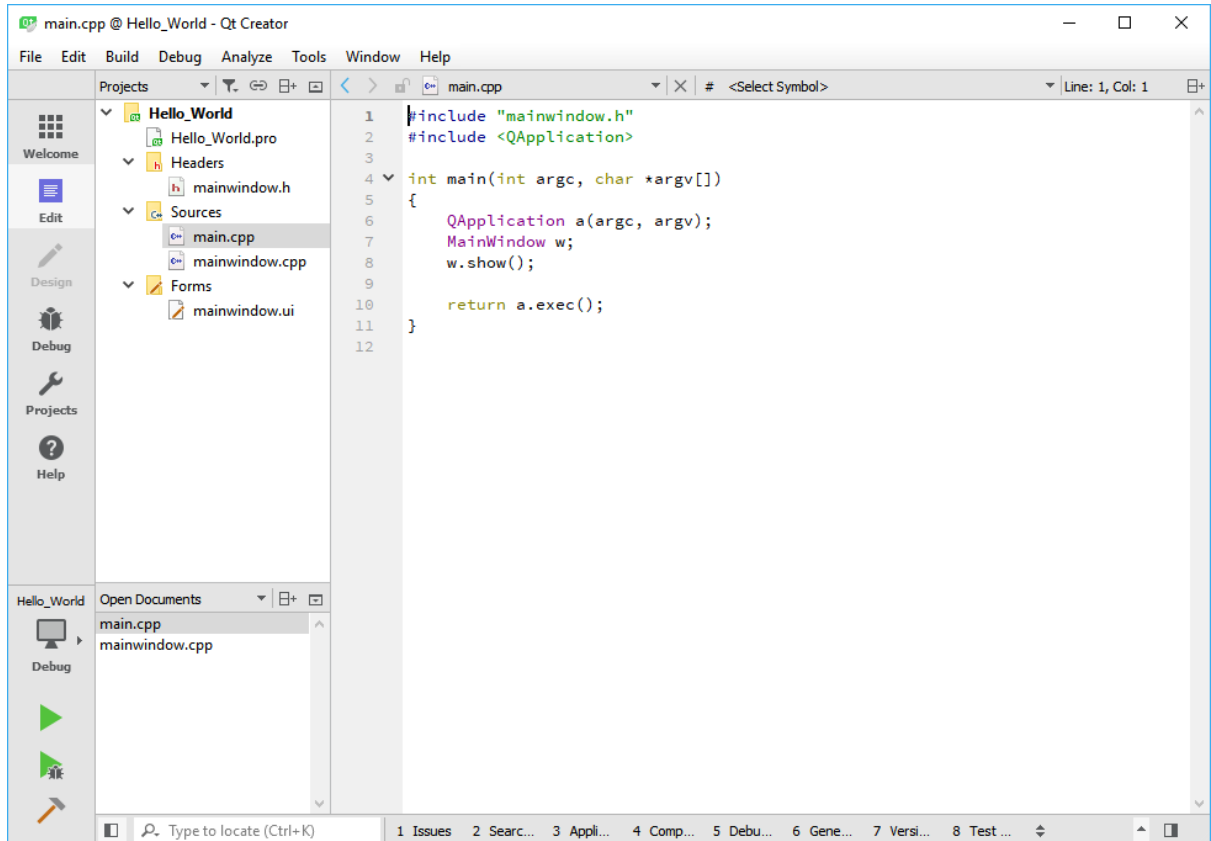


Chapter 01: Introduction to OpenCV and Qt





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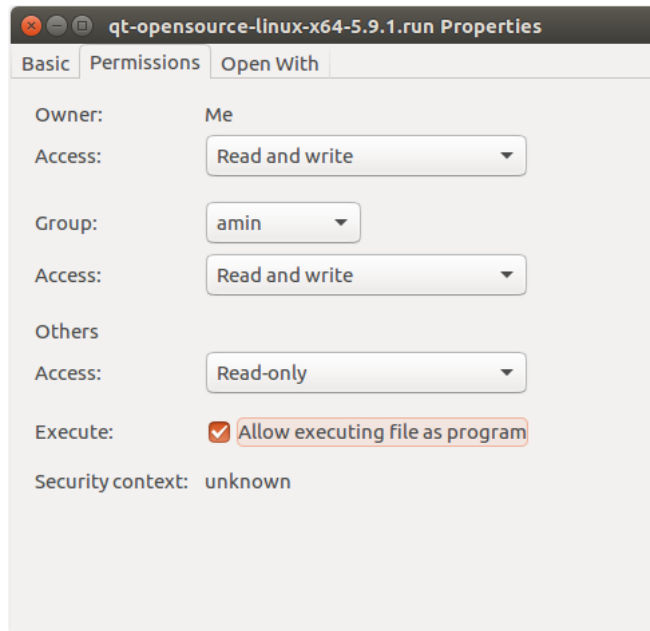
| Name | Last modified | Size | Metadata |
|---------------------------|-------------------|------|----------|
| ↑ Parent Directory | | - | |
| ■ vsaddin/ | 14-Feb-2017 07:47 | - | |
| ■ qtcreator/ | 23-May-2017 12:55 | - | |
| ■ qtchooser/ | 15-Apr-2016 07:49 | - | |
| ■ qt/ | 31-May-2017 07:06 | - | |
| ■ qt-installer-framework/ | 22-Mar-2017 13:10 | - | |
| ■ qbs/ | 03-Jul-2017 14:03 | - | |
| ■ pyside/ | 30-Nov-2015 13:39 | - | |
| ■ online_installers/ | 23-May-2017 19:19 | - | |
| ■ jom/ | 15-Nov-2016 13:32 | - | |
| ■ gdb/ | 17-Nov-2014 13:42 | - | |

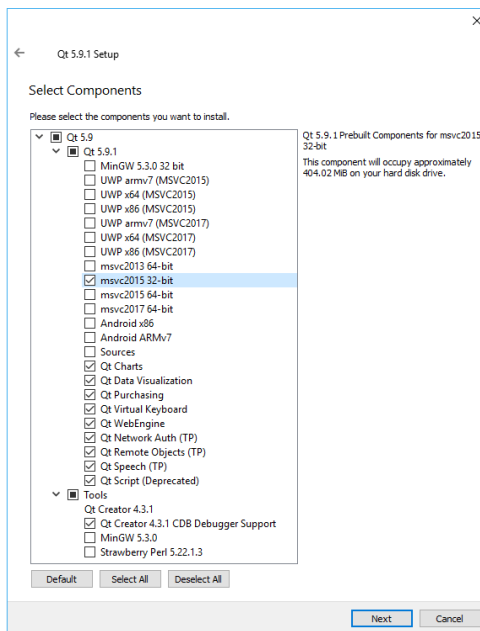
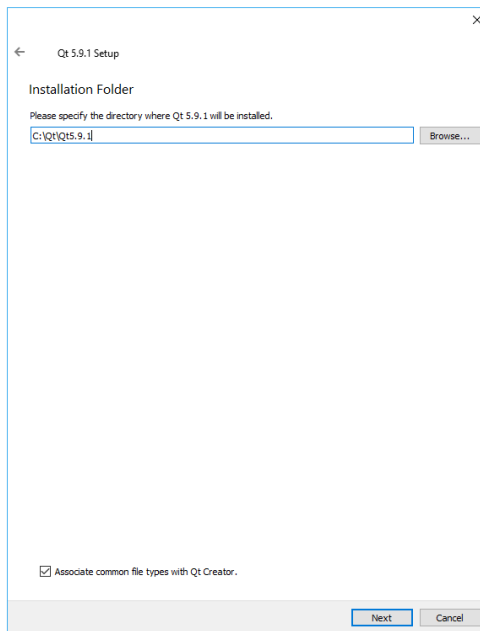
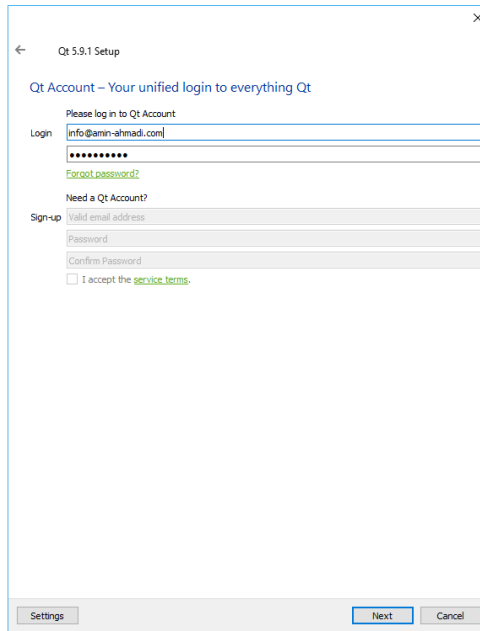
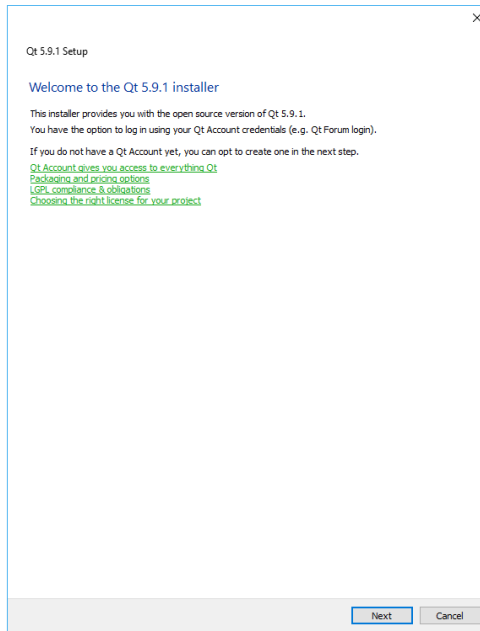
For Qt Downloads, please visit qt.io/download

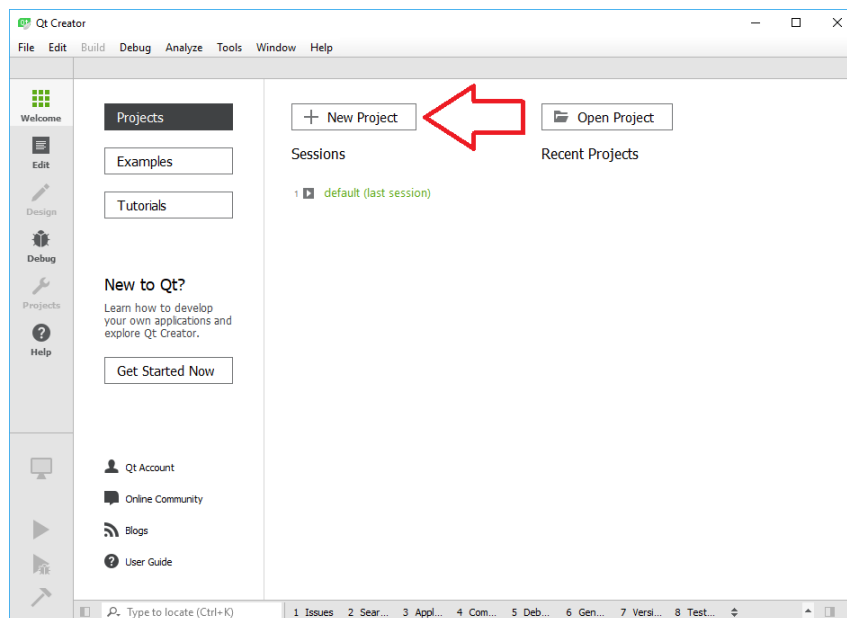
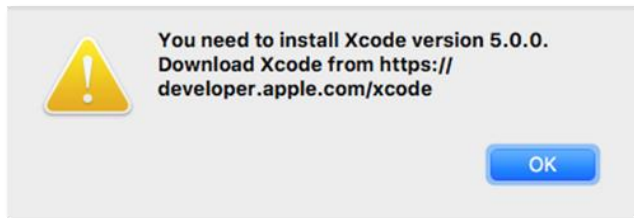
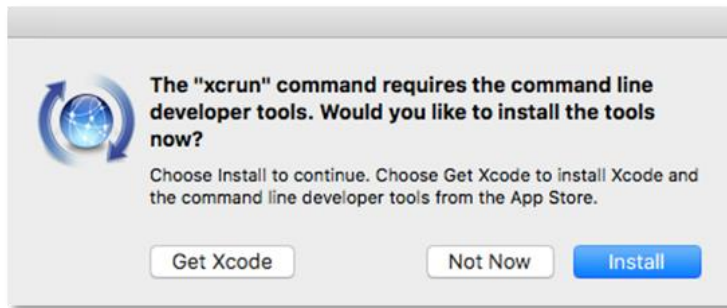
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All other trademarks are property of their respective owners.

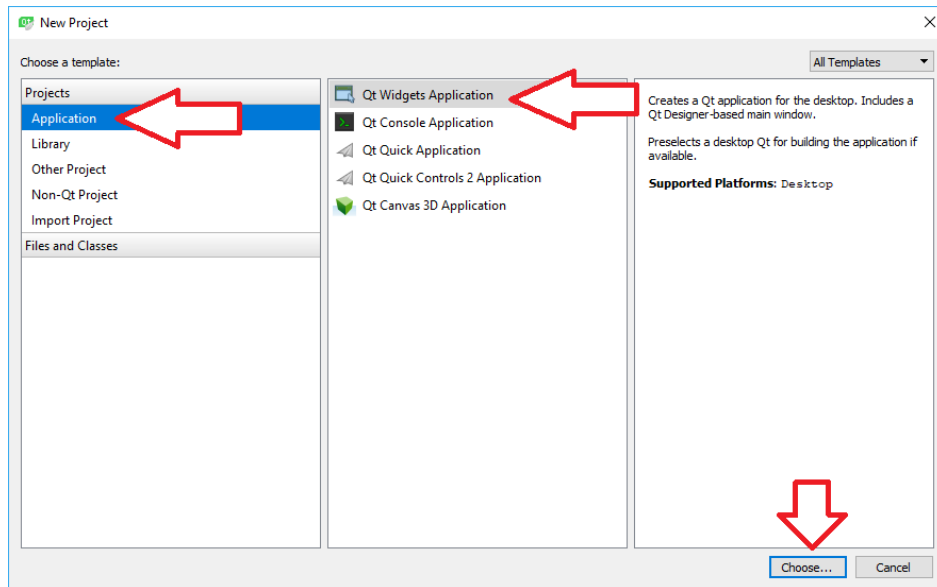
The Qt Company Ltd, Bertel Jungin aukio D3A, 02000 Espoo, Finland, Org. Nr. 2037805-2

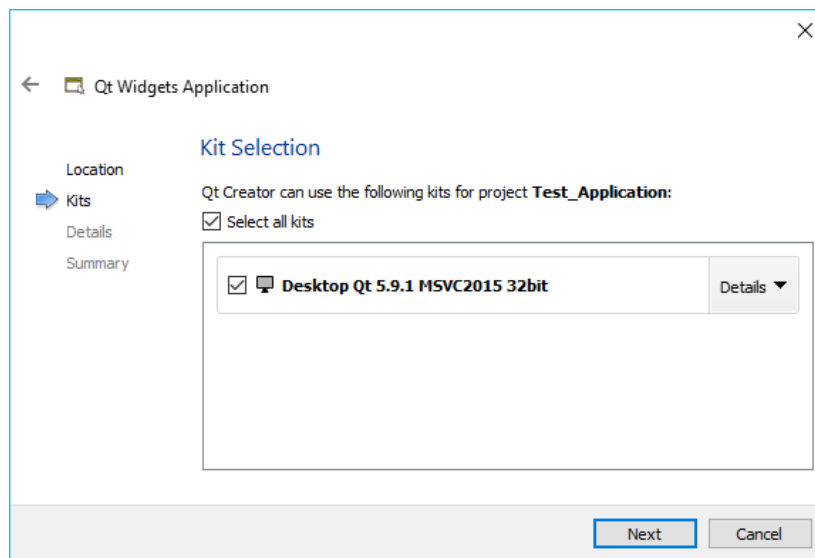
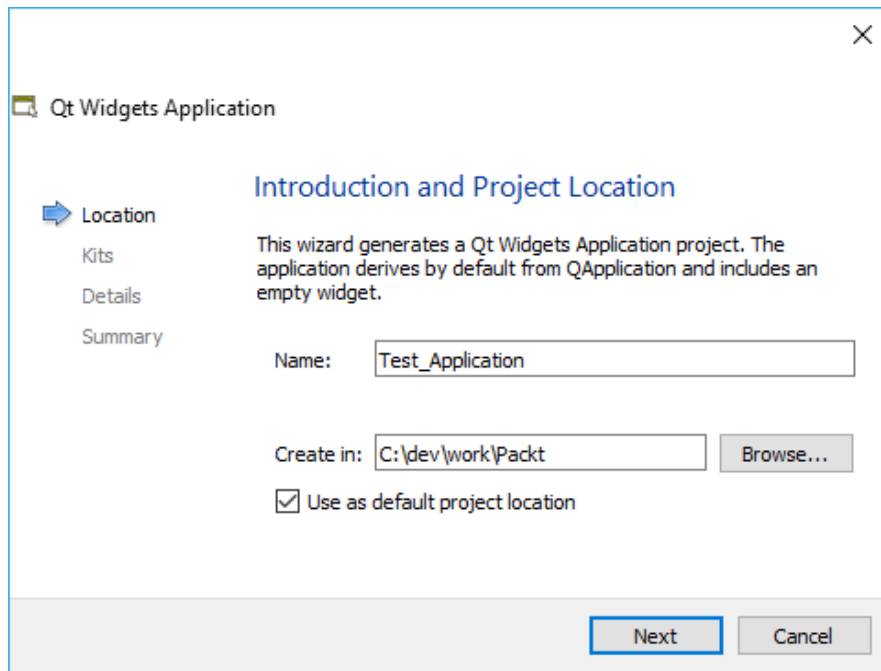
[List of official Qt-project mirrors](#)











Qt Widgets Application

Location
Kits
Details
Summary

Class Information

Specify basic information about the classes for which you want to generate skeleton source code files.

Class name:

Base class:

Header file:

Source file:

Generate form:

Form file:

Next Cancel

Qt Widgets Application

Location
Kits
Details
Summary

Project Management

Add as a subproject to project:

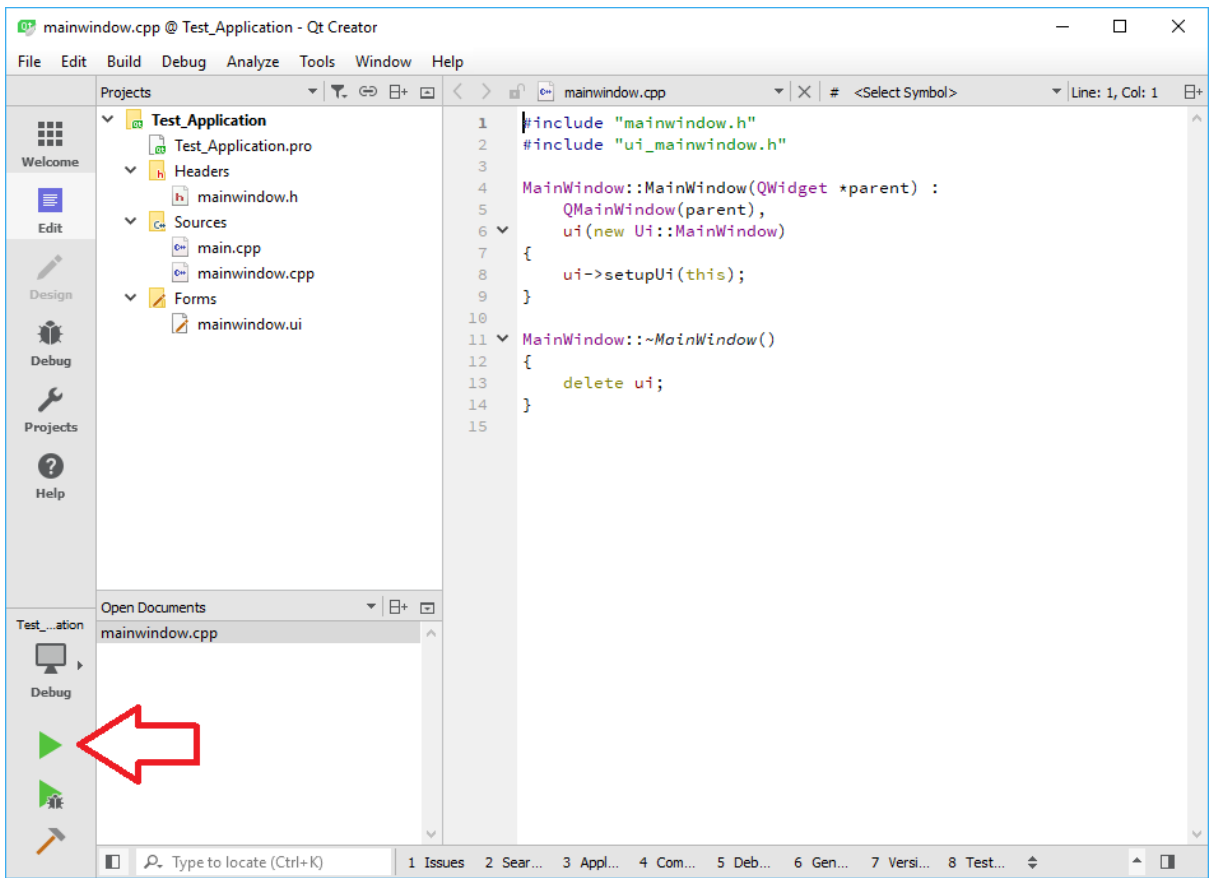
Add to version control:

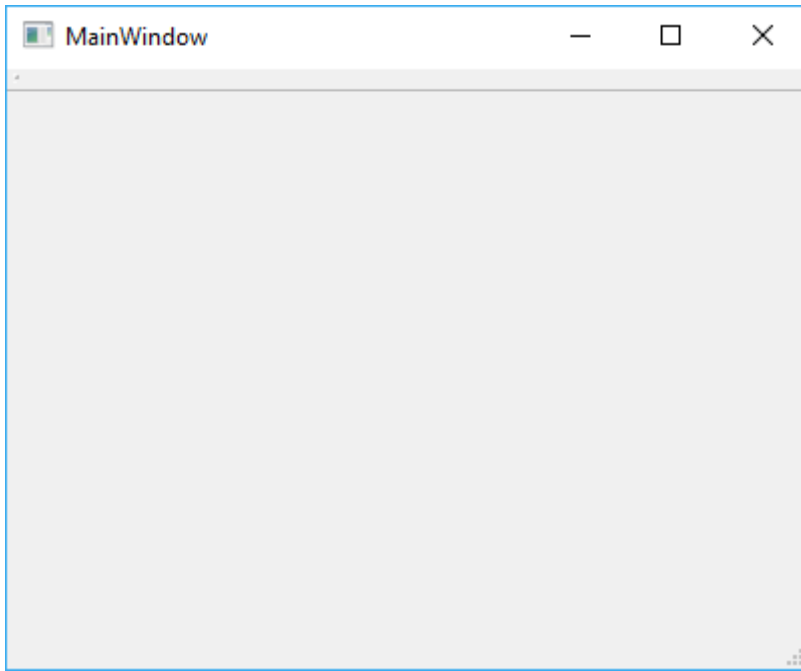
Files to be added in

C:\dev\work\Packt\Test_Application:

```
main.cpp
mainwindow.cpp
mainwindow.h
mainwindow.ui
Test_Application.pro
```

Finish Cancel







Releases

*** 3.3.0** [Documentation](#)

2017-08-03

[Sources](#)

[3.3.0](#)

[Win pack](#)

[iOS pack](#)

[Android pack](#)

*** 2.4.13.3** [Documentation](#)

2017-08-01

[Sources](#)

[2.4.13.3](#)

[Win pack](#)

[iOS pack](#)

[Android pack](#)

3.2.0 [Documentation](#)

2016-12-23

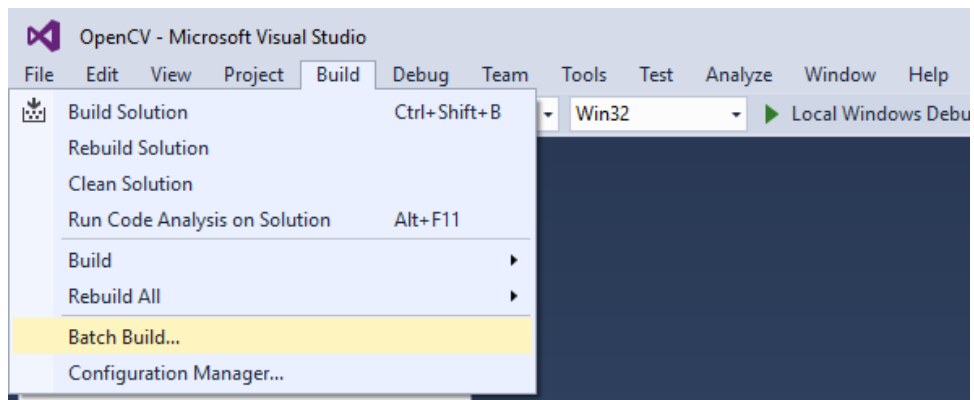
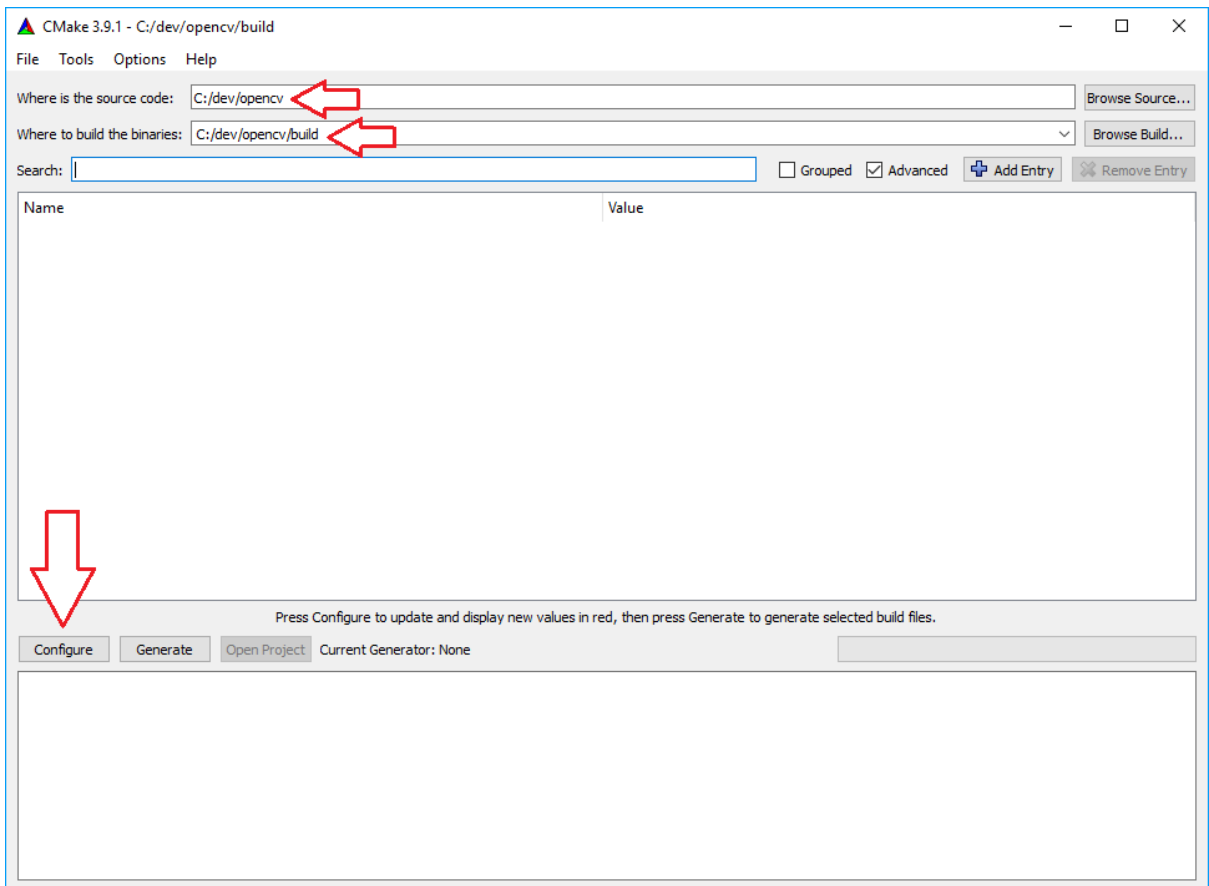
[Sources](#)

[3.2.0](#)

[Win pack](#)

[iOS pack](#)

[Android pack](#)



Batch Build

Check the project configurations to build:

| Project | Configuration | Platform | Solution Config | Build |
|--------------|---------------|----------|-----------------|-------------------------------------|
| ALL_BUILD | Debug | Win32 | Debug Win32 | <input checked="" type="checkbox"/> |
| ALL_BUILD | Release | Win32 | Release Win32 | <input checked="" type="checkbox"/> |
| doxygen | Debug | Win32 | Debug Win32 | <input type="checkbox"/> |
| doxygen | Release | Win32 | Release Win32 | <input type="checkbox"/> |
| IlmImf | Debug | Win32 | Debug Win32 | <input type="checkbox"/> |
| IlmImf | Release | Win32 | Release Win32 | <input type="checkbox"/> |
| INSTALL | Debug | Win32 | Debug Win32 | <input checked="" type="checkbox"/> |
| INSTALL | Release | Win32 | Release Win32 | <input checked="" type="checkbox"/> |
| install_docs | Debug | Win32 | Debug Win32 | <input type="checkbox"/> |
| install_docs | Release | Win32 | Release Win32 | <input type="checkbox"/> |
| itnotify | Debug | Win32 | Debug Win32 | <input type="checkbox"/> |
| itnotify | Release | Win32 | Release Win32 | <input type="checkbox"/> |

