;
00459
00461     stdair::year_p_t year_p;
00462     stdair::month_p_t month_p;
00463     stdair::day_p_t day_p;
00464
00466     //
00467     // (Boost Spirit) Grammar Definition
00468     //
00470
00499     template <typename Iterator>
00500     struct FareRuleParser :
00501         public boost::spirit::qi::grammar<Iterator,
00502             boost::spirit::ascii::space_type> {
00503
00504         FareRuleParser (stdair::BomRoot& ioBomRoot,
00505             FareRuleStruct& iofareRule) :
00506
00507             FareRuleParser::base_type(start),
00508             _bomRoot(ioBomRoot), _fareRule(iofareRule) {
00509
00510
00511             start = *(comments | fare_rule);
00512
00513             comments = (bsq::lexeme[bsq::repeat(2)[bsa::char_('/')]]
00514                 >> +(bsa::char_ - bsq::eol)
00515                 >> bsq::eol]
00516                 | bsq::lexeme[bsa::char_('/') >>bsa::char_('*')
00517                 >> +(bsa::char_ - bsa::char_('*'))
00518                 >> bsa::char_('*') >> bsa::char_('/')]);
00519
00520             fare_rule = fare_key
00521                 >> +( ';' >> segment )
00522                 >> fare_rule_end[doEndFare(_bomRoot, _fareRule)];
00523
00524             fare_rule_end = bsa::char_(';');

```

```

00525
00526     fare_key = fare_id
00527     >> ';' >> origin >> ';' >> destination
00528     >> ';' >> tripType
00529     >> ';' >> dateRangeStart >> ';' >> dateRangeEnd
00530     >> ';' >> timeRangeStart >> ';' >> timeRangeEnd
00531     >> ';' >> point_of_sale >> ';' >> cabinCode >> ';' >> channel
00532     >> ';' >> advancePurchase >> ';' >> saturdayStay
00533     >> ';' >> changeFees >> ';' >> nonRefundable
00534     >> ';' >> minimumStay >> ';' >> fare;
00535
00536     fare_id = uint1_4_p[storeFareId(_fareRule)];
00537
00538     origin = bsq::repeat(3)[bsa::char_("A-Z")][storeOrigin(_fareRule)];
00539
00540     destination =
00541         bsq::repeat(3)[bsa::char_("A-Z")][storeDestination(_fareRule)];
00542
00543     tripType =
00544         bsq::repeat(2)[bsa::char_("A-Z")][storeTripType(_fareRule)];
00545
00546     dateRangeStart = date[storeDateRangeStart(_fareRule)];
00547
00548     dateRangeEnd = date[storeDateRangeEnd(_fareRule)];
00549
00550     date = bsq::lexeme
00551         [year_p[boost::phoenix::ref(_fareRule._itYear) = bsq::labels::_1]
00552         >> '-'
00553         >> month_p[boost::phoenix::ref(_fareRule._itMonth) = bsq::labels::_1]
00554         >> '-'
00555         >> day_p[boost::phoenix::ref(_fareRule._itDay) = bsq::labels::_1] ];
00556
00557     timeRangeStart = time[storeStartRangeTime(_fareRule)];
00558
00559     timeRangeEnd = time[storeEndRangeTime(_fareRule)];
00560
00561     time = bsq::lexeme
00562         [hour_p[boost::phoenix::ref(_fareRule._itHours) = bsq::labels::_1]
00563         >> ':'
00564         >> minute_p[boost::phoenix::ref(_fareRule._itMinutes) = bsq::labels::_1]
00565         >> - (':' >> second_p[boost::phoenix::ref(_fareRule._itSeconds) = bsq::la
00566             bels::_1]) ];
00567
00568     point_of_sale = bsq::repeat(3)[bsa::char_("A-Z")][storePOS(_fareRule)];
00569
00570     cabinCode = bsa::char_("A-Z")[storeCabinCode(_fareRule)];
00571
00572     channel = bsq::repeat(2)[bsa::char_("A-Z")][storeChannel(_fareRule)];
00573
00574     advancePurchase = uint1_4_p[storeAdvancePurchase(_fareRule)];
00575
00576     saturdayStay = bsa::char_("A-Z")[storeSaturdayStay(_fareRule)];
00577
00578     changeFees = bsa::char_("A-Z")[storeChangeFees(_fareRule)];
00579
00580     nonRefundable = bsa::char_("A-Z")[storeNonRefundable(_fareRule)];
00581
00582     minimumStay = uint1_4_p[storeMinimumStay(_fareRule)];
00583
00584     fare = bsq::double_[storeFare(_fareRule)];
00585

```

```

00585         segment = bsq::repeat(2)[bsa::char_("A-Z")][storeAirlineCode(_fareRule)]
00586         >> ',';
00587         >> bsq::repeat(1,bsq::inf)[bsa::char_("A-Z")][storeClass(_fareRule)];
00588
00589         //BOOST_SPIRIT_DEBUG_NODE (FareRuleParser);
00590         BOOST_SPIRIT_DEBUG_NODE (start);
00591         BOOST_SPIRIT_DEBUG_NODE (comments);
00592         BOOST_SPIRIT_DEBUG_NODE (fare_rule);
00593         BOOST_SPIRIT_DEBUG_NODE (fare_rule_end);
00594         BOOST_SPIRIT_DEBUG_NODE (fare_key);
00595         BOOST_SPIRIT_DEBUG_NODE (fare_id);
00596         BOOST_SPIRIT_DEBUG_NODE (origin);
00597         BOOST_SPIRIT_DEBUG_NODE (destination);
00598         BOOST_SPIRIT_DEBUG_NODE (tripType);
00599         BOOST_SPIRIT_DEBUG_NODE (dateRangeStart);
00600         BOOST_SPIRIT_DEBUG_NODE (dateRangeEnd);
00601         BOOST_SPIRIT_DEBUG_NODE (date);
00602         BOOST_SPIRIT_DEBUG_NODE (timeRangeStart);
00603         BOOST_SPIRIT_DEBUG_NODE (time);
00604         BOOST_SPIRIT_DEBUG_NODE (point_of_sale);
00605         BOOST_SPIRIT_DEBUG_NODE (cabinCode);
00606         BOOST_SPIRIT_DEBUG_NODE (channel);
00607         BOOST_SPIRIT_DEBUG_NODE (advancePurchase);
00608         BOOST_SPIRIT_DEBUG_NODE (saturdayStay);
00609         BOOST_SPIRIT_DEBUG_NODE (changeFees);
00610         BOOST_SPIRIT_DEBUG_NODE (nonRefundable);
00611         BOOST_SPIRIT_DEBUG_NODE (minimumStay);
00612         BOOST_SPIRIT_DEBUG_NODE (fare);
00613         BOOST_SPIRIT_DEBUG_NODE (segment);
00614
00615     }
00616
00617     // Instantiation of rules
00618     boost::spirit::qi::rule<Iterator,
00619         boost::spirit::ascii::space_type>
00620     start, comments, fare_rule, fare_rule_end, fare_key, fare_id, origin,
00621         destination, tripType, dateRangeStart, dateRangeEnd, date,
00622         timeRangeStart, timeRangeEnd, time, point_of_sale, cabinCode, channel,
00623         advancePurchase, saturdayStay, changeFees, nonRefundable, minimumStay,
00624         fare, segment;
00625
00626     // Parser Context
00627     stdair::BomRoot& _bomRoot;
00628     FareRuleStruct& _fareRule;
00629 };
00630
00631 }
00632
00633
00634 //
00635 // Entry class for the file parser
00636 //
00637 //
00638
00639 // //////////////////////////////////////
00640 FareRuleFileParser::
00641 FareRuleFileParser (stdair::BomRoot& ioBomRoot,
00642     const stdair::Filename_T& iFilename)
00643 : _filename (iFilename), _bomRoot (ioBomRoot) {
00644     init();
00645 }
00646
00647 // //////////////////////////////////////

```

```

00649 void FareRuleFileParser::init() {
00650     // Check that the file exists and is readable
00651     const bool doesExistAndIsReadable =
00652         stdair::BasFileMgr::doesExistAndIsReadable (_filename);
00653
00654     if (doesExistAndIsReadable == false) {
00655         STDAIR_LOG_ERROR ("The fare schedule file " << _filename
00656             << " does not exist or can not be read.");
00657
00658         throw FareInputFileNotFoundException ("The fare file " + _filename
00659             + " does not exist or can not be read
00660     ");
00661     }
00662
00663     // //////////////////////////////////////
00664 void FareRuleFileParser::generateFareRules () {
00665
00666     STDAIR_LOG_DEBUG ("Parsing fare input file: " << _filename);
00667
00668     // File to be parsed
00669     const std::string* lFileName = &_filename;
00670     const char *lChar = (*lFileName).c_str();
00671     std::ifstream fileToBeParsed(lChar, std::ios_base::in);
00672
00673     // Check if the filename exist and can be open
00674     if (fileToBeParsed == false) {
00675         STDAIR_LOG_ERROR ("The fare file " << _filename << " can not be open."
00676             << std::endl);
00677
00678         throw FareInputFileNotFoundException ("The file " + _filename
00679             + " does not exist or can not be read
00680     ");
00681     }
00682
00683     // Create an input iterator
00684     stdair::base_iterator_t inputBegin (fileToBeParsed);
00685
00686     // Convert input iterator to an iterator usable by spirit parser
00687     stdair::iterator_t
00688         start (boost::spirit::make_default_multi_pass (inputBegin));
00689     stdair::iterator_t end;
00690
00691     // Initialise the parser (grammar) with the helper/staging structure.
00692     FareParserHelper::FareRuleParser<stdair::iterator_t> lFPParser(_bomRoot, _fareRule);
00693
00694     // Launch the parsing of the file and, thanks to the doEndFare
00695     // call-back structure, the building of the whole BomRoot BOM
00696     const bool hasParsingBeenSuccesful =
00697         boost::spirit::qi::phrase_parse (start, end, lFPParser,
00698             boost::spirit::ascii::space);
00699
00700     if (hasParsingBeenSuccesful == false) {
00701         STDAIR_LOG_ERROR ("Parsing of fare input file: " << _filename
00702             << " failed");
00703         throw FareFileParsingFailedException ("Parsing of fare input file: "
00704             + _filename + " failed");
00705     }
00706
00707     if (start != end) {
00708         STDAIR_LOG_ERROR ("Parsing of fare input file: " << _filename

```

```

00708             << " failed");
00709         throw FareFileParsingFailedException ("Parsing of fare input file: "
00710             + _filename + " failed");
00711     }
00712
00713     if (hasParsingBeenSuccessful == true && start == end) {
00714         STDAIR_LOG_DEBUG ("Parsing of fare input file: " << _filename
00715             << " succeeded");
00716     }
00717
00718 }
00719
00720 }
```

25.33 simfqt/command/FareParserHelper.hpp File Reference

```

#include <string>
#include <boost/spirit/include/qi.hpp>
#include <stdair/command/CmdAbstract.hpp>
#include <simfqt/SIMFQT_Types.hpp>
#include <simfqt/bom/FareRuleStruct.hpp>
```

Classes

- struct [SIMFQT::FareParserHelper::ParserSemanticAction](#)
- struct [SIMFQT::FareParserHelper::storeFareId](#)
- struct [SIMFQT::FareParserHelper::storeOrigin](#)
- struct [SIMFQT::FareParserHelper::storeDestination](#)
- struct [SIMFQT::FareParserHelper::storeTripType](#)
- struct [SIMFQT::FareParserHelper::storeDateRangeStart](#)
- struct [SIMFQT::FareParserHelper::storeDateRangeEnd](#)
- struct [SIMFQT::FareParserHelper::storeStartRangeTime](#)
- struct [SIMFQT::FareParserHelper::storeEndRangeTime](#)
- struct [SIMFQT::FareParserHelper::storePOS](#)
- struct [SIMFQT::FareParserHelper::storeCabinCode](#)
- struct [SIMFQT::FareParserHelper::storeChannel](#)
- struct [SIMFQT::FareParserHelper::storeAdvancePurchase](#)
- struct [SIMFQT::FareParserHelper::storeSaturdayStay](#)
- struct [SIMFQT::FareParserHelper::storeChangeFees](#)
- struct [SIMFQT::FareParserHelper::storeNonRefundable](#)
- struct [SIMFQT::FareParserHelper::storeMinimumStay](#)
- struct [SIMFQT::FareParserHelper::storeFare](#)
- struct [SIMFQT::FareParserHelper::storeAirlineCode](#)
- struct [SIMFQT::FareParserHelper::storeClass](#)
- struct [SIMFQT::FareParserHelper::doEndFare](#)
- class [SIMFQT::FareRuleFileParser](#)

Namespaces

- namespace `stdair`
 Forward declarations.
- namespace `SIMFQT`
- namespace `SIMFQT::FareParserHelper`

25.34 FareParserHelper.hpp

```

00001 #ifndef __SIMFQT_CMD_FAREPARSERHELPER_HPP
00002 #define __SIMFQT_CMD_FAREPARSERHELPER_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // STL
00008 #include <string>
00009 // Boost
00010 #include <boost/spirit/include/qi.hpp>
00011 // StdAir
00012 #include <stdair/command/CmdAbstract.hpp>
00013 // Simfqt
00014 #include <simfqt/SIMFQT_Types.hpp>
00015 #include <simfqt/bom/FareRuleStruct.hpp>
00016
00017 // Forward declarations
00018 namespace stdair {
00019     class BomRoot;
00020 }
00021
00022 namespace SIMFQT {
00023
00024     namespace FareParserHelper {
00025
00026         // //////////////////////////////////////
00027         // Semantic actions
00028         // //////////////////////////////////////
00029
00030         struct ParserSemanticAction {
00031             ParserSemanticAction (FareRuleStruct&);
00032             FareRuleStruct& _fareRule;
00033         };
00034
00035         struct storeFareId : public ParserSemanticAction {
00036             storeFareId (FareRuleStruct&);
00037             void operator() (unsigned int,
00038                             boost::spirit::qi::unused_type,
00039                             boost::spirit::qi::unused_type) const;
00040         };
00041
00042         struct storeOrigin : public ParserSemanticAction {
00043             storeOrigin (FareRuleStruct&);
00044             void operator() (std::vector<char>,
00045                             boost::spirit::qi::unused_type,
00046                             boost::spirit::qi::unused_type) const;
00047         };
00048
00049         struct storeDestination : public ParserSemanticAction {
00050             storeDestination (FareRuleStruct&);

```

```

00063     void operator() (std::vector<char>,
00064                     boost::spirit::qi::unused_type,
00065                     boost::spirit::qi::unused_type) const;
00066 };
00067
00069 struct storeTripType : public ParserSemanticAction {
00071     storeTripType (FareRuleStruct&);
00073     void operator() (std::vector<char>,
00074                     boost::spirit::qi::unused_type,
00075                     boost::spirit::qi::unused_type) const;
00076 };
00077
00078
00080 struct storeDateRangeStart : public ParserSemanticAction {
00082     storeDateRangeStart (FareRuleStruct&);
00084     void operator() (boost::spirit::qi::unused_type,
00085                     boost::spirit::qi::unused_type,
00086                     boost::spirit::qi::unused_type) const;
00087 };
00088
00090 struct storeDateRangeEnd : public ParserSemanticAction {
00092     storeDateRangeEnd (FareRuleStruct&);
00094     void operator() (boost::spirit::qi::unused_type,
00095                     boost::spirit::qi::unused_type,
00096                     boost::spirit::qi::unused_type) const;
00097 };
00098
00100 struct storeStartRangeTime : public ParserSemanticAction {
00102     storeStartRangeTime (FareRuleStruct&);
00104     void operator() (boost::spirit::qi::unused_type,
00105                     boost::spirit::qi::unused_type,
00106                     boost::spirit::qi::unused_type) const;
00107 };
00108
00110 struct storeEndRangeTime : public ParserSemanticAction {
00112     storeEndRangeTime (FareRuleStruct&);
00114     void operator() (boost::spirit::qi::unused_type,
00115                     boost::spirit::qi::unused_type,
00116                     boost::spirit::qi::unused_type) const;
00117 };
00118
00120 struct storePOS : public ParserSemanticAction {
00122     storePOS (FareRuleStruct&);
00124     void operator() (std::vector<char>,
00125                     boost::spirit::qi::unused_type,
00126                     boost::spirit::qi::unused_type) const;
00127 };
00128
00130 struct storeCabinCode : public ParserSemanticAction {
00132     storeCabinCode (FareRuleStruct&);
00134     void operator() (char,
00135                     boost::spirit::qi::unused_type,
00136                     boost::spirit::qi::unused_type) const;
00137 };
00138
00140 struct storeChannel : public ParserSemanticAction {
00142     storeChannel (FareRuleStruct&);
00144     void operator() (std::vector<char>,
00145                     boost::spirit::qi::unused_type,
00146                     boost::spirit::qi::unused_type) const;
00147 };
00148

```

```
00150     struct storeAdvancePurchase : public ParserSemanticAction {
00152         storeAdvancePurchase (FareRuleStruct&);
00154         void operator() (unsigned int,
00155                         boost::spirit::qi::unused_type,
00156                         boost::spirit::qi::unused_type) const;
00157     };
00158
00160     struct storeSaturdayStay : public ParserSemanticAction {
00162         storeSaturdayStay (FareRuleStruct&);
00164         void operator() (char,
00165                         boost::spirit::qi::unused_type,
00166                         boost::spirit::qi::unused_type) const;
00167     };
00168
00170     struct storeChangeFees : public ParserSemanticAction {
00172         storeChangeFees (FareRuleStruct&);
00174         void operator() (char,
00175                         boost::spirit::qi::unused_type,
00176                         boost::spirit::qi::unused_type) const;
00177     };
00178
00180     struct storeNonRefundable : public ParserSemanticAction {
00182         storeNonRefundable (FareRuleStruct&);
00184         void operator() (char,
00185                         boost::spirit::qi::unused_type,
00186                         boost::spirit::qi::unused_type) const;
00187     };
00188
00190     struct storeMinimumStay : public ParserSemanticAction {
00192         storeMinimumStay (FareRuleStruct&);
00194         void operator() (unsigned int,
00195                         boost::spirit::qi::unused_type,
00196                         boost::spirit::qi::unused_type) const;
00197     };
00198
00200     struct storeFare : public ParserSemanticAction {
00202         storeFare (FareRuleStruct&);
00204         void operator() (double,
00205                         boost::spirit::qi::unused_type,
00206                         boost::spirit::qi::unused_type) const;
00207     };
00208
00210     struct storeAirlineCode : public ParserSemanticAction {
00212         storeAirlineCode (FareRuleStruct&);
00214         void operator() (std::vector<char>,
00215                         boost::spirit::qi::unused_type,
00216                         boost::spirit::qi::unused_type) const;
00217     };
00218
00220     struct storeClass : public ParserSemanticAction {
00222         storeClass (FareRuleStruct&);
00224         void operator() (std::vector<char>,
00225                         boost::spirit::qi::unused_type,
00226                         boost::spirit::qi::unused_type) const;
00227     };
00228
00230     struct doEndFare : public ParserSemanticAction {
00232         doEndFare (stdair::BomRoot&, FareRuleStruct&);
00234         void operator() (boost::spirit::qi::unused_type,
00235                         boost::spirit::qi::unused_type,
00236                         boost::spirit::qi::unused_type) const;
00238         stdair::BomRoot& _bomRoot;
```

```

00239     };
00240
00241 }
00242
00243 //
00244 // Entry class for the file parser
00245 //
00246
00247
00254 class FareRuleFileParser : public stdair::CmdAbstract {
00255 public:
00256     FareRuleFileParser (stdair::BomRoot& ioBomRoot,
00257                         const stdair::Filename_T& iFilename);
00258
00259     void generateFareRules ();
00260
00261 private:
00262     void init();
00263
00264 private:
00265     // Attributes
00266     stdair::Filename_T _filename;
00267     stdair::BomRoot& _bomRoot;
00268     FareRuleStruct _fareRule;
00269 };
00270
00271 #endif // __SIMFQT_CMD_FAREPARSERHELPER_HPP

```

25.35 simfq/command/FareQuoter.cpp File Reference

