

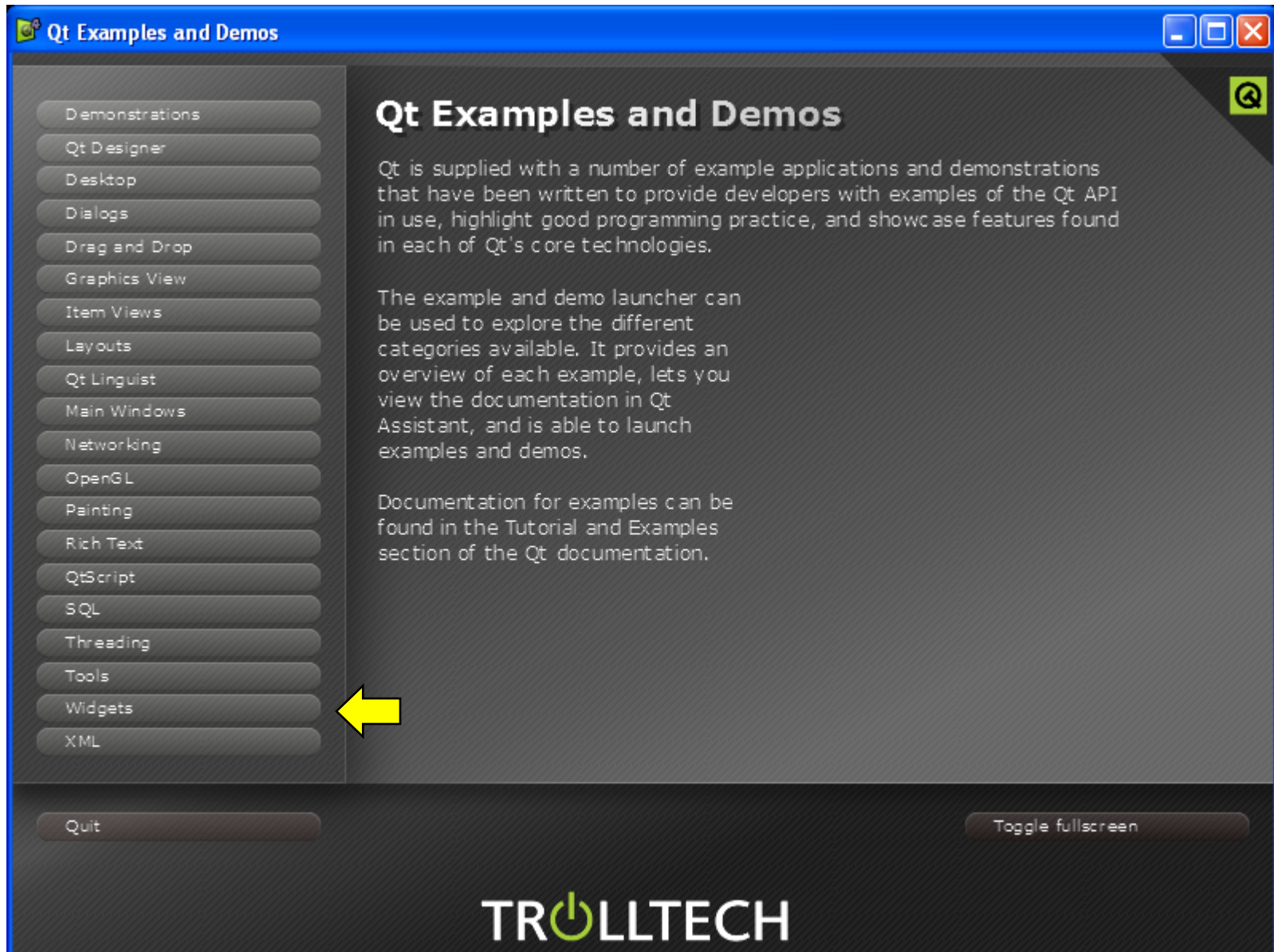
ECE 462

Object-Oriented Programming using C++ and Java