Build

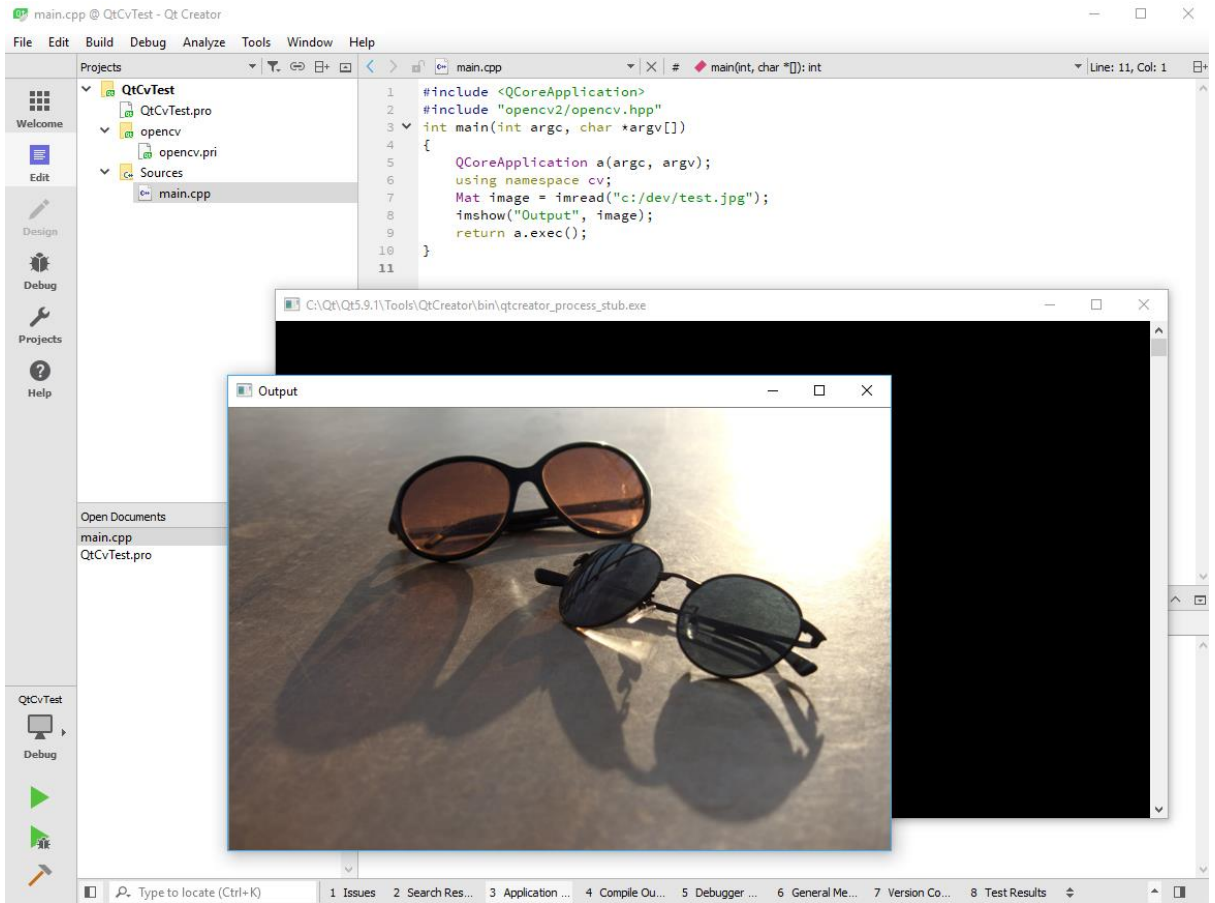
Rebuild

Clean

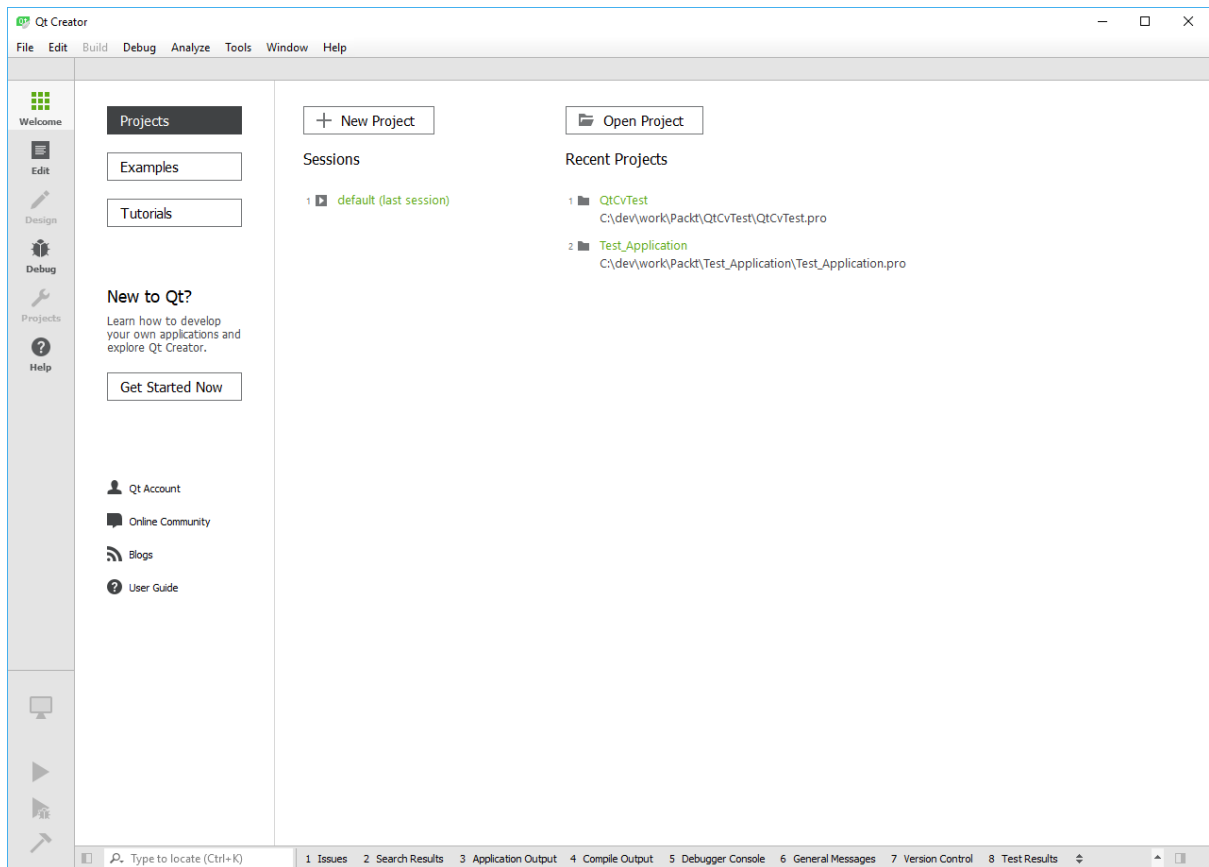
Select All

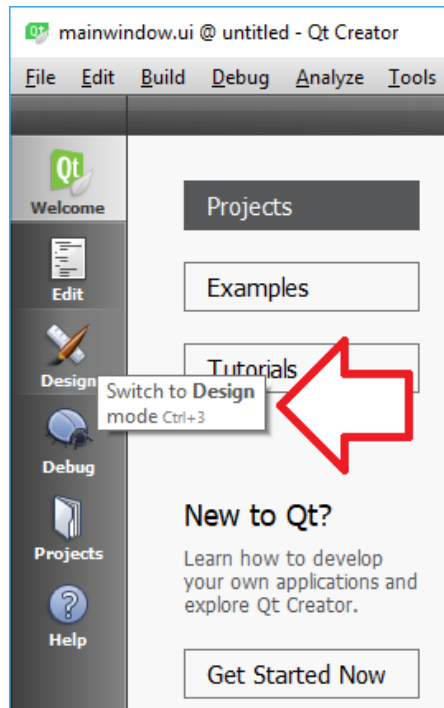
Deselect All

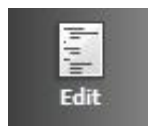
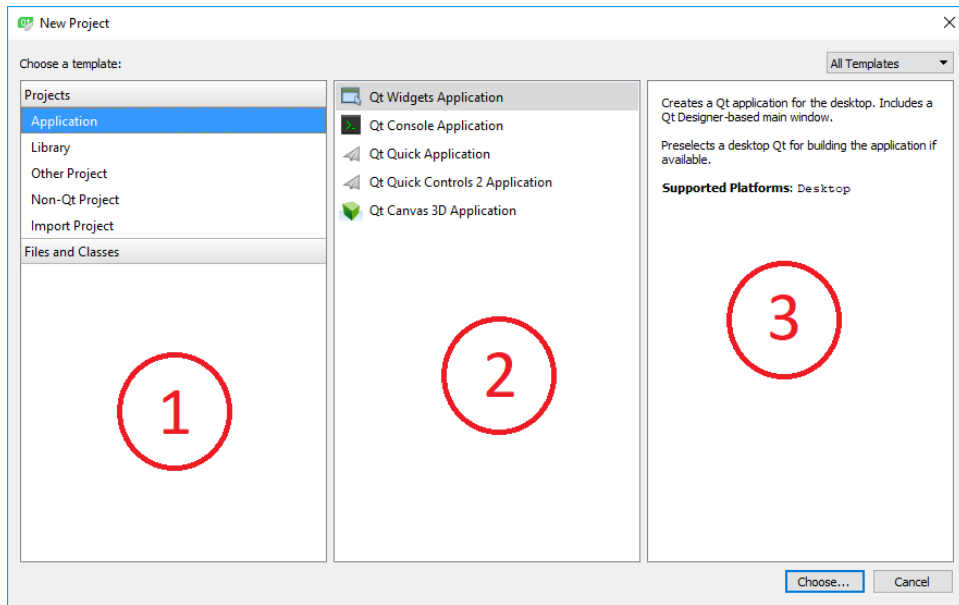
Close

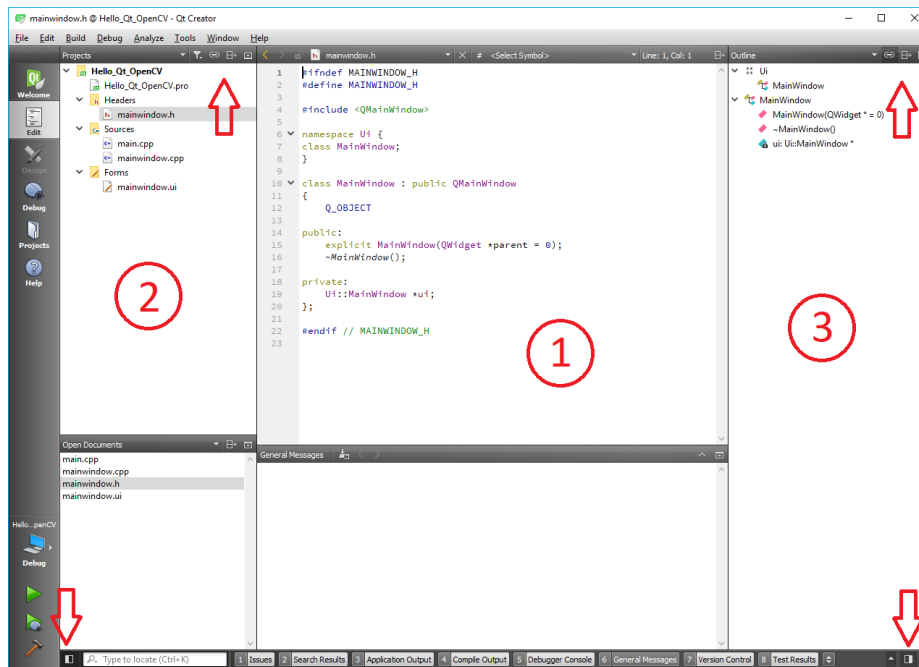


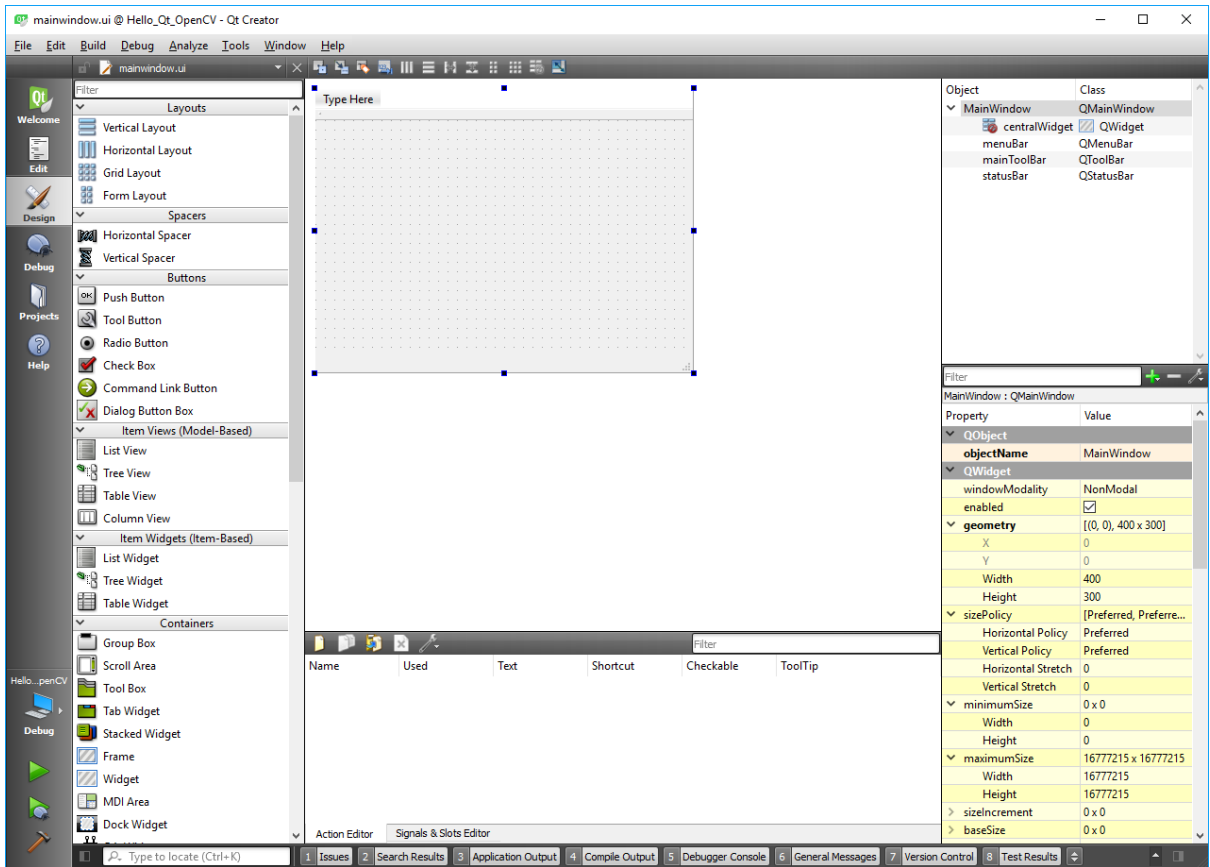
Chapter 02: Creating Our First Qt and OpenCV Project







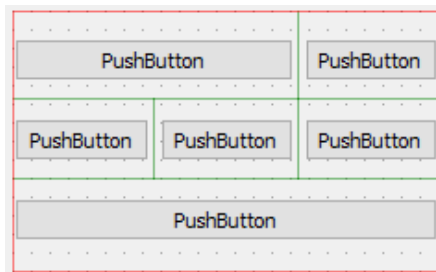
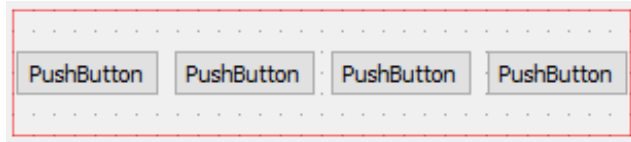
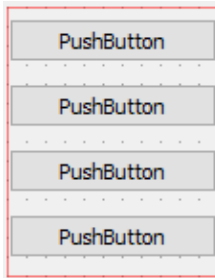




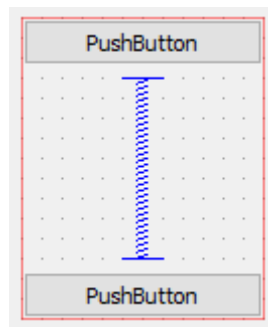
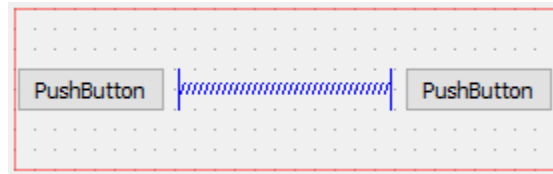
- Layouts
 - Vertical Layout
 - Horizontal Layout
 - Grid Layout
 - Form Layout
- Spacers
 - Horizontal Spacer
 - Vertical Spacer
- Buttons
 - Push Button
 - Tool Button
 - Radio Button
 - Check Box
 - Command Link Button
 - Dialog Button Box
- Item Views (Model-Based)
 - List View
 - Tree View
 - Table View
 - Column View
- Item Widgets (Item-Based)
 - List Widget
 - Tree Widget
 - Table Widget

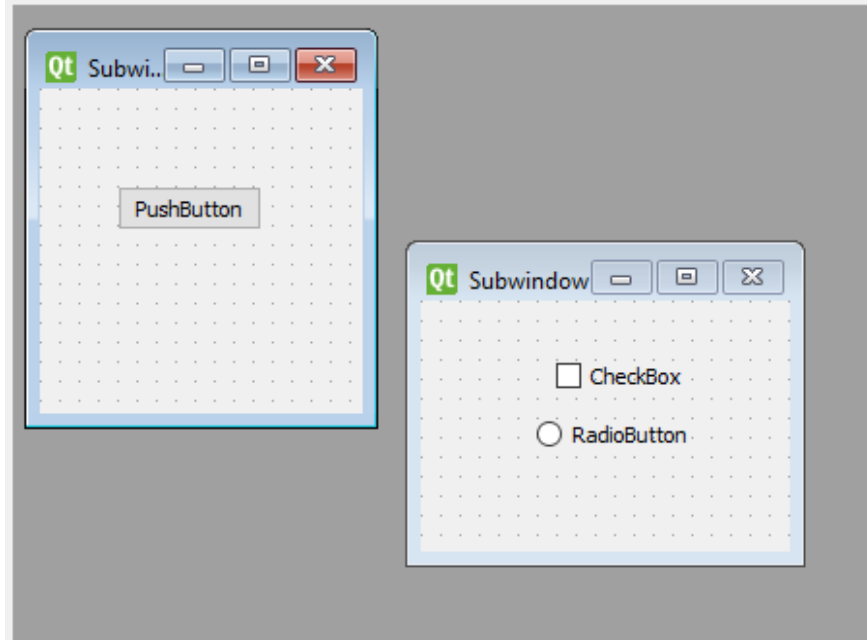
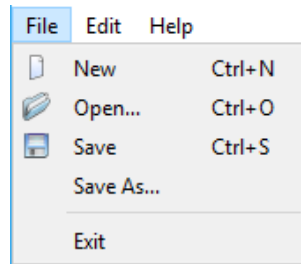
- Containers
 - Group Box
 - Scroll Area
 - Tool Box
 - Tab Widget
 - Stacked Widget
 - Frame
 - Widget
 - MDI Area
 - Dock Widget
 - QAxWidget
- Input Widgets
 - Combo Box
 - Font Combo Box
 - Line Edit
 - Text Edit
 - Plain Text Edit
 - Spin Box
 - Double Spin Box
 - Time Edit
 - Date Edit
 - Date/Time Edit
 - Dial
 - Horizontal Scroll Bar
 - Vertical Scroll Bar
 - Horizontal Slider
 - Vertical Slider
 - Key Sequence Edit

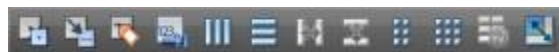
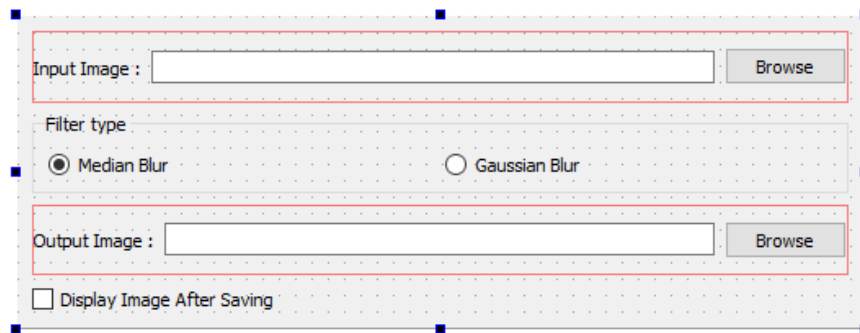
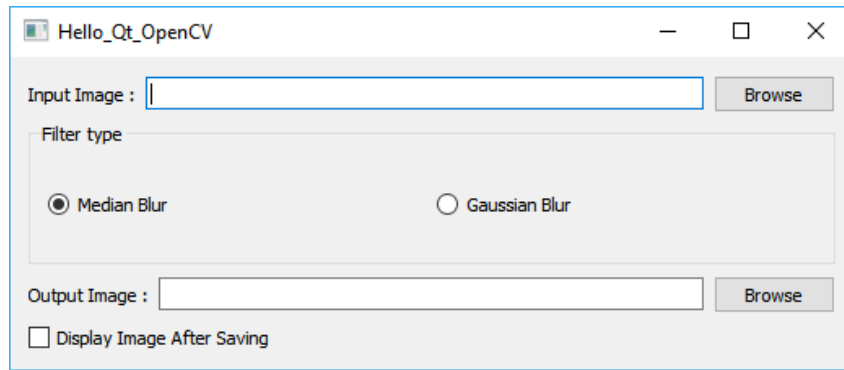
- Display Widgets
 - Label
 - Text Browser
 - Graphics View
 - Calendar Widget
 - LCD Number
 - Progress Bar
 - Horizontal Line
 - Vertical Line
 - OpenGL Widget
 - QQuickWidget

















| | |
|-------------|--------------------------------------|
| Name | <input type="text" value="Amin"/> |
| Last Name | <input type="text" value="Ahmadi"/> |
| Age | <input type="text" value="32"/> |
| Wakes up at | <input type="text" value="7:00 AM"/> |

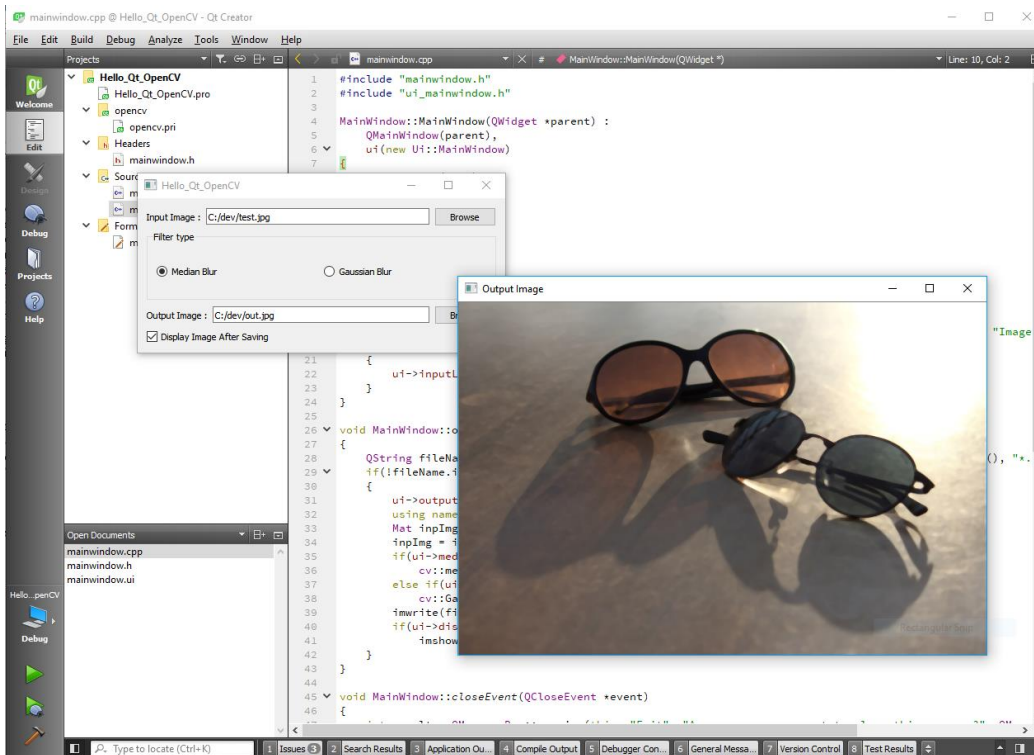
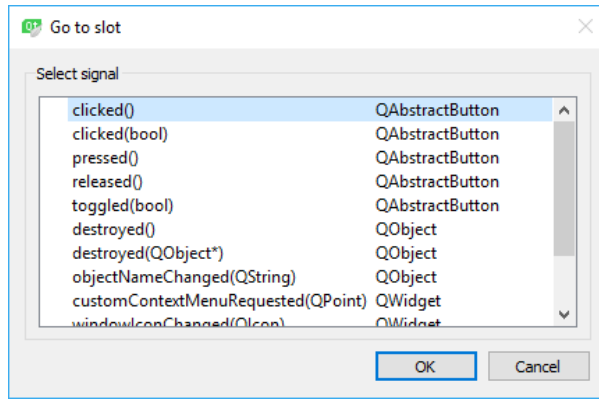


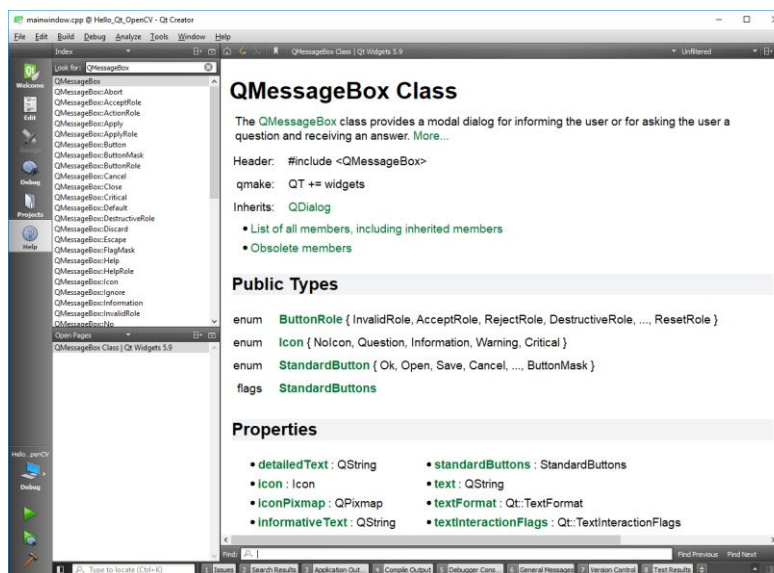
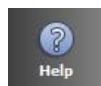
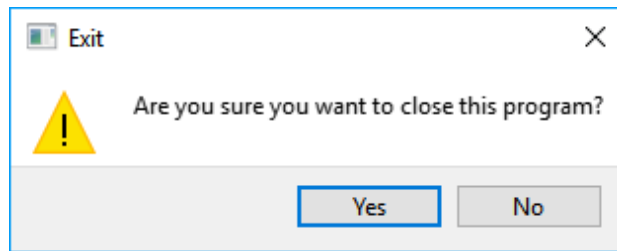




-  Vertical Layout
-  Horizontal Layout
-  Grid Layout
-  Form Layout

| Object | Class |
|--|---|
| ▼ MainWindow | QMainWindow |
| ▼  centralWidget | QWidget |
| displayImageCheckBox | <input checked="" type="checkbox"/> QCheckBox |
| ▼  filterTypeGroupBox | QGroupBox |
| gaussianBlurRadioButton | <input type="radio"/> QRadioButton |
| medianBlurRadioButton | <input type="radio"/> QRadioButton |
| ▼  topHorizontalLayout | QHBoxLayout |
| inputLabel |  QLabel |
| inputLineEdit |  QLineEdit |
| inputPushButton |  QPushButton |
| ▼  bottomHorizontalLayout | QHBoxLayout |
| outputLabel |  QLabel |
| outputLineEdit |  QLineEdit |
| outputPushButton |  QPushButton |





The screenshot shows the Qt Creator IDE with the documentation for the **QMessageBox Class** open. The left sidebar shows a project tree with "QMessageBox Class | Qt Widgets 5.9" selected. The main area displays the following information:

QMessageBox Class

The `QMessageBox` class provides a modal dialog for informing the user or for asking the user a question and receiving an answer. [More...](#)

Header: `#include <QMessageBox>`

qmake: `QT += widgets`

Inherits: `QDialog`

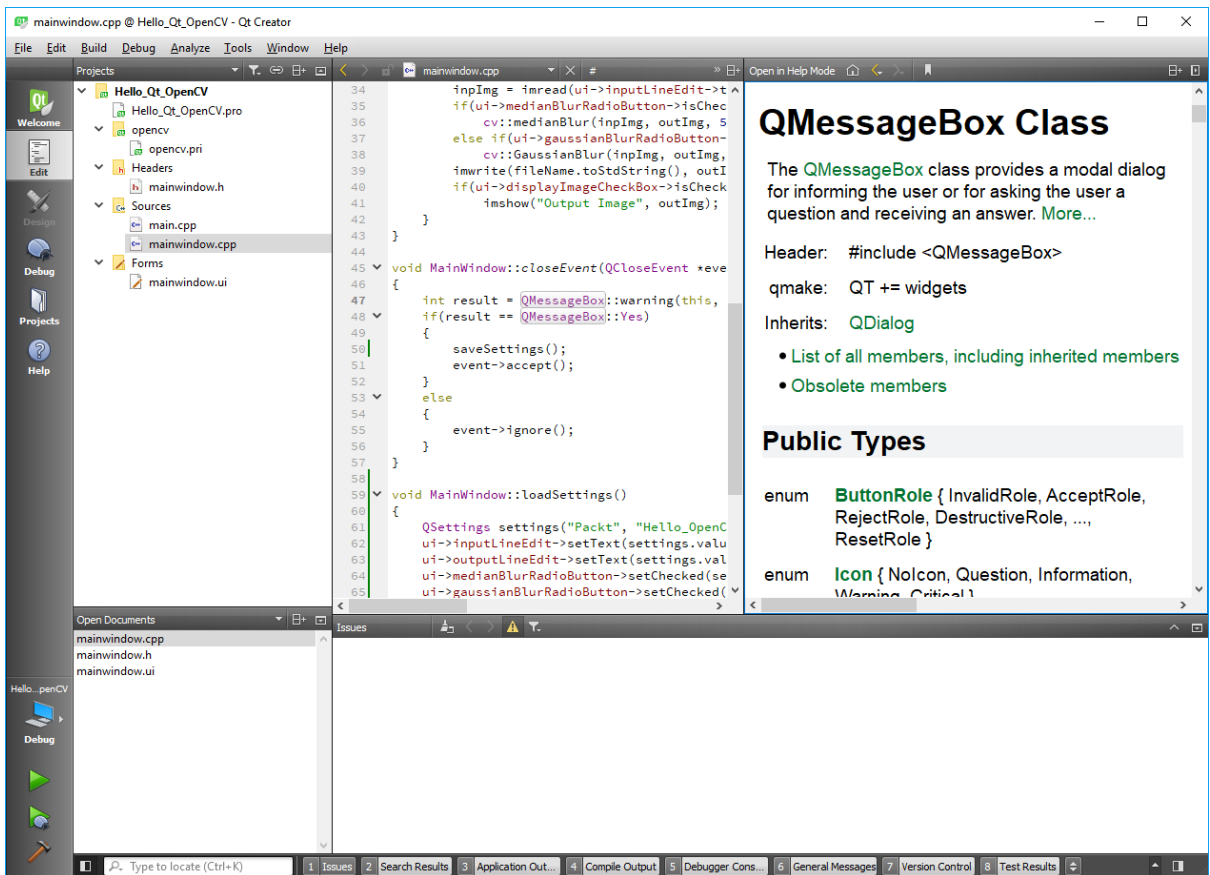
- List of all members, including inherited members
- Obsolete members