```

#include <cassert>
#include <sstream>
#include <stdair/basic/BasConst_BomDisplay.hpp>
#include <stdair/bom/BomKeyManager.hpp>
#include <stdair/bom/ParsedKey.hpp>
#include <stdair/bom/BomManager.hpp>
#include <stdair/bom/BomRoot.hpp>
#include <stdair/bom/InventoryKey.hpp>
#include <stdair/bom/FlightDateKey.hpp>
#include <stdair/bom/SegmentDateKey.hpp>
#include <stdair/bom/AirlineClassList.hpp>
#include <stdair/bom/AirportPair.hpp>
#include <stdair/bom/PosChannel.hpp>
#include <stdair/bom/DatePeriod.hpp>
#include <stdair/bom/TimePeriod.hpp>

```

```
#include <stdair/bom/FareFeatures.hpp>
#include <stdair/bom/BookingRequestStruct.hpp>
#include <stdair/bom/TravelSolutionStruct.hpp>
#include <stdair/service/Logger.hpp>
#include <stdair/bom/key_types.hpp>
#include <simfqt/SIMFQT_Types.hpp>
#include <simfqt/command/FareQuoter.hpp>
```

Namespaces

- namespace [SIMFQT](#)

25.36 FareQuoter.cpp

```
00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 #include <sstream>
00007 // StdAir
00008 #include <stdair/basic/BasConst_BomDisplay.hpp>
00009 #include <stdair/bom/BomKeyManager.hpp>
00010 #include <stdair/bom/ParsedKey.hpp>
00011 #include <stdair/bom/BomManager.hpp>
00012 #include <stdair/bom/BomRoot.hpp>
00013 #include <stdair/bom/InventoryKey.hpp>
00014 #include <stdair/bom/FlightDateKey.hpp>
00015 #include <stdair/bom/SegmentDateKey.hpp>
00016 #include <stdair/bom/AirlineClassList.hpp>
00017 #include <stdair/bom/AirportPair.hpp>
00018 #include <stdair/bom/PosChannel.hpp>
00019 #include <stdair/bom/DatePeriod.hpp>
00020 #include <stdair/bom/TimePeriod.hpp>
00021 #include <stdair/bom/FareFeatures.hpp>
00022 #include <stdair/bom/BookingRequestStruct.hpp>
00023 #include <stdair/bom/TravelSolutionStruct.hpp>
00024 #include <stdair/service/Logger.hpp>
00025 #include <stdair/bom/key_types.hpp>
00026 // SimFQT
00027 #include <simfqt/SIMFQT_Types.hpp>
00028 #include <simfqt/command/FareQuoter.hpp>
00029
00030 namespace SIMFQT {
00031
00032     bool FareQuoter::_atLeastOneAvailableDateRule = false;
00033     bool FareQuoter::_atLeastOneAvailablePosChannel = false;
00034     bool FareQuoter::_atLeastOneAvailableTimeRule = false;
00035     bool FareQuoter::_atLeastOneAvailableFeaturesRule = false;
00036     bool FareQuoter::_atLeastOneAvailableAirlineClassRule = false;
00037
00038     // //////////////////////////////////////
00039     FareQuoter::FareQuoter() {
```

```

00040     assert (false);
00041 }
00042
00043 // //////////////////////////////////////
00044 FareQuoter::FareQuoter(const FareQuoter&) {
00045     assert (false);
00046 }
00047
00048 // //////////////////////////////////////
00049 FareQuoter::~FareQuoter() {
00050 }
00051
00052 // //////////////////////////////////////
00053 void FareQuoter::reset() {
00054     _atLeastOneAvailableDateRule = false;
00055     _atLeastOneAvailablePosChannel = false;
00056     _atLeastOneAvailableTimeRule = false;
00057     _atLeastOneAvailableFeaturesRule = false;
00058     _atLeastOneAvailableAirlineClassRule = false;
00059 }
00060
00061 // //////////////////////////////////////
00062 void FareQuoter::
00063 priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00064             stdair::TravelSolutionList_T& ioTravelSolutionList,
00065             const stdair::BomRoot& iBomRoot) {
00066
00067     // Do an independent price quote for each travel solution related to the
00068     // booking request.
00069     for (stdair::TravelSolutionList_T::iterator itTravelSolution =
00070          ioTravelSolutionList.begin();
00071          itTravelSolution != ioTravelSolutionList.end(); ++itTravelSolution) {
00072         reset();
00073         // Select a travel solution.
00074         stdair::TravelSolutionStruct& lTravelSolutionStruct = *itTravelSolution;
00075         // Price quote the travel solution into question.
00076         priceQuote (iBookingRequest, lTravelSolutionStruct, iBomRoot);
00077     }
00078 }
00079
00080 // //////////////////////////////////////
00081 void FareQuoter::
00082 priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00083             stdair::TravelSolutionStruct& ioTravelSolution,
00084             const stdair::BomRoot& iBomRoot) {
00085
00086     // Get the origin of the first segment in order to get the origin of
00087     // the solution.
00088     const stdair::ParsedKey& lFirstSegmentKey =
00089         getFirstSPParsedKey(ioTravelSolution);
00090     const stdair::AirportCode_T& lOrigin = lFirstSegmentKey._boardingPoint;
00091
00092     // Get the destination of the last segment in order to get the
00093     // destination of the solution.
00094     const stdair::ParsedKey& lLastSegmentKey =
00095         getLastSPParsedKey(ioTravelSolution);
00096     const stdair::AirportCode_T& lDestination = lLastSegmentKey._offPoint;
00097
00098     // Construct the Airport pair stream of the segment path.
00099     const stdair::AirportPairKey lAirportPairKey (lOrigin, lDestination);
00100
00101

```

```

00102 // Search for the fare rules having the same origin and destination airports
00103 // as the travel solution
00104 const stdair::AirportPair* lAirportPair_ptr = stdair::BomManager::
00105     getObjectPtr<stdair::AirportPair> (iBomRoot, lAirportPairKey.toString());

00106
00107 // If no fare rule has the same origin and destination airports, the pricing
00108 // is not possible, throw an exception.
00109 if (lAirportPair_ptr == NULL) {
00110     STDAIR_LOG_ERROR ("No available fare rule for the "
00111         << "Origin-Destination pair: "
00112         << lAirportPairKey.toString());
00113     throw AirportPairNotFoundException ("No available fare rule for "
00114         "the Origin-Destination pair: "
00115         + lAirportPairKey.toString());
00116 }
00117 // Sanity check.
00118 assert(lAirportPair_ptr != NULL);
00119
00120 // Fare rule(s) with the same origin and destination airports exist(s), now
00121 // the date range need to be checked.
00122 const stdair::AirportPair& lAirportPair = *lAirportPair_ptr;
00123 priceQuote(iBookingRequest, ioTravelSolution, lAirportPair);
00124
00125 if (_atLeastOneAvailableAirlineClassRule == false) {
00126     displayMissingFareRuleMessage(iBookingRequest, ioTravelSolution);
00127 }
00128 }
00129
00130 // //////////////////////////////////////
00131 void FareQuoter::
00132 priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00133     stdair::TravelSolutionStruct& ioTravelSolution,
00134     const stdair::AirportPair& iAirportPair) {
00135
00136     // Get the first segment path parsed key.
00137     const stdair::ParsedKey lFirstSPParsedKey =
00138         getFirstSPParsedKey(ioTravelSolution);
00139
00140     // Get the date of the first segment date key.
00141     const stdair::FlightDateKey& lFlightDateKey =
00142         lFirstSPParsedKey.getFlightDateKey();
00143     const stdair::Date_T& lSPDate = lFlightDateKey.getDepartureDate();
00144
00145     // Get the list of the fare date ranges.
00146     const stdair::DatePeriodList_T& lFareDatePeriodList =
00147         stdair::BomManager::getList<stdair::DatePeriod> (iAirportPair);
00148
00149     // Browse the list of the fare rules date range.
00150     for (stdair::DatePeriodList_T::const_iterator itDateRange =
00151         lFareDatePeriodList.begin();
00152         itDateRange != lFareDatePeriodList.end(); ++itDateRange) {
00153
00154         const stdair::DatePeriod* lCurrentFareDatePeriod_ptr = *itDateRange ;
00155         assert (lCurrentFareDatePeriod_ptr != NULL);
00156
00157         // Select the fare rules having a corresponding date range.
00158         const bool isDepartureDateValid =
00159             lCurrentFareDatePeriod_ptr->isDepartureDateValid (lSPDate);
00160
00161         // If a fare rule has a corresponding date range, its channel and position
00162         // need to be checked.

```

```

00163         if (isDepartureDateValid == true) {
00164             _atLeastOneAvailableDateRule = true;
00165             const stdair::DatePeriod& lCurrentFareDatePeriod =
00166                 *lCurrentFareDatePeriod_ptr;
00167             priceQuote (iBookingRequest, ioTravelSolution,
00168                 lCurrentFareDatePeriod, iAirportPair);
00169         }
00170     }
00171 }
00172 }
00173
00174 // //////////////////////////////////////
00175 void FareQuoter::
00176 priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00177             stdair::TravelSolutionStruct& ioTravelSolution,
00178             const stdair::DatePeriod& iFareDatePeriod,
00179             const stdair::AirportPair& iAirportPair) {
00180
00181     // Get the point-of-sale of the booking request.
00182     const stdair::CityCode_T& lPointOfSale = iBookingRequest.getPOS();
00183
00184     // Get the booking request channel.
00185     const stdair::ChannelLabel_T& lChannel =
00186         iBookingRequest.getBookingChannel();
00187
00188     // Construct the corresponding POS-channel primary key.
00189     const stdair::PosChannelKey lFarePosChannelKey (lPointOfSale, lChannel);
00190
00191     // Search for the fare rules having the same point-of-sale and channel as
00192     // the travel solution.
00193     const stdair::PosChannelList_T lFarePosChannelList =
00194         stdair::BomManager::getList<stdair::PosChannel> (iFareDatePeriod);
00195
00196     // Browse the list of the fare rules pos channel.
00197     for (stdair::PosChannelList_T::const_iterator itPosChannel =
00198         lFarePosChannelList.begin();
00199         itPosChannel != lFarePosChannelList.end();
00200         ++itPosChannel) {
00201         const stdair::PosChannel* lCurrentFarePosChannel_ptr = *itPosChannel;
00202         assert (lCurrentFarePosChannel_ptr != NULL);
00203
00204         // Get the point-of-sale and channel of the current fare rule.
00205         const stdair::CityCode_T& lCurrentPointOfSale =
00206             lCurrentFarePosChannel_ptr->getPos();
00207         const stdair::ChannelLabel_T& lCurrentChannel =
00208             lCurrentFarePosChannel_ptr->getChannel();
00209
00210         // Select the fare rules having a corresponding pos channel.
00211         if (lCurrentPointOfSale == lPointOfSale &&
00212             lCurrentChannel == lChannel) {
00213             _atLeastOneAvailablePosChannel = true;
00214             // Fare rule(s) with the same point-of-sale and channel exist(s), now
00215             // the time range need to be checked.
00216             const stdair::PosChannel& lFarePosChannel= *lCurrentFarePosChannel_ptr;
00217             priceQuote (iBookingRequest, ioTravelSolution, lFarePosChannel);
00218         }
00219     }
00220 }
00221 }
00222
00223 // //////////////////////////////////////
00224 void FareQuoter::

```



```

00225 priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00226             stdair::TravelSolutionStruct& ioTravelSolution,
00227             const stdair::PosChannel& iFarePosChannel) {
00228
00229     // Get the first segment path parsed key.
00230     const stdair::ParsedKey lFirstSPParsedKey =
00231         getFirstSPParsedKey(ioTravelSolution);
00232
00233     // Get the segment boarding time of the segment path.
00234     const stdair::Duration_T& lSPTime = lFirstSPParsedKey.getBoardingTime();
00235
00236     // Get the list of the fare rules time period.
00237     const stdair::TimePeriodList_T& lFareTimePeriodList =
00238         stdair::BomManager::getList<stdair::TimePeriod> (iFarePosChannel);
00239
00240     // Browse the list of the fare rules time range.
00241     for (stdair::TimePeriodList_T::const_iterator itTimeRange =
00242         lFareTimePeriodList.begin();
00243         itTimeRange != lFareTimePeriodList.end();
00244         ++itTimeRange) {
00245         const stdair::TimePeriod* lCurrentFareTimePeriod_ptr = *itTimeRange ;
00246         assert (lCurrentFareTimePeriod_ptr != NULL);
00247
00248         // Select the fare rules having a corresponding time range.
00249         const bool isDepartureTimeValid =
00250             lCurrentFareTimePeriod_ptr->isDepartureTimeValid (lSPTime);
00251
00252         // If a fare rule has a corresponding time range, its advanced purchase,
00253         // trip type and minimum stay duration need to be checked.
00254         if (isDepartureTimeValid) {
00255             _atLeastOneAvailableTimeRule = true;
00256             const stdair::TimePeriod& lCurrentFareTimePeriod =
00257                 *lCurrentFareTimePeriod_ptr;
00258             priceQuote (iBookingRequest, ioTravelSolution,
00259                 lCurrentFareTimePeriod, iFarePosChannel);
00260         }
00261     }
00262 }
00263
00264 // //////////////////////////////////////
00265 void FareQuoter::
00266 priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00267             stdair::TravelSolutionStruct& ioTravelSolution,
00268             const stdair::TimePeriod& iFareTimePeriod,
00269             const stdair::PosChannel& iFarePosChannel) {
00270
00271     // Get the stay duration of the booking request.
00272     const stdair::DayDuration_T& lStayDuration=
00273         iBookingRequest.getStayDuration();
00274
00275     // Get the booking request trip type.
00276     const stdair::TripType_T& lTripType =
00277         iBookingRequest.getTripType();
00278
00279     // Get the booking request date time.
00280     const stdair::DateTime_T& lRequestDateTime =
00281         iBookingRequest.getRequestDateTime();
00282
00283     // Get the referenced departure date of the segment path.
00284     const stdair::ParsedKey lFirstSPParsedKey =
00285         getFirstSPParsedKey(ioTravelSolution);

```

```

00287     const stdair::Date_T& lSPDate =
00288         lFirstSPParsedKey.getFlightDateKey().getDepartureDate();
00289
00290     // Get the segment boarding time of the segment path.
00291     const stdair::Duration_T& lSPTime = lFirstSPParsedKey.getBoardingTime();
00292
00293     // Construct the date-time type corresponding to the flight date
00294     const stdair::DateTime_T lSPDateTime (lSPDate, lSPTime);
00295
00296     bool isTripTypeValid = false;
00297     bool isStayDurationValid = false;
00298     bool isAdvancePurchaseValid = false;
00299
00300     // Get the list of the fare features.
00301     const stdair::FareFeaturesList_T& lFareFeaturesList =
00302         stdair::BomManager::getList<stdair::FareFeatures> (iFareTimePeriod);
00303
00304     // Browse the list of the fare rules features.
00305     for (stdair::FareFeaturesList_T::const_iterator itFareFeatures =
00306         lFareFeaturesList.begin();
00307         itFareFeatures != lFareFeaturesList.end();
00308         ++itFareFeatures) {
00309         const stdair::FareFeatures* lCurrentFareFeatures_ptr =
00310             *itFareFeatures;
00311         assert (lCurrentFareFeatures_ptr != NULL);
00312
00313         // Does the current fare features correspond to a correct trip
00314         // type?
00315         isTripTypeValid =
00316             lCurrentFareFeatures_ptr->isTripTypeValid (lTripType);
00317         // Does the current fare features correspond to a correct stay
00318         // duration?
00319         isStayDurationValid =
00320             lCurrentFareFeatures_ptr->isStayDurationValid (lStayDuration);
00321         // Does the current fare features correspond to a correct advanced
00322         // purchase?
00323         isAdvancePurchaseValid = lCurrentFareFeatures_ptr->
00324             isAdvancePurchaseValid (lRequestDateTime,
00325                                     lSPDateTime);
00326
00327         // Search for the fare rules having corresponding features.
00328         if (isStayDurationValid && isAdvancePurchaseValid && isTripTypeValid){
00329             _atLeastOneAvailableFeaturesRule = true;
00330             // Create a fare structure for the travel solution.
00331             stdair::FareOptionStruct lFareOption;
00332             const stdair::ChangeFees_T& lChangeFees =
00333                 lCurrentFareFeatures_ptr->getChangeFees();
00334             // Set the fare change fees.
00335             lFareOption.setChangeFees (lChangeFees);
00336             const stdair::NonRefundable_T& lNonRefundable =
00337                 lCurrentFareFeatures_ptr->getRefundableOption();
00338             // Set the fare refundable option.
00339             lFareOption.setNonRefundable (lNonRefundable);
00340             const stdair::SaturdayStay_T& lSaturdayStay =
00341                 lCurrentFareFeatures_ptr->getSaturdayStay();
00342             // Set the fare saturday night stay option.
00343             lFareOption.setSaturdayStay (lSaturdayStay);
00344             const stdair::FareFeatures& lCurrentFareFeatures =
00345                 *lCurrentFareFeatures_ptr;
00346             priceQuote (iBookingRequest, ioTravelSolution,
00347                         lCurrentFareFeatures, iFarePosChannel,
00348                         lFareOption);

```

```

00349     }
00350 }
00351
00352 }
00353
00354
00355 // //////////////////////////////////////
00356 void FareQuoter::
00357 priceQuote (const stdair::BookingRequestStruct& iBookingRequest,
00358             stdair::TravelSolutionStruct& ioTravelSolution,
00359             const stdair::FareFeatures& iFareFeatures,
00360             const stdair::PosChannel& iFarePosChannel,
00361             stdair::FareOptionStruct& iFareOption) {
00362
00363     // Get the first segment path parsed key.
00364     const stdair::ParsedKey lFirstSPParsedKey =
00365         getFirstSPParsedKey(ioTravelSolution);
00366
00367     // Get the segment-path of the travel solution.
00368     const stdair::SegmentPath_T& lSegmentPath =
00369         ioTravelSolution.getSegmentPath();
00370
00371     // Get the list of the fare rules.
00372     const stdair::AirlineClassListList_T& lAirlineClassListList =
00373         stdair::BomManager::getList<stdair::AirlineClassList> (iFareFeatures);
00374
00375     bool lCorrectAirlineRule = false;
00376     bool lAtLeastOneDifferentAirline = false;
00377
00378     // Browse the list of airline code list and search for the fare rules
00379     // having a corresponding airline list.
00380     for (stdair::AirlineClassListList_T::const_iterator itAirlineClassList =
00381          lAirlineClassListList.begin();
00382          itAirlineClassList != lAirlineClassListList.end();
00383          ++itAirlineClassList) {
00384         const stdair::AirlineClassList* lCurrentAirlineClassList_ptr =
00385             *itAirlineClassList;
00386         assert (lCurrentAirlineClassList_ptr != NULL);
00387
00388         lCorrectAirlineRule = true;
00389         lAtLeastOneDifferentAirline = false;
00390
00391         const stdair::ClassList_StringList_T lClassList_StringList =
00392             lCurrentAirlineClassList_ptr->getAirlineCodeList();
00393
00394         // Compare the segment path airline list with the fare rule airline list.
00395         if (lClassList_StringList.size() == lSegmentPath.size()) {
00396             // If the two sizes are equal, we need to compare the airline codes.
00397             stdair::SegmentPath_T::const_iterator itSegmentPath =
00398                 lSegmentPath.begin();
00399
00400             stdair::ClassList_StringList_T::const_iterator itClassList_String =
00401                 lClassList_StringList.begin();
00402             // Browse the segment path airline code list (while the segment path
00403             // airline list is equal to the fare rule airline list).
00404             while (itSegmentPath != lSegmentPath.end()
00405                  && lAtLeastOneDifferentAirline == false) {
00406
00407                 // Get the segment airline code.
00408                 const std::string lSegmentDateKey = *itSegmentPath;
00409                 const stdair::ParsedKey& lParsedKey =
00410                     stdair::BomKeyManager::extractKeys (lSegmentDateKey);

```