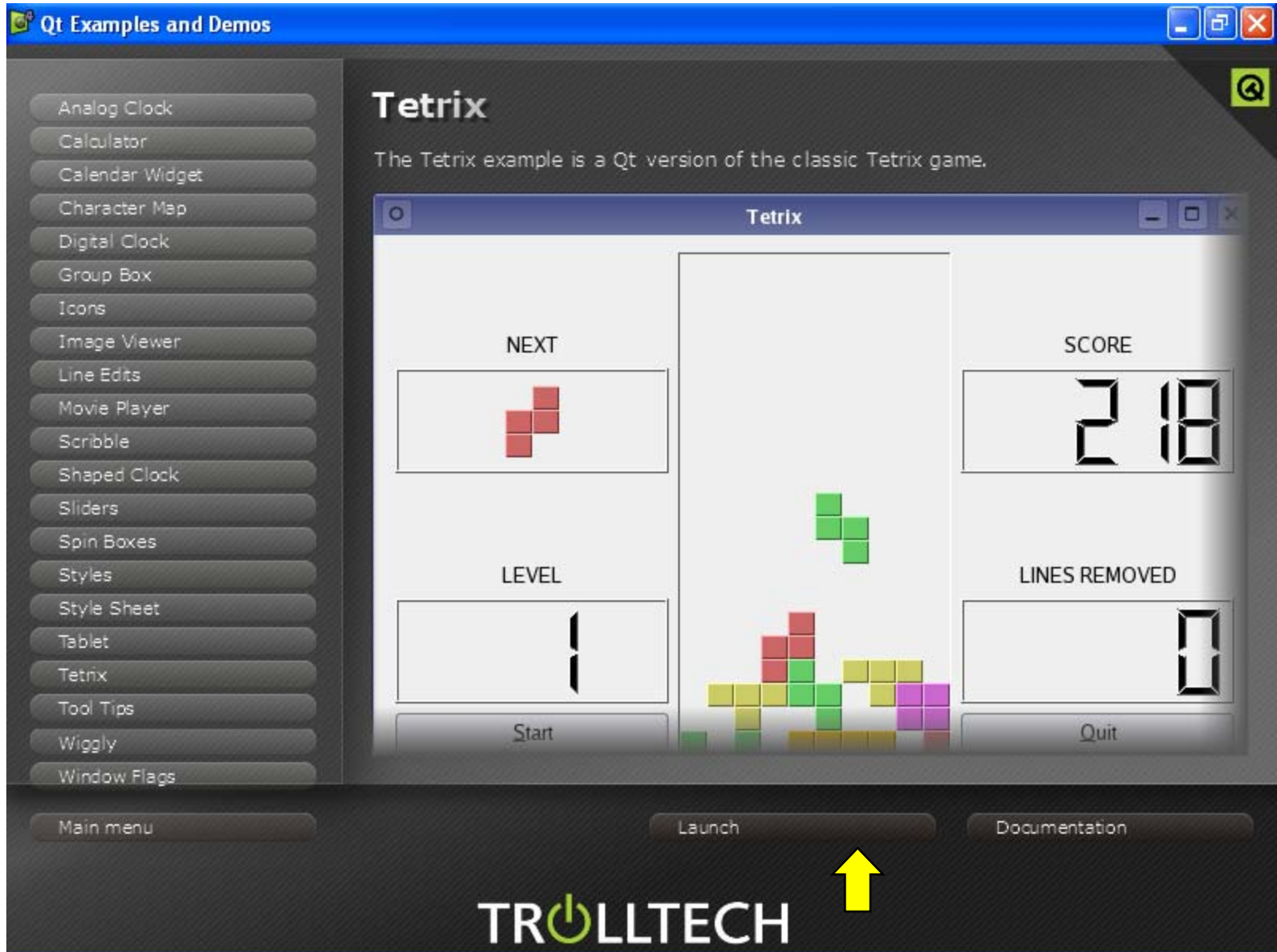
Tetrix and Automatic Document Generation