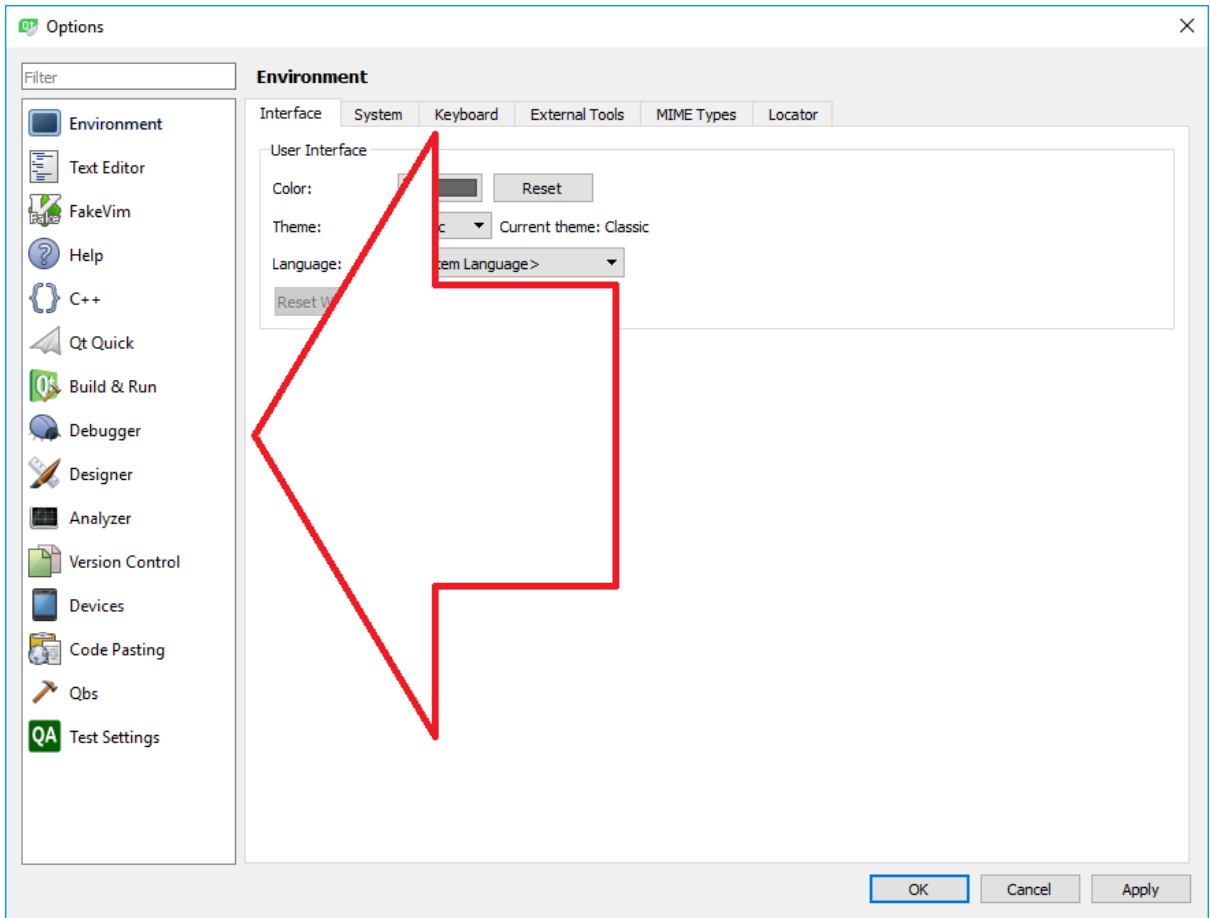
Public Types

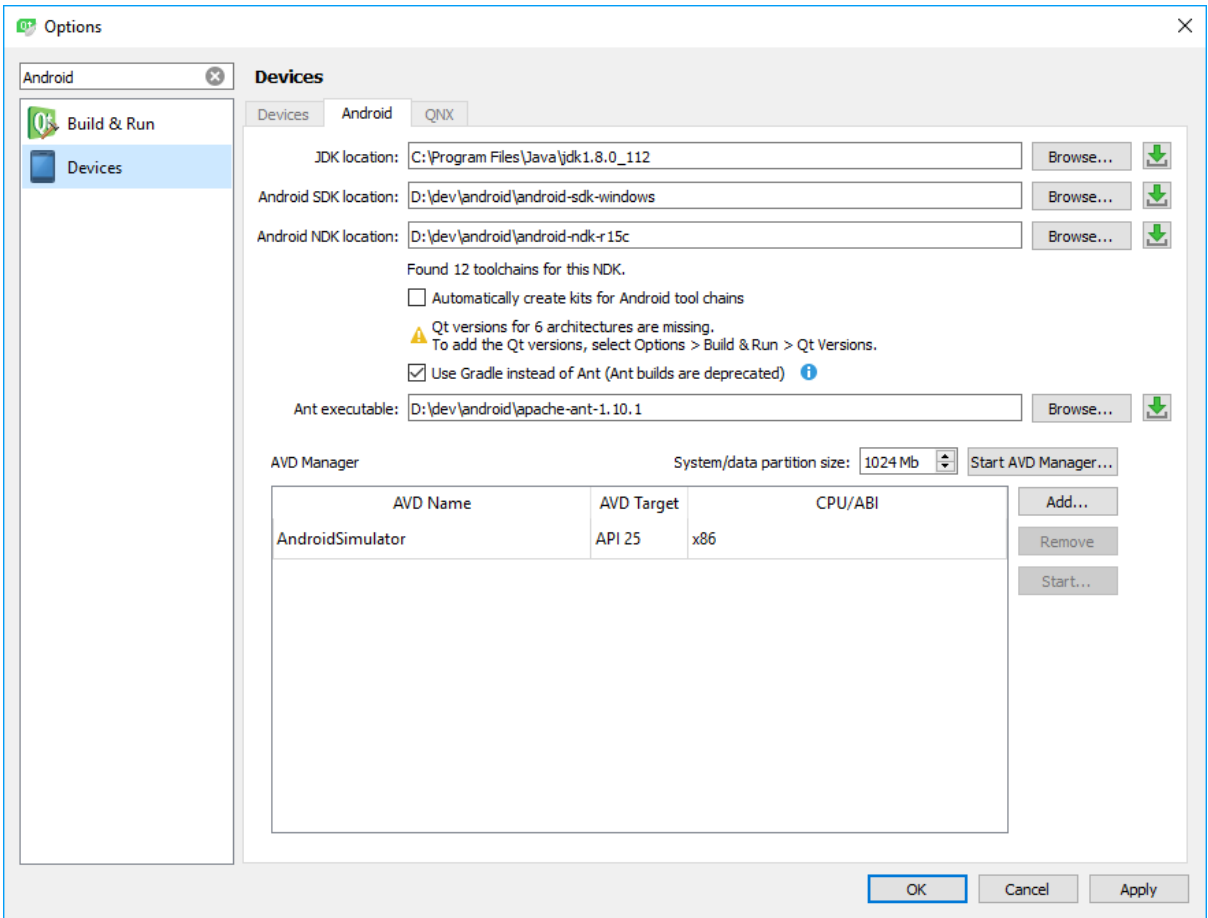
```
enum ButtonRole { InvalidRole, AcceptRole, RejectRole, DestructiveRole, ..., ResetRole }
enum Icon { NoIcon, Question, Information, Warning, Critical }
enum StandardButton { Ok, Open, Save, Cancel, ..., ButtonMask }
flags StandardButtons
```

Properties

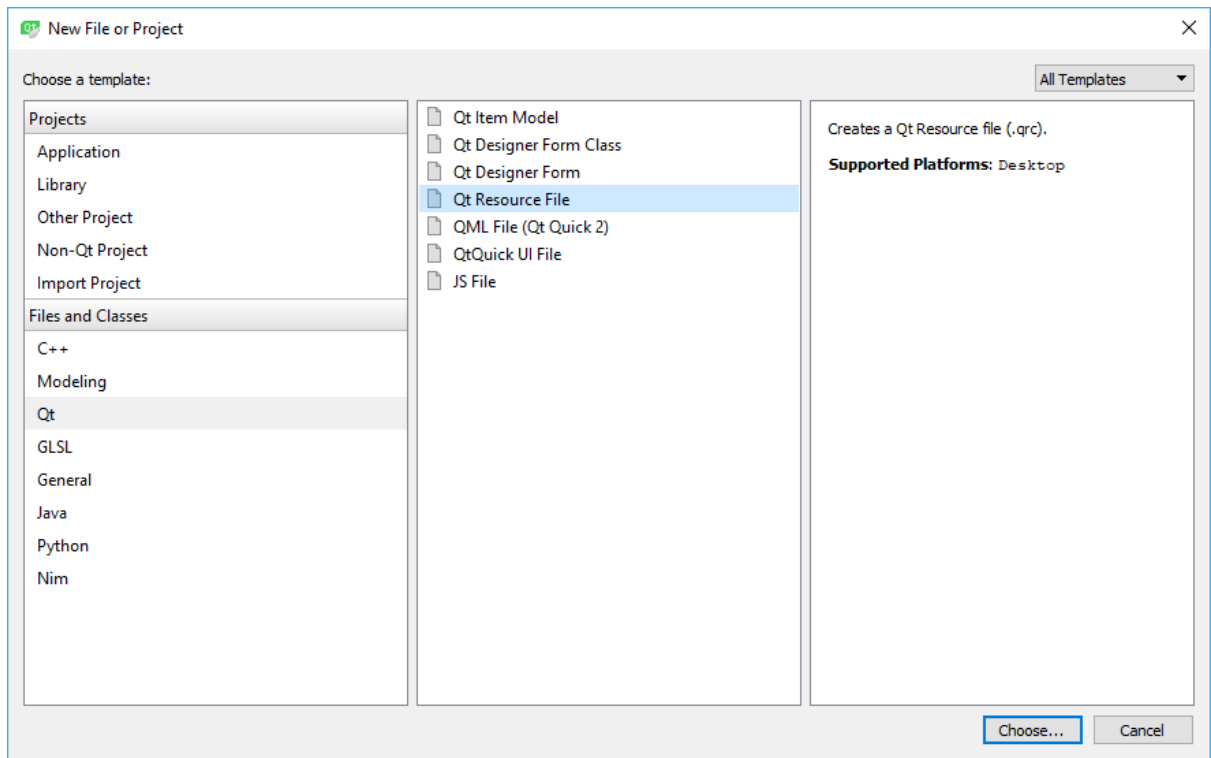
| | |
|------------------------------------|--|
| • detailedText : QString | • standardButtons : StandardButtons |
| • icon : Icon | • text : QString |
| • iconPixmap : QPixmap | • textFormat : Qt::TextFormat |
| • informativeText : QString | • textInteractionFlags : Qt::TextInteractionFlags |

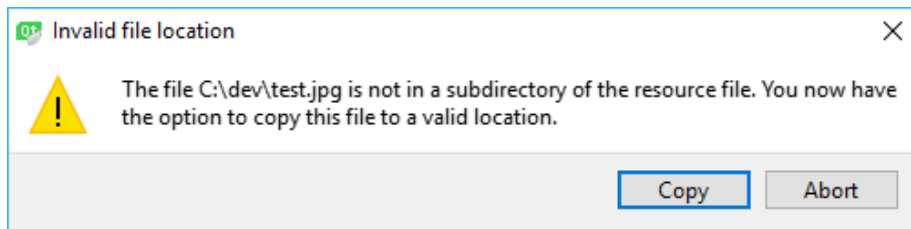
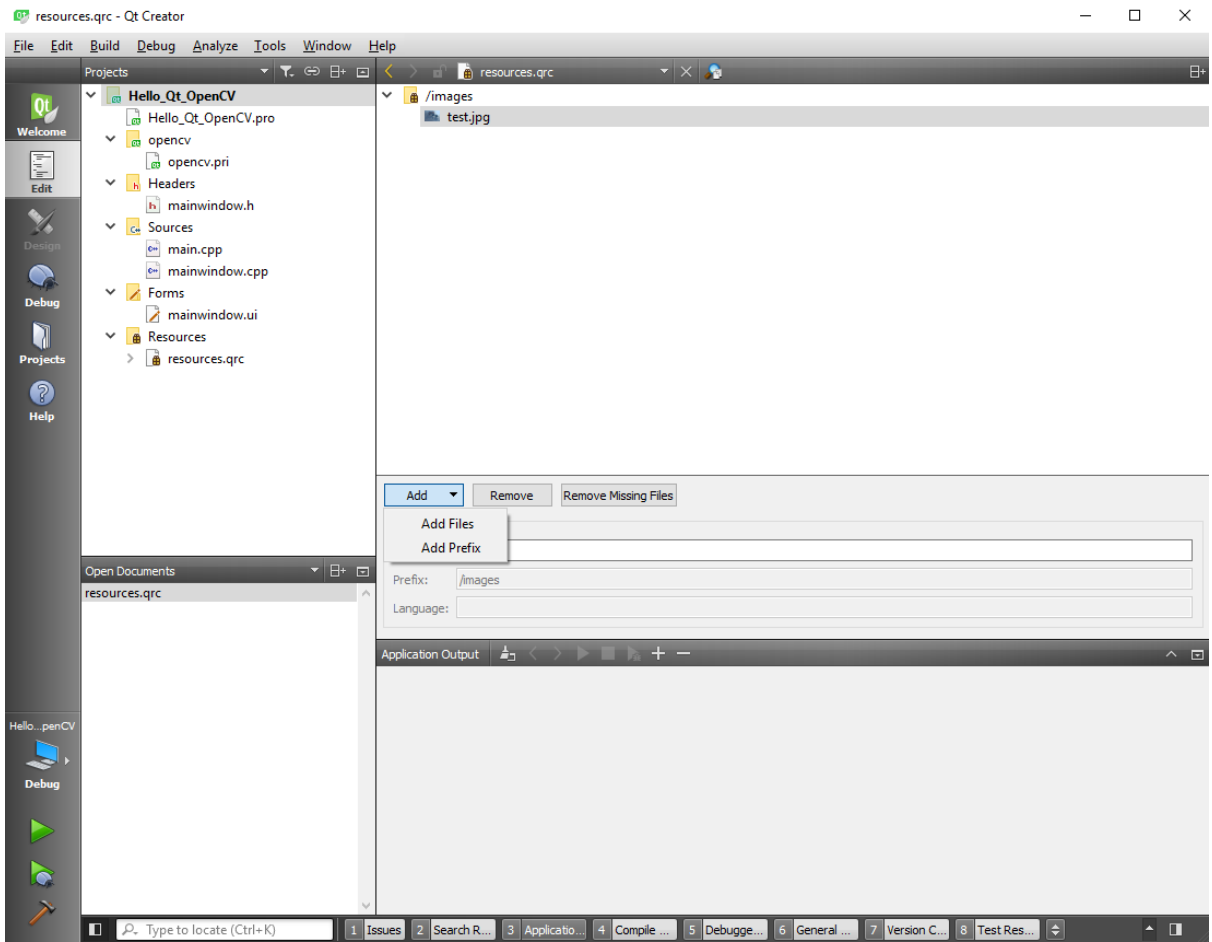


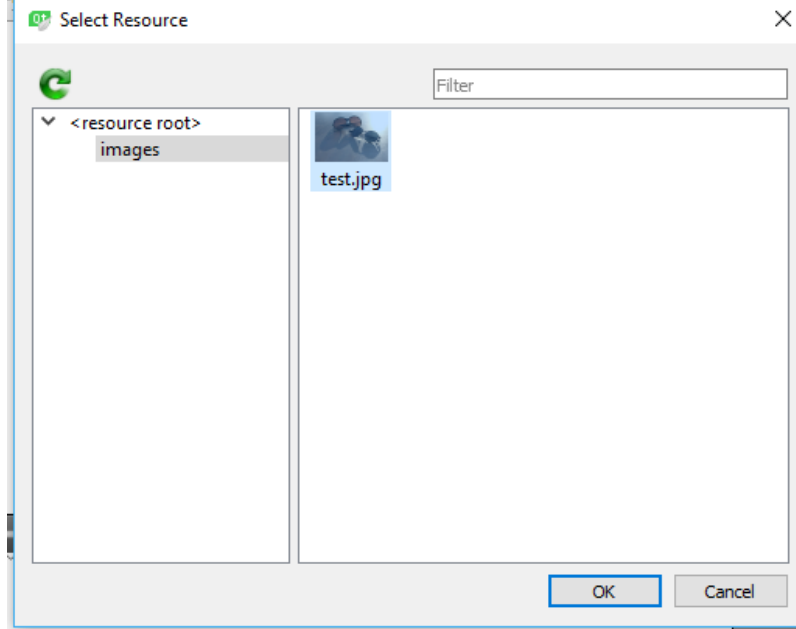
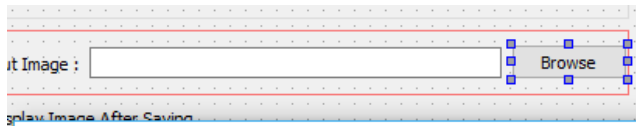




Chapter 03: Creating a Comprehensive Qt+OpenCV Project







inputLineEdit QLineEdit

inputPushButton QPushButton

bottomHorizontalLayout QHBoxLayout

outputLabel QLabel

outputLineEdit QLineEdit

outputPushButton QPushButton

displayImageCheckBox QCheckBox

filterTypeGroupBox QGroupBox

gaussianBlurRadioButton QRadioButton

medianBlurRadioButton QRadioButton

PushButton : QPushButton

| Property | Value |
|----------------|--------------------------|
| FillBackground | <input type="checkbox"/> |
| Sheet | |
| e | English, UnitedStates |
| MethodHints | ImhNone |

stractButton

> text Browse

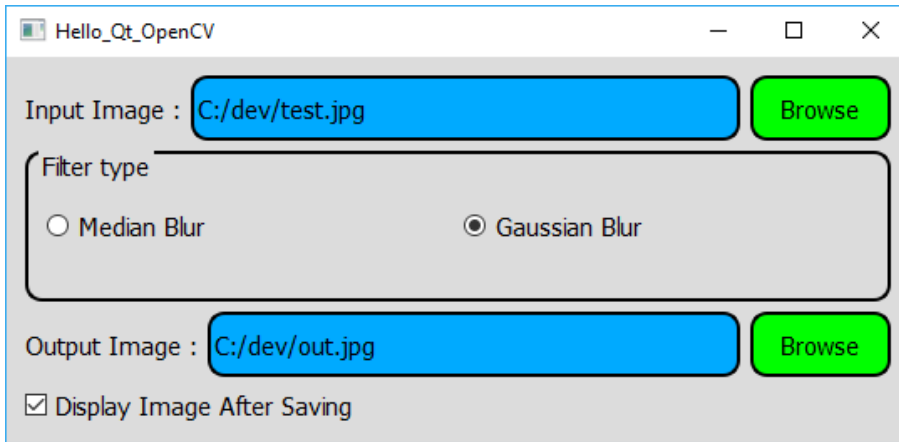
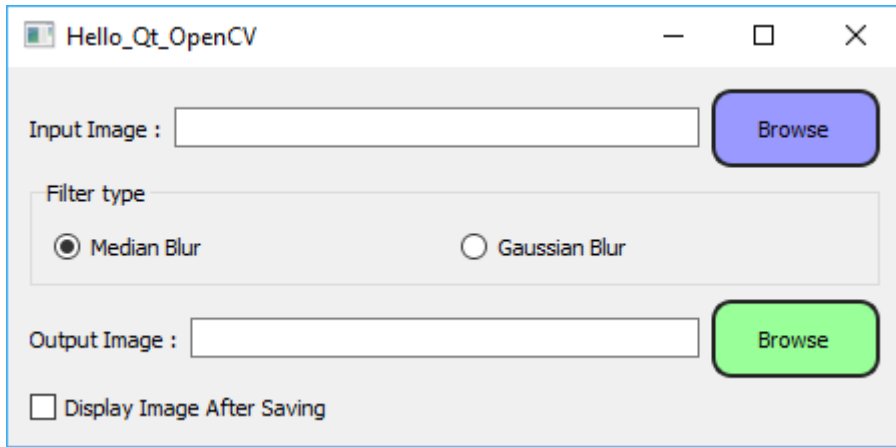
> icon [Theme]

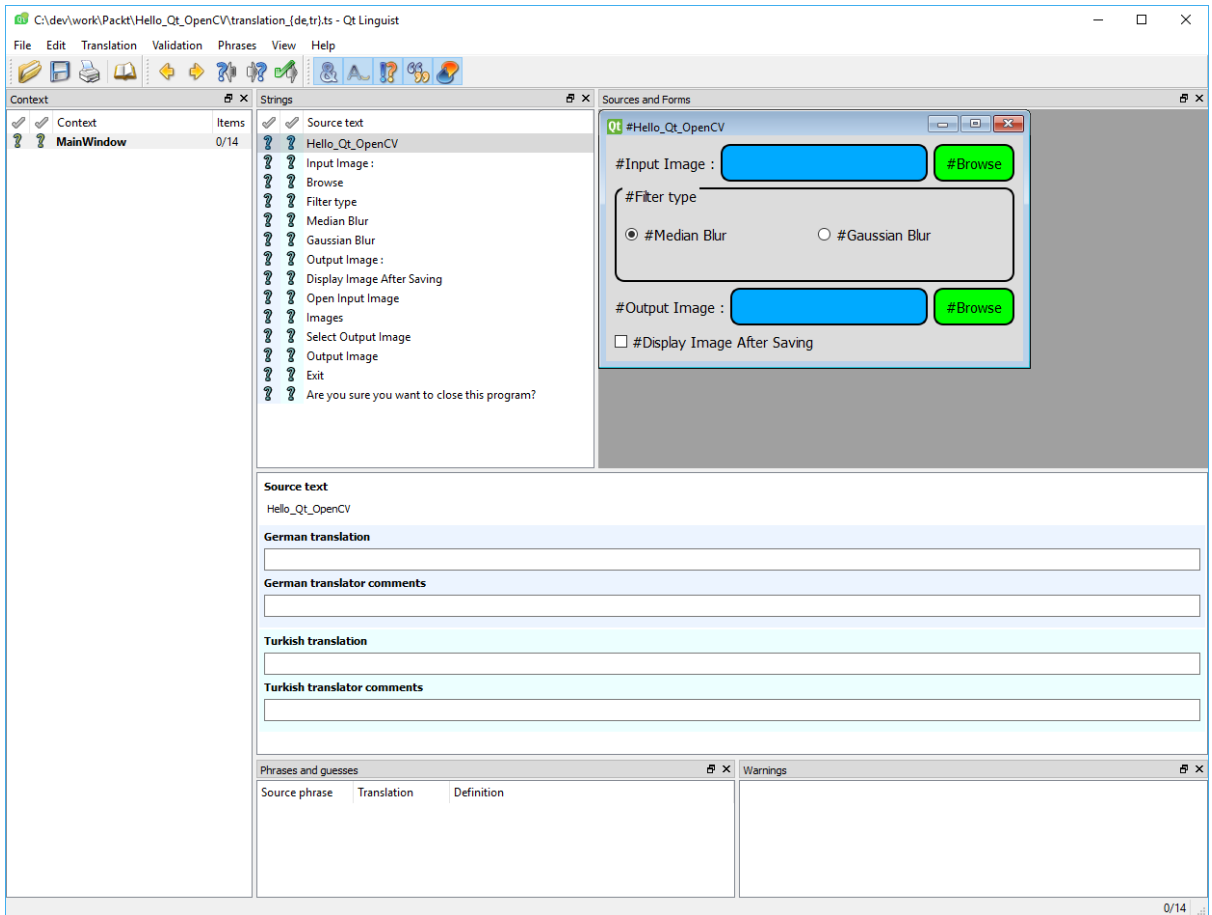
> iconSize 16 x 16

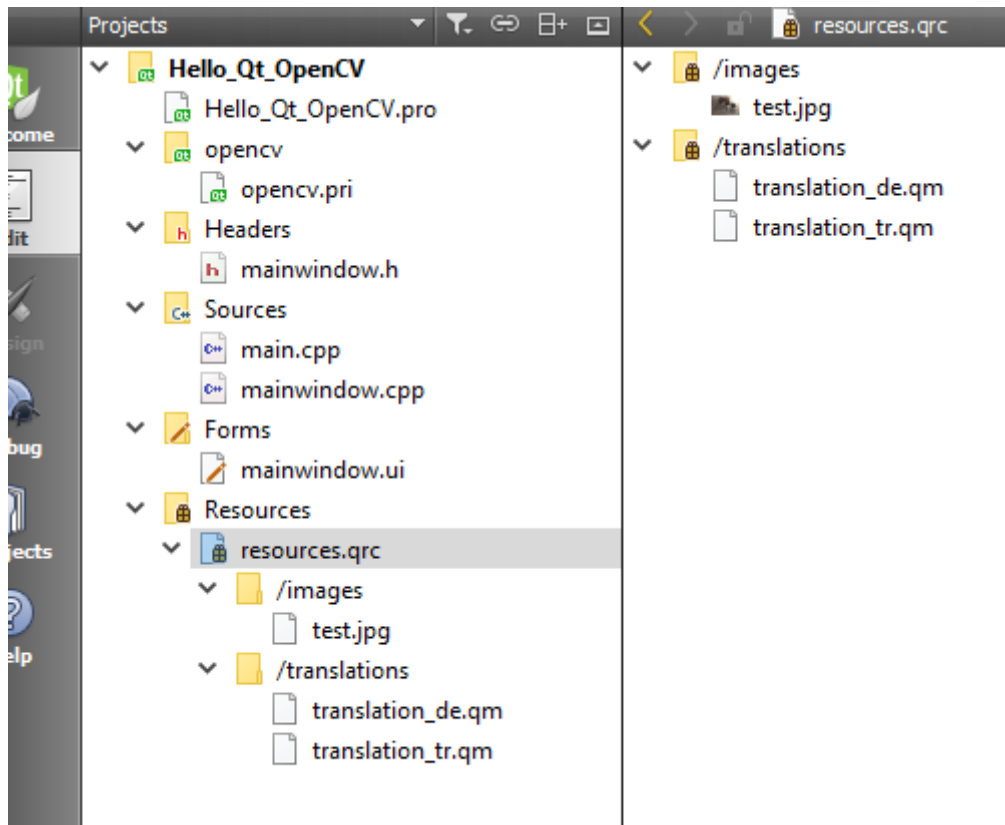
Width 16

Height 16

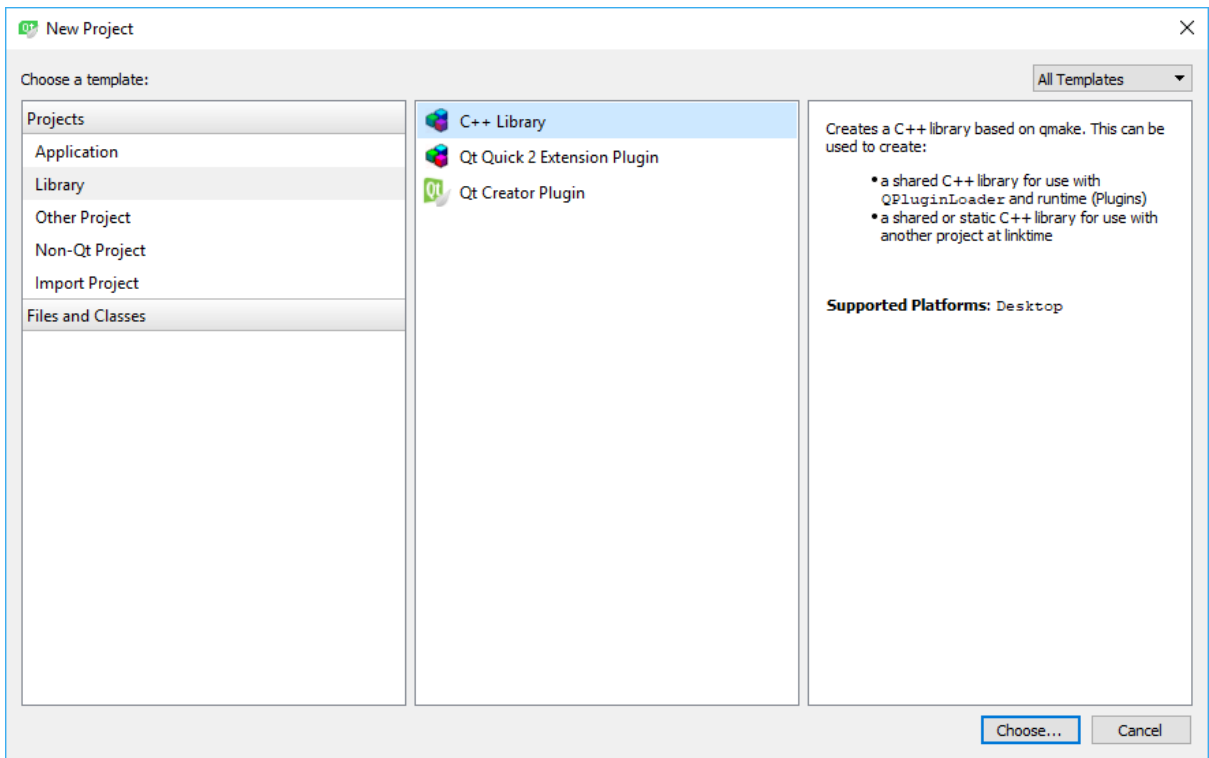
> shortcut



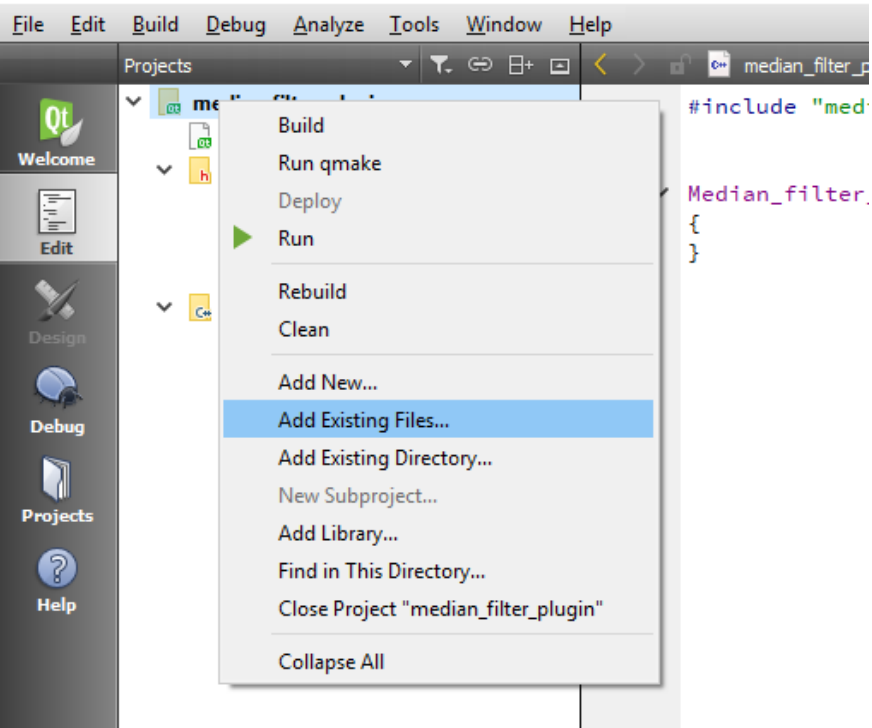


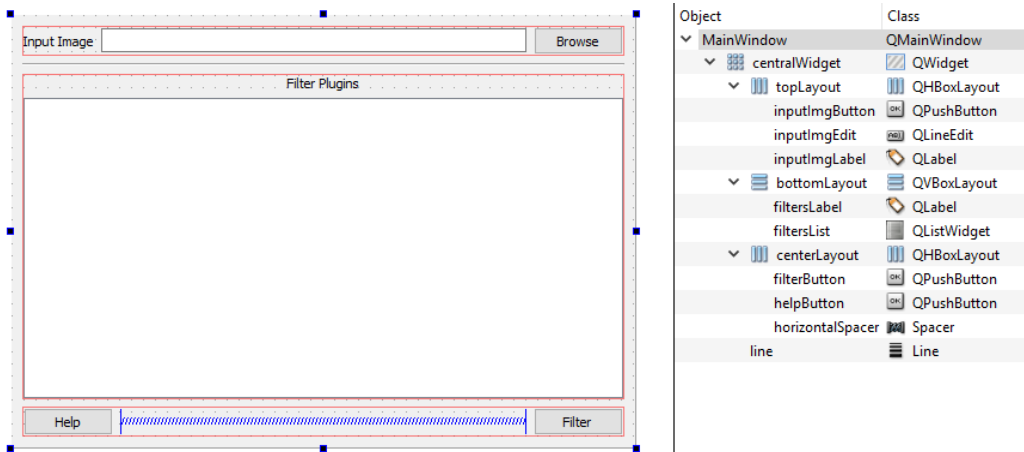
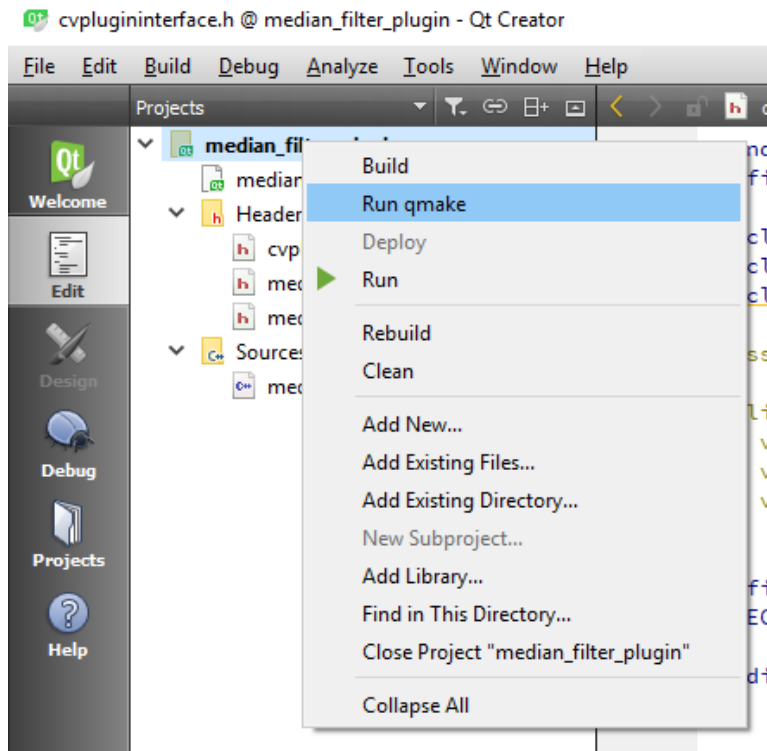