```

00411         const stdair::InventoryKey& lInventoryKey =
00412             lParsedKey.getInventoryKey();
00413         const stdair::AirlineCode_T& lSegmentAirlineCode =
00414             lInventoryKey.getAirlineCode();
00415
00416         // Get the fare rule airline code.
00417         const stdair::AirlineCode_T& lFareRuleAirlineCode =
00418             *itClassList_String;
00419
00420         if (lSegmentAirlineCode != lFareRuleAirlineCode) {
00421             lAtLeastOneDifferentAirline = true;
00422         }
00423         itSegmentPath++;
00424         itClassList_String++;
00425     }
00426
00427 } else {
00428     // If the two sizes are different, the fare rule does not match the
00429     // travel solution into question.
00430     lCorrectAirlineRule = false;
00431 }
00432
00433 // If one segment airline code and one fare rule airline code are
00434 // different then the fare rule does not match the travel solution.
00435 if (lAtLeastOneDifferentAirline == true) {
00436     lCorrectAirlineRule = false;
00437 }
00438
00439 // If the current fare rule is a match, add the fare option structure
00440 // to the travel solution into question.
00441 if (lCorrectAirlineRule == true) {
00442     _atLeastOneAvailableAirlineClassRule = true;
00443     // Get the booking request trip type.
00444     const stdair::TripType_T& lTripType =
00445         iBookingRequest.getTripType();
00446
00447     // Get the travel fare.
00448     stdair::Fare_T lFare =
00449         lCurrentAirlineClassList_ptr->getFare();
00450     // If the trip into question is the inbound or outbound part of a round t
rip,
00451     // the applicable fare is a half RT fare.
00452     if (lTripType == "RI" || lTripType == "RO") {
00453         lFare /= 2;
00454     }
00455     // Set the travel fare option.
00456     iFareOption.setFare (lFare);
00457     // Copy the class path list into the fare option.
00458     const stdair::ClassList_StringList_T& lClassCodeList =
00459         lCurrentAirlineClassList_ptr->getClassCodeList();
00460     for (stdair::ClassList_StringList_T::const_iterator itClassCodeList =
00461         lClassCodeList.begin();
00462         itClassCodeList != lClassCodeList.end(); ++itClassCodeList ) {
00463         const stdair::ClassList_String_T& lClassCodeList = *itClassCodeList;
00464         iFareOption.addClassList (lClassCodeList);
00465     }
00466
00467     // Add the fare option to the travel solution into question.
00468     ioTravelSolution.addFareOption (iFareOption);
00469
00470     // DEBUG
00471     STDAIR_LOG_DEBUG ("Segment path: " << lFirstSPParsedKey.toString())

```

```

00472         << ". A corresponding fare option for the '"
00473         << lCurrentAirlineClassList_ptr->describeKey()
00474         << "' class is: " << iFareOption);
00475
00476         iFareOption.emptyClassList();
00477     }
00478 }
00479
00480 }
00481
00482 //////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
00483 stdair::ParsedKey FareQuoter::
00484 getFirstSPParsedKey (stdair::TravelSolutionStruct& ioTravelSolution) {
00485
00486     // Get the segment-path of the travel solution.
00487     const stdair::SegmentPath_T& lSegmentPath =
00488         ioTravelSolution.getSegmentPath();
00489
00490     // Get the number of segments of the travel solution.
00491     const stdair::NbOfSegments_T& lNbSegments = lSegmentPath.size();
00492
00493     // Sanity check: there is at least one segment in the travel solution.
00494     assert (lNbSegments >= 1);
00495
00496     // Get the first segment of the travel solution.
00497     const std::string& lFirstSegmentDateKey = lSegmentPath.front();
00498
00499     // Get the parsed key of the first segment of the travel solution.
00500     const stdair::ParsedKey& lFirstSegmentParsedKey =
00501         stdair::BomKeyManager::extractKeys (lFirstSegmentDateKey);
00502
00503     return lFirstSegmentParsedKey;
00504 }
00505
00506 //////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
00507 stdair::ParsedKey FareQuoter::
00508 getLastSPParsedKey (stdair::TravelSolutionStruct& ioTravelSolution) {
00509
00510     // Get the segment-path of the travel solution.
00511     const stdair::SegmentPath_T& lSegmentPath =
00512         ioTravelSolution.getSegmentPath();
00513
00514     // Get the number of segments of the travel solution.
00515     const stdair::NbOfSegments_T& lNbSegments = lSegmentPath.size();
00516
00517     // Sanity check: there is at least one segment in the travel solution.
00518     assert (lNbSegments >= 1);
00519
00520     // Get the last segment of the travel solution.
00521     const std::string& lLastSegmentDateKey = lSegmentPath.back();
00522
00523     // Get the parsed key of the last segment of the travel solution.
00524     const stdair::ParsedKey& lLastSegmentParsedKey =
00525         stdair::BomKeyManager::extractKeys (lLastSegmentDateKey);
00526
00527     return lLastSegmentParsedKey;
00528 }
00529
00530 }
00531
00532 //////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
00533 void FareQuoter::

```

```

00534     displayMissingFareRuleMessage (const stdair::BookingRequestStruct& iBookingRequest,
00535                                     stdair::TravelSolutionStruct& ioTravelSolution)
00536     {
00537         // Get the origin of the first segment in order to get the origin of
00538         // the solution.
00539         const stdair::ParsedKey lFirstSPParsedKey =
00540             getFirstSPParsedKey(ioTravelSolution);
00541         const stdair::AirportCode_T& lOrigin = lFirstSPParsedKey._boardingPoint;
00542
00543         // Get the destination of the last segment in order to get the
00544         // destination of the solution.
00545         const stdair::ParsedKey& lLastSegmentKey =
00546             getLastSPParsedKey(ioTravelSolution);
00547         const stdair::AirportCode_T& lDestination = lLastSegmentKey._offPoint;
00548
00549         // Construct the Airport pair stream of the segment path.
00550         const stdair::AirportPairKey lAirportPairKey (lOrigin, lDestination);
00551
00552         // Get the date of the first segment date key.
00553         const stdair::FlightDateKey& lFlightDateKey =
00554             lFirstSPParsedKey.getFlightDateKey();
00555
00556         // Get the point-of-sale of the booking request.
00557         const stdair::CityCode_T& lPointOfSale = iBookingRequest.getPOS();
00558         // Get the booking request channel.
00559         const stdair::ChannelLabel_T& lChannel =
00560             iBookingRequest.getBookingChannel();
00561         // Construct the corresponding POS-channel primary key.
00562         const stdair::PosChannelKey lFarePosChannelKey (lPointOfSale, lChannel);
00563
00564         // Get the booking request date time.
00565         const stdair::DateTime_T& lRequestDateTime =
00566             iBookingRequest.getRequestDateTime();
00567
00568         // If no fare rule has a corresponding date range, the pricing is not
00569         // possible, throw an exception.
00570         if (_atLeastOneAvailableDateRule == false) {
00571             const stdair::SegmentDateKey lSegmentDateKey =
00572                 lFirstSPParsedKey.getSegmentKey();
00573             STDAIR_LOG_ERROR ("No available fare rule corresponding to the "
00574                             "flight date " << lFlightDateKey.toString()
00575                             "<< " and the Origin-Destination pair: "
00576                             "<< lSegmentDateKey.toString());
00577             throw FlightDateNotFoundException ("No available fare rule for the "
00578                                             "flight date "
00579                                             + lFlightDateKey.toString()
00580                                             + " and the Origin-Destination pair: "
00581                                             + lSegmentDateKey.toString());
00582         }
00583         // If no fare rule has a corresponding pos channel, the pricing is not possible,
00584         // throw an exception.
00585         else if (_atLeastOneAvailablePosChannel == false) {
00586             STDAIR_LOG_ERROR ("No available fare rule corresponding to the "
00587                             "point of sale " << lPointOfSale
00588                             "<< ", to the channel " << lChannel
00589                             "<< ", to the flight date "
00590                             "<< lFlightDateKey.toString()
00591                             "<< " and to the Origin-Destination pair: "
00592                             "<< lAirportPairKey.toString());

```

```

00593         throw PosOrChannelNotFoundException ("No available fare rule for the "
00594                                             "point of sale " + lPointOfSale
00595                                             + ", the channel " + lChannel
00596                                             + ", the flight date "
00597                                             + lFlightDateKey.toString()
00598                                             + " and the Origin-Destination pair: "
00599
00600                                             + lAirportPairKey.toString());
00601     }
00602     // If no fare rule has a corresponding time range, the pricing is not possibl
e,
00603     // throw an exception.
00604     else if (_atLeastOneAvailableTimeRule == false) {
00605         STDAIR_LOG_ERROR ("No available fare rule corresponding to '"
00606                         "<< lFirstSPParsedKey.toString() << "' (parsed key) and to
'"
00607                         << lFarePosChannelKey.toString() << "' (POS and channel)"
00608                         );
00609         throw FlightTimeNotFoundException ("No available fare rule corresponding "
00610                                         "to '" + lFirstSPParsedKey.toString()
00611                                         + "' (parsed key) and to '"
00612                                         + lFarePosChannelKey.toString()
00613                                         + "' (POS and channel)");
00614     }
00615     // If no fare rule matches the advance purchase, trip type and stay
00616     // duration criterion, the pricing is not possible, throw an exception.
00617     else if (_atLeastOneAvailableFeaturesRule == false) {
00618         // Get the stay duration of the booking request.
00619         const stdair::DayDuration_T& lStayDuration=
00620             iBookingRequest.getStayDuration();
00621         std::ostringstream lStayDurationStream;
00622         lStayDurationStream << lStayDuration;
00623         const std::string lStayDurationString (lStayDurationStream.str());
00624
00625         // Get the booking request trip type.
00626         const stdair::TripType_T& lTripType =
00627             iBookingRequest.getTripType();
00628
00629         STDAIR_LOG_ERROR ("No available fare rule corresponding to a "
00630                         "trip type " << lTripType
00631                         << ", to a stay duration of " << lStayDurationString
00632                         << ", to a request date time of " << lRequestDateTime
00633                         << ", to '" << lFirstSPParsedKey.toString()
00634                         << "' (parsed key) and to '"
00635                         << lFarePosChannelKey << "' (POS and channel)");
00636         throw FeaturesNotFoundException ("No available fare rule corresponding to a
00637
00638                                         "trip type " + lTripType
00639                                         + ", to a stay duration of "
00640                                         + lStayDurationString
00641                                         + ", to a request date time of "
00642                                         + boost::posix_time::to_simple_string(lReq
00643                                         uestDateTime)
00644                                         + ", to '" + lFirstSPParsedKey.toString()
00645                                         + "' (parsed key) and to '"
00646                                         + lFarePosChannelKey.toString()
00647                                         + "' (POS and channel)");
00648     }
00649     assert (_atLeastOneAvailableAirlineClassRule == false);
00650     // If no fare rule matches the airline class path, the pricing is not
00651     // possible, throw an exception.
00652     STDAIR_LOG_ERROR ("No available fare rule corresponding to '"

```

```

00649         << lFirstSPParsedKey .toString() << " (parsed key), to '"
00650         << iBookingRequest.describe()
00651         << " (booking request) and to '"
00652         << lFarePosChannelKey.toString() << " (POS and channel)");

00653     throw AirlineNotFoundException ("No available fare rule corresponding to '"
00654                                     + lFirstSPParsedKey .toString()
00655                                     + " (parsed key), to '"
00656                                     + iBookingRequest.describe()
00657                                     + " (booking request) and to '"
00658                                     + lFarePosChannelKey.toString()
00659                                     + " (POS and channel)");
00660 }
00661 }
00662

```

25.37 simfqt/command/FareQuoter.hpp File Reference

```

#include <stdair/stdair_basic_types.hpp>
#include <stdair/bom/TravelSolutionTypes.hpp>

```

Classes

- class [SIMFQT::FareQuoter](#)
Command wrapping the pricing request process.

Namespaces

- namespace [stdair](#)
Forward declarations.
- namespace [SIMFQT](#)

25.38 FareQuoter.hpp

```

00001 #ifndef __SIMFQT_CMD_FAREQUOTER_HPP
00002 #define __SIMFQT_CMD_FAREQUOTER_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // StdAir
00008 #include <stdair/stdair_basic_types.hpp>
00009 #include <stdair/bom/TravelSolutionTypes.hpp>
00010
00012 namespace stdair {
00013     class BomRoot;
00014     struct BookingRequestStruct;
00015     struct TravelSolutionStruct;
00016     struct ParsedKey;
00017     class AirportPair;
00018     class PosChannel;
00019     class DatePeriod;

```



```

00020     class TimePeriod;
00021     class FareFeatures;
00022 }
00023
00024 namespace SIMFQT {
00025
00029     class FareQuoter {
00032         friend class SIMFQT_Service;
00033
00034     private:
00035         // ////////////////////////////////// Business support methods //////////////////////////////////
00045         static void priceQuote (const stdair::BookingRequestStruct&,
00046                                 stdair::TravelSolutionList_T&,
00047                                 const stdair::BomRoot&);
00048
00060         static void priceQuote (const stdair::BookingRequestStruct&,
00061                                 stdair::TravelSolutionStruct&,
00062                                 const stdair::BomRoot&);
00063
00074         static void priceQuote (const stdair::BookingRequestStruct&,
00075                                 stdair::TravelSolutionStruct&,
00076                                 const stdair::AirportPair&);
00077
00092         static void priceQuote (const stdair::BookingRequestStruct&,
00093                                 stdair::TravelSolutionStruct&,
00094                                 const stdair::DatePeriod&,
00095                                 const stdair::AirportPair&);
00096
00108         static void priceQuote (const stdair::BookingRequestStruct&,
00109                                 stdair::TravelSolutionStruct&,
00110                                 const stdair::PosChannel&);
00111
00126         static void priceQuote (const stdair::BookingRequestStruct&,
00127                                 stdair::TravelSolutionStruct&,
00128                                 const stdair::TimePeriod&,
00129                                 const stdair::PosChannel&);
00130
00148         static void priceQuote (const stdair::BookingRequestStruct&,
00149                                 stdair::TravelSolutionStruct&,
00150                                 const stdair::FareFeatures&,
00151                                 const stdair::PosChannel&,
00152                                 stdair::FareOptionStruct&);
00153
00157         static void reset ();
00158
00168         static void displayMissingFareRuleMessage (const stdair::BookingRequestStruct
00169                                                     &,
00170                                                     stdair::TravelSolutionStruct&);
00171
00178         static stdair::ParsedKey getFirstSPParsedKey (stdair::TravelSolutionStruct&);
00179
00187         static stdair::ParsedKey getLastSPParsedKey (stdair::TravelSolutionStruct&);
00188
00189
00190
00191     private:
00192         // ////////////////////////////////// Construction and destruction //////////////////////////////////
00196         FareQuoter();
00197
00201         FareQuoter(const FareQuoter&);
00202

```

```

00206     ~FareQuoter();
00207
00208     private:
00209
00212         static bool _atLeastOneAvailableDateRule;
00213
00216         static bool _atLeastOneAvailablePosChannel;
00217
00221         static bool _atLeastOneAvailableTimeRule;
00222
00226         static bool _atLeastOneAvailableFeaturesRule;
00227
00231         static bool _atLeastOneAvailableAirlineClassRule;
00232
00233     };
00234
00235 }
00236 #endif // __SIMFQT_CMD_FAREQUOTER_HPP
00237

```

25.39 simfqt/command/FareRuleGenerator.cpp File Reference

```

#include <cassert>
#include <stdair/bom/BomManager.hpp>
#include <stdair/bom/BomRoot.hpp>
#include <stdair/factory/FacBomManager.hpp>
#include <stdair/service/Logger.hpp>
#include <stdair/bom/AirportPair.hpp>
#include <stdair/bom/PosChannel.hpp>
#include <stdair/bom/DatePeriod.hpp>
#include <stdair/bom/TimePeriod.hpp>
#include <stdair/bom/FareFeatures.hpp>
#include <stdair/bom/AirlineClassList.hpp>
#include <simfqt/bom/FareRuleStruct.hpp>
#include <simfqt/command/FareRuleGenerator.hpp>

```

Namespaces

- namespace [SIMFQT](#)

25.40 FareRuleGenerator.cpp

```

00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // STL

```

```

00005 #include <cassert>
00006 // StdAir
00007 #include <stdair/bom/BomManager.hpp>
00008 #include <stdair/bom/BomRoot.hpp>
00009 #include <stdair/factory/FacBomManager.hpp>
00010 #include <stdair/service/Logger.hpp>
00011 #include <stdair/bom/AirportPair.hpp>
00012 #include <stdair/bom/PosChannel.hpp>
00013 #include <stdair/bom/DatePeriod.hpp>
00014 #include <stdair/bom/TimePeriod.hpp>
00015 #include <stdair/bom/FareFeatures.hpp>
00016 #include <stdair/bom/AirlineClassList.hpp>
00017 // SimFQT
00018 #include <simfqt/bom/FareRuleStruct.hpp>
00019 #include <simfqt/command/FareRuleGenerator.hpp>
00020
00021 namespace SIMFQT {
00022
00023 // //////////////////////////////////////
00024 void FareRuleGenerator::
00025     createAirportPair (stdair::BomRoot& ioBomRoot,
00026                       const FareRuleStruct& iFareRuleStruct) {
00027
00028     // Create the airport-pair primary key.
00029     const stdair::AirportCode_T& lBoardPoint = iFareRuleStruct.getOrigin ();
00030     const stdair::AirportCode_T& lOffPoint =
00031         iFareRuleStruct.getDestination ();
00032     const stdair::AirportPairKey lAirportPairKey (lBoardPoint, lOffPoint);
00033
00034     // Check that the airport-pair object is not already existing. If an
00035     // airport-pair object with the same key has not already been created,
00036     // create it and link it to the ioBomRoot object.
00037     stdair::AirportPair* lAirportPair_ptr = stdair::BomManager::
00038         getObjectPtr<stdair::AirportPair> (ioBomRoot, lAirportPairKey.toString());
00039     if (lAirportPair_ptr == NULL) {
00040         lAirportPair_ptr =
00041             &stdair::FacBom<stdair::AirportPair>::instance().
00042             create (lAirportPairKey);
00043         stdair::FacBomManager::addToListAndMap (ioBomRoot, *lAirportPair_ptr);
00044         stdair::FacBomManager::linkWithParent (ioBomRoot, *lAirportPair_ptr);
00045     }
00046     // Sanity check.
00047     assert (lAirportPair_ptr != NULL);
00048
00049     stdair::AirportPair& lAirportPair = *lAirportPair_ptr;
00050     // Generate the date-period object corresponding to the given
00051     // fareRule.
00052     createDateRange (lAirportPair, iFareRuleStruct);
00053
00054 }
00055
00056 // //////////////////////////////////////
00057 void FareRuleGenerator::
00058     createDateRange (stdair::AirportPair& iAirportPair,
00059                     const FareRuleStruct& iFareRuleStruct) {
00060
00061     // Create the fare date-period primary key.
00062     const stdair::Date_T& lDateRangeStart =
00063         iFareRuleStruct.getDateRangeStart ();
00064     const stdair::Date_T& lDateRangeEnd =
00065         iFareRuleStruct.getDateRangeEnd ();
00066     const stdair::DatePeriod_T lDatePeriod (lDateRangeStart, lDateRangeEnd);

```

```

00067     const stdair::DatePeriodKey lFareDatePeriodKey (lDatePeriod);
00068
00069     // Check that the date-period object is not already existing.
00070     // If a date-period object with the same key has not already been
00071     // created, create it and link it to the airport-pair object.
00072     stdair::DatePeriod* lFareDatePeriod_ptr = stdair::BomManager::
00073         getObjectPtr<stdair::DatePeriod> (iAirportPair,
00074             lFareDatePeriodKey.toString());
00075     if (lFareDatePeriod_ptr == NULL) {
00076         lFareDatePeriod_ptr = &stdair::FacBom<stdair::DatePeriod>::instance().
00077             create (lFareDatePeriodKey);
00078         stdair::FacBomManager::addToListAndMap (iAirportPair,
00079             *lFareDatePeriod_ptr);
00080         stdair::FacBomManager::linkWithParent (iAirportPair,
00081             *lFareDatePeriod_ptr);
00082     }
00083     // Sanity check.
00084     assert (lFareDatePeriod_ptr != NULL);
00085
00086     stdair::DatePeriod& lDateRange = *lFareDatePeriod_ptr;
00087     // Generate the point_of_sale-channel object corresponding to
00088     // the given fareRule.
00089     createPOSSChannel (lDateRange, iFareRuleStruct);
00090 }
00091
00092 // //////////////////////////////////////
00093 void FareRuleGenerator::
00094 createPOSSChannel (stdair::DatePeriod& iDatePeriod,
00095     const FareRuleStruct& iFareRuleStruct) {
00096
00097     // Create the point-of-sale-channel primary key.
00098     const stdair::CityCode_T& lPosition = iFareRuleStruct.getPOS ();
00099     const stdair::ChannelLabel_T& lChannel =
00100         iFareRuleStruct.getChannel ();
00101     const stdair::PosChannelKey lFarePosChannelKey (lPosition, lChannel);
00102
00103     // Check that the point_of_sale-channel object is not already existing.
00104     // If a point_of_sale-channel object with the same key has not already
00105     // been created, create it and link it to the date-period object.
00106     stdair::PosChannel* lFarePosChannel_ptr = stdair::BomManager::
00107         getObjectPtr<stdair::PosChannel> (iDatePeriod,
00108             lFarePosChannelKey.toString());
00109     if (lFarePosChannel_ptr == NULL) {
00110         lFarePosChannel_ptr = &stdair::FacBom<stdair::PosChannel>::instance().
00111             create (lFarePosChannelKey);
00112         stdair::FacBomManager::addToListAndMap (iDatePeriod,
00113             *lFarePosChannel_ptr);
00114         stdair::FacBomManager::linkWithParent (iDatePeriod,
00115             *lFarePosChannel_ptr);
00116     }
00117     // Sanity check.
00118     assert (lFarePosChannel_ptr != NULL);
00119
00120     stdair::PosChannel& lPosChannel = *lFarePosChannel_ptr;
00121     // Generate the time-period object corresponding to the given
00122     // fareRule.
00123     createTimeRange (lPosChannel, iFareRuleStruct);
00124 }
00125
00126 }
00127
00128

```