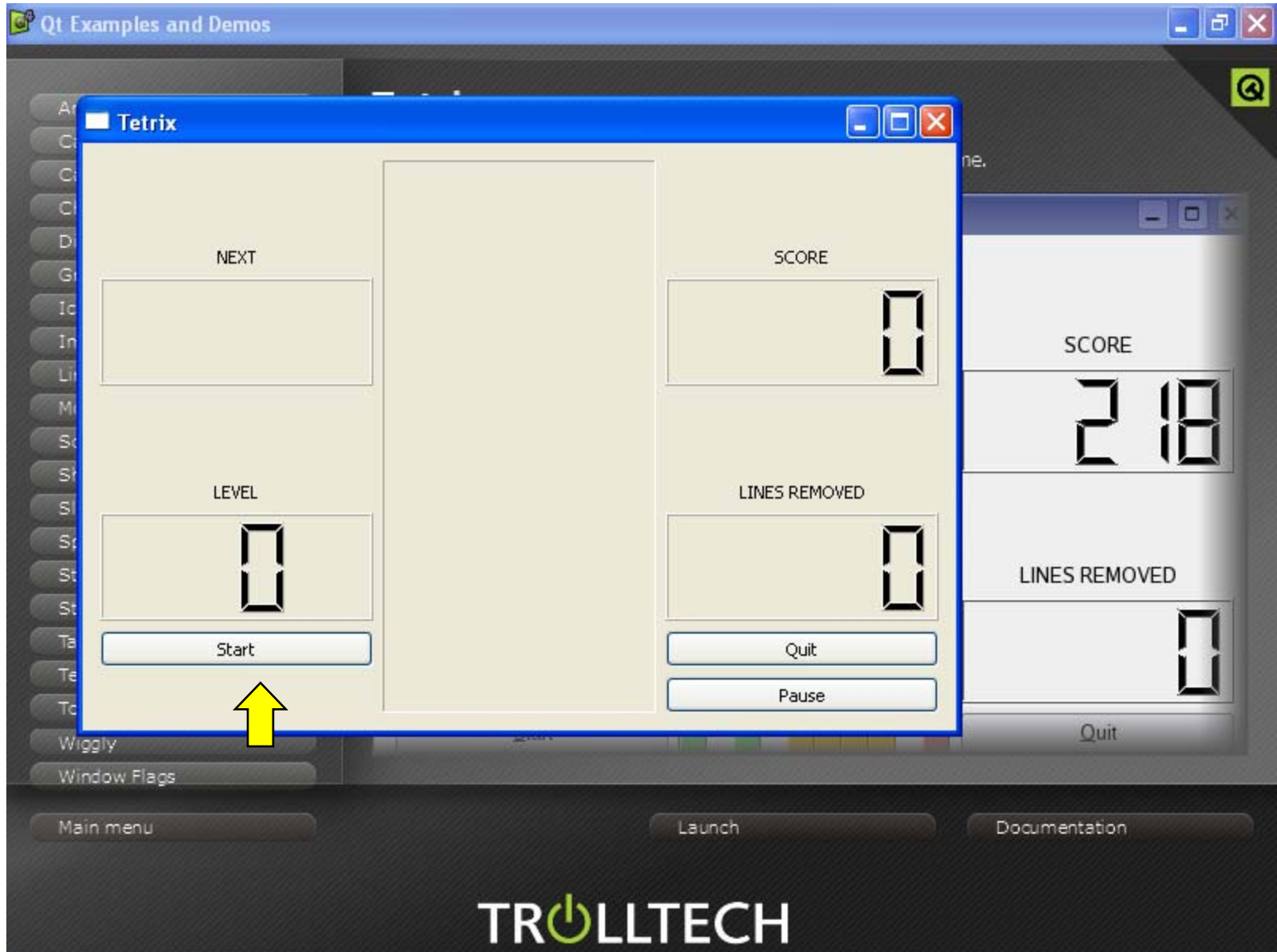
Yung-Hsiang Lu
yunglu@purdue.edu

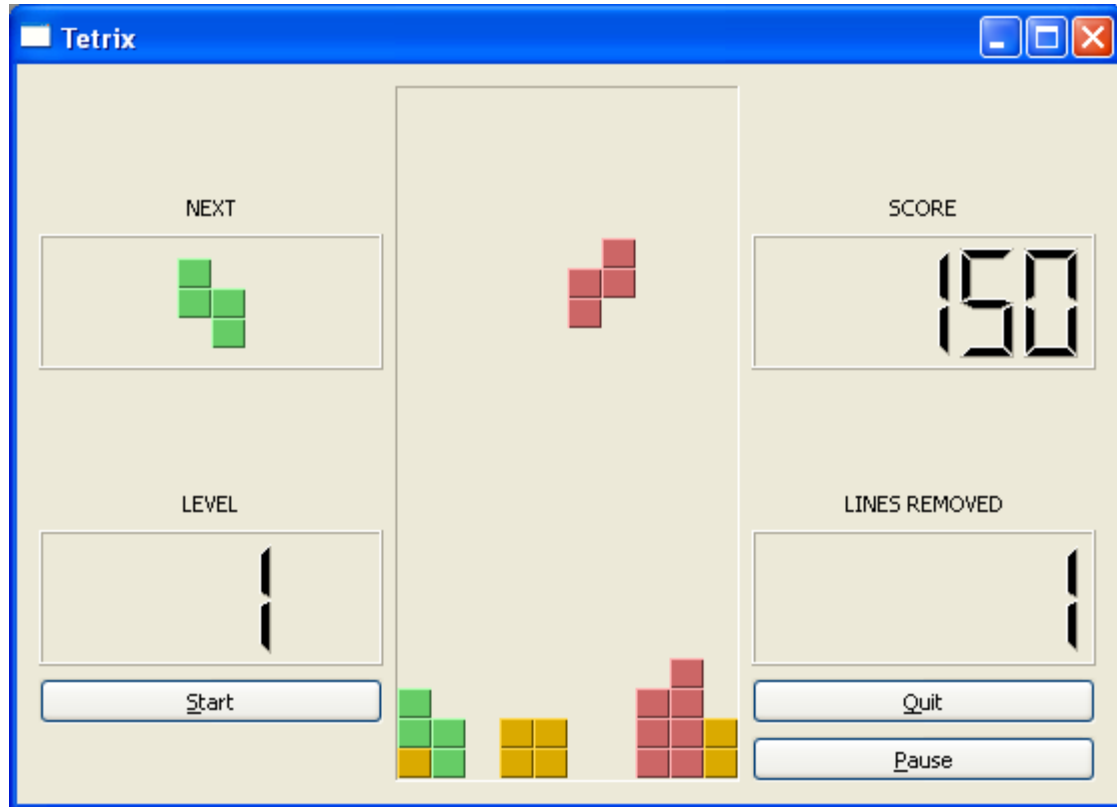
Tetrix Example in Qt











Qt 4.3: Tetrix Example - Mozilla Firefox

File Edit View History Bookmarks Yahoo! Tools Help

http://doc.trolltech.com/4.3/widgets-tetrix.html

Home · All Classes · Main Classes · Grouped Classes · Modules · Functions

TROLLTECH

Tetrix Example

Files:

- ♦ [widgets/tetrix/tetrixboard.cpp](#)
- ♦ [widgets/tetrix/tetrixboard.h](#)
- ♦ [widgets/tetrix/tetrixpiece.cpp](#)
- ♦ [widgets/tetrix/tetrixpiece.h](#)
- ♦ [widgets/tetrix/tetrixwindow.cpp](#)
- ♦ [widgets/tetrix/tetrixwindow.h](#)
- ♦ [widgets/tetrix/main.cpp](#)

The Tetrix example is a Qt version of the classic Tetrix game.

Done

Tetrix

NEXT SCORE

Automatic Document Generation

Doxygen - Mozilla Firefox

File Edit View History Bookmarks Yahoo! Tools Help

http://www.stack.nl/~dimitri/doxygen/

Doxygen

latest release v1.5.6 - last page update 18 May 2008

Source code documentation generator tool

Doxygen is a documentation system for C++, C, Java, Objective-C, Python, IDL (Corba and Microsoft flavors), Fortran, VHDL, PHP, C#, and to some extent D.