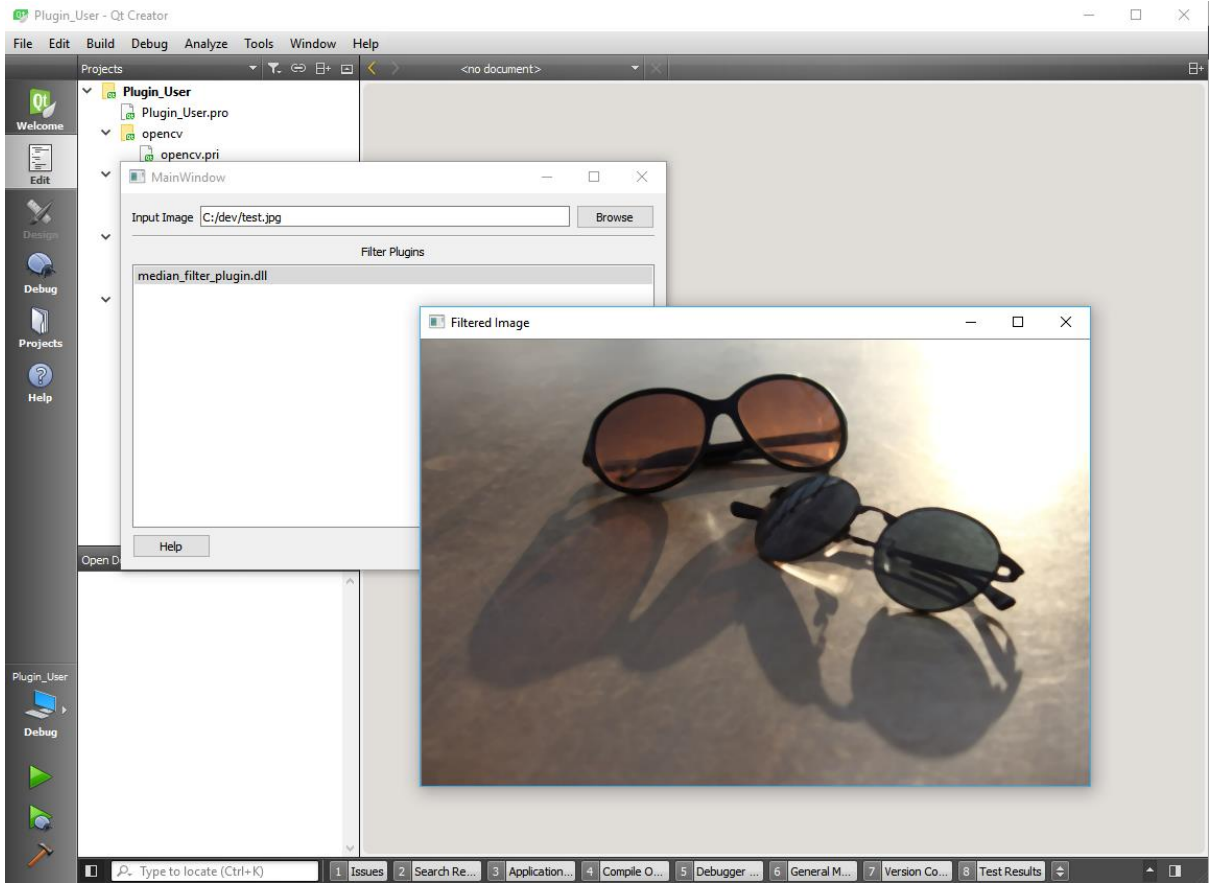
- Language
- English
- German
- Turkish



median_filter_plugin.cpp @ median_filter_plugin - Qt Creator





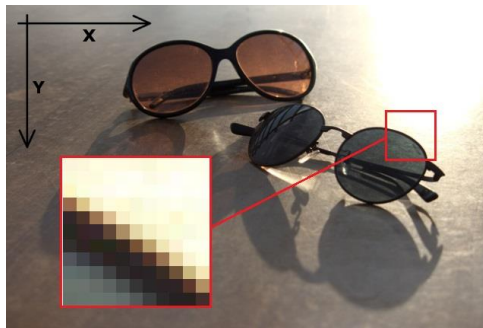


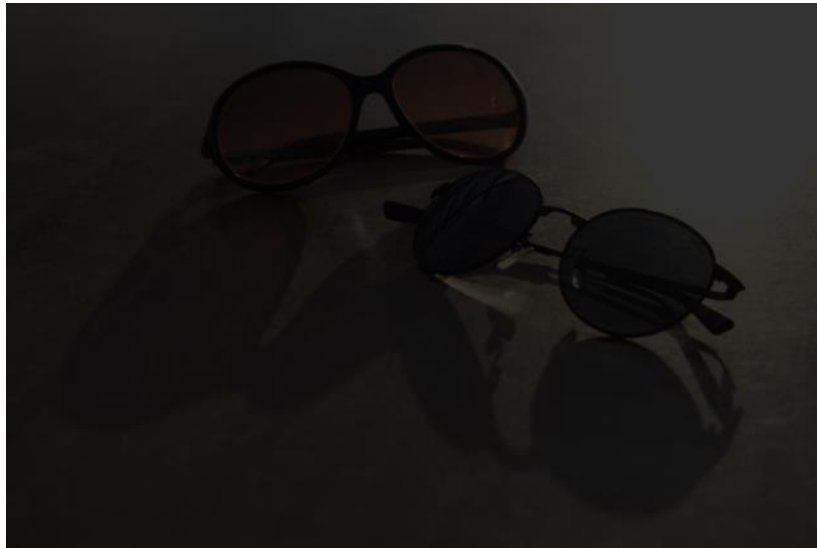
Chapter 04: Mat and QImage

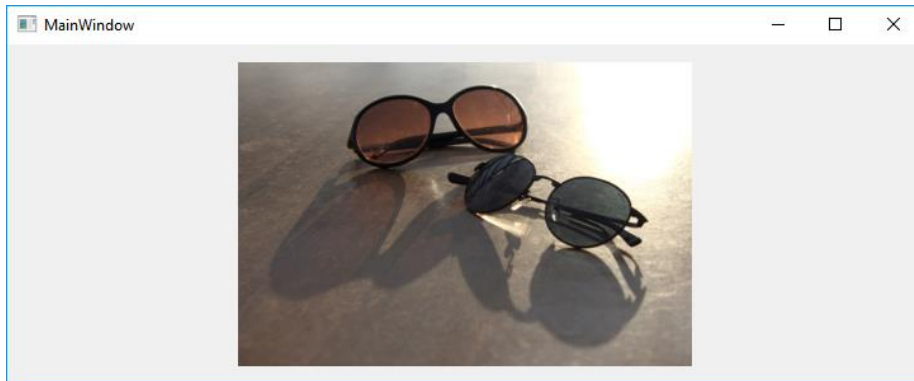
| | | | | | | | | | | | | | | | |
|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 63 | 53 | 35 | 48 | 107 | 210 | 183 | 179 | 33 | 34 | 33 | 33 | 34 | 33 | 40 | 43 |
| 67 | 63 | 46 | 38 | 54 | 127 | 199 | 182 | 38 | 37 | 34 | 28 | 26 | 26 | 26 | 27 |
| 63 | 69 | 60 | 45 | 41 | 66 | 162 | 187 | 26 | 29 | 25 | 28 | 26 | 29 | 30 | 31 |
| 71 | 75 | 74 | 59 | 39 | 50 | 96 | 186 | 28 | 23 | 25 | 43 | 105 | 147 | 148 | 123 |
| 68 | 68 | 73 | 65 | 42 | 41 | 64 | 166 | 23 | 31 | 67 | 126 | 183 | 180 | 190 | 198 |
| 66 | 61 | 64 | 63 | 52 | 41 | 47 | 116 | 50 | 134 | 168 | 174 | 176 | 173 | 192 | 202 |
| 66 | 62 | 59 | 58 | 57 | 40 | 42 | 82 | 115 | 166 | 177 | 180 | 185 | 188 | 185 | 179 |
| 61 | 61 | 59 | 56 | 56 | 44 | 44 | 59 | 179 | 174 | 170 | 175 | 170 | 174 | 182 | 190 |



| | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 195 | 233 | 255 | 255 | 252 | 255 | 255 | 254 | 255 | 254 |
| 140 | 215 | 251 | 254 | 253 | 255 | 255 | 252 | 255 | 253 |
| 68 | 153 | 231 | 255 | 247 | 237 | 246 | 237 | 241 | 233 |
| 48 | 120 | 211 | 249 | 248 | 255 | 250 | 253 | 254 | 255 |
| 37 | 69 | 182 | 245 | 249 | 255 | 248 | 251 | 252 | 252 |
| 15 | 48 | 126 | 208 | 235 | 250 | 223 | 228 | 227 | 233 |
| 35 | 42 | 111 | 197 | 252 | 253 | 252 | 255 | 255 | 255 |
| 35 | 40 | 64 | 168 | 246 | 248 | 251 | 254 | 254 | 255 |
| 77 | 98 | 44 | 100 | 194 | 226 | 233 | 241 | 234 | 243 |
| 45 | 40 | 33 | 85 | 187 | 247 | 255 | 249 | 254 | 255 |
| 39 | 32 | 39 | 47 | 185 | 237 | 255 | 247 | 255 | 255 |
| 15 | 46 | 15 | 34 | 98 | 178 | 227 | 235 | 239 | 238 |
| 72 | 50 | 38 | 36 | 71 | 180 | 233 | 252 | 255 | 250 |
| 66 | 45 | 29 | 40 | 46 | 144 | 230 | 247 | 252 | 251 |
| 76 | 51 | 30 | 38 | 40 | 96 | 177 | 227 | 241 | 233 |
| 107 | 80 | 49 | 40 | 39 | 68 | 155 | 234 | 255 | 253 |
| 107 | 78 | 49 | 33 | 39 | 39 | 120 | 222 | 252 | 251 |
| 107 | 83 | 57 | 49 | 11 | 11 | 80 | 174 | 223 | 230 |
| 106 | 98 | 74 | 46 | 42 | 38 | 72 | 161 | 241 | 255 |
| 116 | 102 | 75 | 46 | 33 | 35 | 34 | 180 | 228 | 255 |
| 107 | 101 | 77 | 49 | 46 | 42 | 31 | 97 | 186 | 228 |
| 95 | 107 | 108 | 60 | 49 | 42 | 42 | 71 | 204 | 247 |
| 98 | 108 | 110 | 82 | 47 | 35 | 35 | 49 | 155 | 235 |
| 91 | 103 | 107 | 61 | 52 | 18 | 11 | 25 | 108 | 197 |
| 94 | 98 | 113 | 106 | 76 | 49 | 42 | 13 | 60 | 213 |
| 87 | 100 | 118 | 110 | 76 | 44 | 31 | 39 | 48 | 174 |
| 80 | 95 | 114 | 109 | 78 | 61 | 17 | 30 | 36 | 119 |
| 75 | 79 | 93 | 102 | 93 | 74 | 40 | 42 | 47 | 100 |
| 80 | 84 | 98 | 108 | 97 | 74 | 38 | 36 | 37 | 64 |
| 74 | 78 | 94 | 106 | 98 | 76 | 33 | 36 | 36 | 82 |







C++ Class

Details
Summary

Define Class

Class name:

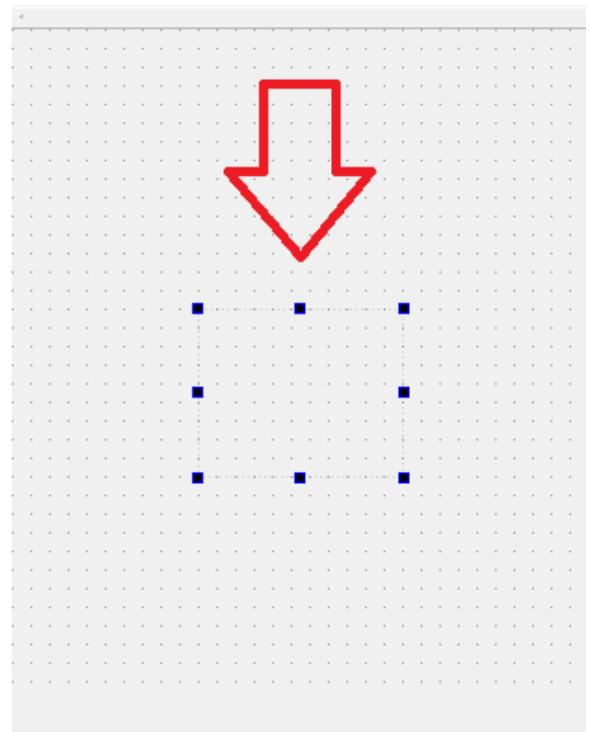
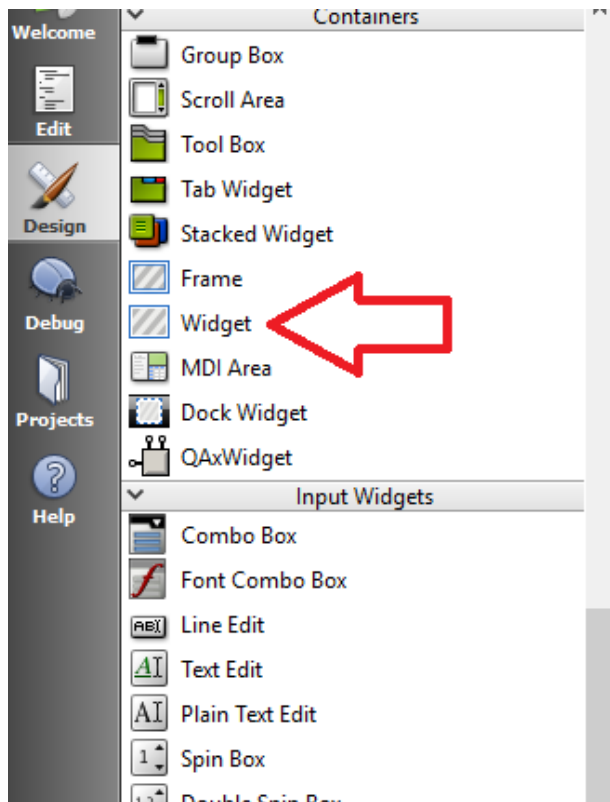
Base class:

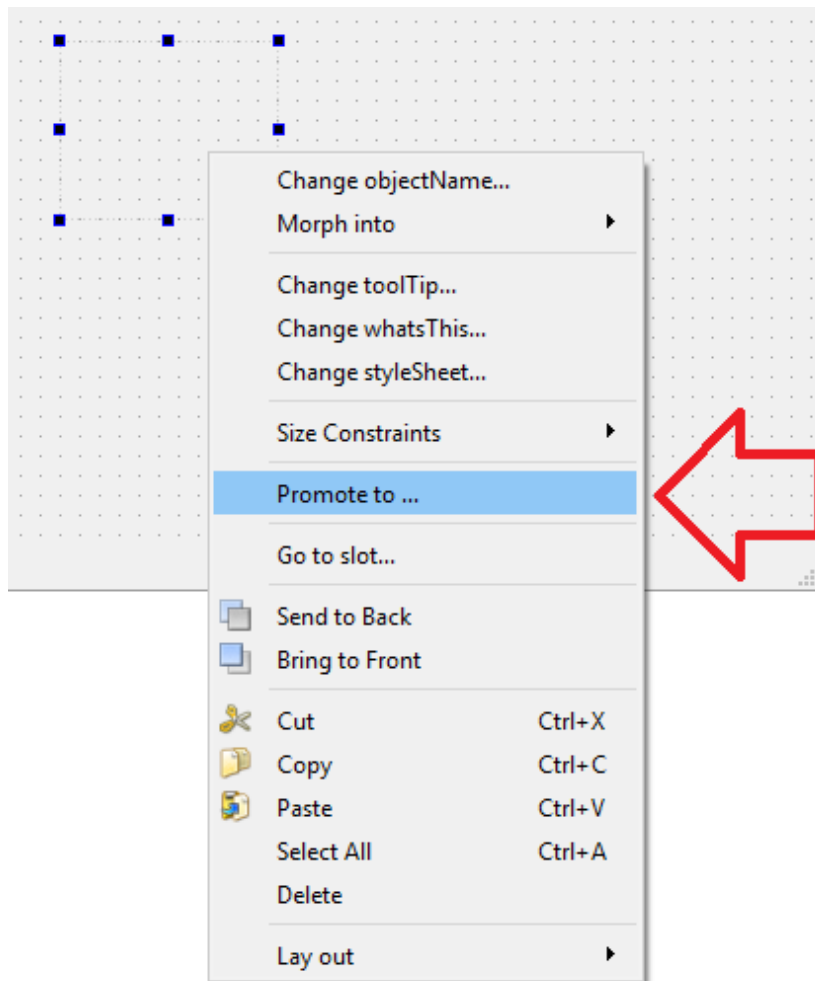
Include QObject
 Include QWidget
 Include QMainWindow
 Include QDeclarativeItem - Qt Quick 1
 Include QQuickItem - Qt Quick 2
 Include QSharedData

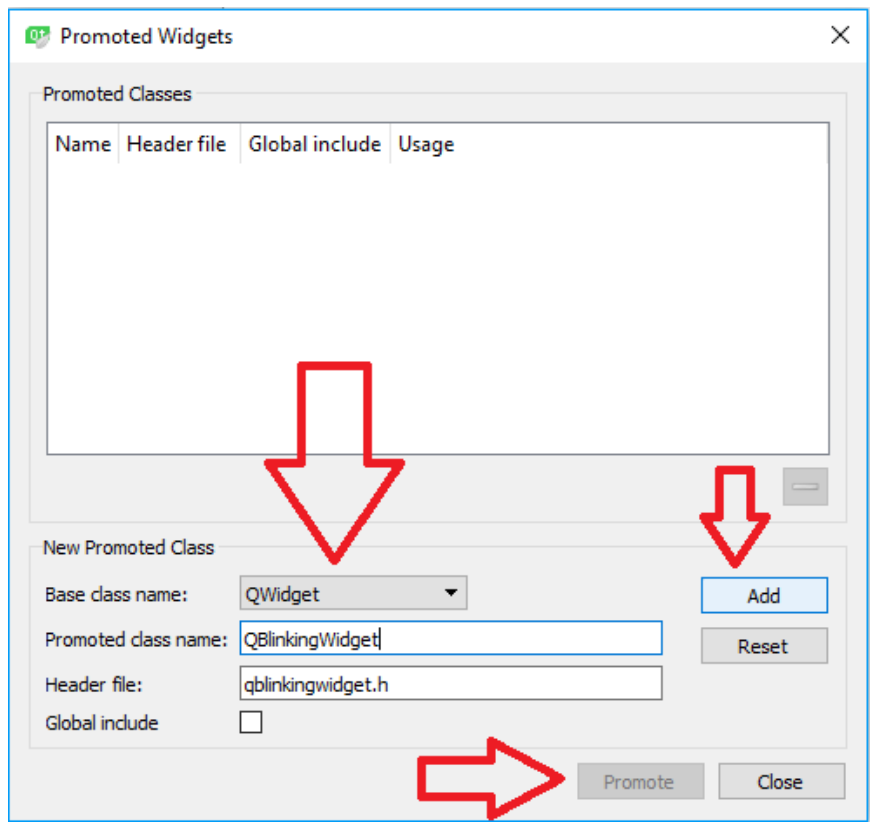
Header file:

Source file:

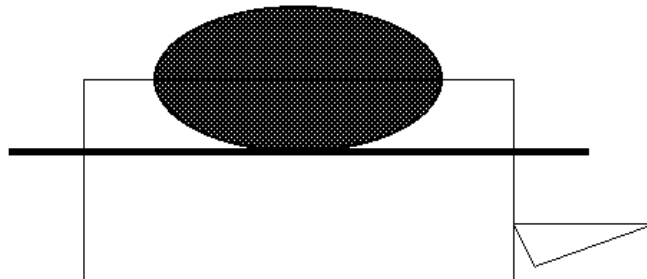
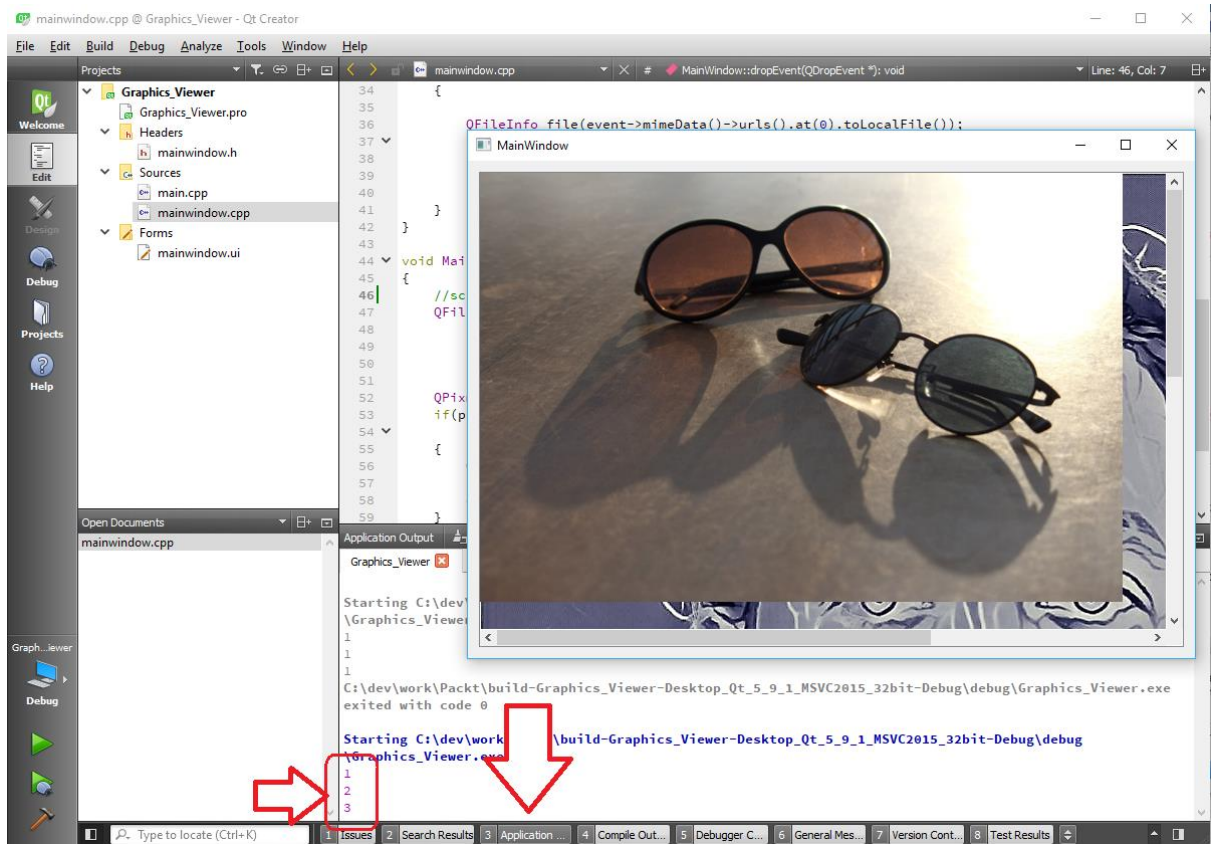
Path:

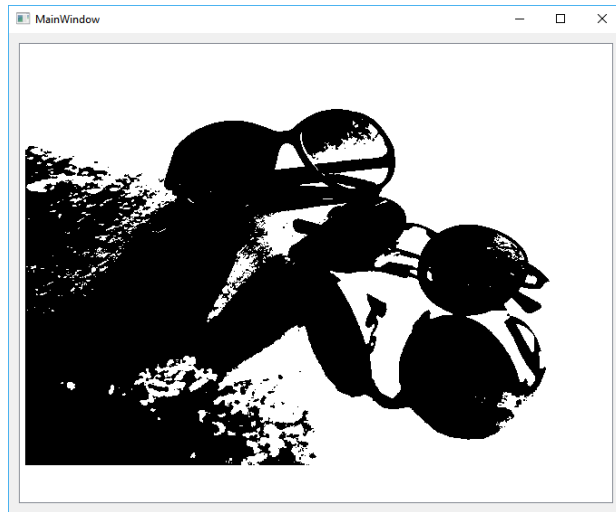
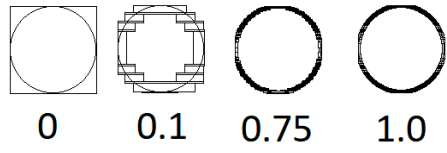




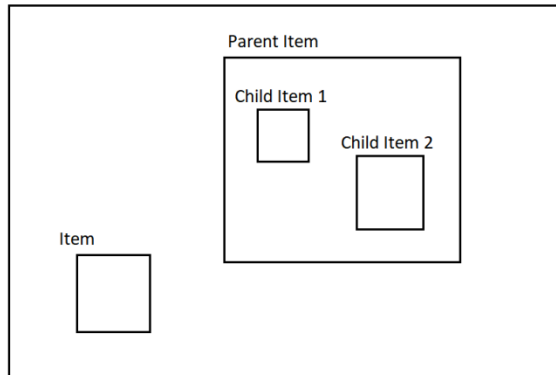


Chapter 05: The Graphics View Framework

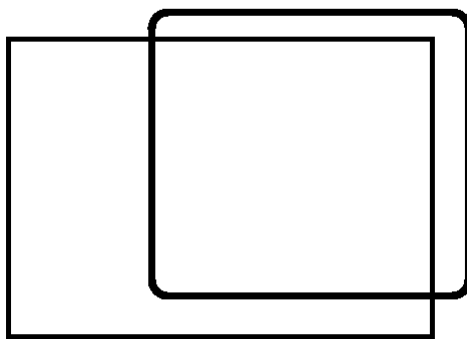




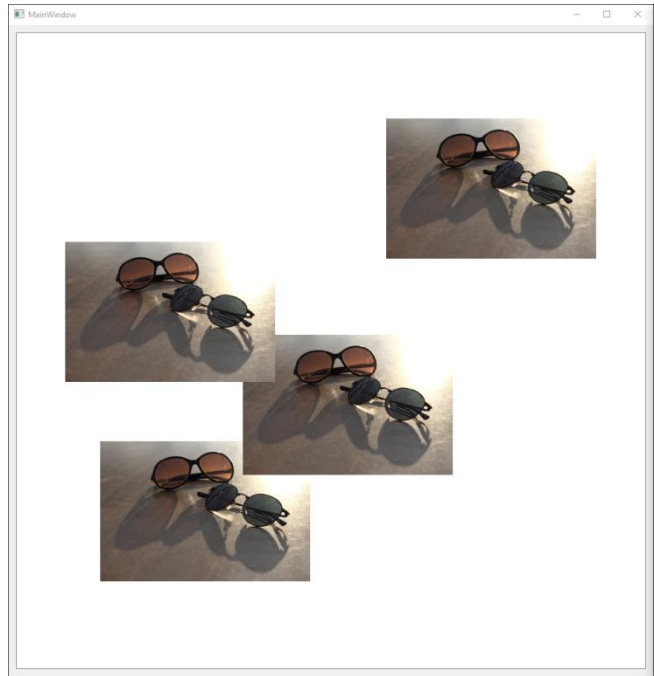
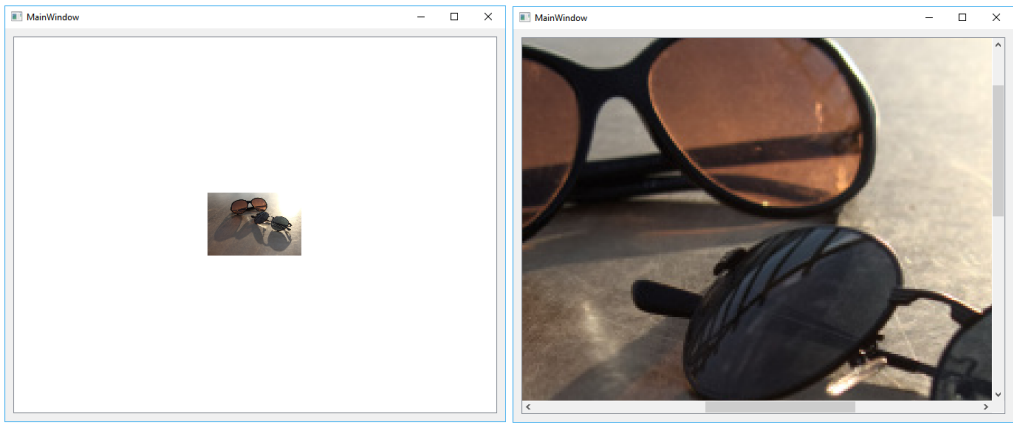
The Scene