```

00129 //////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
00130 void FareRuleGenerator::
00131 createTimeRange (stdair::PosChannel& iPosChannel,
00132                 const FareRuleStruct& iFareRuleStruct) {
00133
00134     // Create the fare time-period primary key.
00135     const stdair::Time_T& lTimeRangeStart =
00136         iFareRuleStruct.getTimeRangeStart ();
00137     const stdair::Time_T& lTimeRangeEnd =
00138         iFareRuleStruct.getTimeRangeEnd ();
00139     const stdair::TimePeriodKey lFareTimePeriodKey (lTimeRangeStart,
00140                                                     lTimeRangeEnd);
00141
00142     // Check that the time-period object is not already existing.
00143     // If a time-period object with the same key has not already been
00144     // created, create it and link it to the point_of_sale-channel object.
00145
00146     stdair::TimePeriod* lFareTimePeriod_ptr = stdair::BomManager::
00147         getObjectPtr<stdair::TimePeriod> (iPosChannel,
00148                                           lFareTimePeriodKey.toString());
00149     if (lFareTimePeriod_ptr == NULL) {
00150         lFareTimePeriod_ptr = &stdair::FacBom<stdair::TimePeriod>::instance().
00151             create (lFareTimePeriodKey);
00152         stdair::FacBomManager::addToListAndMap (iPosChannel,
00153                                                 *lFareTimePeriod_ptr);
00154         stdair::FacBomManager::linkWithParent (iPosChannel,
00155                                                 *lFareTimePeriod_ptr);
00156     }
00157     // Sanity check.
00158     assert (lFareTimePeriod_ptr != NULL);
00159
00160     stdair::TimePeriod& lTimeRange = *lFareTimePeriod_ptr;
00161     // Generate the fare-features object corresponding to the given
00162     // fareRule.
00163     createFareFeatures (lTimeRange, iFareRuleStruct);
00164 }
00165
00166 //////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
00167 void FareRuleGenerator::
00168 createFareFeatures (stdair::TimePeriod& iTimePeriod,
00169                   const FareRuleStruct& iFareRuleStruct) {
00170
00171     // Create the fare-features primary key.
00172     const stdair::TripType_T& lTripType =
00173         iFareRuleStruct.getTripType ();
00174     const stdair::DayDuration_T& lAdvancePurchase =
00175         iFareRuleStruct.getAdvancePurchase ();
00176     const stdair::SaturdayStay_T& lSaturdayStay =
00177         iFareRuleStruct.getSaturdayStay ();
00178     const stdair::ChangeFees_T& lChangeFees =
00179         iFareRuleStruct.getChangeFees ();
00180     const stdair::NonRefundable_T& lNonRefundable =
00181         iFareRuleStruct.getNonRefundable ();
00182     const stdair::DayDuration_T& lMinimumStay =
00183         iFareRuleStruct.getMinimumStay ();
00184     const stdair::FareFeaturesKey
00185         lFareFeaturesKey (lTripType, lAdvancePurchase, lSaturdayStay,
00186                         lChangeFees, lNonRefundable, lMinimumStay);
00187
00188     // Check that the fare features object is not already existing.
00189     // If a fare features object with the same key has not already been

```

```

00190     // created, create it and link it to the time-period object.
00191     stdair::FareFeatures* lFareFeatures_ptr = stdair::BomManager::
00192         getObjectPtr<stdair::FareFeatures> (iTimePeriod,
00193             lFareFeaturesKey.toString());
00194     if (lFareFeatures_ptr == NULL) {
00195         lFareFeatures_ptr = &stdair::FacBom<stdair::FareFeatures>::instance().
00196             create (lFareFeaturesKey);
00197         assert(lFareFeatures_ptr != NULL);
00198         stdair::FacBomManager::addToListAndMap (iTimePeriod,
00199             *lFareFeatures_ptr);
00200         stdair::FacBomManager::linkWithParent (iTimePeriod,
00201             *lFareFeatures_ptr);
00202     }
00203     // Sanity check.
00204     assert(lFareFeatures_ptr != NULL);
00205
00206     stdair::FareFeatures& lFareFeatures = *lFareFeatures_ptr;
00207     // Generate the airline-class list object corresponding to the
00208     // given fareRule
00209     createAirlineClassList (lFareFeatures, iFareRuleStruct);
00210
00211 }
00212
00213 // //////////////////////////////////////
00214 void FareRuleGenerator::
00215     createAirlineClassList (stdair::FareFeatures& iFareFeatures,
00216         const FareRuleStruct& iFareRuleStruct) {
00217
00218     // Create the AirlineClassList primary key.
00219     const unsigned int lAirlineListSize =
00220         iFareRuleStruct.getAirlineListSize();
00221     const unsigned int lClassCodeListSize =
00222         iFareRuleStruct.getClassCodeListSize();
00223     assert (lAirlineListSize == lClassCodeListSize);
00224     const stdair::AirlineClassListKey
00225         lAirlineClassListKey (iFareRuleStruct.getAirlineList(),
00226             iFareRuleStruct.getClassCodeList());
00227     const stdair::Fare_T& lFare = iFareRuleStruct.getFare ();
00228
00229     // Create the airline class list object and link it to the fare features
00230     // object.
00231     stdair::AirlineClassList* lAirlineClassList_ptr =
00232         &stdair::FacBom<stdair::AirlineClassList>::instance().
00233             create (lAirlineClassListKey);
00234     lAirlineClassList_ptr->setFare(lFare);
00235     stdair::FacBomManager::addToListAndMap (iFareFeatures,
00236         *lAirlineClassList_ptr);
00237     stdair::FacBomManager::linkWithParent (iFareFeatures,
00238         *lAirlineClassList_ptr);
00239 }
00240
00241 }
00242

```

25.41 simfqt/command/FareRuleGenerator.hpp File Reference

```
#include <stdair/command/CmdAbstract.hpp>
```

```
#include <simfqt/SIMFQT_Types.hpp>
```

Classes

- class [SIMFQT::FareRuleGenerator](#)

Namespaces

- namespace [stdair](#)
Forward declarations.
- namespace [SIMFQT](#)
- namespace [SIMFQT::FareParserHelper](#)

25.42 FareRuleGenerator.hpp

```

00001 #ifndef __SIMFQT_CMD_FARERULEGENERATOR_HPP
00002 #define __SIMFQT_CMD_FARERULEGENERATOR_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // StdAir
00008 #include <stdair/command/CmdAbstract.hpp>
00009 // Simfqt
00010 #include <simfqt/SIMFQT_Types.hpp>
00011
00012 // Forward declarations
00013 namespace stdair {
00014     class BomRoot;
00015     class FareRule;
00016     class AirportPair;
00017     class DatePeriod;
00018     class PosChannel;
00019     class TimePeriod;
00020     class FareFeatures;
00021     class AirlineClassList;
00022 }
00023
00024 namespace SIMFQT {
00025
00026     // Forward declarations
00027     struct FareRuleStruct;
00028     namespace FareParserHelper {
00029         struct doEndFare;
00030     }
00031
00032     class FareRuleGenerator : public stdair::CmdAbstract {
00033
00034         // Only the following class may use methods of FareGenerator.
00035         // Indeed, as those methods build the BOM, it is not good to expose
00036         // them public.
00037         friend class FareFileParser;
00038         friend struct FareParserHelper::doEndFare;
00039         friend class FareParser;
00040
00041     private:
00042
00043         static void createAirportPair (stdair::BomRoot&,
00044                                         const FareRuleStruct&);

```

```

00054
00063     static void createDateRange (stdair::AirportPair&,
00064                                 const FareRuleStruct&);
00065
00074     static void createPOSChannel (stdair::DatePeriod&,
00075                                 const FareRuleStruct&);
00076
00085     static void createTimeRange (stdair::PosChannel&,
00086                                 const FareRuleStruct&);
00087
00096     static void createFareFeatures (stdair::TimePeriod&,
00097                                    const FareRuleStruct&);
00098
00107     static void createAirlineClassList (stdair::FareFeatures&,
00108                                         const FareRuleStruct&);
00109
00110
00111
00112 };
00113
00114 }
00115 #endif // __SIMFQT_CMD_FARERULEGENERATOR_HPP

```

25.43 simfqt/config/simfqt-paths.hpp File Reference

Defines

- #define [PACKAGE](#) "simfqt"
- #define [PACKAGE_NAME](#) "SIMFQT"
- #define [PACKAGE_VERSION](#) "0.1.3"
- #define [PREFIXDIR](#) "/usr"
- #define [EXEC_PREFIX](#) "/usr"
- #define [BINDIR](#) "/usr/bin"
- #define [LIBDIR](#) "/usr/lib64"
- #define [LIBEXECDIR](#) "/usr/libexec"
- #define [SBINDIR](#) "/usr/sbin"
- #define [SYSCONFDIR](#) "/usr/etc"
- #define [INCLUDEDIR](#) "/usr/include"
- #define [DATAROOTDIR](#) "/usr/share"
- #define [DATADIR](#) "/usr/share"
- #define [DOCDIR](#) "/usr/share/doc/simfqt-0.1.3"
- #define [MANDIR](#) "/usr/share/man"
- #define [INFODIR](#) "/usr/share/info"
- #define [HTMLDIR](#) "/usr/share/doc/simfqt-0.1.3/html"
- #define [PDFDIR](#) "/usr/share/doc/simfqt-0.1.3/html"
- #define [STDAIR_SAMPLE_DIR](#) "/usr/share/stdair/samples"

25.43.1 Define Documentation

25.43.1.1 #define [PACKAGE](#) "simfqt"

Definition at line 4 of file [simfqt-paths.hpp](#).

25.43.1.2 `#define PACKAGE_NAME "SIMFQT"`

Definition at line 5 of file [simfqt-paths.hpp](#).

Referenced by [readConfiguration\(\)](#).

25.43.1.3 `#define PACKAGE_VERSION "0.1.3"`

Definition at line 6 of file [simfqt-paths.hpp](#).

Referenced by [readConfiguration\(\)](#).

25.43.1.4 `#define PREFIXDIR "/usr"`

Definition at line 7 of file [simfqt-paths.hpp](#).

Referenced by [readConfiguration\(\)](#).

25.43.1.5 `#define EXEC_PREFIX "/usr"`

Definition at line 8 of file [simfqt-paths.hpp](#).

25.43.1.6 `#define BINDIR "/usr/bin"`

Definition at line 9 of file [simfqt-paths.hpp](#).

25.43.1.7 `#define LIBDIR "/usr/lib64"`

Definition at line 10 of file [simfqt-paths.hpp](#).

25.43.1.8 `#define LIBEXECDIR "/usr/libexec"`

Definition at line 11 of file [simfqt-paths.hpp](#).

25.43.1.9 `#define SBINDIR "/usr/sbin"`

Definition at line 12 of file [simfqt-paths.hpp](#).

25.43.1.10 `#define SYSCONFDIR "/usr/etc"`

Definition at line 13 of file [simfqt-paths.hpp](#).

25.43.1.11 `#define INCLUDEDIR "/usr/include"`

Definition at line 14 of file [simfqt-paths.hpp](#).

25.43.1.12 `#define DATAROOTDIR "/usr/share"`

Definition at line 15 of file [simfqt-paths.hpp](#).

25.43.1.13 `#define DATADIR "/usr/share"`

Definition at line 16 of file [simfqt-paths.hpp](#).

25.43.1.14 `#define DOCDIR "/usr/share/doc/simfqt-0.1.3"`

Definition at line 17 of file [simfqt-paths.hpp](#).

25.43.1.15 `#define MANDIR "/usr/share/man"`

Definition at line 18 of file [simfqt-paths.hpp](#).

25.43.1.16 `#define INFODIR "/usr/share/info"`

Definition at line 19 of file [simfqt-paths.hpp](#).

25.43.1.17 `#define HTMLDIR "/usr/share/doc/simfqt-0.1.3/html"`

Definition at line 20 of file [simfqt-paths.hpp](#).

25.43.1.18 `#define PDFDIR "/usr/share/doc/simfqt-0.1.3/html"`

Definition at line 21 of file [simfqt-paths.hpp](#).

25.43.1.19 `#define STDAIR_SAMPLE_DIR "/usr/share/stdair/samples"`

Definition at line 22 of file [simfqt-paths.hpp](#).

25.44 simfqt-paths.hpp

```
00001 #ifndef __SIMFQT_PATHS_HPP__
00002 #define __SIMFQT_PATHS_HPP__
00003
00004 #define PACKAGE "simfqt"
00005 #define PACKAGE_NAME "SIMFQT"
00006 #define PACKAGE_VERSION "0.1.3"
00007 #define PREFIXDIR "/usr"
00008 #define EXEC_PREFIX "/usr"
00009 #define BINDIR "/usr/bin"
00010 #define LIBDIR "/usr/lib64"
00011 #define LIBEXECDIR "/usr/libexec"
00012 #define SBINDIR "/usr/sbin"
00013 #define SYSCONFDIR "/usr/etc"
00014 #define INCLUDEDIR "/usr/include"
00015 #define DATAROOTDIR "/usr/share"
00016 #define DATADIR "/usr/share"
00017 #define DOCDIR "/usr/share/doc/simfqt-0.1.3"
00018 #define MANDIR "/usr/share/man"
00019 #define INFODIR "/usr/share/info"
00020 #define HTMLDIR "/usr/share/doc/simfqt-0.1.3/html"
00021 #define PDFDIR "/usr/share/doc/simfqt-0.1.3/html"
00022 #define STDAIR_SAMPLE_DIR "/usr/share/stdair/samples"
00023
00024 #endif // __SIMFQT_PATHS_HPP__
```

25.45 simfqt/factory/FacSimfqtServiceContext.cpp File Reference

```
#include <cassert>
```

```
#include <stdair/service/FacSupervisor.hpp>
#include <simfqt/factory/FacSimfqtServiceContext.hpp>
#include <simfqt/service/SIMFQT_ServiceContext.hpp>
```

Namespaces

- namespace [SIMFQT](#)

25.46 FacSimfqtServiceContext.cpp

```
00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 // StdAir
00007 #include <stdair/service/FacSupervisor.hpp>
00008 // SimFQT
00009 #include <simfqt/factory/FacSimfqtServiceContext.hpp>
00010 #include <simfqt/service/SIMFQT_ServiceContext.hpp>
00011
00012 namespace SIMFQT {
00013
00014     FacSimfqtServiceContext* FacSimfqtServiceContext::_instance = NULL;
00015
00016     // //////////////////////////////////////
00017     FacSimfqtServiceContext::~FacSimfqtServiceContext() {
00018         _instance = NULL;
00019     }
00020
00021     // //////////////////////////////////////
00022     FacSimfqtServiceContext& FacSimfqtServiceContext::instance() {
00023
00024         if (_instance == NULL) {
00025             _instance = new FacSimfqtServiceContext();
00026             assert (_instance != NULL);
00027
00028             stdair::FacSupervisor::instance().registerServiceFactory (_instance);
00029         }
00030         return *_instance;
00031     }
00032
00033     // //////////////////////////////////////
00034     SIMFQT_ServiceContext& FacSimfqtServiceContext::create() {
00035         SIMFQT_ServiceContext* aServiceContext_ptr = NULL;
00036
00037         aServiceContext_ptr = new SIMFQT_ServiceContext();
00038         assert (aServiceContext_ptr != NULL);
00039
00040         // The new object is added to the Bom pool
00041         _pool.push_back (aServiceContext_ptr);
00042
00043         return *aServiceContext_ptr;
00044     }
00045
00046 }
```

25.47 simfqt/factory/FacSimfqtServiceContext.hpp File Reference

```
#include <string>
#include <stdair/stdair_basic_types.hpp>
#include <stdair/service/FacServiceAbstract.hpp>
```

Classes

- class [SIMFQT::FacSimfqtServiceContext](#)
Factory for the service context.

Namespaces

- namespace [SIMFQT](#)

25.48 FacSimfqtServiceContext.hpp

```
00001 #ifndef __SIMFQT_FAC_FACSIMFQTSERVICECONTEXT_HPP
00002 #define __SIMFQT_FAC_FACSIMFQTSERVICECONTEXT_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // STL
00008 #include <string>
00009 // StdAir
00010 #include <stdair/stdair_basic_types.hpp>
00011 #include <stdair/service/FacServiceAbstract.hpp>
00012
00013 namespace SIMFQT {
00014
00016     class SIMFQT_ServiceContext;
00017
00018
00022     class FacSimfqtServiceContext : public stdair::FacServiceAbstract {
00023     public:
00024
00031         static FacSimfqtServiceContext& instance();
00032
00039         ~FacSimfqtServiceContext ();
00040
00048         SIMFQT_ServiceContext& create();
00049
00050
00051     protected:
00057         FacSimfqtServiceContext() {}
00058
00059
00060     private:
00064         static FacSimfqtServiceContext* _instance;
00065     };
00066
00067 }
00068 #endif // __SIMFQT_FAC_FACSIMFQTSERVICECONTEXT_HPP
```

25.49 simfqt/service/SIMFQT_Service.cpp File Reference

```

#include <cassert>
#include <boost/make_shared.hpp>
#include <stdair/basic/BasChronometer.hpp>
#include <stdair/bom/BomDisplay.hpp>
#include <stdair/bom/TravelSolutionStruct.hpp>
#include <stdair/bom/BookingRequestStruct.hpp>
#include <stdair/service/Logger.hpp>
#include <stdair/STDAIR_Service.hpp>
#include <simfqt/basic/BasConst_SIMFQT_Service.hpp>
#include <simfqt/factory/FacSimfqtServiceContext.hpp>
#include <simfqt/command/FareParser.hpp>
#include <simfqt/command/FareQuoter.hpp>
#include <simfqt/service/SIMFQT_ServiceContext.hpp>
#include <simfqt/SIMFQT_Service.hpp>

```

Namespaces

- namespace [SIMFQT](#)

25.50 SIMFQT_Service.cpp

```

00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 // Boost
00007 #include <boost/make_shared.hpp>
00008 // StdAir
00009 #include <stdair/basic/BasChronometer.hpp>
00010 #include <stdair/bom/BomDisplay.hpp>
00011 #include <stdair/bom/TravelSolutionStruct.hpp>
00012 #include <stdair/bom/BookingRequestStruct.hpp>
00013 #include <stdair/service/Logger.hpp>
00014 #include <stdair/STDAIR_Service.hpp>
00015 // Simfqt
00016 #include <simfqt/basic/BasConst_SIMFQT_Service.hpp>
00017 #include <simfqt/factory/FacSimfqtServiceContext.hpp>
00018 #include <simfqt/command/FareParser.hpp>
00019 #include <simfqt/command/FareQuoter.hpp>
00020 #include <simfqt/service/SIMFQT_ServiceContext.hpp>
00021 #include <simfqt/SIMFQT_Service.hpp>
00022
00023 namespace SIMFQT {
00024

```