It can help you in three ways:

1. It can generate an on-line documentation browser (in HTML) and/or an off-line reference manual (in \LaTeX) from a set of documented source files. There is also support for generating output in RTF (MS-Word), PostScript, hyperlinked PDF, compressed HTML, and Unix man pages. The documentation is extracted directly from the sources, which makes it much easier to keep the documentation consistent with the source code.
2. You can **configure** doxygen to extract the code structure from undocumented source files. This is very useful to quickly find your way in large source distributions. You can also visualize the relations between the various elements by means of include

- Home
- Manual
- Mailing Lists
- Mail archive
- FAQ
- ChangeLog
- Todo / Wish List
- Report bugs
- Doxygen users
- Articles
- Other Doc Tools

- SVN
- SVN tarballs
- Download
- Download manual
- Helper tools
- RPM Packages
- Debian Packages

Help doxygen!

[Donate](#)

Contributors

Preisvergleich

Done

```
2:msee190pc9.ecn.purdue.edu - ee462b30@msee190pc - SSH Secure Shell
File Edit View Window Help
Quick Connect Profiles
[(msee190pc9) ~/tetrax/ ] ls
main.cpp          tetrixboard.h    tetrixpiece.h    tetrixwindow.cpp
tetrixboard.cpp  tetrixpiece.cpp  tetrix.pro       tetrixwindow.h
[(msee190pc9) ~/tetrax/ ] doxygen -g

Configuration file `Doxyfile' created.
Now edit the configuration file and enter

doxygen Doxyfile          make necessary changes in Doxyfile

to generate the documentation for your project

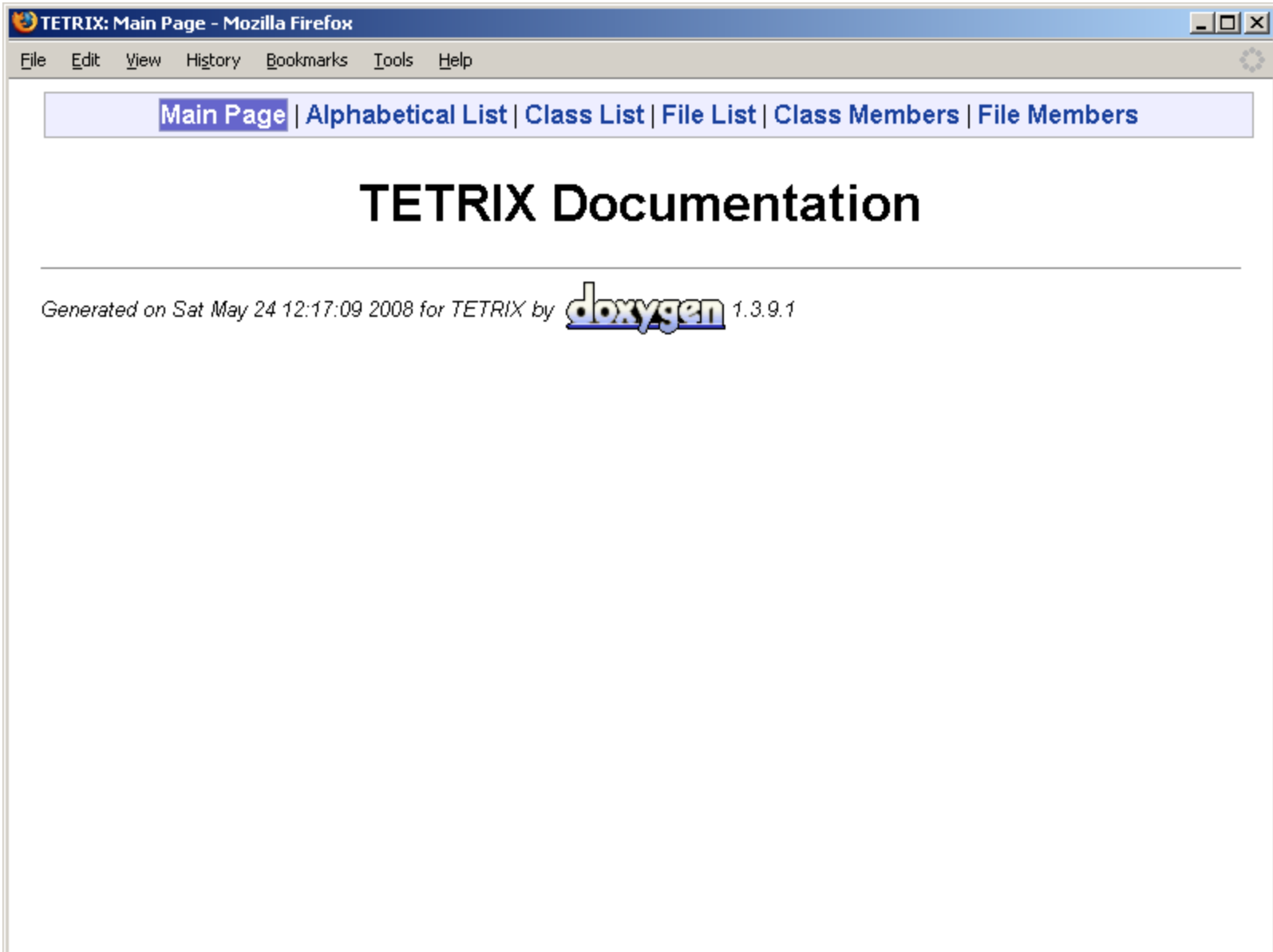
[(msee190pc9) ~/tetrax/ ] ls
Doxyfile          tetrixboard.h    tetrix.pro
main.cpp          tetrixpiece.cpp  tetrixwindow.cpp
tetrixboard.cpp  tetrixpiece.h    tetrixwindow.h
[(msee190pc9) ~/tetrax/ ] █
```