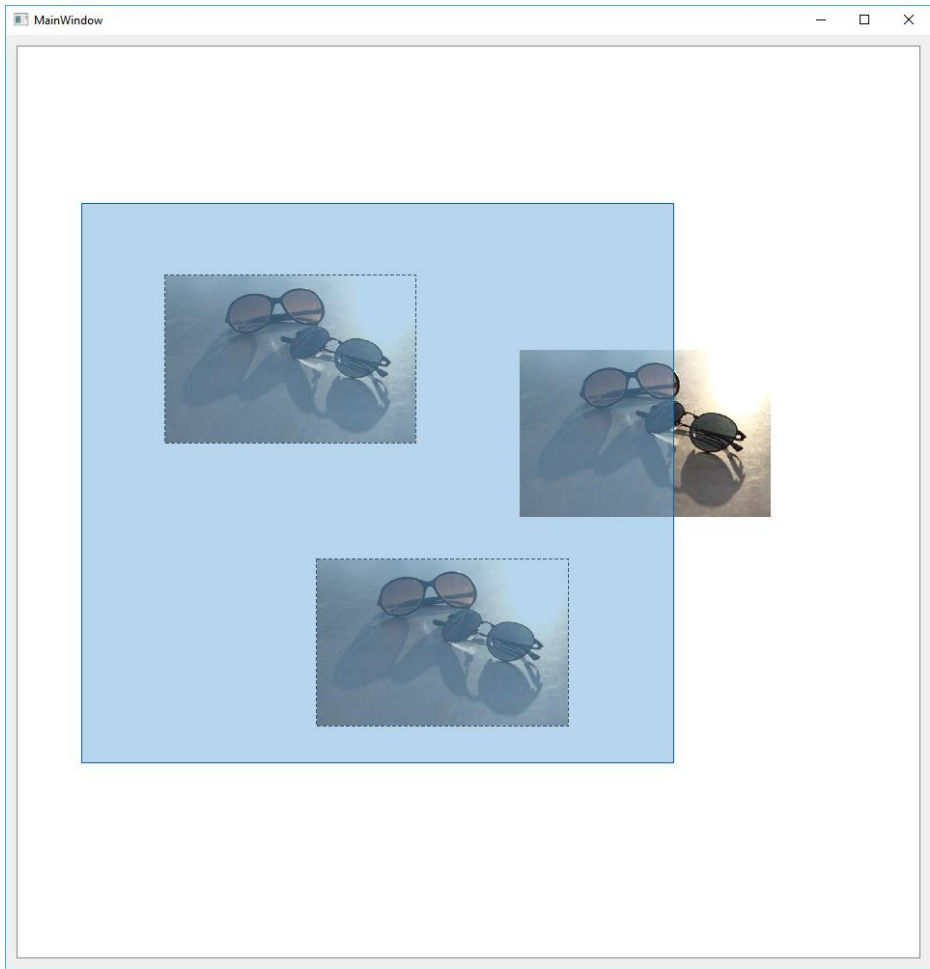


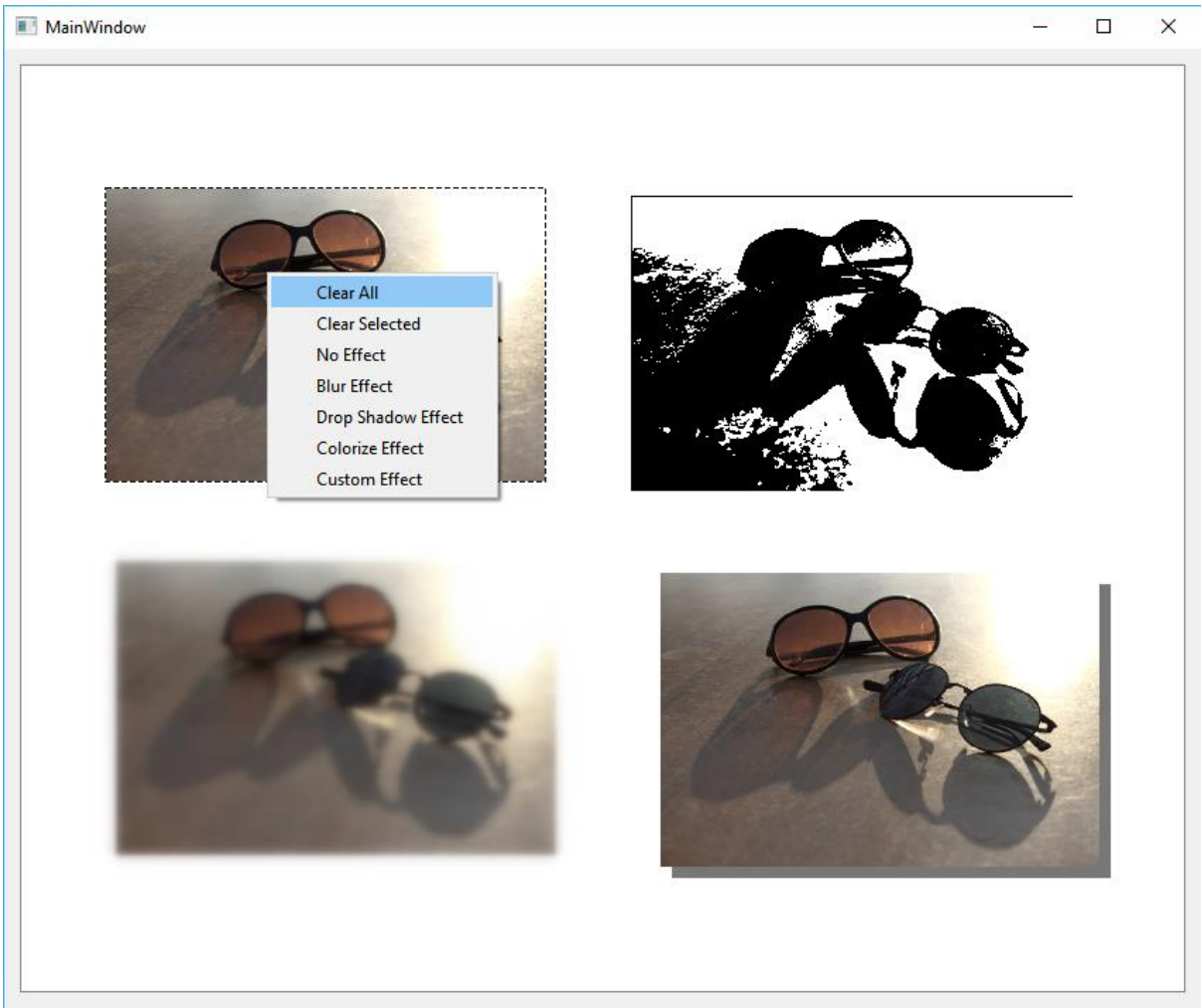
The View



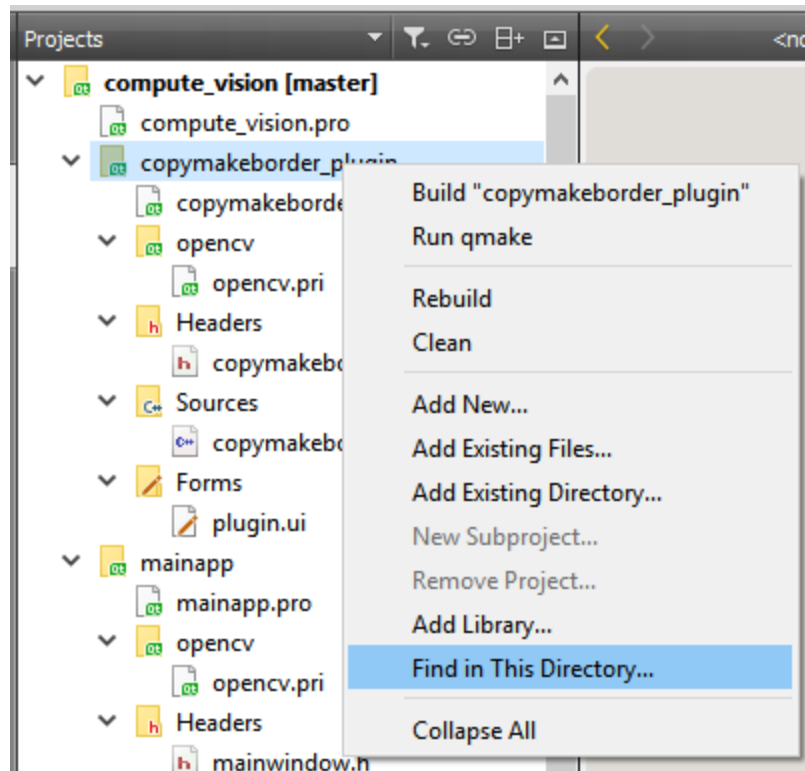
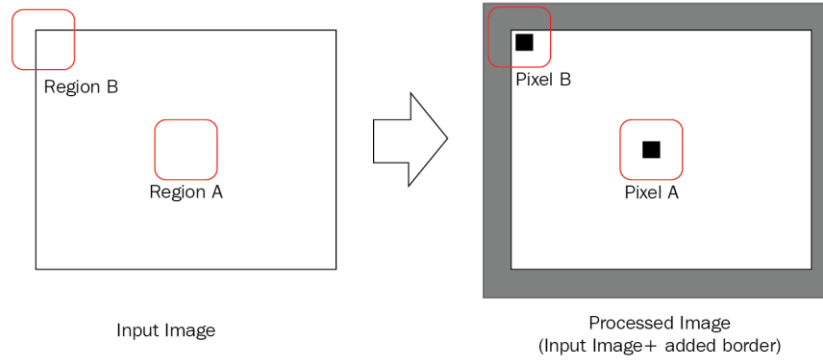
The Scene

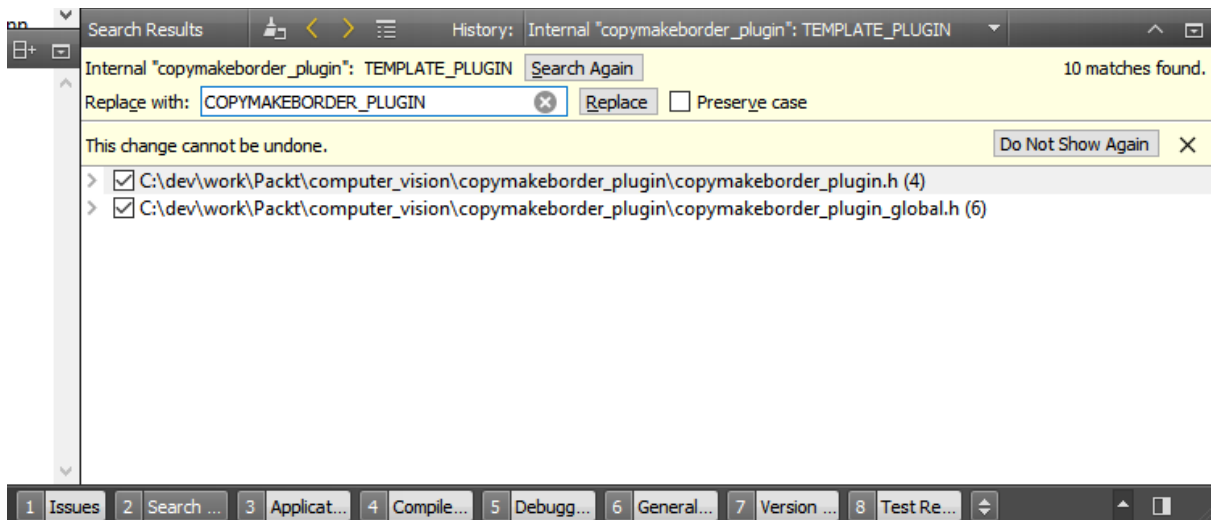
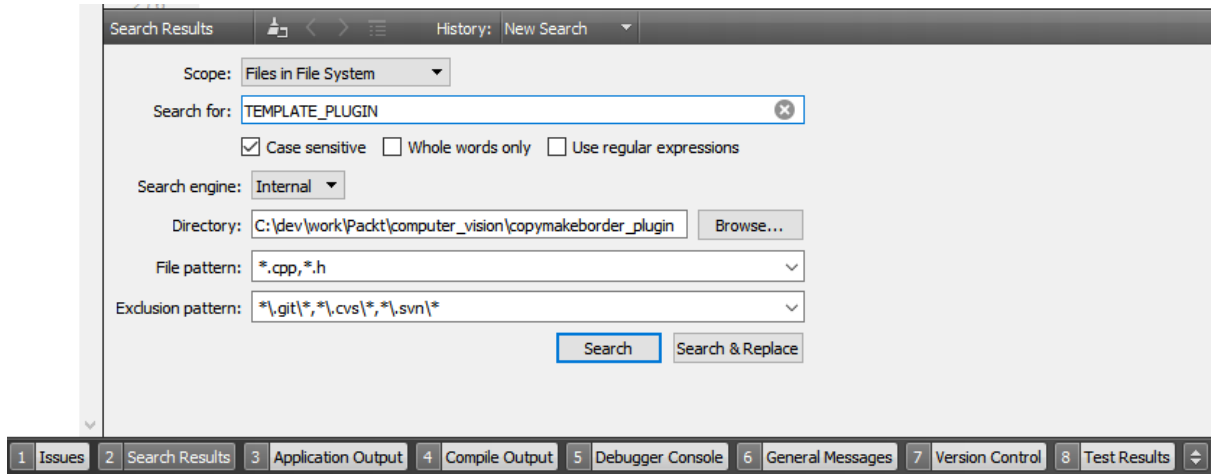


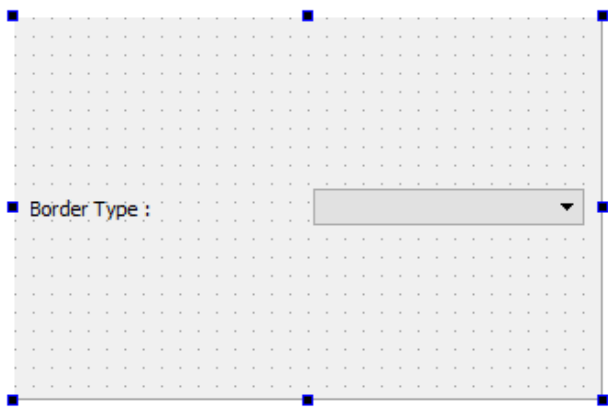




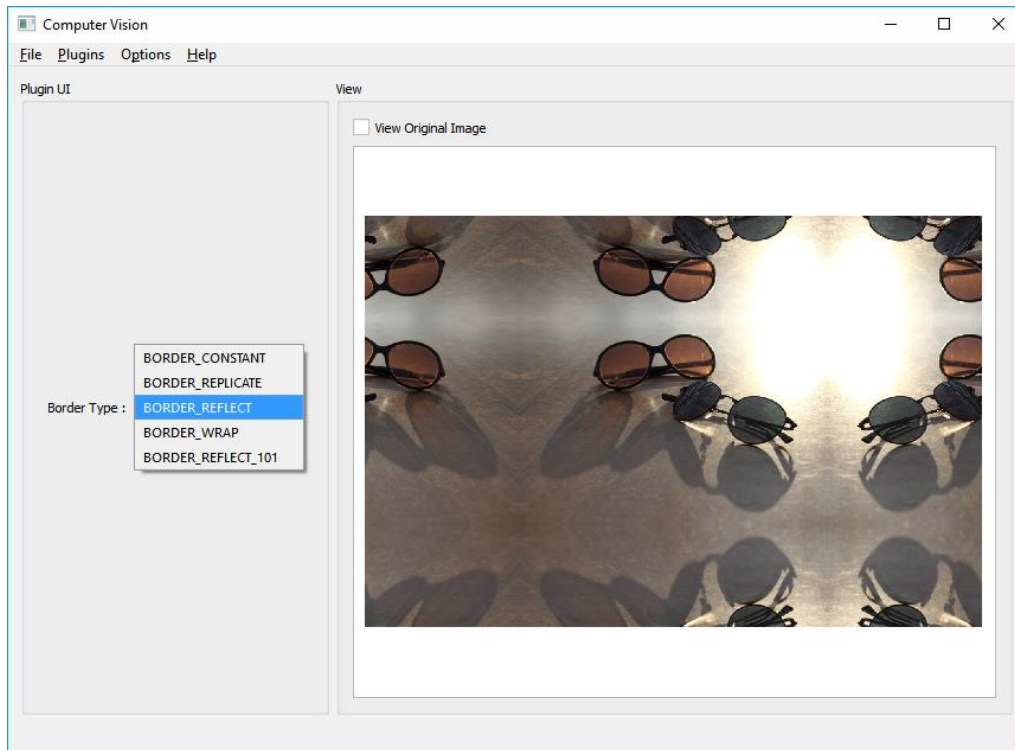
Chapter 06: Image Processing in OpenCV

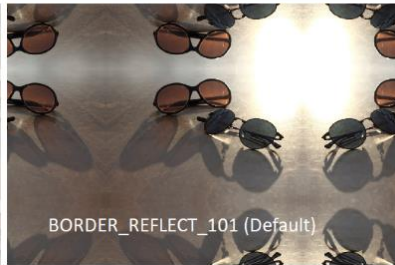


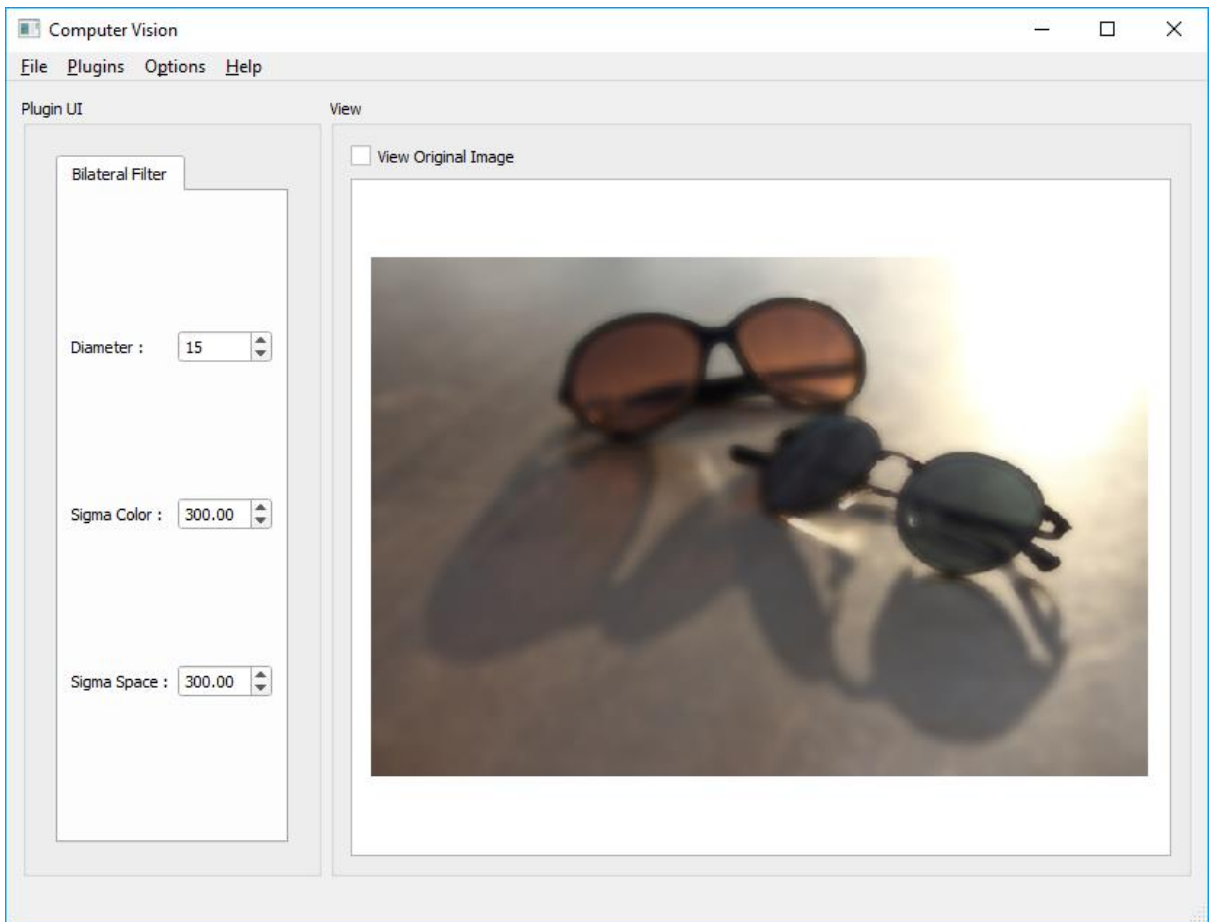


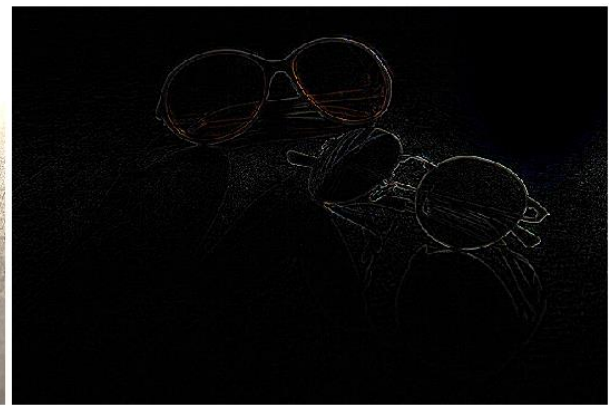
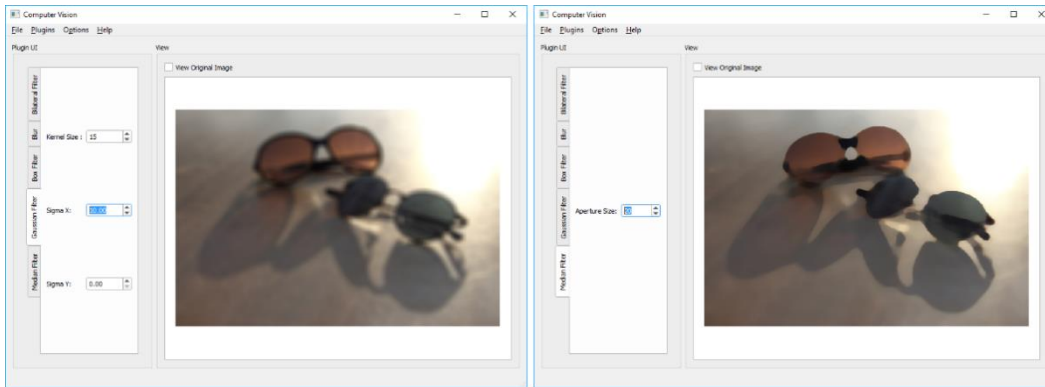


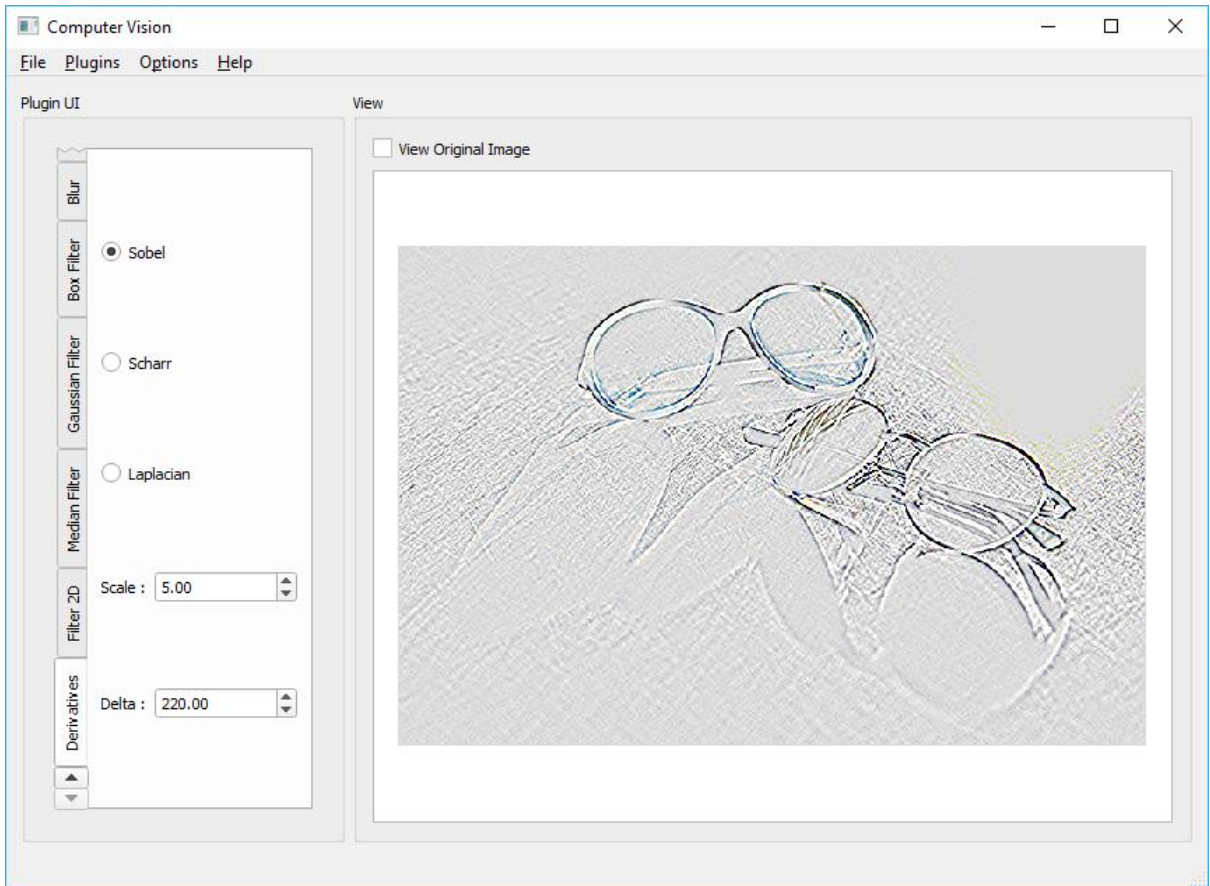
| Object | Class |
|--------------------|-----------|
| PluginGui | QWidget |
| borderTypeComboBox | QComboBox |
| borderTypeLabel | QLabel |