```

00025 // //////////////////////////////////////
00026 SIMFQT_Service::SIMFQT_Service() : _simfqtServiceContext (NULL) {
00027     assert (false);
00028 }
00029
00030 // //////////////////////////////////////
00031 SIMFQT_Service::SIMFQT_Service (const SIMFQT_Service& iService) {
00032     assert (false);
00033 }
00034
00035 // //////////////////////////////////////
00036 SIMFQT_Service::SIMFQT_Service (const stdair::BasLogParams& iLogParams)
00037     : _simfqtServiceContext (NULL) {
00038
00039     // Initialise the STDAIR service handler
00040     stdair::STDAIR_ServicePtr_T lSTDAIR_Service_ptr =
00041         initStdAirService (iLogParams);
00042
00043     // Initialise the service context
00044     initServiceContext();
00045
00046     // Add the StdAir service context to the SIMFQT service context
00047     // \note SIMFQT owns the STDAIR service resources here.
00048     const bool ownStdairService = true;
00049     addStdAirService (lSTDAIR_Service_ptr, ownStdairService);
00050
00051     // Initialise the (remaining of the) context
00052     initSimfqtService();
00053 }
00054
00055 // //////////////////////////////////////
00056 SIMFQT_Service::SIMFQT_Service (const stdair::BasLogParams& iLogParams,
00057                                 const stdair::BasDBParams& iDBParams)
00058     : _simfqtServiceContext (NULL) {
00059
00060     // Initialise the STDAIR service handler
00061     stdair::STDAIR_ServicePtr_T lSTDAIR_Service_ptr =
00062         initStdAirService (iLogParams, iDBParams);
00063
00064     // Initialise the service context
00065     initServiceContext();
00066
00067     // Add the StdAir service context to the SIMFQT service context
00068     // \note SIMFQT owns the STDAIR service resources here.
00069     const bool ownStdairService = true;
00070     addStdAirService (lSTDAIR_Service_ptr, ownStdairService);
00071
00072     // Initialise the (remaining of the) context
00073     initSimfqtService();
00074 }
00075
00076 // //////////////////////////////////////
00077 SIMFQT_Service::
00078 SIMFQT_Service (stdair::STDAIR_ServicePtr_T ioSTDAIR_Service_ptr)
00079     : _simfqtServiceContext (NULL) {
00080
00081     // Initialise the service context
00082     initServiceContext();
00083
00084     // Store the STDAIR service object within the (SIMFQT) service context
00085     // \note Simfqt does not own the STDAIR service resources here.
00086     const bool doesNotOwnStdairService = false;

```

```

00087     addStdAirService (ioSTDAIR_Service_ptr, doesNotOwnStdairService);
00088
00089     // Initialise the context
00090     initSimfqtService();
00091 }
00092
00093 // //////////////////////////////////////
00094 SIMFQT_Service::~SIMFQT_Service() {
00095     // Delete/Clean all the objects from memory
00096     finalise();
00097 }
00098
00099 // //////////////////////////////////////
00100 void SIMFQT_Service::finalise() {
00101     assert (_simfqtServiceContext != NULL);
00102     // Reset the (Boost.)Smart pointer pointing on the STDAIR_Service object.
00103     _simfqtServiceContext->reset();
00104 }
00105
00106 // //////////////////////////////////////
00107 void SIMFQT_Service::initServiceContext() {
00108     // Initialise the service context
00109     SIMFQT_ServiceContext& lSIMFQT_ServiceContext =
00110         FacSimfqtServiceContext::instance().create();
00111     _simfqtServiceContext = &lSIMFQT_ServiceContext;
00112 }
00113
00114 // //////////////////////////////////////
00115 void SIMFQT_Service::
00116 addStdAirService (stdair::STDAIR_ServicePtr_T ioSTDAIR_Service_ptr,
00117                  const bool iOwnStdairService) {
00118
00119     // Retrieve the SimFQT service context
00120     assert (_simfqtServiceContext != NULL);
00121     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00122
00123     // Store the STDAIR service object within the (SimFQT) service context
00124     lSIMFQT_ServiceContext.setSTDAIR_Service (ioSTDAIR_Service_ptr,
00125                                              iOwnStdairService);
00126 }
00127
00128 // //////////////////////////////////////
00129 stdair::STDAIR_ServicePtr_T SIMFQT_Service::
00130 initStdAirService (const stdair::BasLogParams& iLogParams,
00131                   const stdair::BasDBParams& iDBParams) {
00132
00133     stdair::STDAIR_ServicePtr_T lSTDAIR_Service_ptr =
00134         boost::make_shared<stdair::STDAIR_Service> (iLogParams, iDBParams);
00135     assert (lSTDAIR_Service_ptr != NULL);
00136
00137     return lSTDAIR_Service_ptr;
00138 }
00139
00140 // //////////////////////////////////////
00141 stdair::STDAIR_ServicePtr_T SIMFQT_Service::
00142 initStdAirService (const stdair::BasLogParams& iLogParams) {
00143
00144     stdair::STDAIR_ServicePtr_T lSTDAIR_Service_ptr =
00145         boost::make_shared<stdair::STDAIR_Service> (iLogParams);
00146     assert (lSTDAIR_Service_ptr != NULL);
00147
00148     return lSTDAIR_Service_ptr;
00149 }

```

Generated on Mon Dec 5 2011 21:12:44 for SimFQT by Doxygen


```

00240     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00241
00242     // Retrieve the STDAIR service object from the (Simfqt) service context
00243     stdair::STDAIR_Service& lSTDAIR_Service =
00244         lSIMFQT_ServiceContext.getSTDAIR_Service();
00245
00246     // Delegate the BOM building to the dedicated service
00247     stdair::BookingRequestStruct oBookingRequest =
00248         lSTDAIR_Service.buildSampleBookingRequest (isForCRS);
00249
00250     return oBookingRequest;
00251 }
00252
00253 // //////////////////////////////////////
00254 void SIMFQT_Service::
00255 buildSampleTravelSolutions(stdair::TravelSolutionList_T& ioTravelSolutionList){

00256
00257     // Retrieve the SIMFQT service context
00258     if (_simfqtServiceContext == NULL) {
00259         throw stdair::NonInitialisedServiceException ("The Simfqt service has not "
00260
00261                                                         "been initialised");
00262     }
00263     assert (_simfqtServiceContext != NULL);
00264
00265     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00266
00267     // Retrieve the STDAIR service object from the (Simfqt) service context
00268     stdair::STDAIR_Service& lSTDAIR_Service =
00269         lSIMFQT_ServiceContext.getSTDAIR_Service();
00270
00271     // Delegate the BOM building to the dedicated service
00272     lSTDAIR_Service.buildSampleTravelSolutionForPricing (ioTravelSolutionList);
00273 }
00274
00275 // //////////////////////////////////////
00276 std::string SIMFQT_Service::csvDisplay() const {
00277
00278     // Retrieve the SIMFQT service context
00279     if (_simfqtServiceContext == NULL) {
00280         throw stdair::NonInitialisedServiceException ("The SimFQT service "
00281                                                         "has not been initialised");
00282     }
00283     assert (_simfqtServiceContext != NULL);
00284
00285     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00286
00287     // Retrieve the STDAIR service object from the (SimFQT) service context
00288     stdair::STDAIR_Service& lSTDAIR_Service =
00289         lSIMFQT_ServiceContext.getSTDAIR_Service();
00290
00291     // Get the root of the BOM tree, on which all of the other BOM objects
00292     // are attached
00293     stdair::BomRoot& lBomRoot = lSTDAIR_Service.getBomRoot();
00294
00295     // Delegate the BOM display to the dedicated service
00296     std::ostream oCSVStr;
00297     stdair::BomDisplay::csvSimFQTAirRACDisplay (oCSVStr, lBomRoot);
00298     return oCSVStr.str();
00299 }

```

```

00300
00301 // //////////////////////////////////////
00302 std::string SIMFQT_Service::
00303 csvDisplay (const stdair::TravelSolutionList_T& ioTravelSolutionList) const {
00304
00305     // Retrieve the Simfqt service context
00306     if (_simfqtServiceContext == NULL) {
00307         throw stdair::NonInitialisedServiceException ("The Simfqt service has not "
00308
00309                                                         "been initialised");
00310     }
00311     assert (_simfqtServiceContext != NULL);
00312
00313     // Retrieve the Simfqt service context
00314     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00315
00316     // Retrieve the STDAIR service object from the (Simfqt) service context
00317     stdair::STDAIR_Service& lSTDAIR_Service =
00318         lSIMFQT_ServiceContext.getSTDAIR_Service();
00319
00320     // Delegate the BOM building to the dedicated service
00321     return lSTDAIR_Service.csvDisplay (ioTravelSolutionList);
00322 }
00323 // //////////////////////////////////////
00324 std::string SIMFQT_Service::
00325 csvDisplay (const stdair::AirportCode_T& iOrigin,
00326             const stdair::AirportCode_T& iDestination,
00327             const stdair::Date_T& iDepartureDate) const {
00328
00329     // Retrieve the SIMFQT service context
00330     if (_simfqtServiceContext == NULL) {
00331         throw stdair::NonInitialisedServiceException ("The Simfqt service "
00332                                                         "has not been initialised");
00333     }
00334     assert (_simfqtServiceContext != NULL);
00335
00336     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00337
00338     // Retrieve the STDAIR service object from the (SIMFQT) service context
00339     stdair::STDAIR_Service& lSTDAIR_Service =
00340         lSIMFQT_ServiceContext.getSTDAIR_Service();
00341
00342     // Delegate the BOM display to the dedicated service
00343     return lSTDAIR_Service.csvDisplay (iOrigin, iDestination,
00344                                         iDepartureDate);
00345 }
00346 // //////////////////////////////////////
00347 std::string SIMFQT_Service::list() const {
00348
00349     // Retrieve the SIMFQT service context
00350     if (_simfqtServiceContext == NULL) {
00351         throw stdair::NonInitialisedServiceException ("The Simfqt service "
00352                                                         "has not been initialised");
00353     }
00354     assert (_simfqtServiceContext != NULL);
00355
00356     SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00357
00358     // Retrieve the STDAIR service object from the (SIMFQT) service context
00359     stdair::STDAIR_Service& lSTDAIR_Service =
00360

```

```

00361         lSIMFQT_ServiceContext.getSTDAIR_Service();
00362
00363         // Delegate the BOM display to the dedicated service
00364         return lSTDAIR_Service.listAirportPairDateRange ();
00365     }
00366
00367     // //////////////////////////////////////
00368     bool SIMFQT_Service::
00369     check (const stdair::AirportCode_T& iOrigin,
00370           const stdair::AirportCode_T& iDestination,
00371           const stdair::Date_T& iDepartureDate) const {
00372         std::ostringstream oFlightListStr;
00373
00374         if (_simfqtServiceContext == NULL) {
00375             throw stdair::NonInitialisedServiceException ("The Simfqt service "
00376                                                         "has not been initialised");
00377         }
00378         assert (_simfqtServiceContext != NULL);
00379         SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00380
00381         // Retrieve the STDAIR service object from the (SIMFQT) service context
00382         stdair::STDAIR_Service& lSTDAIR_Service =
00383             lSIMFQT_ServiceContext.getSTDAIR_Service();
00384
00385         // Delegate the BOM display to the dedicated service
00386         return lSTDAIR_Service.check (iOrigin, iDestination, iDepartureDate);
00387     }
00388
00389     // //////////////////////////////////////
00390     void SIMFQT_Service::
00391     quotePrices (const stdair::BookingRequestStruct& iBookingRequest,
00392                stdair::TravelSolutionList_T& ioTravelSolutionList) {
00393
00394         // Retrieve the Simfqt service context
00395         if (_simfqtServiceContext == NULL) {
00396             throw stdair::NonInitialisedServiceException ("The SimFQT service "
00397                                                         "has not been initialised");
00398         }
00399         assert (_simfqtServiceContext != NULL);
00400
00401         SIMFQT_ServiceContext& lSIMFQT_ServiceContext = *_simfqtServiceContext;
00402
00403         // Retrieve the StdAir service context
00404         stdair::STDAIR_Service& lSTDAIR_Service =
00405             lSIMFQT_ServiceContext.getSTDAIR_Service();
00406
00407         // Get the root of the BOM tree, on which all of the other BOM objects
00408         // will be attached
00409         stdair::BomRoot& lBomRoot = lSTDAIR_Service.getBomRoot();
00410
00411         // Delegate the action to the dedicated command
00412         stdair::BasChronometer lFareQuoteRetrievalChronometer;
00413         lFareQuoteRetrievalChronometer.start();
00414         FareQuoter::priceQuote (iBookingRequest, ioTravelSolutionList, lBomRoot);
00415
00416         // DEBUG
00417         const double lFareQuoteRetrievalMeasure =
00418             lFareQuoteRetrievalChronometer.elapsed();
00419         STDAIR_LOG_DEBUG ("Fare Quote retrieving: " << lFareQuoteRetrievalMeasure
00420                        << " - " << lSIMFQT_ServiceContext.display());
00421     }
00422

```

```
00423 }
```

25.51 simfqt/service/SIMFQT_ServiceContext.cpp File Reference

```
#include <cassert>
#include <sstream>
#include <simfqt/basic/BasConst_SIMFQT_Service.hpp>
#include <simfqt/service/SIMFQT_ServiceContext.hpp>
```

Namespaces

- namespace [SIMFQT](#)

25.52 SIMFQT_ServiceContext.cpp

```
00001 // //////////////////////////////////////
00002 // Import section
00003 // //////////////////////////////////////
00004 // STL
00005 #include <cassert>
00006 #include <sstream>
00007 // SimFQT
00008 #include <simfqt/basic/BasConst_SIMFQT_Service.hpp>
00009 #include <simfqt/service/SIMFQT_ServiceContext.hpp>
00010
00011 namespace SIMFQT {
00012
00013 // //////////////////////////////////////
00014 SIMFQT_ServiceContext::SIMFQT_ServiceContext() : _ownStdairService (false) {
00015 }
00016
00017 // //////////////////////////////////////
00018 SIMFQT_ServiceContext::SIMFQT_ServiceContext (const SIMFQT_ServiceContext&) {
00019     assert (false);
00020 }
00021
00022 // //////////////////////////////////////
00023 SIMFQT_ServiceContext::~SIMFQT_ServiceContext () {
00024 }
00025
00026 // //////////////////////////////////////
00027 stdair::STDAIR_Service& SIMFQT_ServiceContext::getSTDAIR_Service() const {
00028     assert (_stdairService != NULL);
00029     return *_stdairService;
00030 }
00031
00032 // //////////////////////////////////////
00033 const std::string SIMFQT_ServiceContext::shortDisplay() const {
00034     std::ostringstream oStr;
00035     oStr << "SIMFQT_ServiceContext -- Owns StdAir service: "
00036         << _ownStdairService;
00037     return oStr.str();
00038 }
00039
```

```

00040 // //////////////////////////////////////
00041 const std::string SIMFQT_ServiceContext::display() const {
00042     std::ostringstream ostr;
00043     ostr << shortDisplay();
00044     return ostr.str();
00045 }
00046
00047 // //////////////////////////////////////
00048 const std::string SIMFQT_ServiceContext::describe() const {
00049     return shortDisplay();
00050 }
00051
00052 // //////////////////////////////////////
00053 void SIMFQT_ServiceContext::reset() {
00054     if (_ownStdairService == true) {
00055         _stdairService.reset();
00056     }
00057 }
00058
00059 }

```

25.53 simfqt/service/SIMFQT_ServiceContext.hpp File Reference

```

#include <string>

#include <stdair/stdair_service_types.hpp>

#include <stdair/service/ServiceAbstract.hpp>

#include <simfqt/SIMFQT_Types.hpp>

```

Classes

- class [SIMFQT::SIMFQT_ServiceContext](#)
Class holding the context of the SimFQT services.

Namespaces

- namespace [stdair](#)
Forward declarations.
- namespace [SIMFQT](#)

25.54 SIMFQT_ServiceContext.hpp

```

00001 #ifndef __SIMFQT_SVC_SIMFQTSERVICECONTEXT_HPP
00002 #define __SIMFQT_SVC_SIMFQTSERVICECONTEXT_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // STL
00008 #include <string>
00009 // StdAir

```

```

00010 #include <stdair/stdair_service_types.hpp>
00011 #include <stdair/service/ServiceAbstract.hpp>
00012 // SimFQT
00013 #include <simfqt/SIMFQT_Types.hpp>
00014
00016 namespace stdair {
00017     class STDAIR_Service;
00018 }
00019
00020 namespace SIMFQT {
00021
00025     class SIMFQT_ServiceContext : public stdair::ServiceAbstract {
00031         friend class SIMFQT_Service;
00032         friend class FacSimfqtServiceContext;
00033
00034     private:
00035         // ////////// Getters //////////
00039         stdair::STDAIR_ServicePtr_T getSTDAIR_ServicePtr() const {
00040             return _stdairService;
00041         }
00042
00046         stdair::STDAIR_Service& getSTDAIR_Service() const;
00047
00051         const bool getOwnStdairServiceFlag() const {
00052             return _ownStdairService;
00053         }
00054
00055     private:
00056         // ////////// Setters //////////
00061         void setSTDAIR_Service (stdair::STDAIR_ServicePtr_T ioSTDAIR_ServicePtr,
00062                                 const bool iOwnStdairService) {
00063             _stdairService = ioSTDAIR_ServicePtr;
00064             _ownStdairService = iOwnStdairService;
00065         }
00066
00070         void reset();
00071
00072     private:
00073         // ////////// Display Methods //////////
00074         const std::string shortDisplay() const;
00075
00079         const std::string display() const;
00084
00088         const std::string describe() const;
00089
00090     private:
00091         // ////////// Construction / initialisation //////////
00092         SIMFQT_ServiceContext (const FareQuoteID_T&);
00093
00097         SIMFQT_ServiceContext ();
00102
00106         SIMFQT_ServiceContext (const SIMFQT_ServiceContext&);
00107
00111         ~SIMFQT_ServiceContext ();
00112
00113     private:
00114         // ////////// Children //////////
00115         stdair::STDAIR_ServicePtr_T _stdairService;

```

```

00120
00124     bool _ownStdairService;
00125 };
00126
00127 }
00128 #endif // __SIMFQT_SVC_SIMFQTSERVICECONTEXT_HPP

```

25.55 simfqt/SIMFQT_Service.hpp File Reference

```

#include <stdair/stdair_basic_types.hpp>
#include <stdair/stdair_service_types.hpp>
#include <stdair/bom/TravelSolutionTypes.hpp>
#include <simfqt/SIMFQT_Types.hpp>

```

Classes

- class [SIMFQT::SIMFQT_Service](#)
Interface for the [SIMFQT](#) Services.

Namespaces

- namespace [stdair](#)
Forward declarations.
- namespace [SIMFQT](#)

25.56 SIMFQT_Service.hpp

```

00001 #ifndef __SIMFQT_SVC_SIMFQT_SERVICE_HPP
00002 #define __SIMFQT_SVC_SIMFQT_SERVICE_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // StdAir
00008 #include <stdair/stdair_basic_types.hpp>
00009 #include <stdair/stdair_service_types.hpp>
00010 #include <stdair/bom/TravelSolutionTypes.hpp>
00011 // SimFQT
00012 #include <simfqt/SIMFQT_Types.hpp>
00013
00015 namespace stdair {
00016     class STDAIR_Service;
00017     struct BookingRequestStruct;
00018     struct BasLogParams;
00019     struct BasDBParams;
00020 }
00021
00022 namespace SIMFQT {
00023
00025     class SIMFQT_ServiceContext;

```