run doxygen (without -g) to generate document

How to Understand a Program You Did Not Write?

- use document generation program (such as doxygen) to analyze the program structure
- start from the main function
- follow one execution path to understand the program's flow
- use a debugger to trace the program



TETRIX: Class List - Mozilla Firefox


File Edit View History Bookmarks Tools Help

[Main Page](#) | [Alphabetical List](#) | [Class List](#) | [File List](#) | [Class Members](#) | [File Members](#)

TETRIX Class List

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

TetrixBoard	
TetrixPiece	
TetrixWindow	

Generated on Sat May 24 12:17:10 2008 for TETRIX by  1.3.9.1

TETRIX: TetrixBoard Class Reference - Mozilla Firefox

File Edit View History Bookmarks Tools Help

[Main Page](#) | [Alphabetical List](#) | [Class List](#) | [File List](#) | [Class Members](#) | [File Members](#)

TetrixBoard Class Reference

```
#include <tetrixboard.h>
```

Collaboration diagram for TetrixBoard:

```
classDiagram
    class TetrixPiece {
        - pieceShape
        - coords
        + TetrixPiece()
        + setRandomShape()
        + setShape()
        + shape()
        + x()
        + y()
        + minX()
        + maxX()
        + minY()
        + maxY()
        + rotatedLeft()
        + rotatedRight()
        - setX()
        - setY()
    }
    nextPiece
    curPiece
```

```
00001 /*****
00002 **
00003 ** Copyright (C) 2004-2007 Trolltech ASA. All rights reserved.
00004 **
00005 ** This file is part of the example classes of the Qt Toolkit.
00006 **
00007 ** This file may be used under the terms of the GNU General Public
00008 ** License version 2.0 as published by the Free Software Foundation
00009 ** and appearing in the file LICENSE.GPL included in the packaging of
00010 ** this file. Please review the following information to ensure GNU
00011 ** General Public Licensing requirements will be met:
00012 ** http://www.trolltech.com/products/qt/opensource.html
00013 **
00014 ** If you are unsure which license is appropriate for your use, please
00015 ** review the following information:
00016 ** http://www.trolltech.com/products/qt/licensing.html or contact the
00017 ** sales department at sales@trolltech.com.
00018 **
00019 ** This file is provided AS IS with NO WARRANTY OF ANY KIND, INCLUDING THE
00020 ** WARRANTY OF DESIGN, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
00021 **
00022 *****/
00023
00024 #ifndef TETRISBOARD_H
00025 #define TETRISBOARD_H
```



```
TETRIS: tetrixboard.h Source File - Mozilla Firefox
File Edit View History Bookmarks Tools Help
00024 #ifndef TETRISBOARD_H
00025 #define TETRISBOARD_H
00026
00027 #include <QBasicTimer>
00028 #include <QFrame>
00029 #include <QPointer>
00030
00031 #include "tetrixpiece.h"
00032
00033 class QLabel;
00034
00035 class TetrixBoard : public QFrame
00036 {
00037     Q_OBJECT
00038
00039 public:
00040     TetrixBoard(QWidget *parent = 0);
00041
00042     void setNextPieceLabel(QLabel *label);
00043     QSize sizeHint() const;
00044     QSize minimumSizeHint() const;
00045
00046 public slots:
00047     void start();
00048     void pause();
00049
00050 signals:
00051     void scoreChanged(int score);
00052     void levelChanged(int level);
00053     void linesRemovedChanged(int numLines);
00054
00055 protected:
00056     void paintEvent(QPaintEvent *event);
00057     void keyPressEvent(QKeyEvent *event);
```