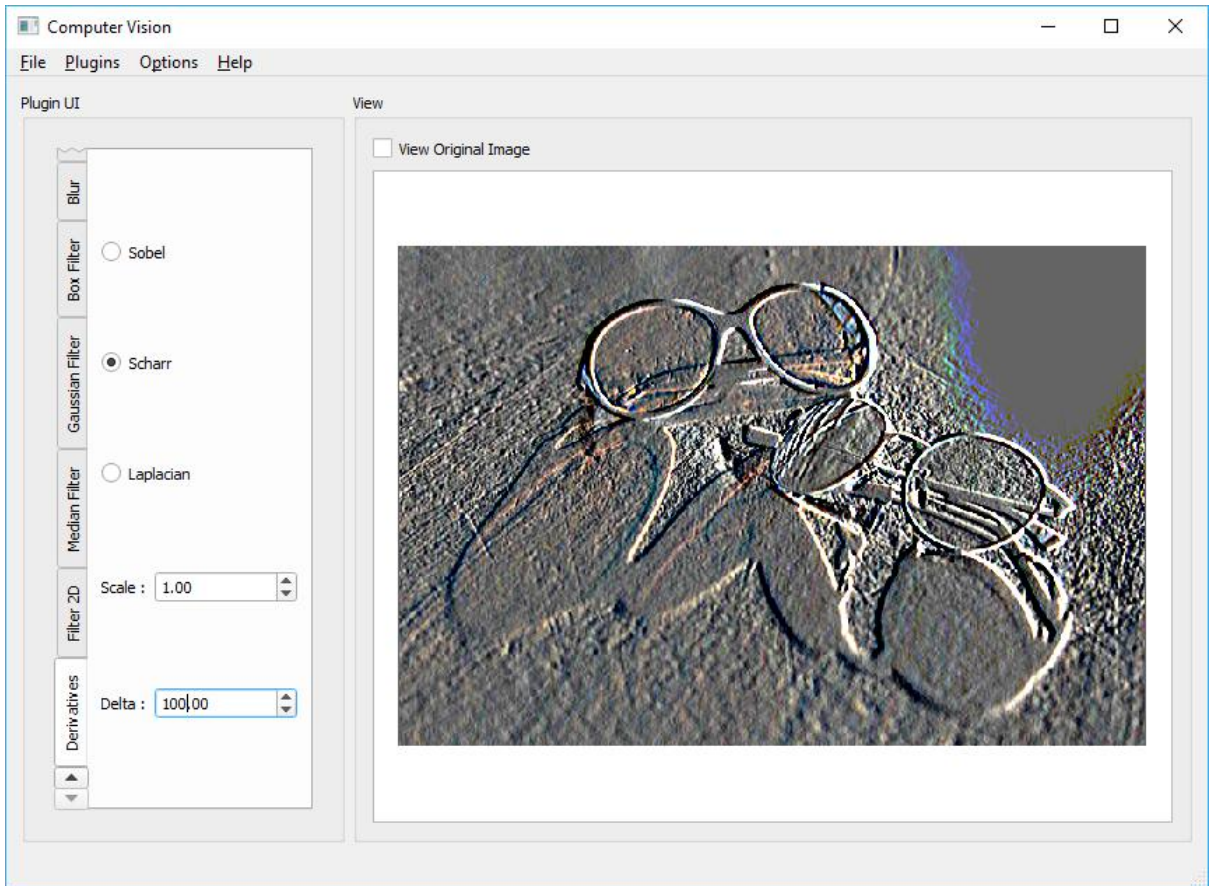


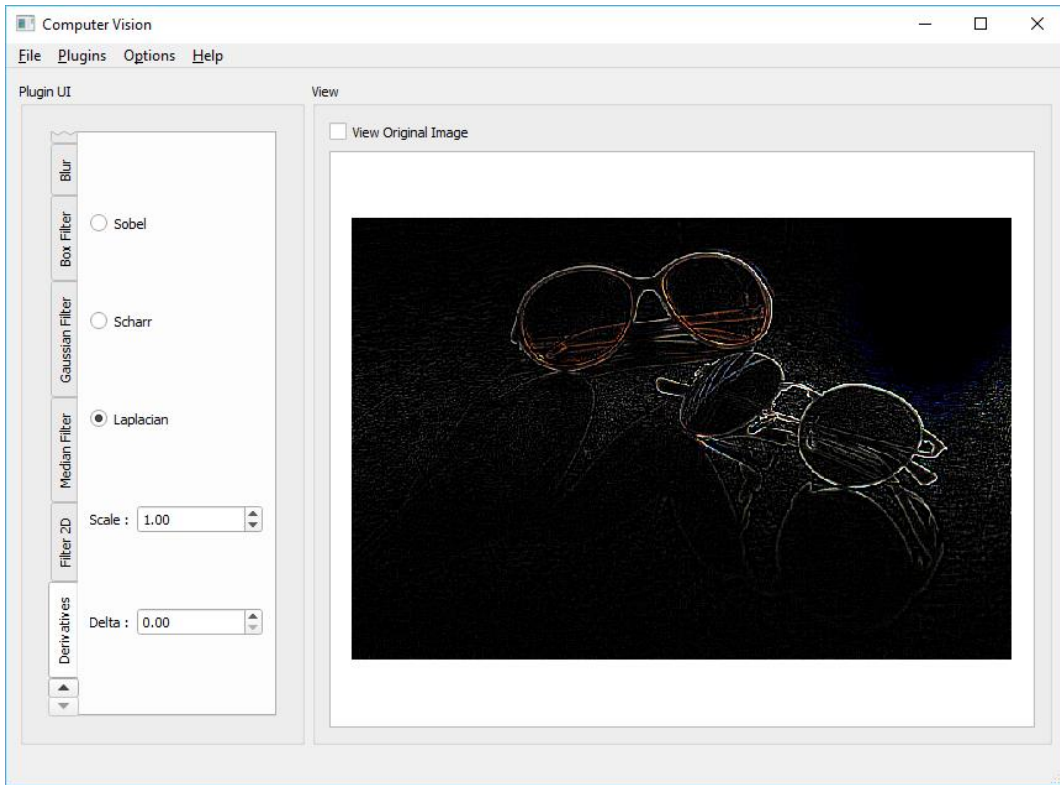


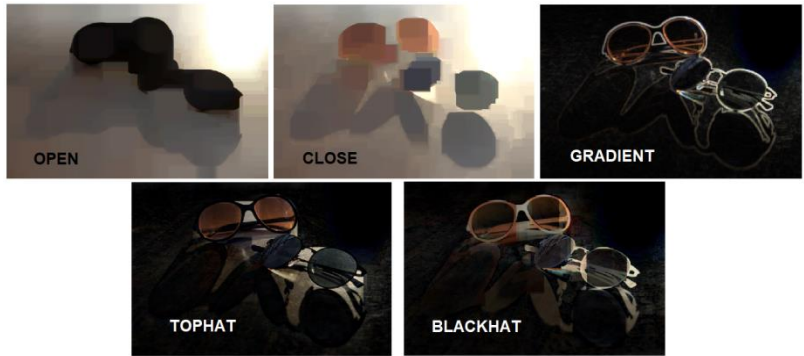






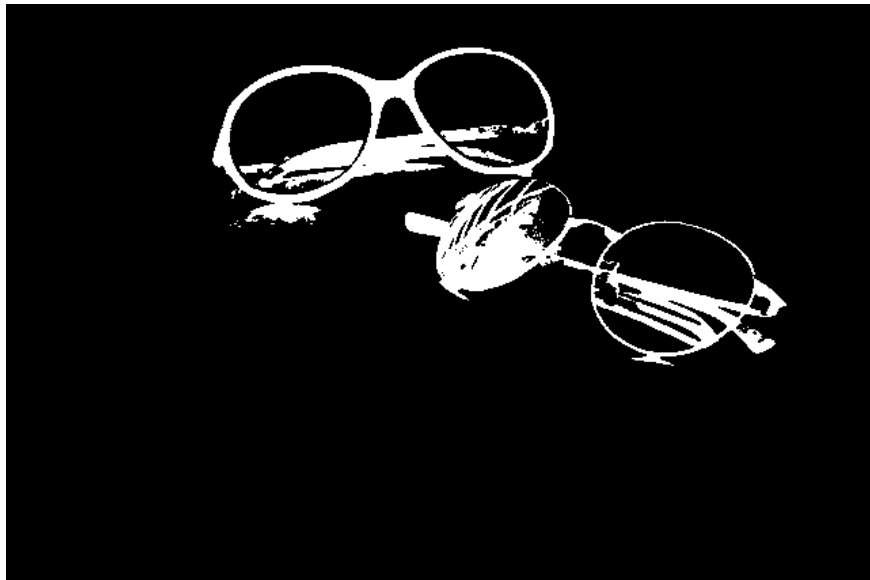
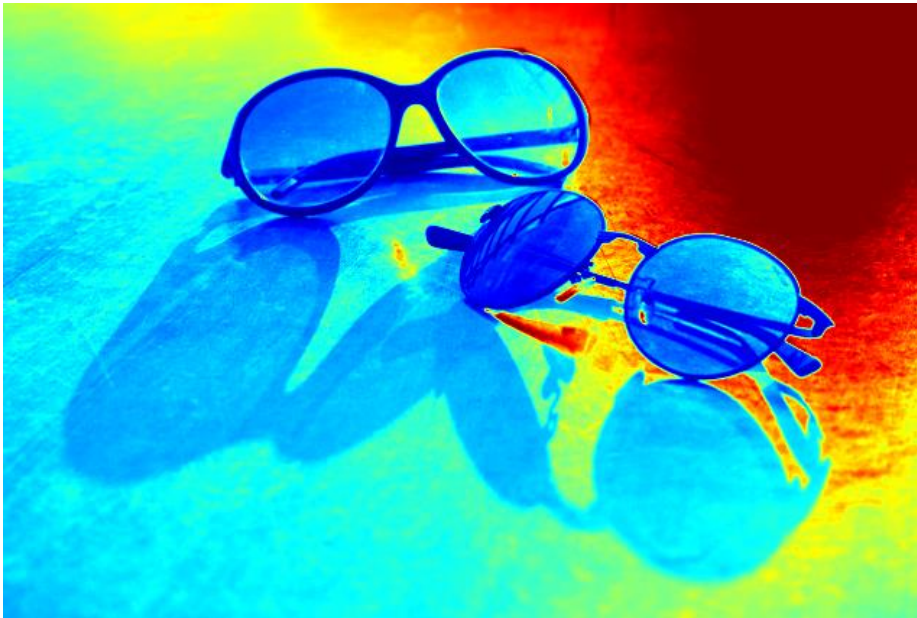


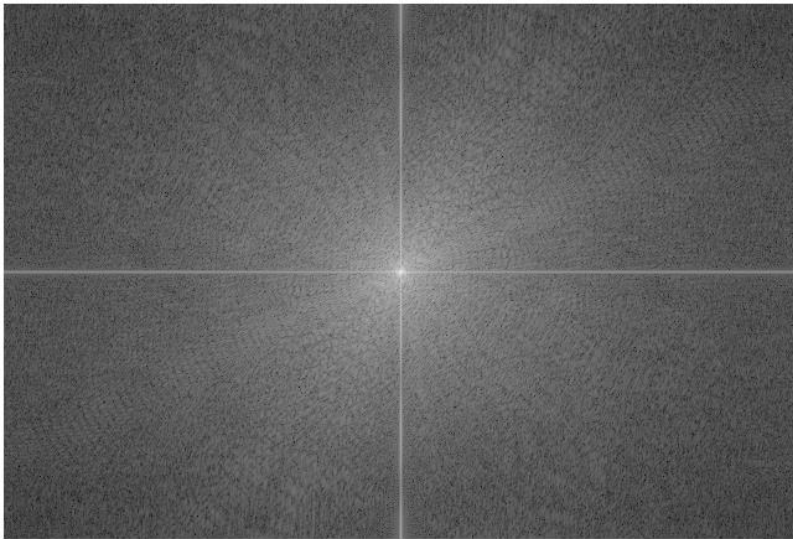
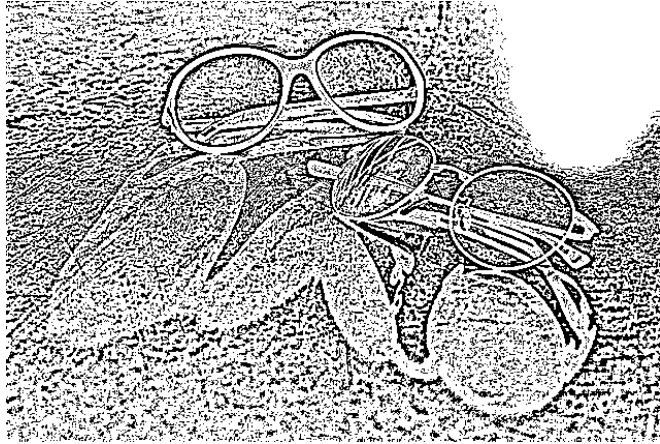










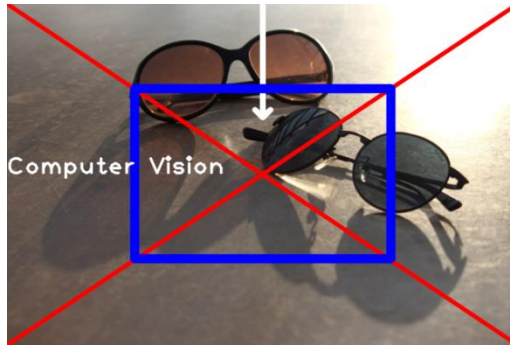




LINE_4 , LINE_8



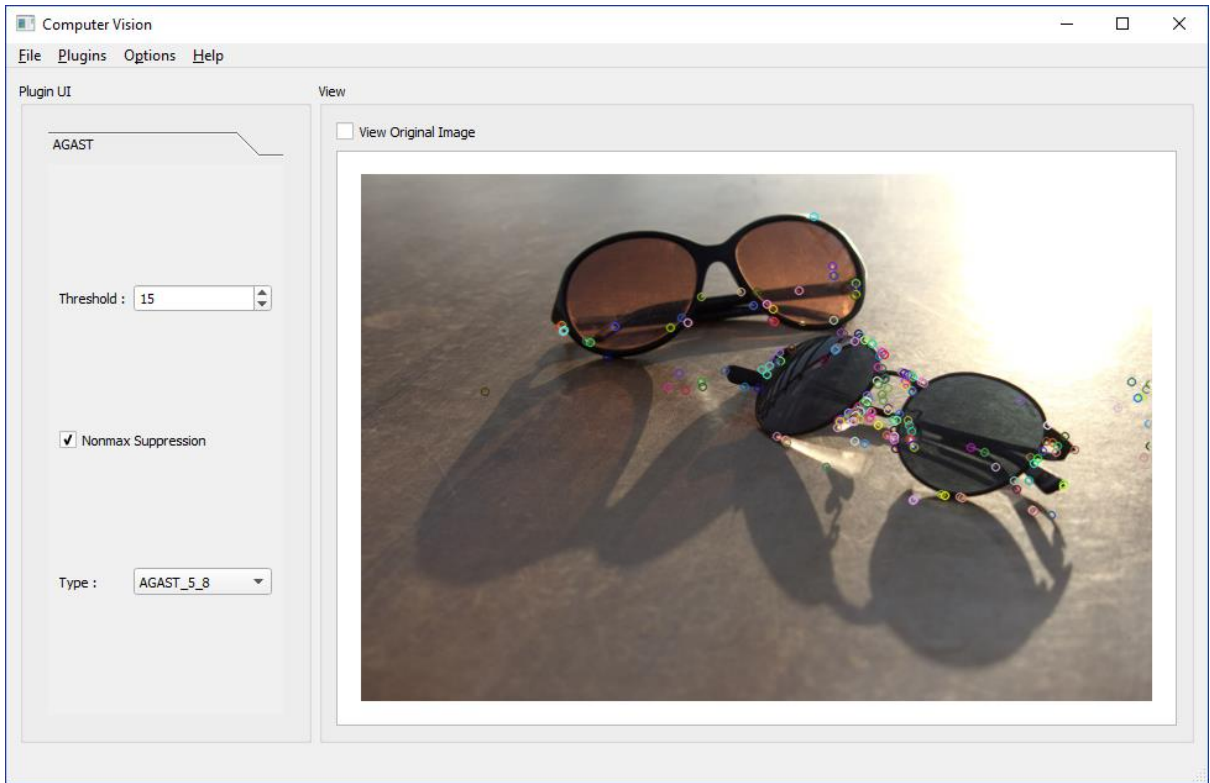
LINE_AA

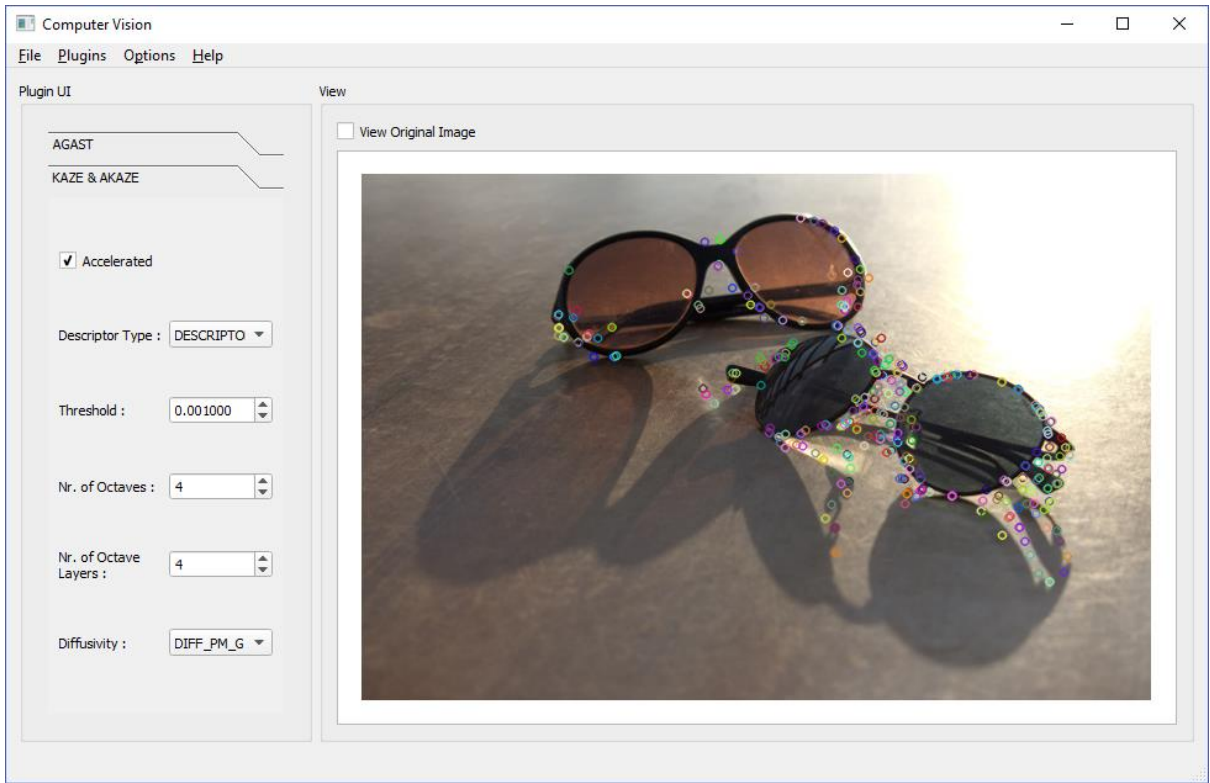


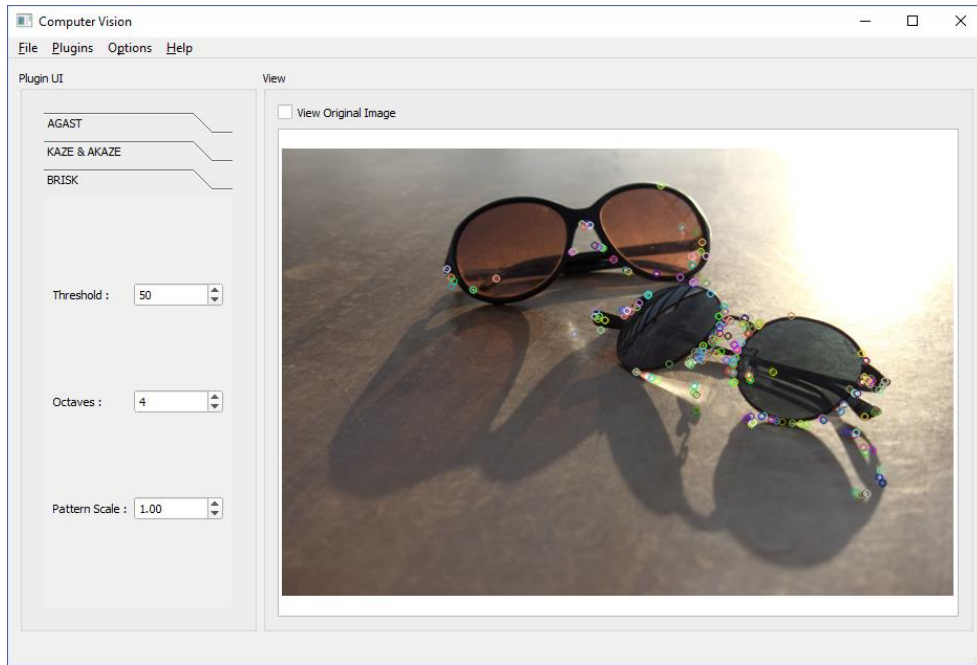


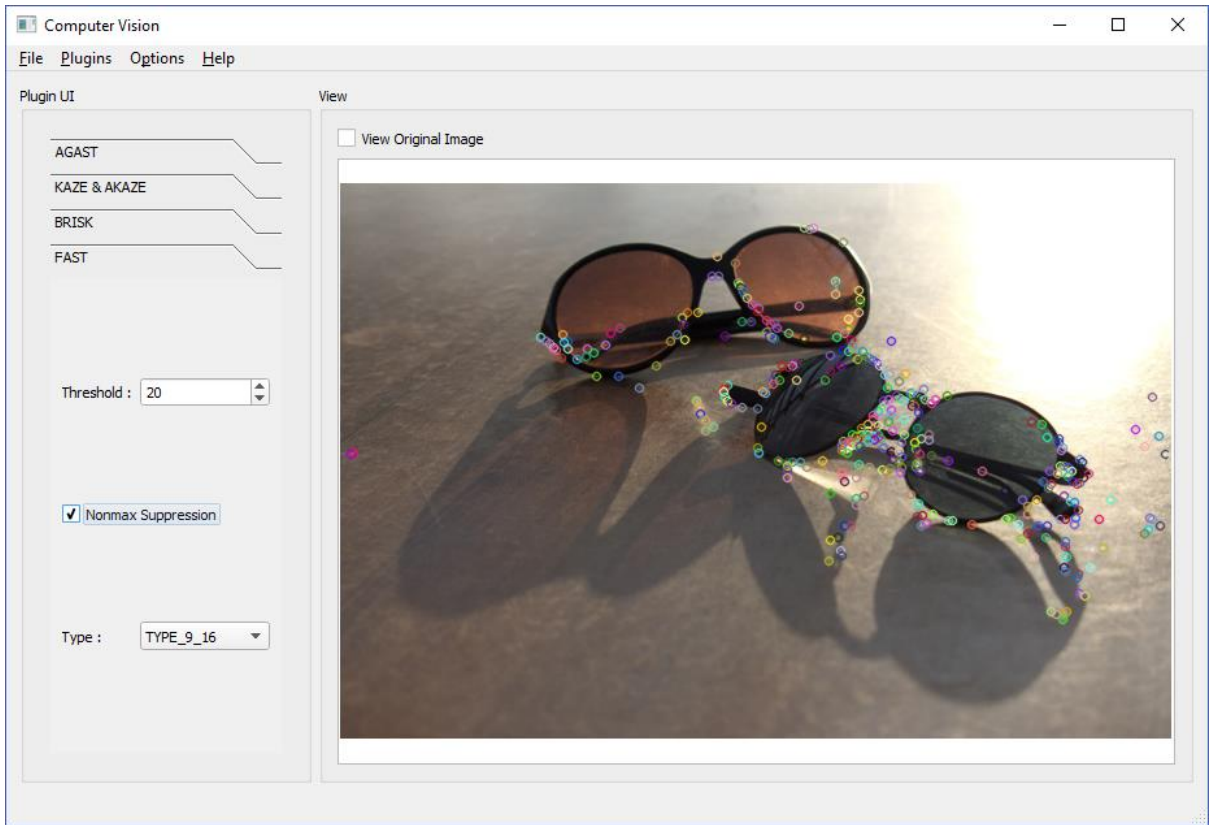
Chapter 07: Features and Descriptors

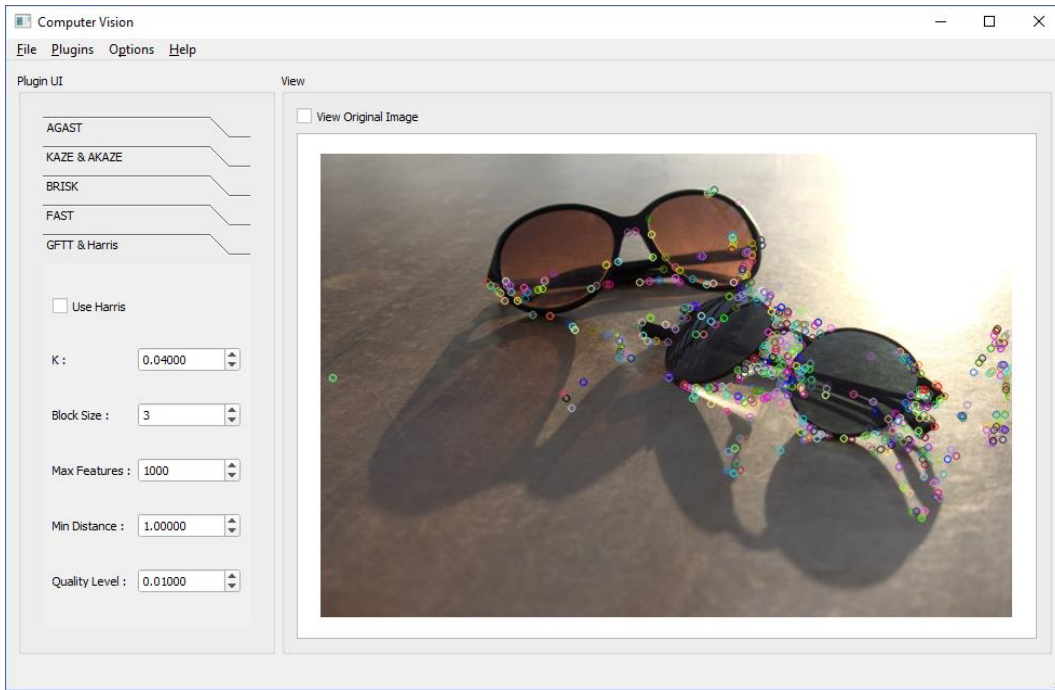


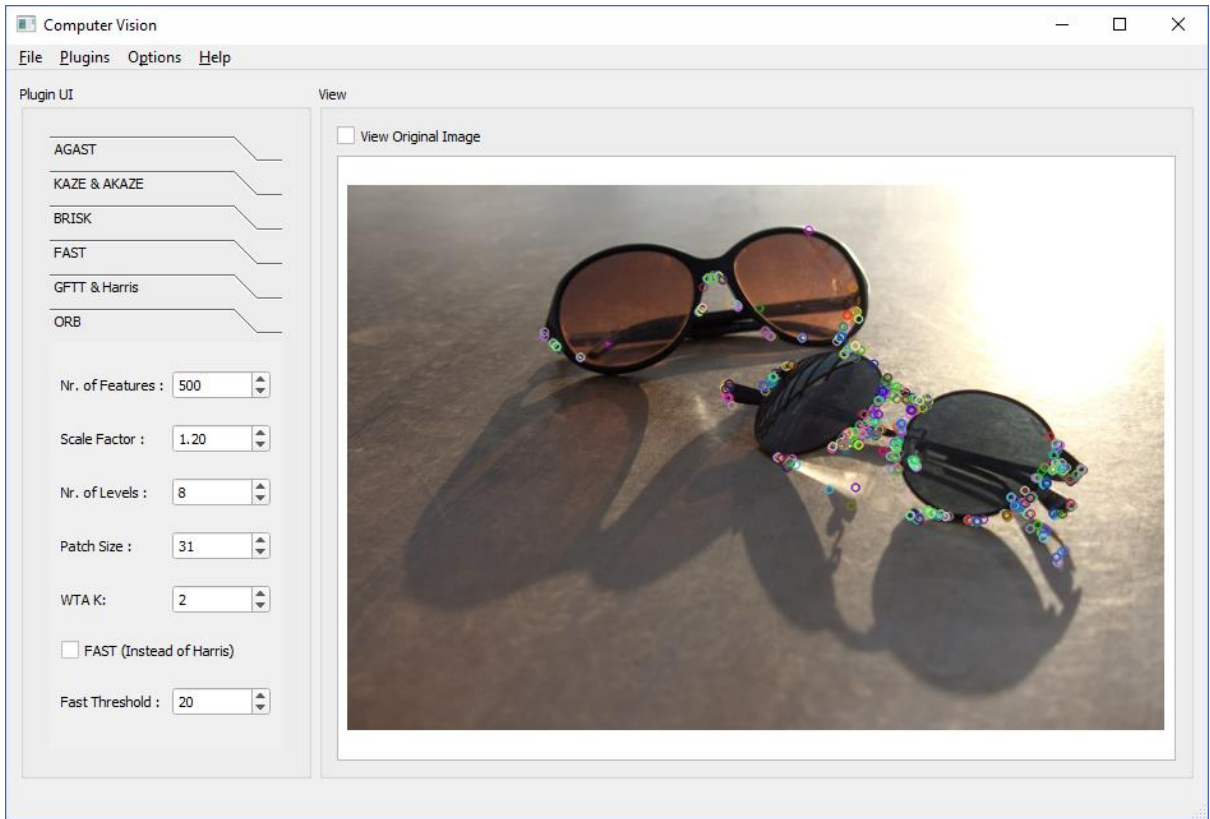


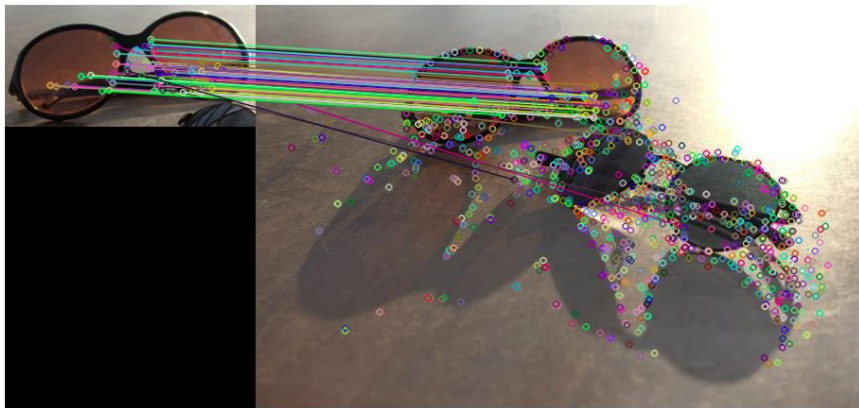


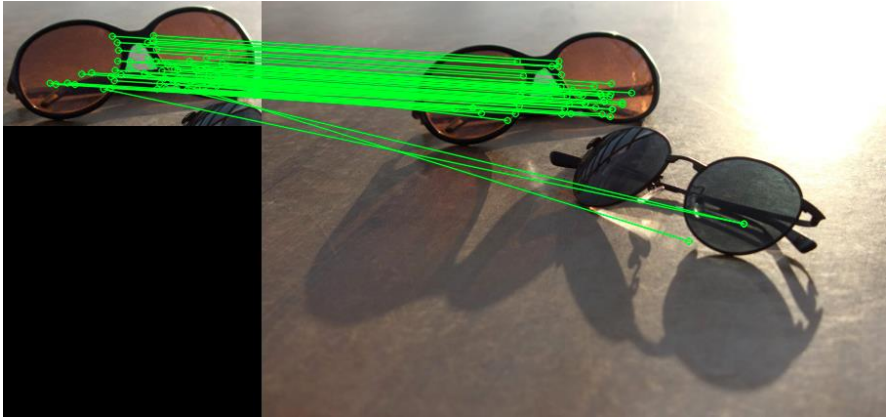


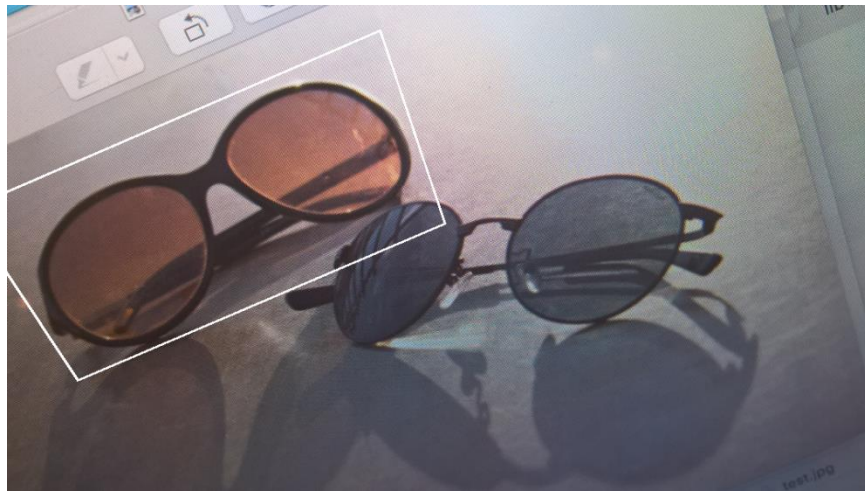












Chapter 08: Multithreading

| Object | Class |
|-----------------|-------------|
| ▼ MainWindow | QMainWindow |
| ▼ centralWidget | QWidget |
| inVideo | QLabel |
| outVideo | QLabel |

C++ Class

Details
Summary

Define Class

Class name:

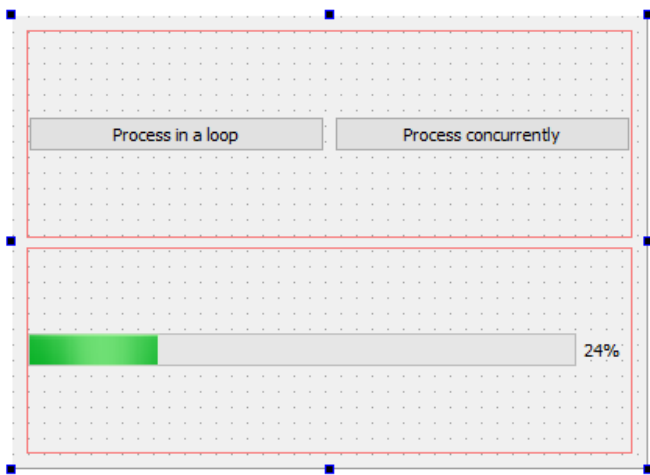
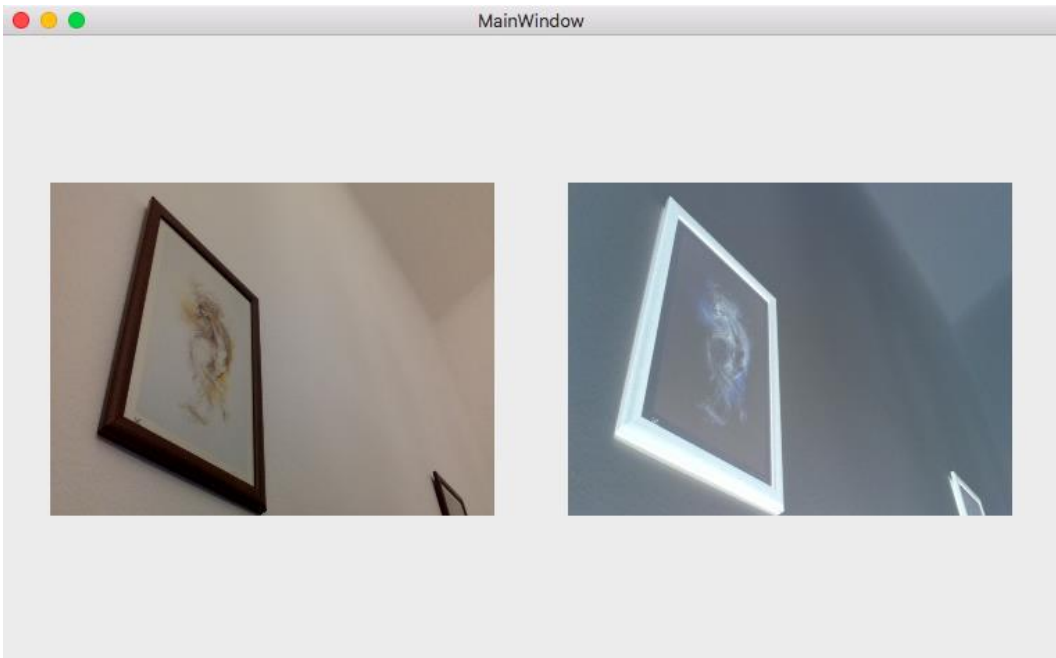
Base class:

Include QObject
 Include QWidget
 Include QMainWindow
 Include QDeclarativeItem - Qt Quick 1
 Include QQuickItem - Qt Quick 2
 Include QSharedData

Header file:

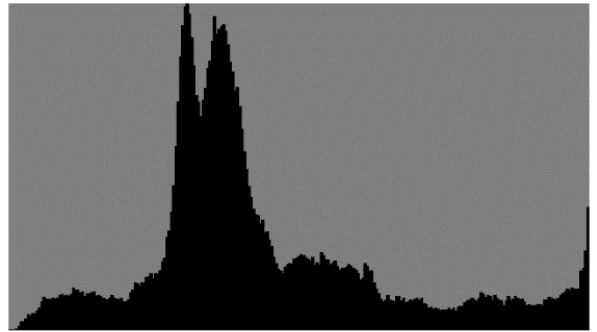
Source file:

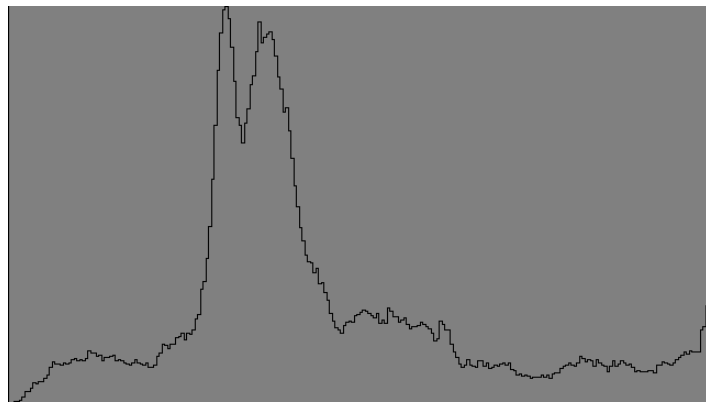
Path:

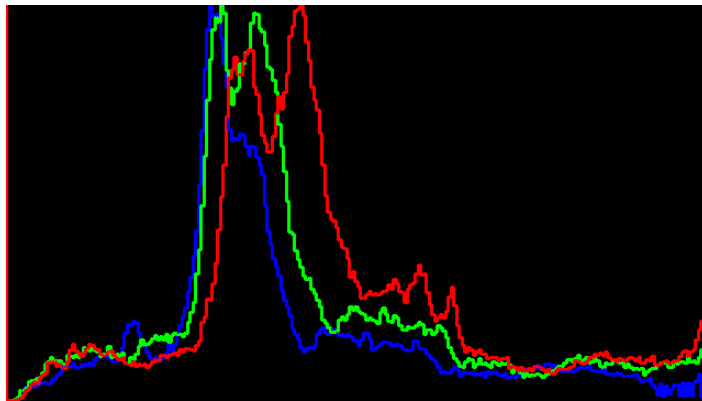


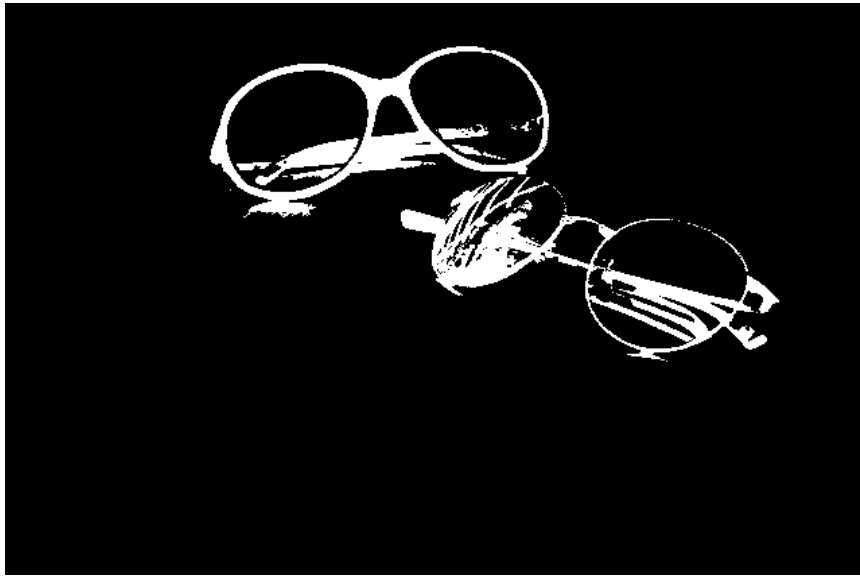
| Object | Class |
|--------------------|--------------|
| MainWindow | QMainWindow |
| centralWidget | QWidget |
| horizontalLayout | QHBoxLayout |
| concurrentBtn | QPushButton |
| loopBtn | QPushButton |
| horizontalLayout_2 | QHBoxLayout |
| progressBar | QProgressBar |

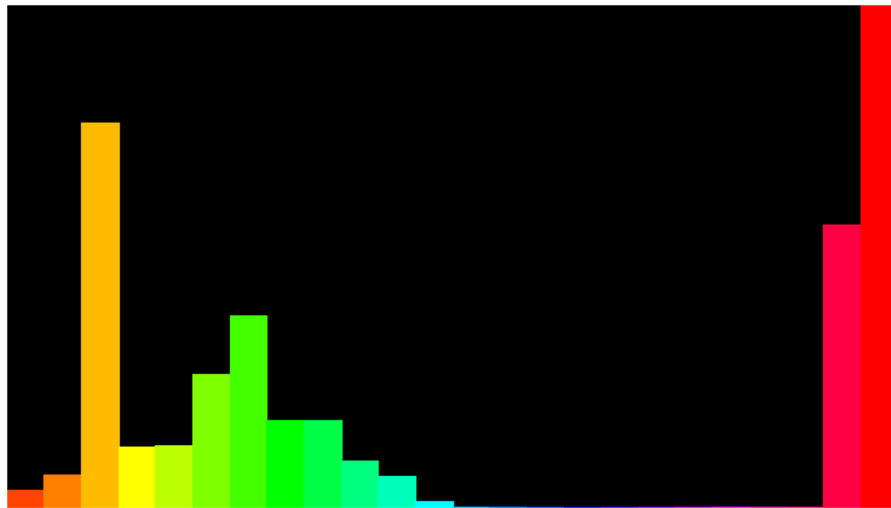
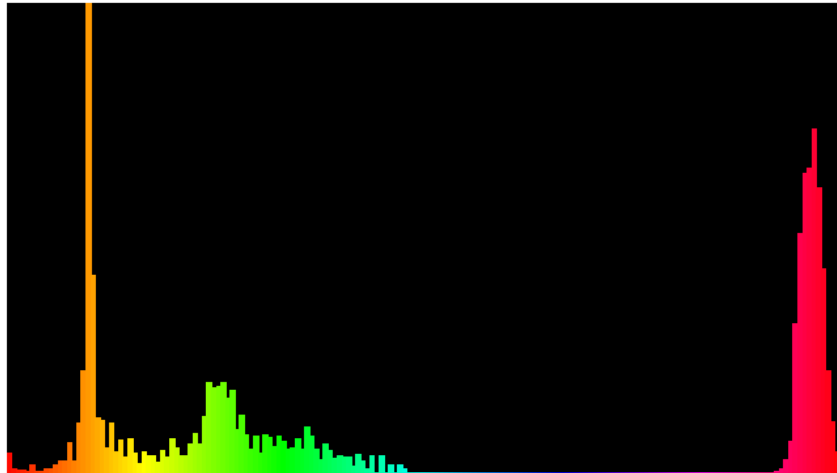
Chapter 09: Video Analysis

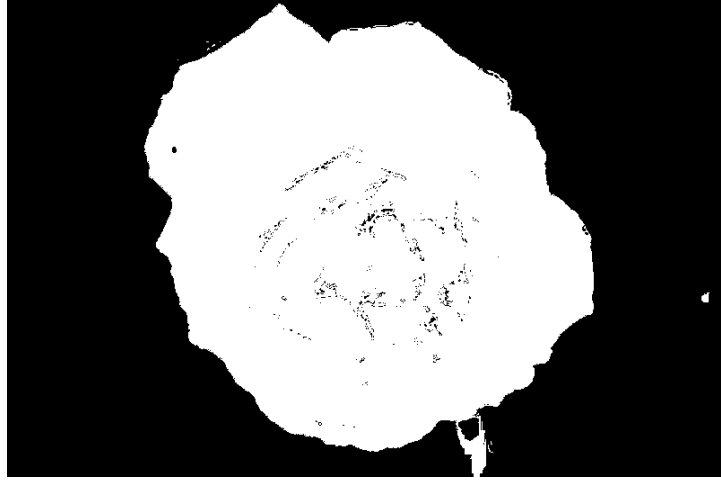


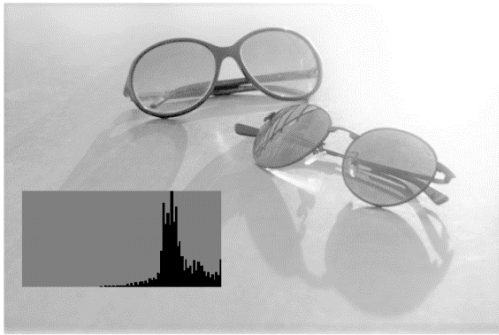


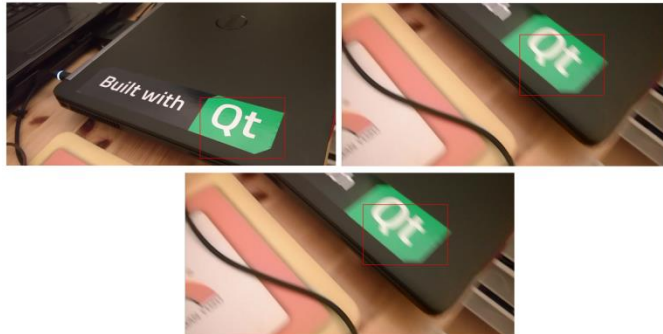
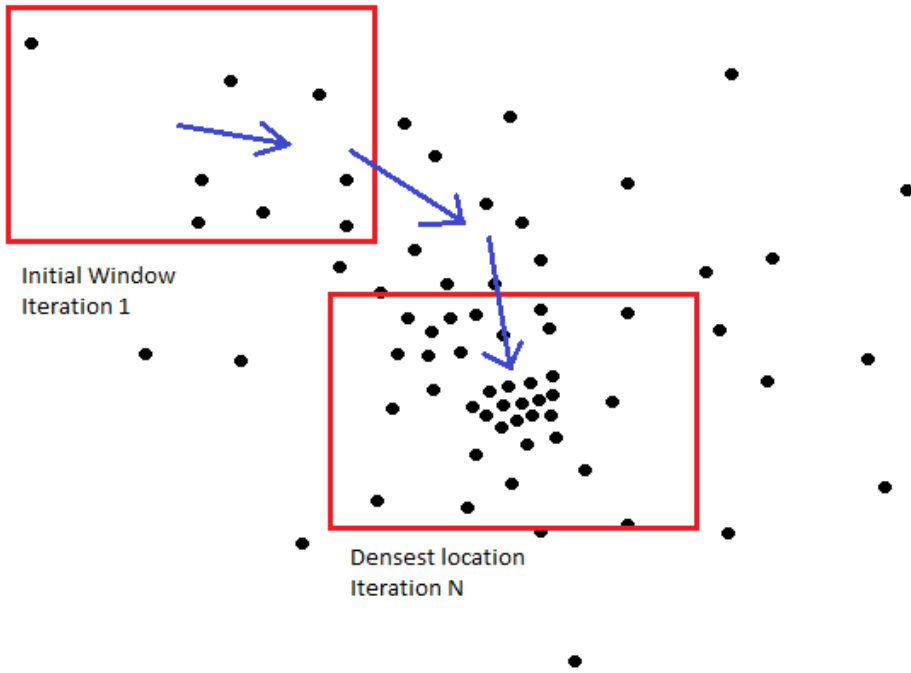


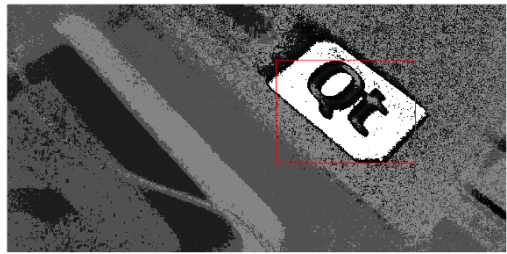
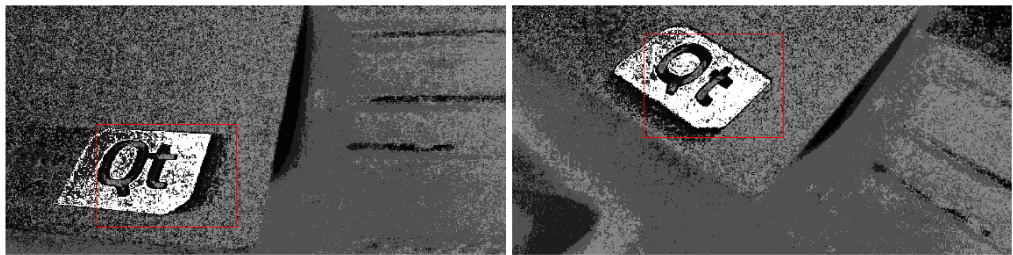






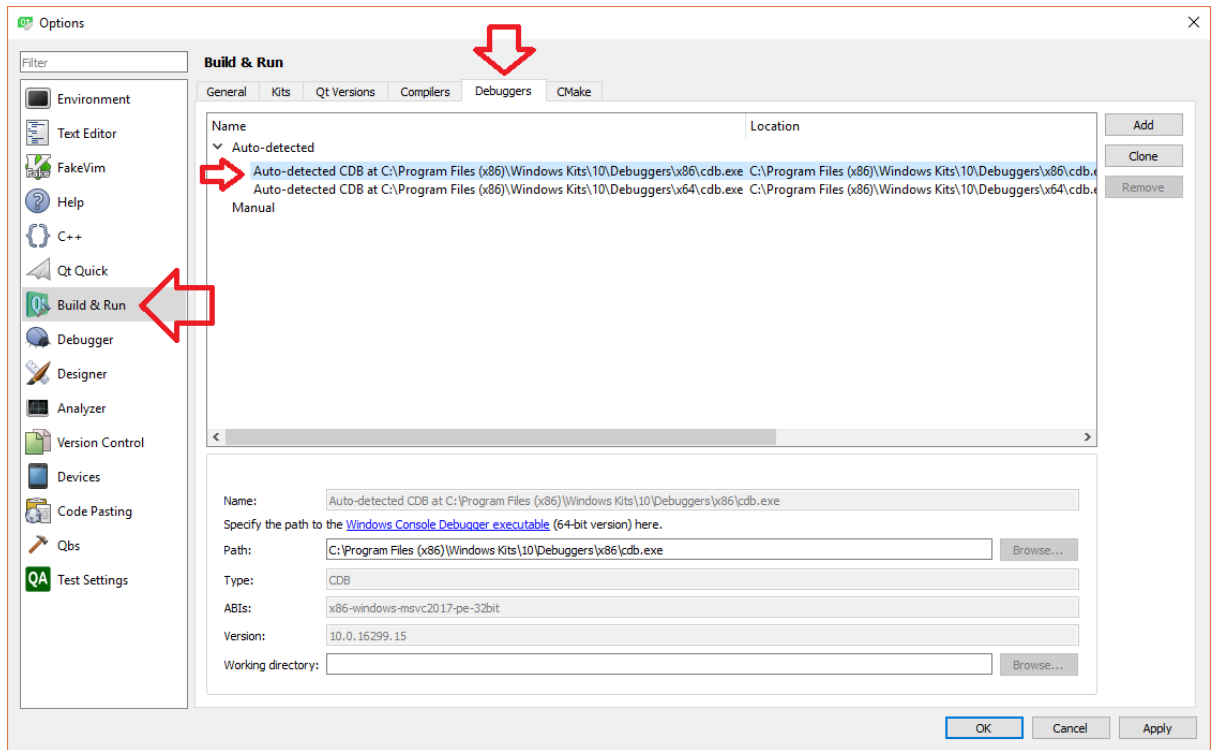








Chapter 10: Debugging and Testing



Options

Build & Run

General Kits Qt Versions Compilers Debuggers CMake

Name

- Auto-detected
 - Desktop Qt 5.9.1 MSVC2015 32bit (default)
 - Manual

Name: Desktop Qt %\{Qt:Version\} MSVC2015 32bit

File system name:

Device type: Desktop

Device: Local PC (default for Desktop)

Sysroot:

C: Microsoft Visual C++ Compiler 14.0 (x86)

C++: Microsoft Visual C++ Compiler 14.0 (x86)

Environment: No changes to apply.

Debugger: Auto-detected CDB at C:\Program Files (x86)\Windows Kits\10\Debuggers\x86\cdb.exe

Qt version: Qt 5.9.1 MSVC2015 32bit

Qt mkspec:

CMake Tool: System CMake at C:\Program Files\CMake\bin\cmake.exe

CMake generator: CodeBlocks - NMake Makefiles, Platform: <none>, Toolset: <none>

CMake Configuration CMAKE_CXX_COMPILER:STRING=%\{Compiler:Executable:Cxx\}; CMAKE_C_COMPILER:STRING=%\{Compiler:Executable:C\}; ...

OK Cancel Apply



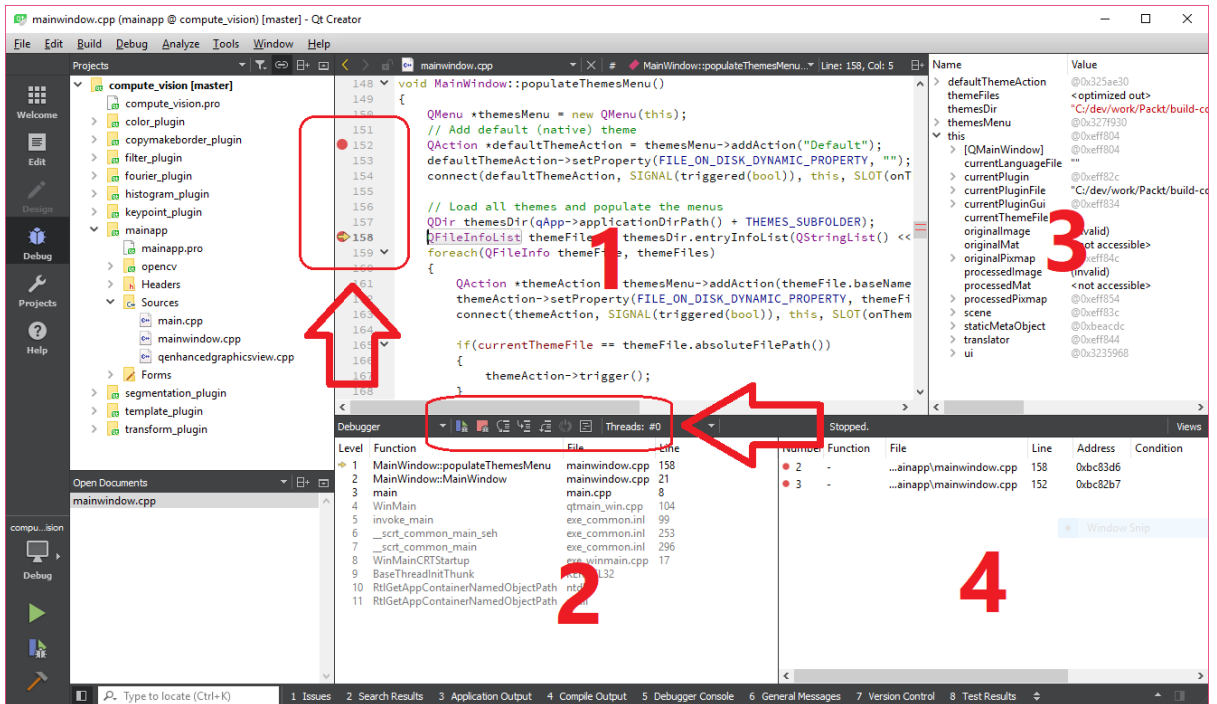
List of Processes

Kit: Desktop Qt 5.9.1 MSVC2015 32bit Manage...

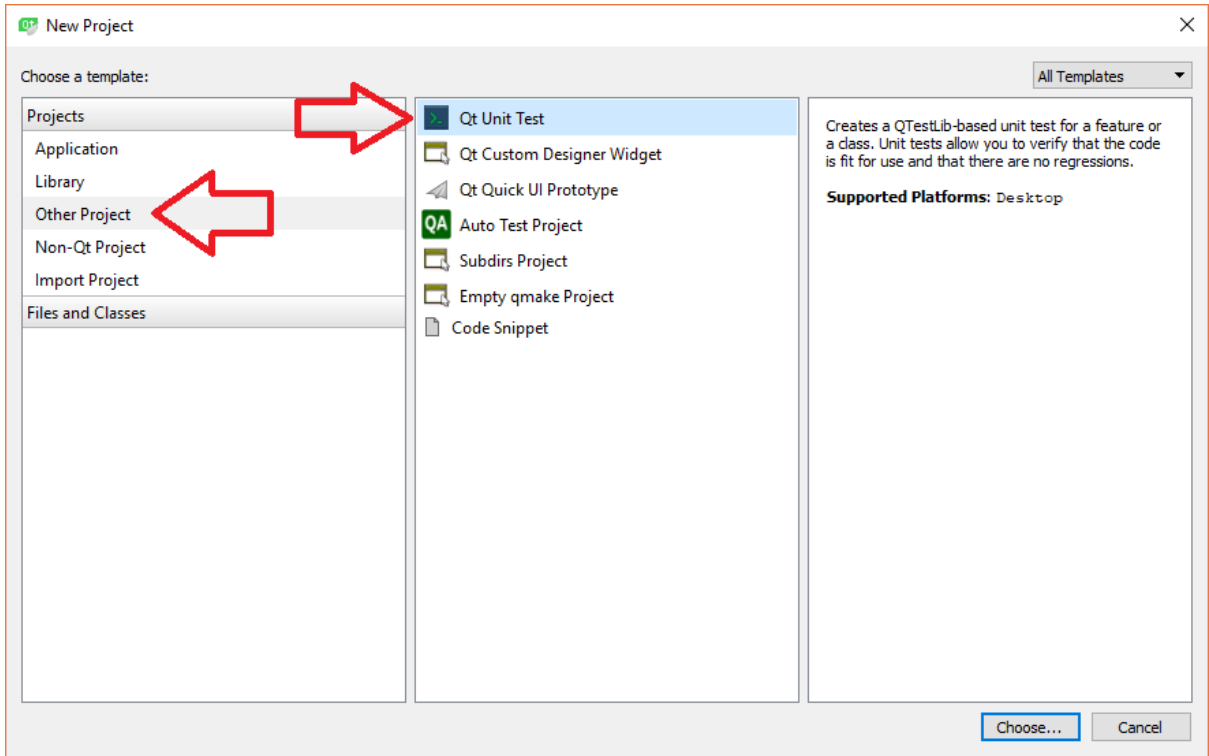
Filter: computer_vision

| Process ID | Command Line |
|------------|--|
| 18140 | C:\dev\work\Packt\build-compute_vision-Desktop_Qt_5_9_1_MSVC2015_32bit-Debug\mainapp\debug\Computer_Vision.exe |

Attach to Process Update List Kill Process Cancel



- Breakpoints
 - Debugger Log
 - Locals and Expressions
 - Modules
 - Registers
 - Snapshots
 - Source Files
 - Stack
 - Threads
 - Editor
-
- Automatically Hide View Title Bars
 - Reset to Default Layout



Qt Unit Test

Location
Kits
Modules
Details
Summary

Select Required Modules

Select the modules you want to include in your project. The recommended modules for this project are selected by default.

| | |
|--|---|
| <input checked="" type="checkbox"/> QtCore | <input type="checkbox"/> QtSvg |
| <input type="checkbox"/> QtGui | <input type="checkbox"/> QtWebEngine |
| <input type="checkbox"/> QtWidgets | <input type="checkbox"/> QtWebEngineWidgets |
| <input type="checkbox"/> QtDeclarative | <input type="checkbox"/> QtWebKit |
| <input type="checkbox"/> QtQml | <input type="checkbox"/> QtWebKitWidgets |
| <input type="checkbox"/> QtQuick | <input type="checkbox"/> QtXml |
| <input type="checkbox"/> QtNetwork | <input type="checkbox"/> QtXmlPatterns |
| <input type="checkbox"/> QtOpenGL | <input type="checkbox"/> Phonon |
| <input type="checkbox"/> QtPrintSupport | <input type="checkbox"/> QtMultimedia |
| <input type="checkbox"/> QtSql | <input type="checkbox"/> Qt3Support |
| <input type="checkbox"/> QtScript | <input checked="" type="checkbox"/> QTest |
| <input type="checkbox"/> QtScriptTools | <input type="checkbox"/> QtDBus |

Next Cancel

Qt Unit Test

Location
Kits
Modules
Details
Summary

Test Class Information

Specify basic information about the test class for which you want to generate skeleton source code file.

Class name: HelloTestTest

Test slot: testPixelCount

Type: Test

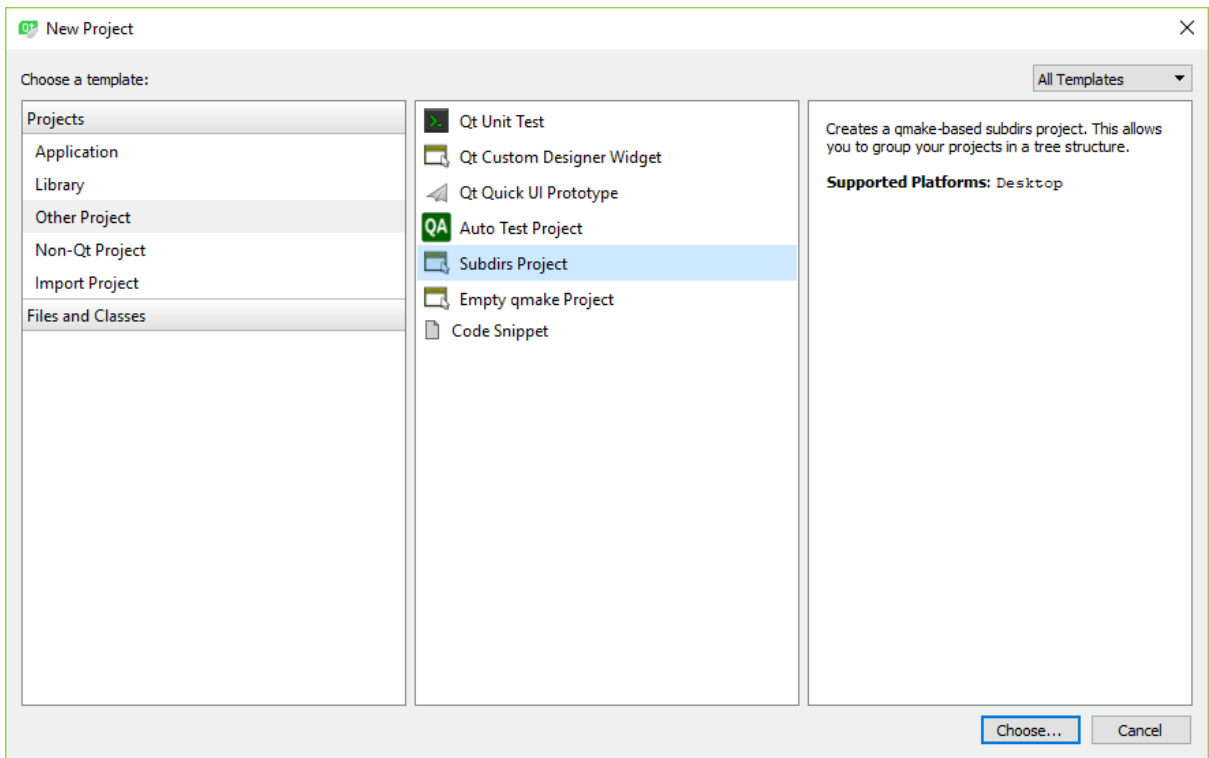
Use a test data set

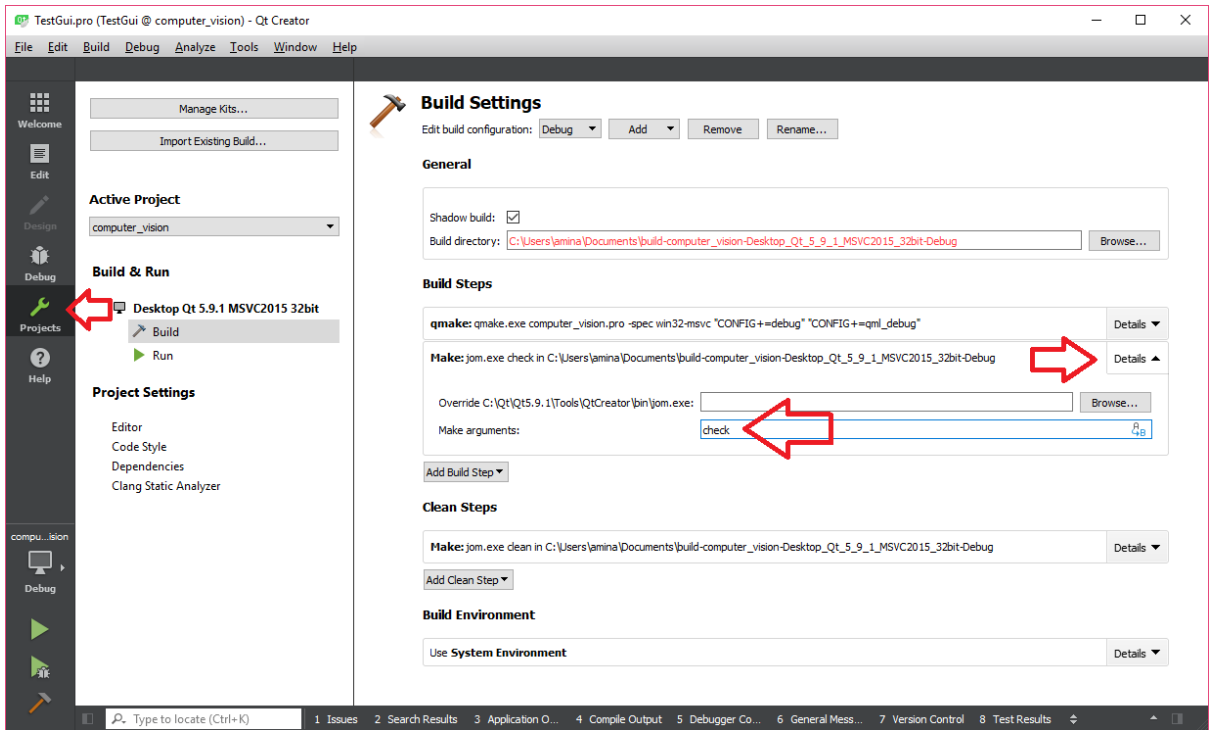
Requires QApplication

Generate initialization and cleanup code

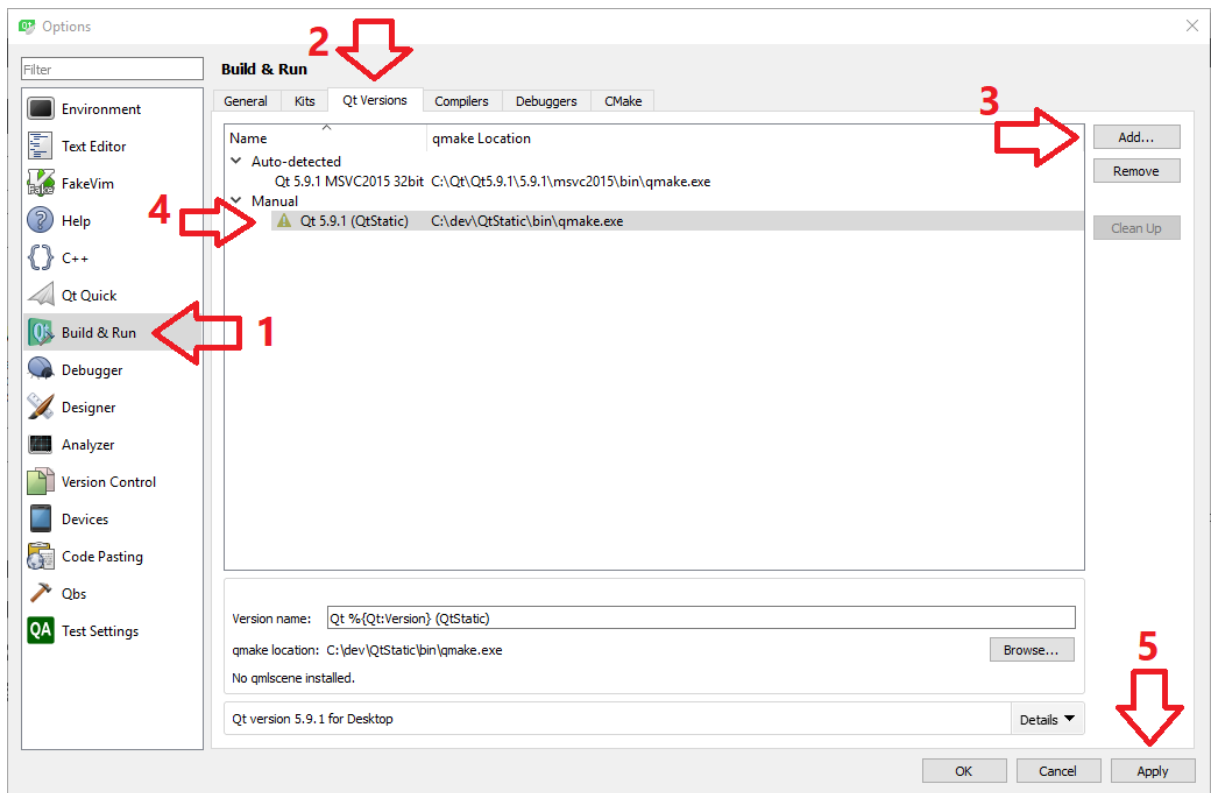
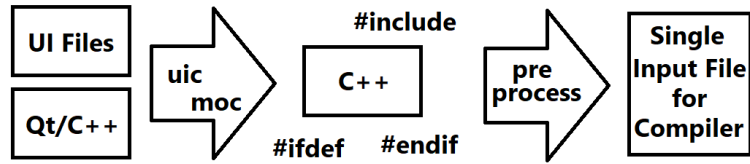
File: tst_hellotesttest.cpp