```

00026
00027
00031  class SIMFQT_Service {
00032  public:
00033
00034      // ////////////////////////////////// Constructors and Destructors //////////////////////////////////
00046      SIMFQT_Service (const stdair::BasLogParams&);
00047
00060      SIMFQT_Service (const stdair::BasLogParams&, const stdair::BasDBParams&);
00061
00077      SIMFQT_Service (stdair::STDAIR_ServicePtr_T ioSTDAIR_ServicePtr);
00078
00087      void parseAndLoad (const FareFilePath& iFareFilename);
00088
00092      ~SIMFQT_Service();
00093
00094
00095  public:
00096      // ////////////////////////////////// Business Methods //////////////////////////////////
00108      void buildSampleBom();
00109
00116      stdair::BookingRequestStruct buildBookingRequest(const bool isForCRS = false)
;
00117
00135      void buildSampleTravelSolutions (stdair::TravelSolutionList_T&);
00136
00146      void quotePrices (const stdair::BookingRequestStruct&,
00147                      stdair::TravelSolutionList_T&);
00148
00149
00150  public:
00151      // ////////////////////////////////// Display support methods //////////////////////////////////
00159      std::string csvDisplay() const;
00160
00168      std::string csvDisplay (const stdair::TravelSolutionList_T&) const;
00169
00182      std::string csvDisplay (const stdair::AirportCode_T& ioOrigin,
00183                          const stdair::AirportCode_T& ioDestination,
00184                          const stdair::Date_T& ioDepartureDate) const;
00185
00194      std::string list() const;
00195
00208      bool check (const stdair::AirportCode_T& ioOrigin,
00209                const stdair::AirportCode_T& ioDestination,
00210                const stdair::Date_T& ioDepartureDate) const;
00211
00212  private:
00213      // ////////////////////////////////// Construction and Destruction helper methods //////////////////////////////////
00217      SIMFQT_Service();
00218
00222      SIMFQT_Service (const SIMFQT_Service&);
00223
00233      stdair::STDAIR_ServicePtr_T initStdAirService (const stdair::BasLogParams&,
00234                                                  const stdair::BasDBParams&);
00235
00244      stdair::STDAIR_ServicePtr_T initStdAirService (const stdair::BasLogParams&);
00245
00254      void addStdAirService (stdair::STDAIR_ServicePtr_T ioSTDAIR_ServicePtr,
00255                          const bool iOwnStdairService);
00256
00261      void initServiceContext();
00262

```



```

00269     void initSimfqtService();
00270
00279     void initSimfqtService (const FareFilePath& iFareFilename);
00280
00284     void finalise();
00285
00286
00287     private:
00288         // ////////// Service Context //////////
00292         SIMFQT_ServiceContext* _simfqtServiceContext;
00293     };
00294 }
00295 #endif // __SIMFQT_SVC_SIMFQT_SERVICE_HPP

```

25.57 simfqt/SIMFQT_Types.hpp File Reference

```

#include <vector>
#include <string>
#include <boost/shared_ptr.hpp>
#include <stdair/stdair_exceptions.hpp>
#include <stdair/stdair_file.hpp>

```

Classes

- class [SIMFQT::FareFileParsingFailedException](#)
- class [SIMFQT::AirportPairNotFoundException](#)
- class [SIMFQT::PosOrChannelNotFoundException](#)
- class [SIMFQT::FlightDateNotFoundException](#)
- class [SIMFQT::FlightTimeNotFoundException](#)
- class [SIMFQT::FeaturesNotFoundException](#)
- class [SIMFQT::AirlineNotFoundException](#)
- class [SIMFQT::FareInputFileNotFoundException](#)
- class [SIMFQT::QuotingException](#)
- class [SIMFQT::FareFilePath](#)

Namespaces

- namespace [SIMFQT](#)

Typedefs

- typedef unsigned int [SIMFQT::FareQuotelD_T](#)
- typedef boost::shared_ptr< [SIMFQT_Service](#) > [SIMFQT::SIMFQT_ServicePtr_T](#)

25.58 SIMFQT_Types.hpp

```

00001 #ifndef __SIMFQT_SIMFQT_TYPES_HPP
00002 #define __SIMFQT_SIMFQT_TYPES_HPP
00003
00004 // //////////////////////////////////////
00005 // Import section
00006 // //////////////////////////////////////
00007 // STL
00008 #include <vector>
00009 #include <string>
00010 // Boost
00011 #include <boost/shared_ptr.hpp>
00012 // StdAir
00013 #include <stdair/stdair_exceptions.hpp>
00014 #include <stdair/stdair_file.hpp>
00015
00016 namespace SIMFQT {
00017
00018     // Forward declarations
00019     class SIMFQT_Service;
00020
00021
00022     // ////////// Exceptions //////////
00026     class FareFileParsingFailedException
00027     : public stdair::ParsingFileFailedException {
00028     public:
00032         FareFileParsingFailedException (const std::string& iWhat)
00033         : stdair::ParsingFileFailedException (iWhat) {}
00034     };
00035
00039     class AirportPairNotFoundExpection : public stdair::ObjectNotFoundExpection {
00040     public:
00044         AirportPairNotFoundExpection (const std::string& iWhat)
00045         : stdair::ObjectNotFoundExpection (iWhat) {}
00046     };
00047
00051     class PosOrChannelNotFoundExpection : public stdair::ObjectNotFoundExpection {
00052     public:
00056         PosOrChannelNotFoundExpection (const std::string& iWhat)
00057         : stdair::ObjectNotFoundExpection (iWhat) {}
00058     };
00059
00063     class FlightDateNotFoundExpection : public stdair::ObjectNotFoundExpection {
00064     public:
00068         FlightDateNotFoundExpection (const std::string& iWhat)
00069         : stdair::ObjectNotFoundExpection (iWhat) {}
00070     };
00071
00075     class FlightTimeNotFoundExpection : public stdair::ObjectNotFoundExpection {
00076     public:
00080         FlightTimeNotFoundExpection (const std::string& iWhat)
00081         : stdair::ObjectNotFoundExpection (iWhat) {}
00082     };
00083
00087     class FeaturesNotFoundExpection : public stdair::ObjectNotFoundExpection {
00088     public:
00092         FeaturesNotFoundExpection (const std::string& iWhat)
00093         : stdair::ObjectNotFoundExpection (iWhat) {}
00094     };
00095
00099     class AirlineNotFoundExpection : public stdair::ObjectNotFoundExpection {

```

```

00100     public:
00104         AirlineNotFoundException (const std::string& iWhat)
00105             : stdair::ObjectNotFoundException (iWhat) {}
00106     };
00107
00111     class FareInputFileNotFoundException : public stdair::FileNotFoundException {
00112     public:
00116         FareInputFileNotFoundException (const std::string& iWhat)
00117             : stdair::FileNotFoundException (iWhat) {}
00118     };
00119
00123     class QuotingException : public stdair::RootException {
00124     };
00125
00126     // ////////// Files //////////
00130     class FareFilePath : public stdair::InputFilePath {
00131     public:
00135         explicit FareFilePath (const stdair::Filename_T& iFilename)
00136             : stdair::InputFilePath (iFilename) {}
00137     };
00138
00139     // ////////// Type definitions specific to SimFQT //////////
00143     typedef unsigned int FareQuoteID_T;
00144
00148     typedef boost::shared_ptr<SIMFQT_Service> SIMFQT_ServicePtr_T;
00149 }
00150 #endif // __SIMFQT_SIMFQT_TYPES_HPP

```

25.59 simfqt/ui/cmdline/simfqt.cpp File Reference

25.60 simfqt.cpp

```

00001
00005 // STL
00006 #include <cassert>
00007 #include <iostream>
00008 #include <sstream>
00009 #include <fstream>
00010 #include <string>
00011 // Boost (Extended STL)
00012 #include <boost/program_options.hpp>
00013 #include <boost/tokenizer.hpp>
00014 #include <boost/regex.hpp>
00015 // StdAir
00016 #include <stdair/basic/BasLogParams.hpp>
00017 #include <stdair/basic/BasConst_BomDisplay.hpp>
00018 #include <stdair/basic/BasDBParams.hpp>
00019 #include <stdair/basic/BasConst_DefaultObject.hpp>
00020 #include <stdair/basic/BasConst_Inventory.hpp>
00021 #include <stdair/basic/BasConst_Request.hpp>
00022 #include <stdair/service/Logger.hpp>
00023 #include <stdair/stdair_exceptions.hpp>
00024 #include <stdair/stdair_basic_types.hpp>
00025 #include <stdair/stdair_date_time_types.hpp>
00026 #include <stdair/bom/TravelSolutionStruct.hpp>
00027 #include <stdair/bom/BookingRequestStruct.hpp>
00028 #include <stdair/bom/ParsedKey.hpp>
00029 #include <stdair/bom/BomKeyManager.hpp>
00030 #include <stdair/command/CmdBomManager.hpp>
00031 // Stdair GNU Readline Wrapper

```

```

00032 #include <stdair/ui/cmdline/SReadline.hpp>
00033 // Simfqt
00034 #include <simfqt/SIMFQT_Service.hpp>
00035 #include <simfqt/config/simfqt-paths.hpp>
00036
00037
00038 // ////////// Constants //////////
00042 const std::string K_SIMFQT_DEFAULT_LOG_FILENAME ("simfqt.log");
00043
00047 const std::string K_SIMFQT_DEFAULT_FARE_INPUT_FILENAME (STDAIR_SAMPLE_DIR
00048                                                         "/fare01.csv");
00049
00054 const bool K_SIMFQT_DEFAULT_BUILT_IN_INPUT = false;
00055
00059 const int K_SIMFQT_EARLY_RETURN_STATUS = 99;
00060
00065 typedef std::vector<std::string> TokenList_T;
00066
00070 struct Command_T {
00071     typedef enum {
00072         NOP = 0,
00073         QUIT,
00074         HELP,
00075         LIST,
00076         DISPLAY,
00077         PRICE,
00078         LAST_VALUE
00079     } Type_T;
00080 };
00081
00082 // ////////// Parsing of Options & Configuration //////////
00083 // A helper function to simplify the main part.
00084 template<class T> std::ostream& operator<< (std::ostream& os,
00085                                           const std::vector<T>& v) {
00086     std::copy (v.begin(), v.end(), std::ostream_iterator<T> (std::cout, " "));
00087     return os;
00088 }
00089
00093 int readConfiguration (int argc, char* argv[], bool& ioIsBuiltin,
00094                       stdair::Filename_T& ioFareInputFilename,
00095                       std::string& ioLogFilename) {
00096
00097     // Default for the built-in input
00098     ioIsBuiltin = K_SIMFQT_DEFAULT_BUILT_IN_INPUT;
00099
00100     // Declare a group of options that will be allowed only on command line
00101     boost::program_options::options_description generic ("Generic options");
00102     generic.add_options()
00103         ("prefix", "print installation prefix")
00104         ("version,v", "print version string")
00105         ("help,h", "produce help message");
00106
00107     // Declare a group of options that will be allowed both on command
00108     // line and in config file
00109     boost::program_options::options_description config ("Configuration");
00110     config.add_options()
00111         ("builtin,b",
00112          "The sample BOM tree can be either built-in or parsed from an input file. Th
00113          at latter must then be given with the -f/--fare option")
00114         ("fare,f",
00115          boost::program_options::value< std::string >(&ioFareInputFilename)->default_
00116          value(K_SIMFQT_DEFAULT_FARE_INPUT_FILENAME),

```

```

00115     "(CSV) input file for the fare rules")
00116     ("log,l",
00117     boost::program_options::value< std::string >(&ioLogFilename)->default_value(
K_SIMFQT_DEFAULT_LOG_FILENAME),
00118     "Filename for the logs")
00119     ;
00120
00121     // Hidden options, will be allowed both on command line and
00122     // in config file, but will not be shown to the user.
00123     boost::program_options::options_description hidden ("Hidden options");
00124     hidden.add_options()
00125         ("copyright",
00126         boost::program_options::value< std::vector<std::string> >(),
00127         "Show the copyright (license)");
00128
00129     boost::program_options::options_description cmdline_options;
00130     cmdline_options.add(generic).add(config).add(hidden);
00131
00132     boost::program_options::options_description config_file_options;
00133     config_file_options.add(config).add(hidden);
00134
00135     boost::program_options::options_description visible ("Allowed options");
00136     visible.add(generic).add(config);
00137
00138     boost::program_options::positional_options_description p;
00139     p.add ("copyright", -1);
00140
00141     boost::program_options::variables_map vm;
00142     boost::program_options::
00143     store (boost::program_options::command_line_parser (argc, argv).
00144     options (cmdline_options).positional(p).run(), vm);
00145
00146     std::ifstream ifs ("simfqt.cfg");
00147     boost::program_options::store (parse_config_file (ifs, config_file_options),
00148     vm);
00149     boost::program_options::notify (vm); if (vm.count ("help")) {
00150     std::cout << visible << std::endl;
00151     return K_SIMFQT_EARLY_RETURN_STATUS;
00152     }
00153
00154     if (vm.count ("version")) {
00155     std::cout << PACKAGE_NAME << ", version " << PACKAGE_VERSION << std::endl;
00156     return K_SIMFQT_EARLY_RETURN_STATUS;
00157     }
00158
00159     if (vm.count ("prefix")) {
00160     std::cout << "Installation prefix: " << PREFIXDIR << std::endl;
00161     return K_SIMFQT_EARLY_RETURN_STATUS;
00162     }
00163
00164     if (vm.count ("builtin")) {
00165     ioIsBuiltin = true;
00166     }
00167     const std::string isBuiltinStr = (ioIsBuiltin == true)? "yes": "no";
00168     std::cout << "The BOM should be built-in? " << isBuiltinStr << std::endl;
00169
00170     if (ioIsBuiltin == false) {
00171
00172     // The BOM tree should be built from parsing a fare (and O&D) file
00173     if (vm.count ("fare")) {
00174     ioFareInputFilename = vm["fare"].as< std::string >();
00175     std::cout << "Input fare filename is: " << ioFareInputFilename

```

```

00176             << std::endl;
00177
00178     } else {
00179         // The built-in option is not selected. However, no fare file
00180         // is specified
00181         std::cerr << "Either one among the -b/--builtin and -f/--fare "
00182             << "options must be specified" << std::endl;
00183     }
00184 }
00185
00186 if (vm.count ("log")) {
00187     ioLogFilename = vm["log"].as< std::string >();
00188     std::cout << "Log filename is: " << ioLogFilename << std::endl;
00189 }
00190
00191 return 0;
00192
00193 }
00194
00195 // //////////////////////////////////////
00196 void initReadline (swift::SReadline& ioInputReader) {
00197
00198     // Prepare the list of my own completers
00199     std::vector<std::string> Completers;
00200
00201     // The following is supported:
00202     // - "identifiers"
00203     // - special identifier %file - means to perform a file name completion
00204     Completers.push_back ("help");
00205     Completers.push_back ("list");
00206     Completers.push_back ("display %airport_code %airport_code %departure_date");
00207     Completers.push_back ("price %airline_code %flight_number %departure_date %airp
ort_code %airport_code %departure_time %booking_date %booking_time %POS %channel%
%trip_type %stay_duration");
00208     Completers.push_back ("quit");
00209
00210     // Now register the completers.
00211     // Actually it is possible to re-register another set at any time
00212     ioInputReader.RegisterCompletions (Completers);
00213 }
00214
00215 // //////////////////////////////////////
00216 Command_T::Type_T extractCommand (TokenList_T& ioTokenList) {
00217     Command_T::Type_T oCommandType = Command_T::LAST_VALUE;
00218
00219     // Interpret the user input
00220     if (ioTokenList.empty() == false) {
00221         TokenList_T::iterator itTok = ioTokenList.begin();
00222         std::string& lCommand (*itTok);
00223         boost::algorithm::to_lower (lCommand);
00224
00225         if (lCommand == "help") {
00226             oCommandType = Command_T::HELP;
00227
00228         } else if (lCommand == "list") {
00229             oCommandType = Command_T::LIST;
00230
00231         } else if (lCommand == "display") {
00232             oCommandType = Command_T::DISPLAY;
00233
00234         } else if (lCommand == "price") {
00235             oCommandType = Command_T::PRICE;

```

```

00236
00237     } else if (lCommand == "quit") {
00238         oCommandType = Command_T::QUIT;
00239
00240     }
00241
00242     // Remove the first token (the command), as the corresponding information
00243     // has been extracted in the form of the returned command type enumeration
00244     ioTokenList.erase (itTok);
00245
00246     } else {
00247         oCommandType = Command_T::NOP;
00248     }
00249
00250     return oCommandType;
00251 }
00252
00253 // //////////////////////////////////////
00254 // Re-compose a date using three strings: the year, the month and the
00255 // day. Return true if a correct date has been computed, false if not.
00256 bool retrieveDate (std::string iYearString,
00257                  std::string iMonthString,
00258                  std::string iDayString,
00259                  stdair::Date_T& ioDate) {
00260
00261     const std::string kMonthStr[12] = {"Jan", "Feb", "Mar", "Apr", "May", "Jun",
00262                                       "Jul", "Aug", "Sep", "Oct", "Nov", "Dec"};
00263
00264     // Check the year.
00265     unsigned short lDateYear;
00266     try {
00267         lDateYear = boost::lexical_cast<unsigned short> (iYearString);
00268         if (lDateYear < 100) {
00269             lDateYear += 2000;
00270         }
00271     }
00272
00273     } catch (boost::bad_lexical_cast& eCast) {
00274         std::cerr << "The year ('" << iYearString
00275                 << "') cannot be understood." << std::endl;
00276         return false;
00277     }
00278
00279     // Check the month.
00280     std::string lDateMonthStr;
00281     try {
00282         const boost::regex lMonthRegex ("^(\\d{1,2})$");
00283         const bool isMonthANumber = regex_match (iMonthString, lMonthRegex);
00284
00285         if (isMonthANumber == true) {
00286             const unsigned short lMonth =
00287                 boost::lexical_cast<unsigned short> (iMonthString);
00288             if (lMonth > 12) {
00289                 throw boost::bad_lexical_cast();
00290             }
00291             if (lMonth != 0) {
00292                 lDateMonthStr = kMonthStr[lMonth-1];
00293             } else {
00294                 std::cerr << "The month ('" << iMonthString
00295                         << "') cannot be understood." << std::endl;
00296                 return false;
00297             }

```

```

00298     }
00299
00300     } else {
00301         if (iMonthString.size() < 3) {
00302             throw boost::bad_lexical_cast();
00303         }
00304         std::string lMonthStr1 (iMonthString.substr (0, 1));
00305         boost::algorithm::to_upper (lMonthStr1);
00306         std::string lMonthStr23 (iMonthString.substr (1, 2));
00307         boost::algorithm::to_lower (lMonthStr23);
00308         lDateMonthStr = lMonthStr1 + lMonthStr23;
00309     }
00310
00311     } catch (boost::bad_lexical_cast& eCast) {
00312         std::cerr << "The month ('" << iMonthString
00313             << "') cannot be understood." << std::endl;
00314         return false;
00315     }
00316
00317     // Check the day.
00318     unsigned short lDateDay;
00319     try {
00320
00321         lDateDay = boost::lexical_cast<unsigned short> (iDayString);
00322
00323     } catch (boost::bad_lexical_cast& eCast) {
00324         std::cerr << "The day ('" << iDayString
00325             << "') cannot be understood." << std::endl;
00326         return false;
00327     }
00328
00329     // Re-compose the date.
00330     std::ostringstream lDateStr;
00331     lDateStr << lDateYear << "-" << lDateMonthStr
00332         << "-" << lDateDay;
00333     try {
00334
00335         ioDate =
00336             boost::gregorian::from_simple_string (lDateStr.str());
00337
00338     } catch (boost::gregorian::bad_month& eCast) {
00339         std::cerr << "The month of the date ('" << lDateStr.str()
00340             << "') cannot be understood." << std::endl;
00341         return false;
00342     } catch (boost::gregorian::bad_day_of_month& eCast) {
00343         std::cerr << "The date ('" << lDateStr.str()
00344             << "') is not correct: the day of month does not exist."
00345             << std::endl;
00346         return false;
00347     } catch (boost::gregorian::bad_year& eCast) {
00348         std::cerr << "The year ('" << lDateStr.str()
00349             << "') is not correct."
00350             << std::endl;
00351         return false;
00352     }
00353
00354     return true;
00355 }
00356
00357 // //////////////////////////////////////
00358 // Re-compose a time using two strings: the hour and the minute.
00359 // Return true if a correct time has been computed, false if not.

```



```

00360 bool retrieveTime (std::string iHourString,
00361                    std::string iMinuteString,
00362                    stdair::Duration_T& oTime) {
00363
00364     // Check the hour
00365     unsigned short lTimeHour;
00366     try {
00367
00368         lTimeHour = boost::lexical_cast<unsigned short> (iHourString);
00369
00370     } catch (boost::bad_lexical_cast& eCast) {
00371         std::cerr << "The hour of the time ('" << iHourString
00372                 << "') cannot be understood." << std::endl;
00373         return false;
00374     }
00375
00376     // Check the minutes
00377     unsigned short lTimeMinute;
00378     try {
00379
00380         lTimeMinute = boost::lexical_cast<unsigned short> (iMinuteString);
00381
00382     } catch (boost::bad_lexical_cast& eCast) {
00383         std::cerr << "The minute of the time ('" << iMinuteString
00384                 << "') cannot be understood." << std::endl;
00385         return false;
00386     }
00387
00388
00389     // Re-compose the time
00390     std::ostringstream lTimeStr;
00391     lTimeStr << lTimeHour << ":" << lTimeMinute;
00392     oTime =
00393         boost::posix_time::duration_from_string (lTimeStr.str());
00394
00395     return true;
00396 }
00397
00398 // //////////////////////////////////////
00399 // Analyze the tokens of the 'price' command in order to construct
00400 // a travel solution list and a booking request.
00401 const stdair::BookingRequestStruct parseTravelSolutionAndBookingRequestKey
00402 (const TokenList_T& iTokenList,
00403  stdair::TravelSolutionList_T& ioInteractiveTravelSolutionList,
00404  const stdair::BookingRequestStruct& ioBookingRequestStruct) {
00405
00406     TokenList_T::const_iterator itTok = iTokenList.begin();
00407
00408     if (itTok->empty() == true) {
00409
00410         std::cerr << "Wrong list of parameters. "
00411                 << "The default booking request and travel solution list are kept."
00412                 << std::endl;
00413         return ioBookingRequestStruct;
00414
00415     } else {
00416         // Parameters corresponding to the tokens.
00417         // Each parameter corresponds to one token except the dates
00418         // (three tokens) and the times (two tokens).
00419         stdair::AirlineCode_T lAirlineCode;

```

```

00421     stdair::FlightNumber_T lflightNumber;
00422     stdair::Date_T lDepartureDate;
00423     stdair::Duration_T lDepartureTime;
00424     stdair::AirportCode_T lOriginAirport;
00425     stdair::AirportCode_T lDestinationAirport;
00426     stdair::Date_T lRequestDate;
00427     stdair::Duration_T lRequestTime;
00428     stdair::CityCode_T lPOS;
00429     stdair::ChannelLabel_T lChannel;
00430     stdair::TripType_T lTripType;
00431     unsigned short lStayDuration;
00432
00433     // Read the airline code.
00434     lAirlineCode = *itTok;
00435     boost::algorithm::to_upper (lAirlineCode);
00436
00437     // Read the flight-number .
00438     ++itTok;
00439     if (itTok->empty() == false) {
00440         try {
00441
00442             lflightNumber = boost::lexical_cast<stdair::FlightNumber_T> (*itTok);
00443
00444         } catch (boost::bad_lexical_cast& eCast) {
00445             std::cerr << "The flight number ('" << *itTok
00446                 << "') cannot be understood."
00447                 << std::endl;
00448             return ioBookingRequestStruct;
00449         }
00450     }
00451
00452     // Read the departure date.
00453     ++itTok;
00454     if (itTok->empty() == true) {
00455         return ioBookingRequestStruct;
00456     }
00457     const std::string lDepartureYearString = *itTok;
00458     ++itTok;
00459     if (itTok->empty() == true) {
00460         return ioBookingRequestStruct;
00461     }
00462     const std::string lDepartureMonthString = *itTok;
00463     ++itTok;
00464     if (itTok->empty() == true) {
00465         return ioBookingRequestStruct;
00466     }
00467     const std::string lDepartureDayString = *itTok;
00468     const bool IsDepartureDateReadable =
00469         retrieveDate (lDepartureYearString, lDepartureMonthString,
00470             lDepartureDayString, lDepartureDate);
00471
00472     if (IsDepartureDateReadable == false) {
00473         std::cerr << "The default booking request and travel solution list are kept
00474     ."
00475         << std::endl;
00476         return ioBookingRequestStruct;
00477     }
00478
00479     // Read the origin.
00480     ++itTok;
00481     if (itTok->empty() == false) {
00482         lOriginAirport = *itTok;

```

```

00482         boost::algorithm::to_upper (lOriginAirport);
00483     }
00484
00485     // Read the destination.
00486     ++itTok;
00487     if (itTok->empty() == false) {
00488         lDestinationAirport = *itTok;
00489         boost::algorithm::to_upper (lDestinationAirport);
00490     }
00491
00492     // Read the departure time.
00493     ++itTok;
00494     if (itTok->empty() == true) {
00495         return ioBookingRequestStruct;
00496     }
00497     const std::string lDepartureHourString = *itTok;
00498     ++itTok;
00499     if (itTok->empty() == true) {
00500         return ioBookingRequestStruct;
00501     }
00502     const std::string lDepartureMinuteString = *itTok;
00503     const bool IsDepartureTimeReadable =
00504         retrieveTime (lDepartureHourString, lDepartureMinuteString,
00505                     lDepartureTime);
00506
00507     if (IsDepartureTimeReadable == false) {
00508         std::cerr << "The default booking request and travel solution list are kept
00509     ."
00510         << std::endl;
00511         return ioBookingRequestStruct;
00512     }
00513
00514     // Read the request date.
00515     ++itTok;
00516     if (itTok->empty() == true) {
00517         return ioBookingRequestStruct;
00518     }
00519     const std::string lRequestYearString = *itTok;
00520     ++itTok;
00521     if (itTok->empty() == true) {
00522         return ioBookingRequestStruct;
00523     }
00524     const std::string lRequestMonthString = *itTok;
00525     ++itTok;
00526     if (itTok->empty() == true) {
00527         return ioBookingRequestStruct;
00528     }
00529     const std::string lRequestDayString = *itTok;
00530     const bool IsRequestDateReadable =
00531         retrieveDate (lRequestYearString, lRequestMonthString,
00532                     lRequestDayString, lRequestDate);
00533
00534     if (IsRequestDateReadable == false) {
00535         std::cerr << "The default booking request and travel solution list are kept
00536     ."
00537         << std::endl;
00538         return ioBookingRequestStruct;
00539     }
00540
00541     // Read the request time.
00542     ++itTok;
00543     if (itTok->empty() == true) {

```

```

00542         return ioBookingRequestStruct;
00543     }
00544     const std::string lRequestHourString = *itTok;
00545     ++itTok;
00546     if (itTok->empty() == true) {
00547         return ioBookingRequestStruct;
00548     }
00549     const std::string lRequestMinuteString = *itTok;
00550     const bool IsRequestTimeReadable =
00551         retrieveTime (lRequestHourString, lRequestMinuteString,
00552                     lRequestTime);
00553
00554     if (IsRequestTimeReadable == false) {
00555         std::cerr << "The default booking request and travel solution list are kept
00556     .\"
00557         << std::endl;
00558         return ioBookingRequestStruct;
00559     }
00560     // Read the POS.
00561     ++itTok;
00562     if (itTok->empty() == false) {
00563         lPOS = *itTok;
00564         boost::algorithm::to_upper (lPOS);
00565     }
00566
00567     // Read the channel.
00568     ++itTok;
00569     if (itTok->empty() == false) {
00570         lChannel = *itTok;
00571         boost::algorithm::to_upper (lChannel);
00572     }
00573
00574     // Read the trip type.
00575     ++itTok;
00576     if (itTok->empty() == false) {
00577         lTripType = *itTok;
00578         boost::algorithm::to_upper (lTripType);
00579     }
00580
00581     // Read the stay duration.
00582     ++itTok;
00583     if (itTok->empty() == false) {
00584         try {
00585             lStayDuration = boost::lexical_cast<unsigned short> (*itTok);
00586         } catch (boost::bad_lexical_cast& eCast) {
00587             std::cerr << "The stay duration ('" << *itTok
00588                 << "') cannot be understood." << std::endl;
00589             return ioBookingRequestStruct;
00590         }
00591     }
00592 }
00593 }
00594
00595 // At this step we know that all the parameters designed to construct
00596 // the travel solution and the booking request are correct.
00597
00598 // Empty the travel solution list to store a new travel solution.
00599 ioInteractiveTravelSolutionList.pop_front();
00600 // Construct the new travel solution.
00601 stdair::TravelSolutionStruct lTravelSolution;
00602 std::ostringstream oStr;

```

```

00603     oStr << lAirlineCode
00604         << stdair::DEFAULT_KEY_FLD_DELIMITER
00605         << lflightNumber
00606         << stdair::DEFAULT_KEY_SUB_FLD_DELIMITER
00607         << lDepartureDate
00608         << stdair::DEFAULT_KEY_FLD_DELIMITER
00609         << lOriginAirport
00610         << stdair::DEFAULT_KEY_SUB_FLD_DELIMITER
00611         << lDestinationAirport
00612         << stdair::DEFAULT_KEY_FLD_DELIMITER
00613         << lDepartureTime;
00614     lTravelSolution.addSegment (oStr.str());
00615     ioInteractiveTravelSolutionList.push_front(lTravelSolution);
00616
00617     // Construct the new booking request.
00618     stdair::DateTime_T lRequestDateTime (lRequestDate, lRequestTime);
00619     const stdair::BookingRequestStruct &lBookingRequestStruct =
00620         stdair::BookingRequestStruct (lOriginAirport,
00621                                       lDestinationAirport,
00622                                       lPOS,
00623                                       lDepartureDate,
00624                                       lRequestDateTime,
00625                                       stdair::CABIN_ECO,
00626                                       stdair::DEFAULT_PARTY_SIZE,
00627                                       lChannel,
00628                                       lTripType,
00629                                       lStayDuration,
00630                                       stdair::FREQUENT_FLYER_MEMBER,
00631                                       lDepartureTime,
00632                                       stdair::DEFAULT_WTP,
00633                                       stdair::DEFAULT_VALUE_OF_TIME);
00634
00635     return lBookingRequestStruct;
00636 }
00637 }
00638
00639 // //////////////////////////////////////
00640 // Analyze the tokens of the 'display' command in order to retrieve
00641 // an airport pair and a departure date.
00642 void parseFlightDateKey (const TokenList_T& iTokenList,
00643                         stdair::AirportCode_T& ioOrigin,
00644                         stdair::AirportCode_T& ioDestination,
00645                         stdair::Date_T& ioDepartureDate) {
00646
00647     TokenList_T::const_iterator iTok = iTokenList.begin();
00648
00649     // Interpret the user input.
00650     if (iTok->empty() == true) {
00651
00652         std::cerr << "Wrong parameters specified. Default paramaters '"
00653                 << ioOrigin << "-" << ioDestination
00654                 << "/" << ioDepartureDate
00655                 << "' are kept."
00656                 << std::endl;
00657
00658     } else {
00659
00660         // Read the origin.
00661         ioOrigin = *iTok;
00662         boost::algorithm::to_upper (ioOrigin);
00663
00664         // Read the destination.

```

```

00665     ++itTok;
00666     if (itTok->empty() == false) {
00667         ioDestination = *itTok;
00668         boost::algorithm::to_upper (ioDestination);
00669     }
00670
00671     // Read the departure date.
00672     ++itTok;
00673     if (itTok->empty() == true) {
00674         return;
00675     }
00676     std::string lYearString = *itTok;
00677     ++itTok;
00678     if (itTok->empty() == true) {
00679         return;
00680     }
00681     std::string lMonthString = *itTok;
00682     ++itTok;
00683     if (itTok->empty() == true) {
00684         return;
00685     }
00686     std::string lDayString = *itTok;
00687     const bool IsDepartureDateReadable =
00688         retrieveDate (lYearString, lMonthString, lDayString,
00689                     ioDepartureDate);
00690     if (IsDepartureDateReadable == false) {
00691         std::cerr << "Default paramaters '"
00692                     << ioOrigin << "-" << ioDestination
00693                     << "/" << ioDepartureDate
00694                     << "' are kept."
00695                     << std::endl;
00696         return;
00697     }
00698 }
00699 }
00700
00701 // //////////////////////////////////////
00702 std::string toString (const TokenList_T& iTokenList) {
00703     std::ostringstream oStr;
00704
00705     // Re-create the string with all the tokens, trimmed by read-line
00706     unsigned short idx = 0;
00707     for (TokenList_T::const_iterator itTok = iTokenList.begin();
00708         itTok != iTokenList.end(); ++itTok, ++idx) {
00709         if (idx != 0) {
00710             oStr << " ";
00711         }
00712         oStr << *itTok;
00713     }
00714
00715     return oStr.str();
00716 }
00717
00718 // //////////////////////////////////////
00719 TokenList_T extractTokenList (const TokenList_T& iTokenList,
00720                             const std::string& iRegularExpression) {
00721     TokenList_T oTokenList;
00722
00723     // Re-create the string with all the tokens (which had been trimmed
00724     // by read-line)
00725     const std::string lFullLine = toString (iTokenList);
00726

```

```

00727 // See the caller for the regular expression
00728 boost::regex expression (iRegularExpression);
00729
00730 std::string::const_iterator start = lFullLine.begin();
00731 std::string::const_iterator end = lFullLine.end();
00732
00733 boost::match_results<std::string::const_iterator> what;
00734 boost::match_flag_type flags = boost::match_default | boost::format_sed;
00735 regex_search (start, end, what, expression, flags);
00736
00737 // Put the matched strings in the list of tokens to be returned back
00738 // to the caller
00739 const unsigned short lMatchSetSize = what.size();
00740 for (unsigned short matchIdx = 1; matchIdx != lMatchSetSize; ++matchIdx) {
00741     const std::string lMatchedString (std::string (what[matchIdx].first,
00742                                                    what[matchIdx].second));
00743     //if (lMatchedString.empty() == false) {
00744     oTokenList.push_back (lMatchedString);
00745     //}
00746 }
00747
00748 // DEBUG
00749 // std::cout << "After (token list): " << oTokenList << std::endl;
00750
00751 return oTokenList;
00752 }
00753
00754 // //////////////////////////////////////
00755 // Parse the token list of the 'price' command.
00756 TokenList_T extractTokenListForTSAndBR (const TokenList_T& iTokenList) {
00757     const std::string lRegex("^([[:alpha:]]{2,3})"
00758                               "[[:space:]]+([[:digit:]]{1,4})"
00759                               "[/ ]*"
00760                               "[[:space:]]+([[:digit:]]{2,4})[/-]?"
00761                               "[[:space:]]*([[:alpha:]]{3}|[[:digit:]]{1,2})[/-]?"
00762                               "[[:space:]]*([[:digit:]]{1,2})[[:space:]]*"
00763                               "[[:space:]]+([[:alpha:]]{3})"
00764                               "[[:space:]]+([[:alpha:]]{3})"
00765                               "[[:space:]]+([[:digit:]]{1,2})[:]?([[:digit:]]{1,2})"
00766
00767                               "[[:space:]]+([[:digit:]]{2,4})[/-]?"
00768                               "[[:space:]]*([[:alpha:]]{3}|[[:digit:]]{1,2})[/-]?"
00769                               "[[:space:]]*([[:digit:]]{1,2})"
00770                               "[[:space:]]+([[:digit:]]{1,2})[:]?([[:digit:]]{1,2})"
00771
00772                               "[[:space:]]+([[:alpha:]]{3})"
00773                               "[[:space:]]+([[:alpha:]]{2})"
00774                               "[[:space:]]+([[:alpha:]]{2})"
00775                               "[[:space:]]+([[:digit:]]{1})$");
00776
00777     //
00778     const TokenList_T& oTokenList = extractTokenList (iTokenList, lRegex);
00779     return oTokenList;
00780 }
00781
00782 // //////////////////////////////////////
00783 // Parse the token list of the 'display' command.
00784 TokenList_T extractTokenListForOriDestDate (const TokenList_T& iTokenList) {
00785     const std::string lRegex("^([[:alpha:]]{3})"
00786                               "[[:space:]]*[/-]?"
00787                               "[[:space:]]*([[:alpha:]]{3})"
00788                               "[[:space:]]*[/-]?"

```

```

00817         "[[:space:]]*([[:digit:]]{2,4})"
00818         "[[:space:]]*[/-]?"
00819         "[[:space:]]*([[:alpha:]]{3}|[[:digit:]]{1,2})"
00820         "[[:space:]]*[/-]?"
00821         "[[:space:]]*([[:digit:]]{1,2})$");
00822
00823     //
00824     const TokenList_T& oTokenList = extractTokenList (iTokenList, lRegex);
00825     return oTokenList;
00826 }
00827
00828 // //////////// M A I N ////////////
00829 int main (int argc, char* argv[]) {
00830
00831     // State whether the BOM tree should be built-in or parsed from an
00832     // input file
00833     bool isBuiltin;
00834
00835     // Fare input file name
00836     stdair::Filename_T lFareInputFilename;
00837
00838     // Readline history
00839     const unsigned int lHistorySize (100);
00840     const std::string lHistoryFilename ("simfqt.hist");
00841     const std::string lHistoryBackupFilename ("simfqt.hist.bak");
00842
00843     // Default parameters for the interactive session
00844     stdair::AirportCode_T lInteractiveOrigin;
00845     stdair::AirportCode_T lInteractiveDestination;
00846     stdair::Date_T lInteractiveDepartureDate;
00847
00848     // Output log File
00849     stdair::Filename_T lLogFilename;
00850
00851     // Call the command-line option parser
00852     const int lOptionParserStatus =
00853         readConfiguration (argc, argv, isBuiltin, lFareInputFilename, lLogFilename);
00854
00855     if (lOptionParserStatus == K_SIMFQT_EARLY_RETURN_STATUS) {
00856         return 0;
00857     }
00858
00859     // Set the log parameters
00860     std::ofstream logOutputFile;
00861     // Open and clean the log outputfile
00862     logOutputFile.open (lLogFilename.c_str());
00863     logOutputFile.clear();
00864
00865     // Initialise the fareQuote service
00866     const stdair::BasLogParams lLogParams (stdair::LOG::DEBUG, logOutputFile);
00867     SIMFQT::SIMFQT_Service simfqtService (lLogParams);
00868
00869     // DEBUG
00870     STDAIR_LOG_DEBUG ("Welcome to SimFQT display");
00871
00872     // Check whether or not a (CSV) input file should be read
00873     if (isBuiltin == true) {
00874         // Build the sample BOM tree (filled with fares) for Simfqt
00875         simfqtService.buildSampleBom();
00876     } else {
00877         // Build the BOM tree from parsing a fare file
00878         SIMFQT::FareFilePath lFareFilePath (lFareInputFilename);

```



```

00879     simfqtService.parseAndLoad (lFareFilePath);
00880 }
00881
00882 // DEBUG: Display the whole BOM tree
00883 const std::string& lCSVDump = simfqtService.csvDisplay();
00884 STDAIR_LOG_DEBUG (lCSVDump);
00885
00886 // DEBUG
00887 STDAIR_LOG_DEBUG ("=====");
00888 STDAIR_LOG_DEBUG ("=          Beginning of the interactive session          =");
00889 STDAIR_LOG_DEBUG ("=====");
00890
00891 // Initialise the GNU readline wrapper
00892 swift::SReadline lReader (lHistoryFilename, lHistorySize);
00893 initReadline (lReader);
00894
00895 // Now we can ask user for a line
00896 std::string lUserInput;
00897 bool EndOfInput (false);
00898 Command_T::Type_T lCommandType (Command_T::NOP);
00899
00900 while (lCommandType != Command_T::QUIT && EndOfInput == false) {
00901
00902     stdair::TravelSolutionList_T lInteractiveTravelSolutionList;
00903     stdair::TravelSolutionStruct lInteractiveTravelSolution;
00904
00905     // Update the default booking request.
00906     // If there is an input file, we want the CRS booking request (defined in std
00907     air).
00908     // If not, we want the default booking request.
00909     const bool isCRSBookingRequest = !isBuiltin;
00910     const stdair::BookingRequestStruct& lInteractiveBookingRequest =
00911         simfqtService.buildBookingRequest (isCRSBookingRequest);
00912
00913     // Update the default parameters for the following interactive session.
00914     if (isBuiltin == true) {
00915         lInteractiveOrigin = "LHR";
00916         lInteractiveDestination = "SYD";
00917         lInteractiveDepartureDate = stdair::Date_T(2011,06,10);
00918         simfqtService.buildSampleTravelSolutions (lInteractiveTravelSolutionList);
00919     } else {
00920         lInteractiveOrigin = "SIN";
00921         lInteractiveDestination = "BKK";
00922         lInteractiveDepartureDate = stdair::Date_T(2010,01,30);
00923         //
00924         const std::string lBA9_SegmentDateKey ("SQ, 970, 2010-01-30, SIN, BKK, 07:1
00925         0");
00926
00927         // Add the segment date key to the travel solution.
00928         lInteractiveTravelSolution.addSegment (lBA9_SegmentDateKey);
00929
00930         // Add the travel solution to the list
00931         lInteractiveTravelSolutionList.push_back (lInteractiveTravelSolution);
00932     }
00933
00934     // Prompt.
00935     std::ostringstream oPromptStr;
00936     oPromptStr << "simfqt "
00937         << "> ";
00938
00939     // The last parameter could be ommited.
00940     TokenList_T lTokenListByReadline;
00941     lUserInput = lReader.GetLine (oPromptStr.str(), lTokenListByReadline,

```

```

00939                                     EndOfInput);
00940
00941     // The history could be saved to an arbitrary file at any time.
00942     lReader.SaveHistory (lHistoryBackupFilename);
00943
00944     if (EndOfInput) {
00945         std::cout << std::endl;
00946         break;
00947     }
00948
00949     // Interpret the user input.
00950     lCommandType = extractCommand (lTokenListByReadline);
00951
00952     switch (lCommandType) {
00953
00954         // ////////////////////////////////// Help //////////////////////////////////
00955     case Command_T::HELP: {
00956         // Search for information to display default parameters lists.
00957         // Get the first travel solution.
00958         stdair::TravelSolutionStruct& lTravelSolutionStruct =
00959             lInteractiveTravelSolutionList.front();
00960         // Get the segment-path of the first travel solution.
00961         const stdair::SegmentPath_T& lSegmentPath =
00962             lTravelSolutionStruct.getSegmentPath();
00963         // Get the first segment of the first travel solution.
00964         const std::string& lSegmentDateKey = lSegmentPath.front();
00965         // Get the parsed key of the first segment of the first travel solution.
00966         const stdair::ParsedKey& lParsedKey =
00967             stdair::BomKeyManager::extractKeys (lSegmentDateKey);
00968         // Get the request date time
00969         const stdair::DateTime_T& lRequestDateTime =
00970             lInteractiveBookingRequest.getRequestDateTime();
00971         const stdair::Time_T lRequestTime =
00972             lRequestDateTime.time_of_day();
00973         std::cout << std::endl;
00974         // Display help.
00975         std::cout << "Commands: " << std::endl;
00976         std::cout << " help" << "\t\t" << "Display this help" << std::endl;
00977         std::cout << " quit" << "\t\t" << "Quit the application" << std::endl;
00978         std::cout << " list" << "\t\t"
00979             << "List all the fare rule O&Ds and the corresponding date ranges
00980             " << std::endl;
00981         std::cout << " display" << "\t"
00982             << "Display all fare rules for an O&D and a departure date. \n" <
00983             < "\t\t"
00984             << "If no parameters specified or wrong list of parameters, defau
00985             lt values are used: \n"<< "\t\t"
00986             << "          display " << lInteractiveOrigin << " "
00987             << lInteractiveDestination << " "
00988             << lInteractiveDepartureDate << std::endl;
00989             std::cout << " price" << "\t\t"
00990             << "Price the travel solution corresponding to a booking request.
00991             \n" << "\t\t"
00992             << "If no parameters specified or wrong list of parameters, defau
00993             lt value are used: \n" << "\t\t"
00994             << "          price "
00995             << lParsedKey._airlineCode << " "
00996             << lParsedKey._flightNumber << " "
00997             << lParsedKey._departureDate << " "
00998             << lParsedKey._boardingPoint << " "
00999             << lParsedKey._offPoint << " "
01000             << lParsedKey._boardingTime << " "

```

```

00996         << lRequestDateTime.date() << " "
00997         << lRequestTime.hours() << ":" << lRequestTime.minutes() << " "
00998         << lInteractiveBookingRequest.getPOS() << " "
00999         << lInteractiveBookingRequest.getBookingChannel() << " "
01000         << lInteractiveBookingRequest.getTripType() << " "
01001         << lInteractiveBookingRequest.getStayDuration() << std::endl;
01002     std::cout << std::endl;
01003     break;
01004 }
01005
01006     // /////////////////////////////////// Quit ///////////////////////////////////
01007 case Command_T::QUIT: {
01008     break;
01009 }
01010
01011     // /////////////////////////////////// List ///////////////////////////////////
01012 case Command_T::LIST: {
01013
01014     // Get the list of all airport pairs and date ranges for which
01015     // there are fares available.
01016     const std::string& lAirportPairDateListStr =
01017         simfqtService.list ();
01018
01019     if (lAirportPairDateListStr.empty() == false) {
01020         std::cout << lAirportPairDateListStr << std::endl;
01021         STDAIR_LOG_DEBUG (lAirportPairDateListStr);
01022     } else {
01023
01024         std::cerr << "There is no result for airport pairs and date ranges."
01025         << "Make sure your input file is not empty."
01026         << std::endl;
01027     }
01028
01029     break;
01030 }
01031
01032     // /////////////////////////////////// Display ///////////////////////////////////
01033 case Command_T::DISPLAY: {
01034
01035     // If no parameters are entered by the user, keep default ones.
01036     if (lTokenListByReadline.empty() == true) {
01037
01038         std::cout << "No parameters specified. Default paramaters '"
01039         << lInteractiveOrigin << "-" << lInteractiveDestination
01040         << "/" << lInteractiveDepartureDate
01041         << "' are kept."
01042         << std::endl;
01043     } else {
01044
01045         // Find the best match corresponding to the given parameters.
01046         TokenList_T lTokenList =
01047             extractTokenListForOriDestDate (lTokenListByReadline);
01048
01049         // Parse the best match, and give default values in case the
01050         // user does not specify all the parameters or does not
01051         // specify some of them correctly.
01052         parseFlightDateKey (lTokenList, lInteractiveOrigin,
01053             lInteractiveDestination, lInteractiveDepartureDate);
01054     }
01055 }
01056
01057

```

```

01058     // Check whether the selected airportpair-date is valid:
01059     // i.e. if there are corresponding fare rules.
01060     const bool isAirportPairDateValid =
01061         simfqtService.check (lInteractiveOrigin, lInteractiveDestination,
01062                             lInteractiveDepartureDate);
01063
01064     if (isAirportPairDateValid == false) {
01065         std::ostringstream oFDKStr;
01066         oFDKStr << "The airport pair/departure date: "
01067             << lInteractiveOrigin << "-" << lInteractiveDestination
01068             << "/" << lInteractiveDepartureDate
01069             << " does not correpond to any fare rule.\n"
01070             << "Make sure it exists with the 'list' command.";
01071         std::cout << oFDKStr.str() << std::endl;
01072         STDAIR_LOG_ERROR (oFDKStr.str());
01073
01074         break;
01075     }
01076
01077     // Display the list of corresponding fare rules.
01078     std::cout << "List of fare rules for "
01079         << lInteractiveOrigin << "-"
01080         << lInteractiveDestination << "/"
01081         << lInteractiveDepartureDate
01082         << std::endl;
01083
01084     const std::string& lFareRuleListStr =
01085         simfqtService.csvDisplay (lInteractiveOrigin,
01086                                 lInteractiveDestination,
01087                                 lInteractiveDepartureDate);
01088
01089     assert (lFareRuleListStr.empty() == false);
01090     std::cout << lFareRuleListStr << std::endl;
01091     STDAIR_LOG_DEBUG (lFareRuleListStr);
01092
01093     break;
01094 }
01095
01096     // ////////////////////////////////// Price //////////////////////////////////
01097     case Command_T::PRICE: {
01098
01099         // If no parameters are entered by the user, keep default ones.
01100         if (lTokenListByReadline.empty() == true) {
01101
01102             lInteractiveTravelSolution = lInteractiveTravelSolutionList.front();
01103
01104             std::cout << "No parameters specified. Default booking request and default
01105 t travel solution list are kept.\n"
01106                 << "Booking request: << "
01107                 << lInteractiveBookingRequest.display() << " >>"
01108                 << "\nTravel Solution: << "
01109                 << lInteractiveTravelSolution.display() << " >>"
01110                 << "\n***** \n"
01111                 << "Fare quote"
01112                 << "\n*****"
01113                 << std::endl;
01114
01115             // Try to fareQuote the sample list of travel solutions.
01116             try {
01117                 simfqtService.quotePrices (lInteractiveBookingRequest,
01118                                           lInteractiveTravelSolutionList);
01119             } catch (stdair::ObjectNotFoundException& E) {

```

```

01119         std::cerr << "The given travel solution corresponding to the given book
ing request can not be priced.\n"
01120             << E.what()
01121             << std::endl;
01122         break;
01123     }
01124     } else {
01125
01126         // Find the best match corresponding to the given parameters.
01127         TokenList_T lTokenList =
01128             extractTokenListForTSAndBR (lTokenListByReadline);
01129
01130         // Parse the best match, and give default values in case the
01131         // user does not specify all the parameters or does not
01132         // specify some of them correctly.
01133         stdair::BookingRequestStruct lFinalBookingRequest
01134             = parseTravelSolutionAndBookingRequestKey (lTokenList,
01135                                                         lInteractiveTravelSolutionLi
01136 st,
                                                         lInteractiveBookingRequest);
01137
01138
01139         assert (lInteractiveTravelSolutionList.size() >= 1);
01140         lInteractiveTravelSolution = lInteractiveTravelSolutionList.front();
01141
01142         // Display the booking request and the first travel solution
01143         // before pricing.
01144         std::cout << "Booking request: << "
01145             << lFinalBookingRequest.display() << " >>"
01146             << "\nTravel Solution: << "
01147             << lInteractiveTravelSolution.display() << " >>"
01148             << "\n***** \n"
01149             << "Fare quote"
01150             << "\n*****"
01151             << std::endl;
01152
01153         // Try to fareQuote the sample list of travel solutions.
01154         try {
01155             simfqtService.quotePrices (lFinalBookingRequest,
01156                                     lInteractiveTravelSolutionList);
01157         } catch (stdair::ObjectNotFoundException& E) {
01158             std::cerr << "The given travel solution corresponding to the given book
ing request can not be priced.\n"
01159                 << E.what()
01160                 << std::endl;
01161             break;
01162         }
01163     }
01164
01165     // Display the first travel solution after pricing:
01166     // one or more fare option have been added.
01167     lInteractiveTravelSolution = lInteractiveTravelSolutionList.front();
01168     std::cout << "Travel Solution: << "
01169         << lInteractiveTravelSolution.display() << " >>\n"
01170         << std::endl;
01171
01172     break;
01173 }
01174
01175 // ////////////////////////////////// Default / No value //////////////////////////////////
01176 case Command_T::NOP: {

```

```

01177         break;
01178     }
01179     case Command_T::LAST_VALUE:
01180     default: {
01181         // DEBUG
01182         std::ostringstream oStr;
01183         oStr << "The '" << lUserInput << "' command is not yet understood.\n"
01184             << "Type help to have more information." << std::endl;
01185
01186         STDAIR_LOG_DEBUG (oStr.str());
01187         std::cout << oStr.str() << std::endl;
01188     }
01189 }
01190 }
01191
01192 // DEBUG
01193 STDAIR_LOG_DEBUG ("End of the session. Exiting.");
01194 std::cout << "End of the session. Exiting." << std::endl;
01195
01196 // Close the Log outputFile
01197 logOutputFile.close();
01198
01199 /*
01200     Note: as that program is not intended to be run on a server in
01201     production, it is better not to catch the exceptions. When it
01202     happens (that an exception is throwned), that way we get the
01203     call stack.
01204 */
01205
01206 return 0;
01207 }

```

25.61 test/simfqt/FQTTestSuite.cpp File Reference

25.62 FQTTestSuite.cpp

```

00001
00005 // //////////////////////////////////////
00006 // Import section
00007 // //////////////////////////////////////
00008 // STL
00009 #include <sstream>
00010 #include <fstream>
00011 #include <string>
00012 // Boost Unit Test Framework (UTF)
00013 #define BOOST_TEST_DYN_LINK
00014 #define BOOST_TEST_MAIN
00015 #define BOOST_TEST_MODULE FQTTestSuite
00016 #include <boost/test/unit_test.hpp>
00017 // StdAir
00018 #include <stdair/basic/BasLogParams.hpp>
00019 #include <stdair/basic/BasDBParams.hpp>
00020 #include <stdair/basic/BasFileMgr.hpp>
00021 #include <stdair/service/Logger.hpp>
00022 #include <stdair/bom/TravelSolutionStruct.hpp>
00023 #include <stdair/bom/BookingRequestStruct.hpp>
00024 // SimFQT
00025 #include <simfqt/SIMFQT_Service.hpp>
00026 #include <simfqt/config/simfqt-paths.hpp>
00027

```

```

00028 namespace boost_utf = boost::unit_test;
00029
00033 struct UnitTestConfig {
00035     UnitTestConfig() {
00036         static std::ofstream _test_log ("FQTTTestSuite_utfresults.xml");
00037         boost_utf::unit_test_log.set_stream (_test_log);
00038         boost_utf::unit_test_log.set_format (boost_utf::XML);
00039         boost_utf::unit_test_log.set_threshold_level (boost_utf::log_test_units);
00040         //boost_utf::unit_test_log.set_threshold_level (boost_utf::log_successful_tes
00041         ts);
00042     }
00043
00044     ~UnitTestConfig() {
00045     }
00046 };
00047
00048 // //////////////////////////////////////
00052 void testFareQuoterHelper (const unsigned short iTestFlag,
00053                           const stdair::Filename_T iFareInputFilename,
00054                           const bool isBuiltin) {
00055
00056     // Output log File
00057     std::ostringstream oStr;
00058     oStr << "FQTTTestSuite_" << iTestFlag << ".log";
00059     const stdair::Filename_T lLogFilename (oStr.str());
00060
00061     // Set the log parameters
00062     std::ofstream logOutputFile;
00063     // Open and clean the log outputfile
00064     logOutputFile.open (lLogFilename.c_str());
00065     logOutputFile.clear();
00066
00067     // Initialise the SimFQT service object
00068     const stdair::BasLogParams lLogParams (stdair::LOG::DEBUG,
00069                                           logOutputFile);
00070
00071     // Initialise the Simfqt service object
00072     SIMFQT::SIMFQT_Service simfqtService (lLogParams);
00073
00074     // Check wether or not a (CSV) input file should be read
00075     if (isBuiltin == true) {
00076
00077         // Build the default sample BOM tree (filled with fares) for Simfqt
00078         simfqtService.buildSampleBom();
00079
00080     } else {
00081
00082         // Build the BOM tree from parsing the fare input file
00083         SIMFQT::FareFilePath lFareFilePath (iFareInputFilename);
00084         simfqtService.parseAndLoad (lFareFilePath);
00085     }
00086
00087     // Build a sample list of travel solutions and a booking request.
00088     stdair::TravelSolutionList_T lTravelSolutionList;
00089     simfqtService.buildSampleTravelSolutions (lTravelSolutionList);
00090     stdair::BookingRequestStruct lBookingRequest =
00091         simfqtService.buildBookingRequest();
00092
00093     // Try to fareQuote the sample list of travel solutions
00094     simfqtService.quotePrices (lBookingRequest, lTravelSolutionList);
00095
00096     // Close the log file

```

```
00097     logOutputFile.close();
00098
00099 }
00100
00101 // ////////////////////////////////// Main: Unit Test Suite //////////////////////////////////
00102
00103 // Set the UTF configuration (re-direct the output to a specific file)
00104 BOOST_GLOBAL_FIXTURE (UnitTestFixture);
00105
00106 // Start the test suite
00107 BOOST_AUTO_TEST_SUITE (master_test_suite)
00108
00109
00110 BOOST_AUTO_TEST_CASE (simfqt_simple_pricing_test) {
00111
00112     // Input file name
00113     const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fare01.csv");
00114
00115     // State whether the BOM tree should be built-in or parsed from an input file
00116     const bool isBuiltin = false;
00117
00118     // Try to fareQuote the sample default list of travel solutions
00119     BOOST_CHECK_NO_THROW (testFareQuoterHelper (0, lFareInputFilename, isBuiltin));
00120
00121 }
00122
00123
00124 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_01) {
00125
00126     // Input file name
00127     const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError01.csv");
00128
00129     // State whether the BOM tree should be built-in or parsed from an input file
00130     const bool isBuiltin = false;
00131
00132     // Try to fareQuote the sample default list of travel solutions
00133     BOOST_CHECK_THROW (testFareQuoterHelper (1, lFareInputFilename, isBuiltin),
00134                        SIMFQT::AirportPairNotFoundException);
00135
00136 }
00137
00138 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_02) {
00139
00140     // Input file name
00141     const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError02.csv");
00142
00143     // State whether the BOM tree should be built-in or parsed from an input file
00144     const bool isBuiltin = false;
00145
00146     // Try to fareQuote the sample default list of travel solutions
00147     BOOST_CHECK_THROW (testFareQuoterHelper (2, lFareInputFilename, isBuiltin),
00148                        SIMFQT::PosOrChannelNotFoundException);
00149
00150 }
00151
00152 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_03) {
00153
00154     // Input file name
00155     const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError03.csv");
00156
00157     // State whether the BOM tree should be built-in or parsed from an input file
```



```
00169     const bool isBuiltin = false;
00170
00171     // Try to fareQuote the sample default list of travel solutions
00172     BOOST_CHECK_THROW (testFareQuoterHelper (3, lFareInputFilename, isBuiltin),
00173                       SIMFQT::FlightDateNotFoundException);
00174 }
00175
00180 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_04) {
00181
00182     // Input file name
00183     const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError04.cs
v");
00184
00185     // State whether the BOM tree should be built-in or parsed from an input file
00186     const bool isBuiltin = false;
00187
00188     // Try to fareQuote the sample default list of travel solutions
00189     BOOST_CHECK_THROW (testFareQuoterHelper (4, lFareInputFilename, isBuiltin),
00190                       SIMFQT::FlightTimeNotFoundException);
00191 }
00192
00197 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_05) {
00198
00199     // Input file name
00200     const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError05.cs
v");
00201
00202     // State whether the BOM tree should be built-in or parsed from an input file
00203     const bool isBuiltin = false;
00204
00205     // Try to fareQuote the sample default list of travel solutions
00206     BOOST_CHECK_THROW (testFareQuoterHelper (5, lFareInputFilename, isBuiltin),
00207                       SIMFQT::FeaturesNotFoundException);
00208 }
00209
00214 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_06) {
00215
00216     // Input file name
00217     const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError06.cs
v");
00218
00219     // State whether the BOM tree should be built-in or parsed from an input file
00220     const bool isBuiltin = false;
00221
00222     // Try to fareQuote the sample default list of travel solutions
00223     BOOST_CHECK_THROW (testFareQuoterHelper (6, lFareInputFilename, isBuiltin),
00224                       SIMFQT::AirlineNotFoundException);
00225 }
00226
00231 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_07) {
00232
00233     // Input file name
00234     const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/fareError07.cs
v");
00235
00236     // State whether the BOM tree should be built-in or parsed from an input file
00237     const bool isBuiltin = false;
00238
00239     // Try to fareQuote the sample default list of travel solutions
00240     BOOST_CHECK_THROW (testFareQuoterHelper (7, lFareInputFilename, isBuiltin),
00241                       SIMFQT::FareFileParsingFailedException);
00242 }
```

```
00243
00248 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_08) {
00249
00250     // Input file name
00251     const stdair::Filename_T lFareInputFilename (STDAIR_SAMPLE_DIR "/missingFile.csv");
00252
00253     // State whether the BOM tree should be built-in or parsed from an input file
00254     const bool isBuiltin = false;
00255
00256     // Try to fareQuote the sample default list of travel solutions
00257     BOOST_CHECK_THROW (testFareQuoterHelper (8, lFareInputFilename, isBuiltin),
00258                       SIMFQT::FareInputFileNotFoundException);
00259 }
00260
00265 BOOST_AUTO_TEST_CASE (simfqt_error_pricing_test_09) {
00266
00267     // Input file name
00268     const stdair::Filename_T lEmptyInputFilename (STDAIR_SAMPLE_DIR "/" );
00269
00270     // State whether the BOM tree should be built-in or parsed from an input file
00271     const bool isBuiltin = true;
00272
00273     // Try to fareQuote the sample default list of travel solutions
00274     BOOST_CHECK_NO_THROW(testFareQuoterHelper (9, lEmptyInputFilename, isBuiltin));
00275 }
00276
00277
00278 // End the test suite
00279 BOOST_AUTO_TEST_SUITE_END()
00280
00281
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