The screenshot shows a Mozilla Firefox browser window with the title "TETRIX: TetrixBoard Class Reference - Mozilla Firefox". The browser's menu bar includes "File", "Edit", "View", "History", "Bookmarks", "Tools", and "Help". The main content area displays the documentation for the TetrixBoard class, listing four methods:

- void TetrixBoard::setNextPieceLabel (QLabel * *label*)**
Definition at line [40](#) of file [tetrixboard.cpp](#).
Referenced by [TetrixWindow::TetrixWindow\(\)](#).
- QSize TetrixBoard::sizeHint () const**
Definition at line [45](#) of file [tetrixboard.cpp](#).
- void TetrixBoard::start () [*slot*]**
Definition at line [57](#) of file [tetrixboard.cpp](#).
References [levelChanged\(\)](#), [linesRemovedChanged\(\)](#), and [scoreChanged\(\)](#).
- void TetrixBoard::timerEvent (QTimerEvent * *event*) [*protected*]**
Definition at line [157](#) of file [tetrixboard.cpp](#).

Below the methods, a horizontal line is followed by the text: "The documentation for this class was generated from the following files:"

- ◆ [tetrixboard.h](#)

TETRIX: tetrixpiece.h File Reference - Mozilla Firefox

File Edit View History Bookmarks Tools Help

class **TetrixPiece**

Enumerations

```
enum TetrixShape {  
    NoShape, ZShape, SShape, LineShape,  
    TShape, SquareShape, LShape, MirroredLShape  
}
```

Enumeration Type Documentation

enum **TetrixShape**

Enumeration values:

- NoShape*
- ZShape*
- SShape*
- LineShape*
- TShape*
- SquareShape*
- LShape*
- MirroredLShape*

TETRIX: TetrixPiece Class Reference - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Definition at line [71](#) of file [tetrixpiece.cpp](#).

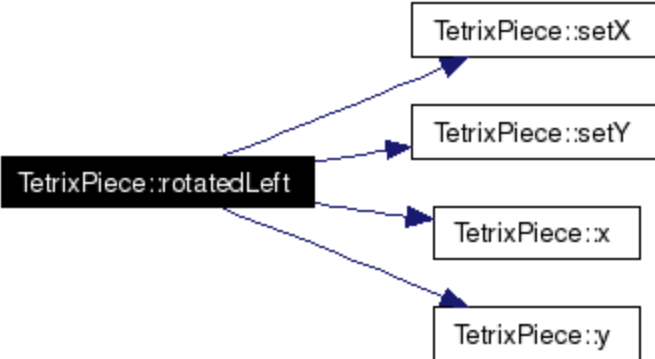
TetrixPiece TetrixPiece::rotatedLeft () const

Definition at line [87](#) of file [tetrixpiece.cpp](#).

References [pieceShape](#), [setX\(\)](#), [setY\(\)](#), [x\(\)](#), and [y\(\)](#).

Referenced by [TetrixBoard::keyPressEvent\(\)](#).

Here is the call graph for this function:



```
graph LR; A[TetrixPiece::rotatedLeft] --> B[TetrixPiece::setX]; A --> C[TetrixPiece::setY]; A --> D[TetrixPiece::x]; A --> E[TetrixPiece::y];
```

TetrixPiece TetrixPiece::rotatedRight () const

Definition at line [101](#) of file [tetrixpiece.cpp](#).