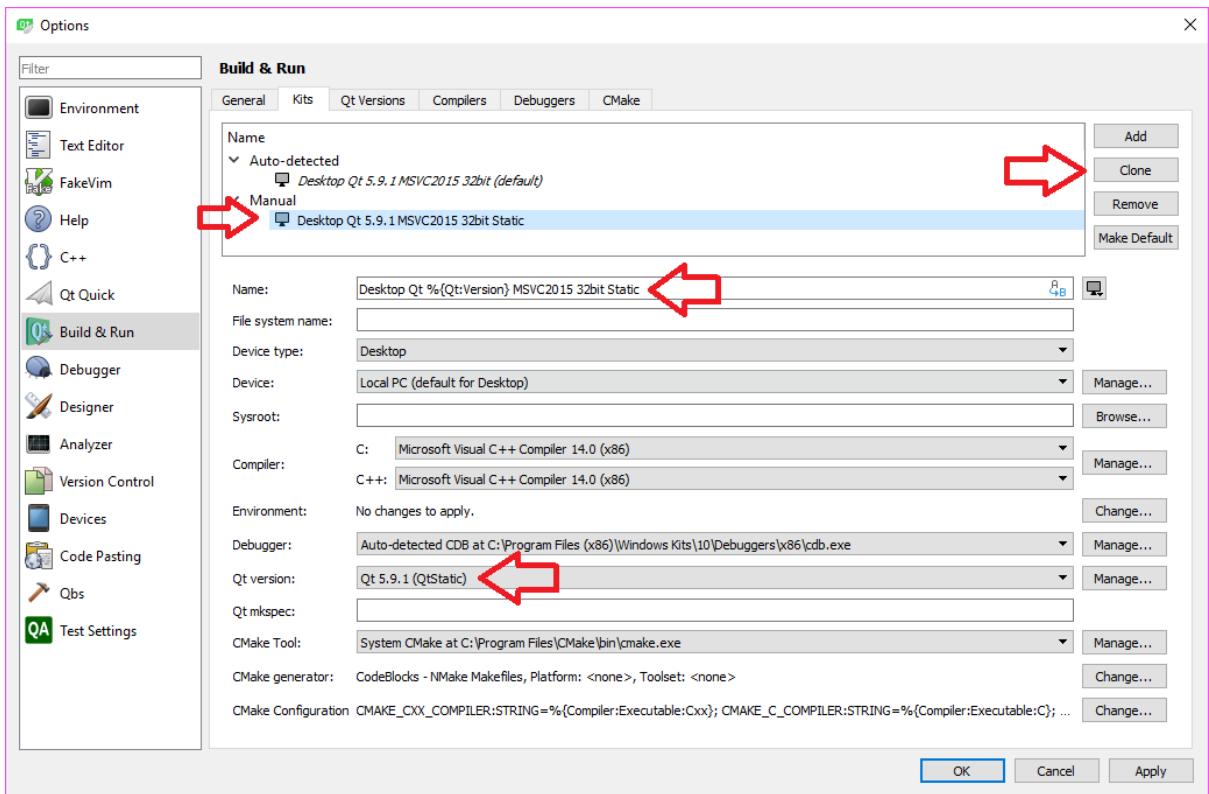
Next Cancel





Chapter 11: Linking and Deployment





Qt Widgets Application

Location
Kits
Details
Summary


Kit Selection

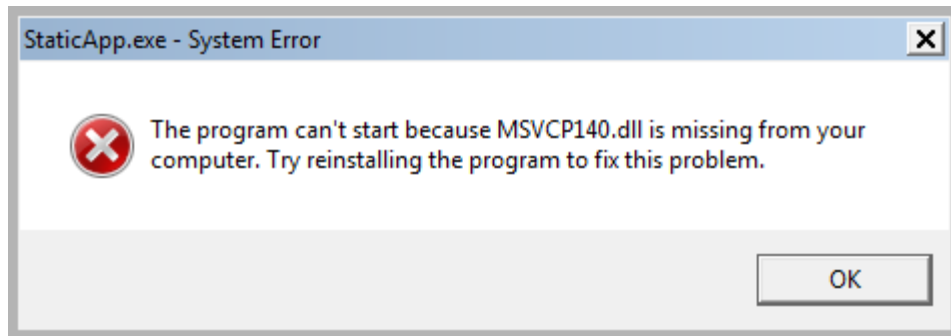
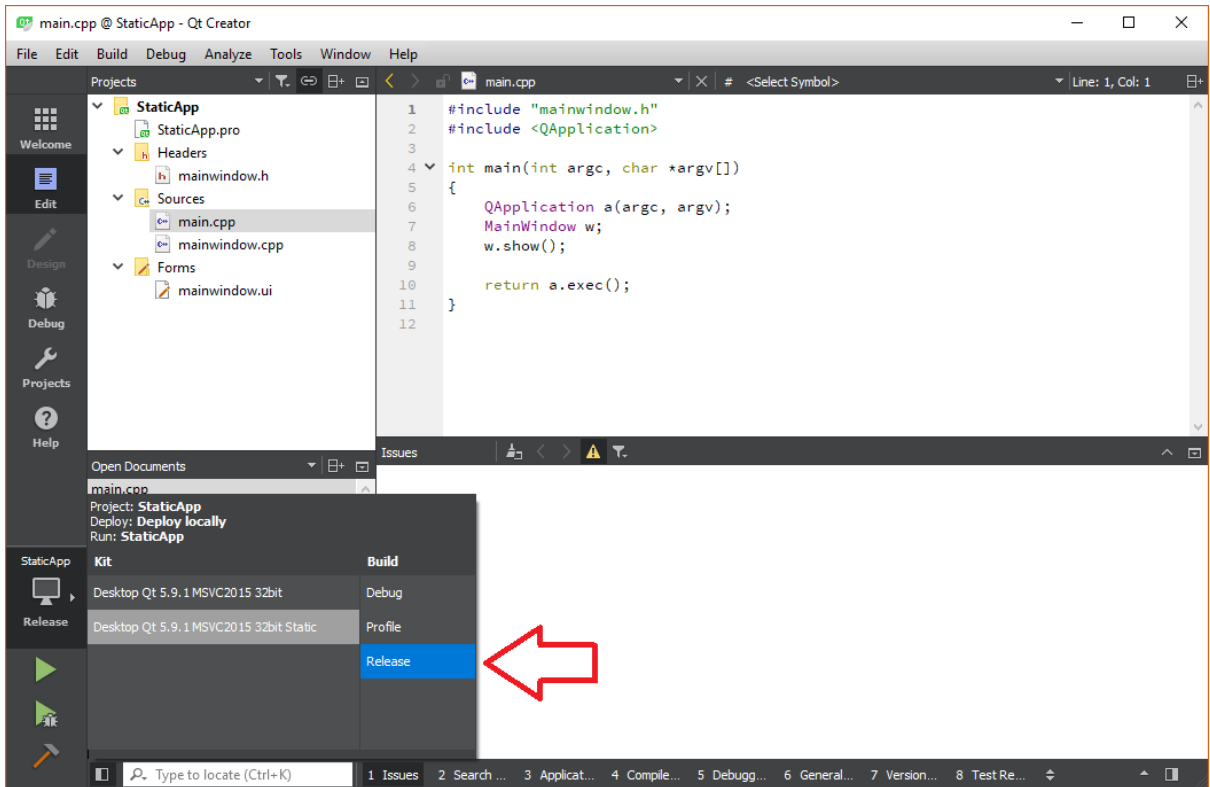
Qt Creator can use the following kits for project **StaticApp**:

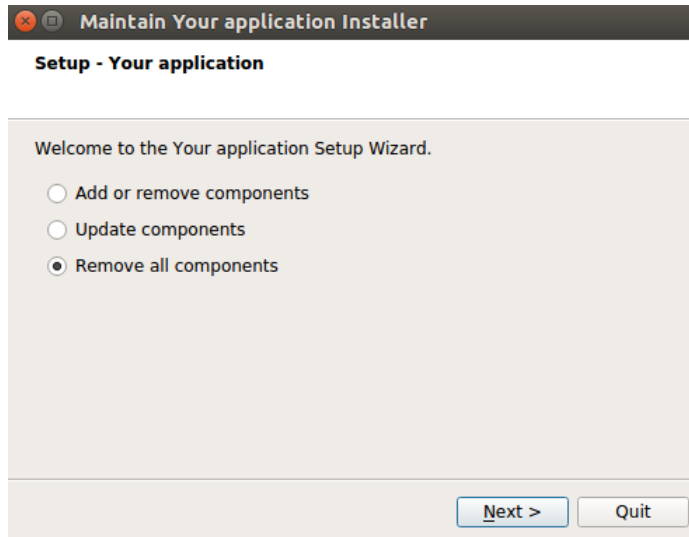
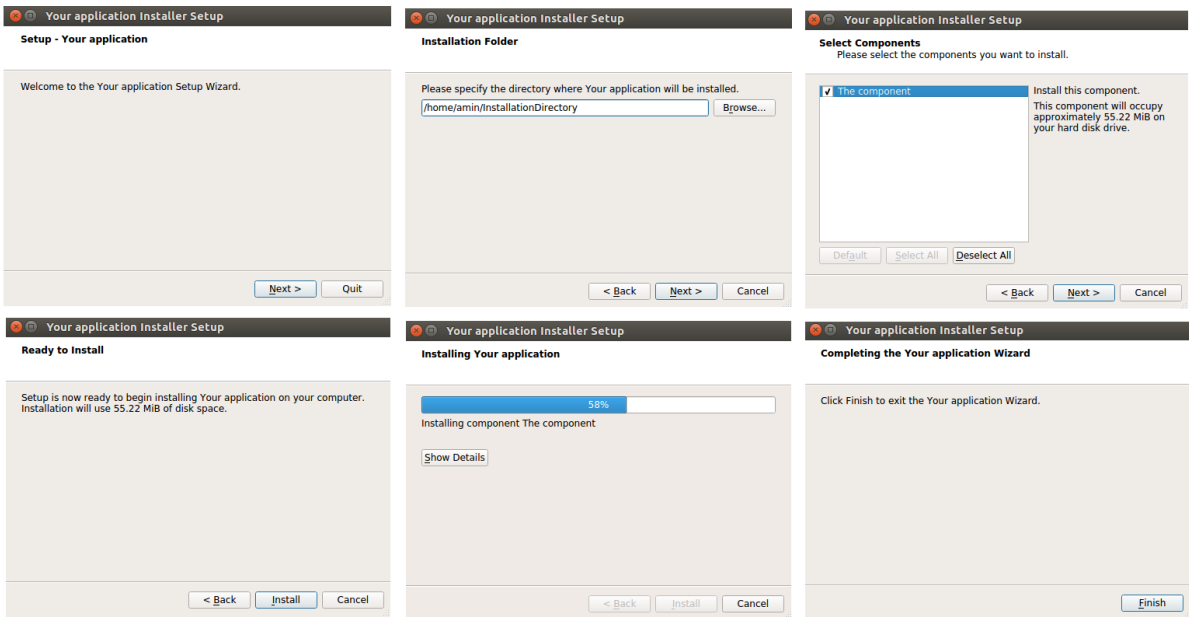
Select all kits

| | |
|--|-----------|
| <input type="checkbox"/> Desktop Qt 5.9.1 MSVC2015 32bit | Details ▾ |
| <input checked="" type="checkbox"/> Desktop Qt 5.9.1 MSVC2015 32bit Static | Details ▾ |

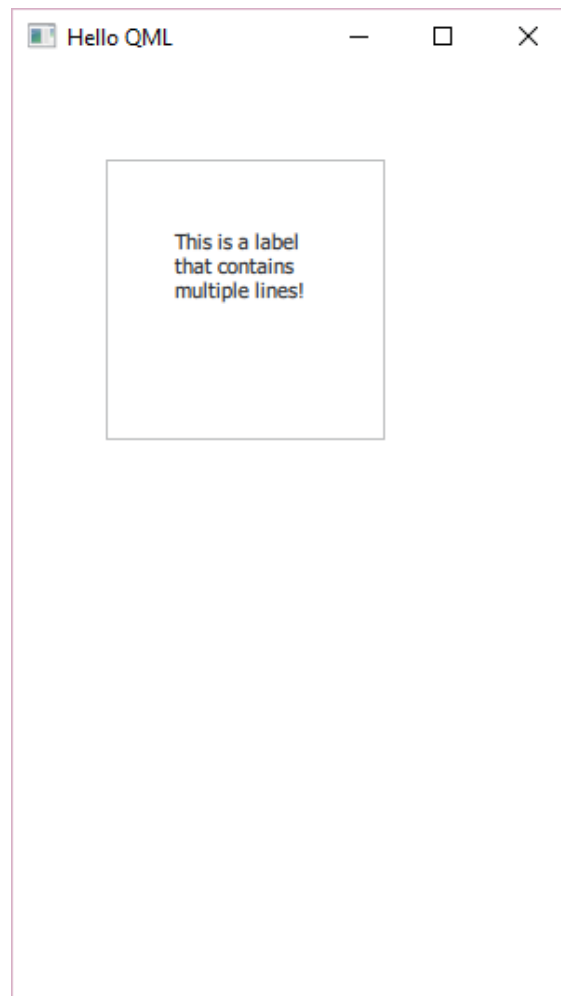
Next Cancel

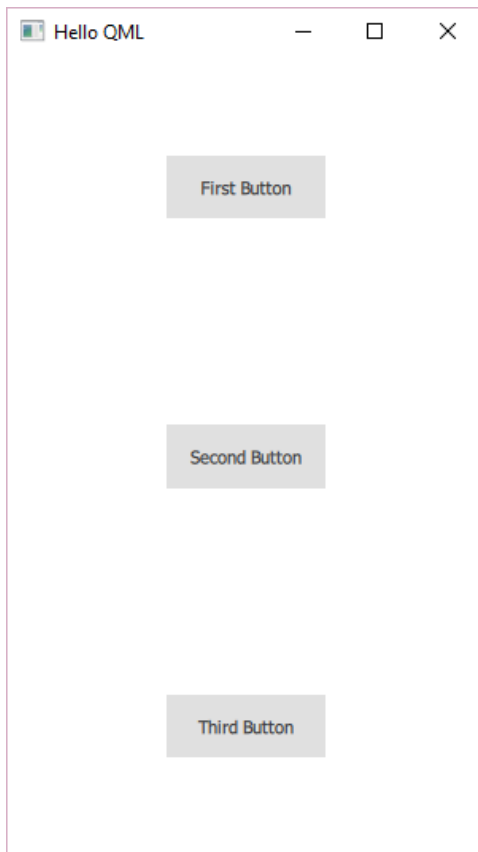


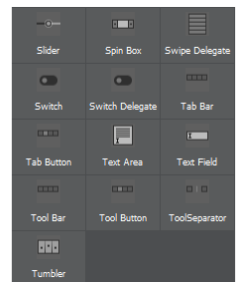
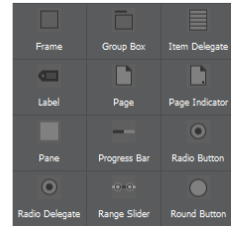
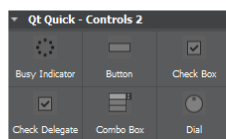
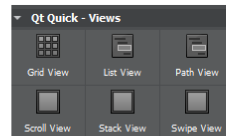
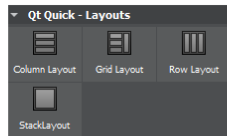
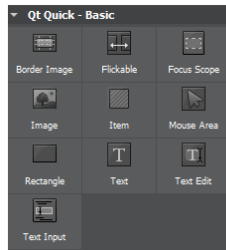
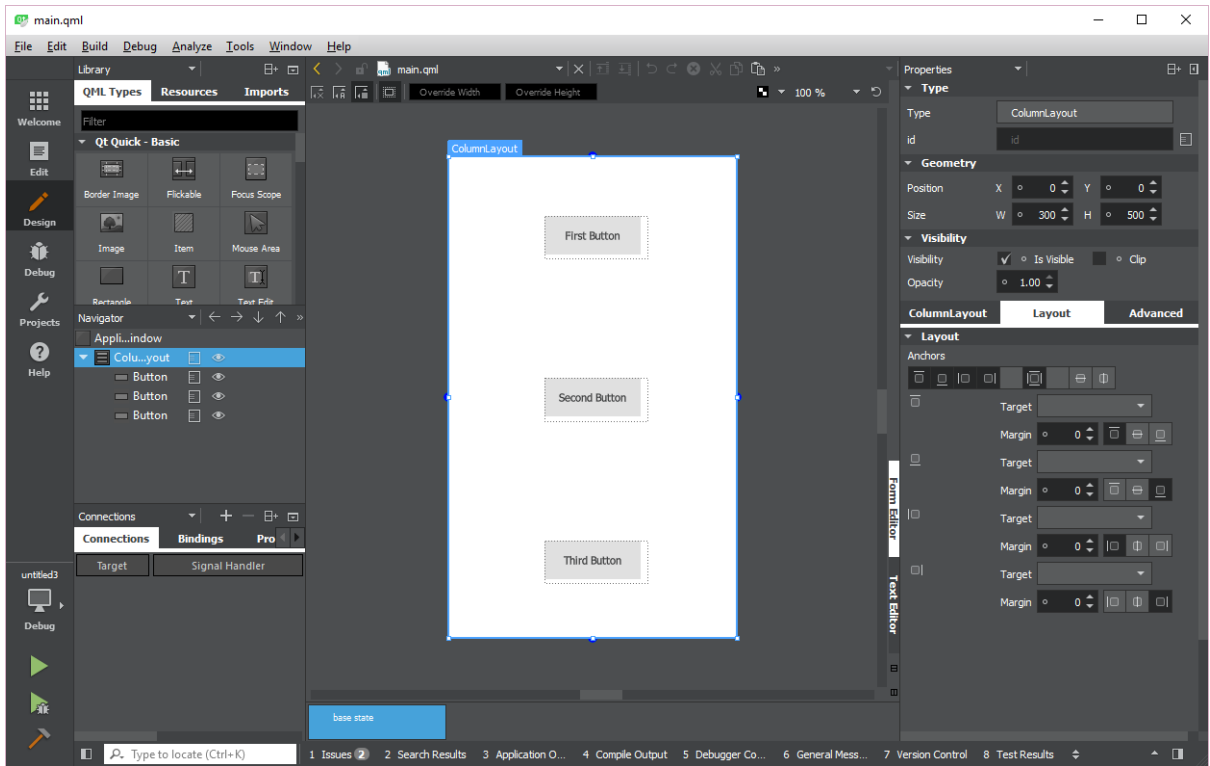


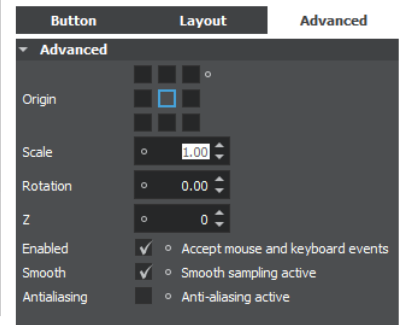
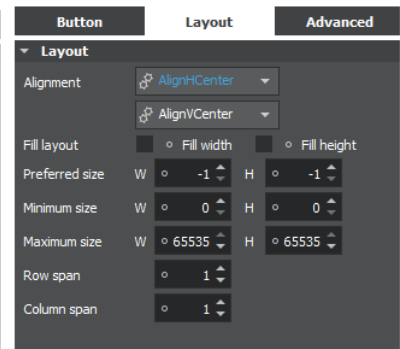
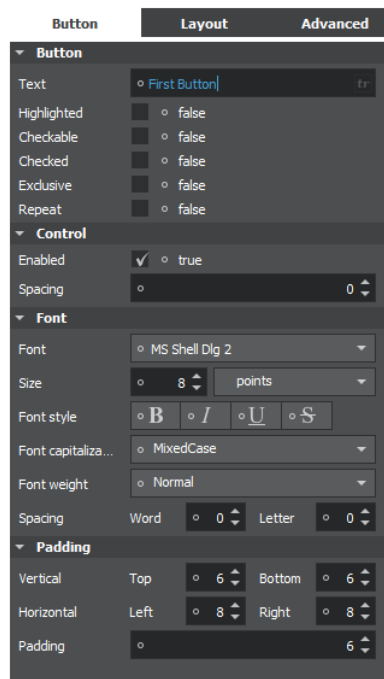
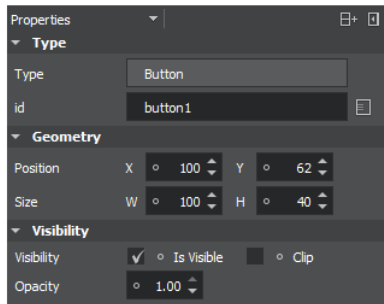
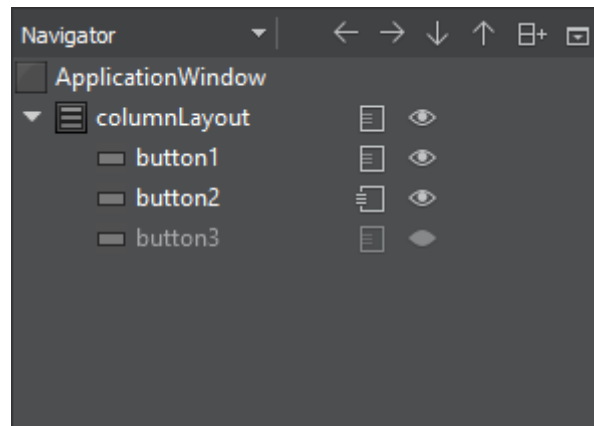


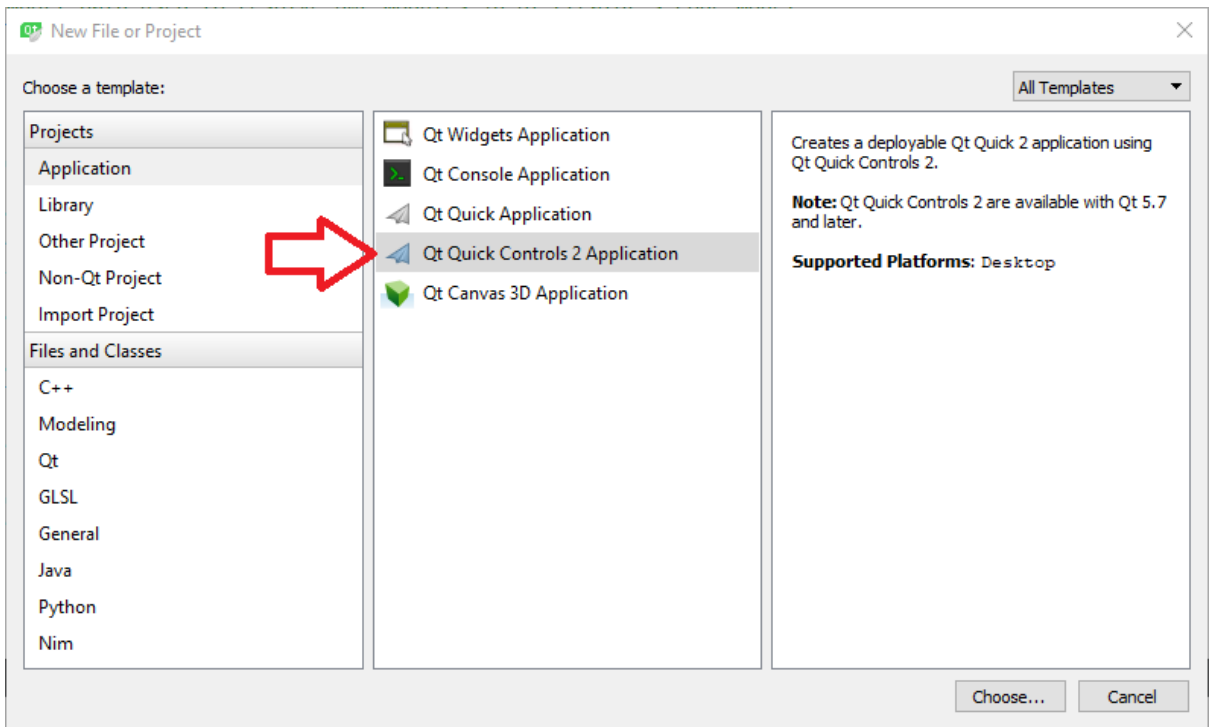
Chapter 12: Qt Quick Applications

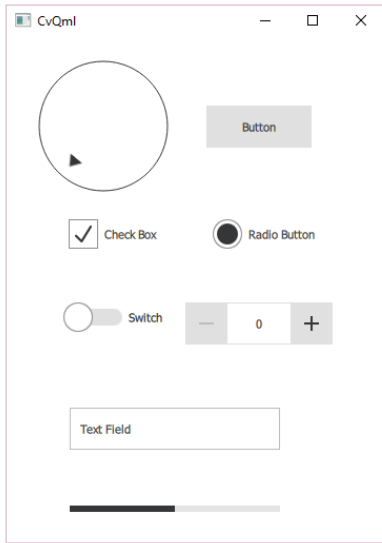




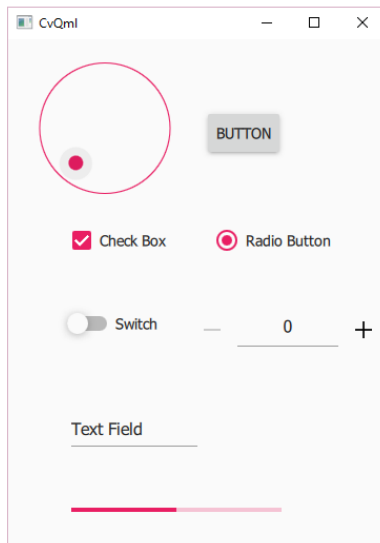




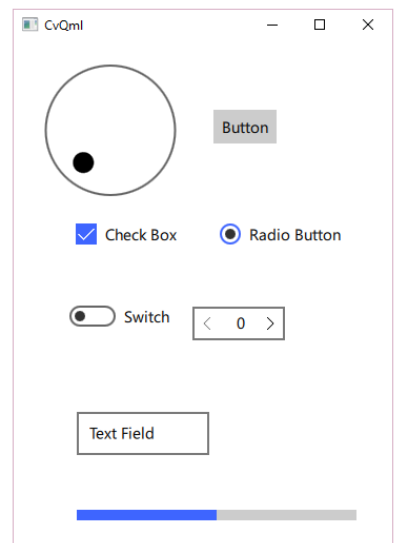




Default



Material



Universal

C++ Class

Details
Summary

Define Class

Class name:

Base class:

Include QObject
 Include QWidget
 Include QMainWindow
 Include QDeclarativeItem - Qt Quick 1
 Include QQuickItem - Qt Quick 2
 Include QSharedData

Header file:

Source file:

Path:

