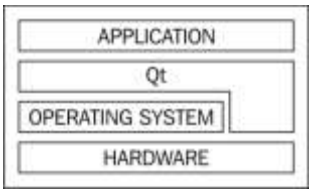
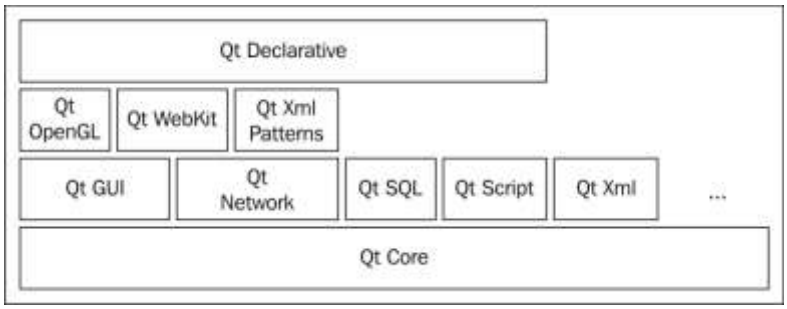
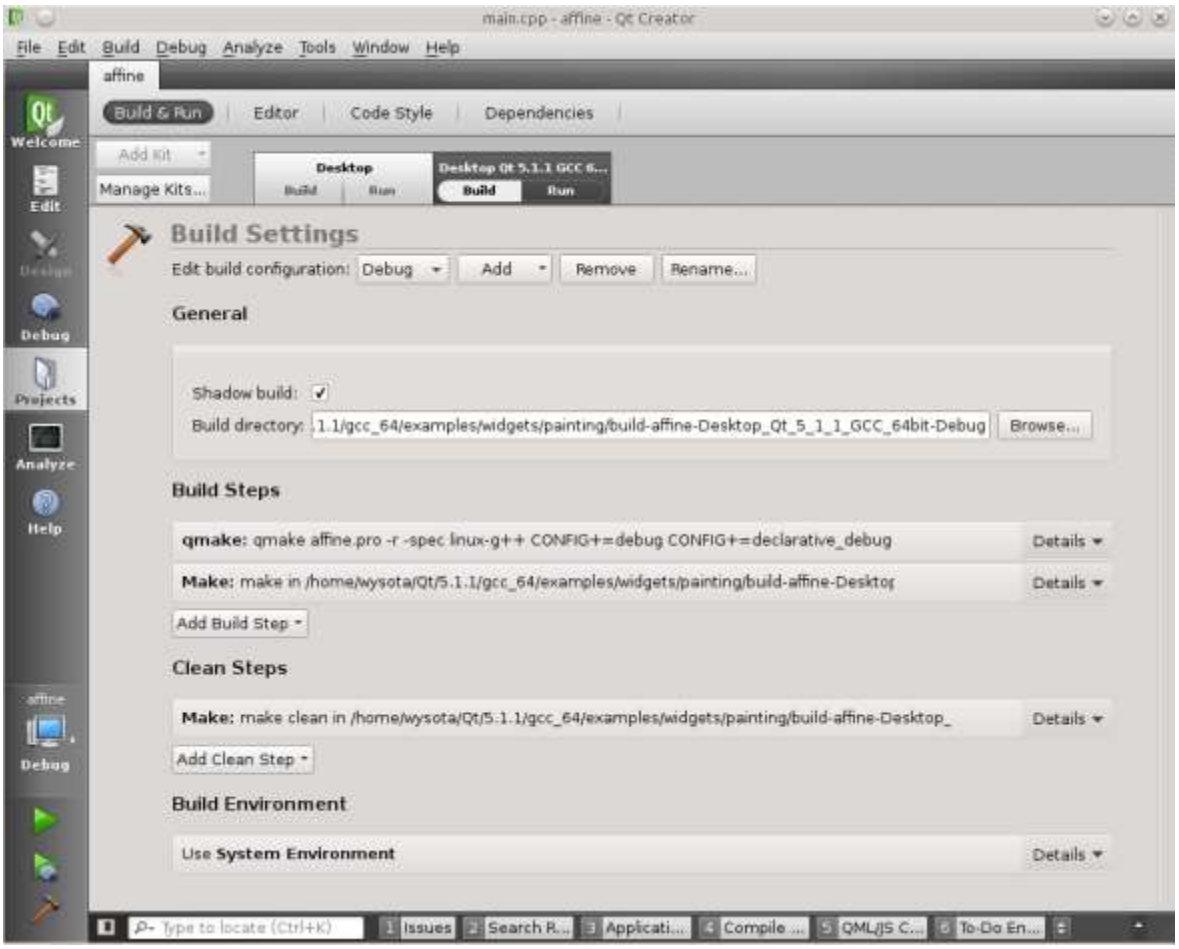
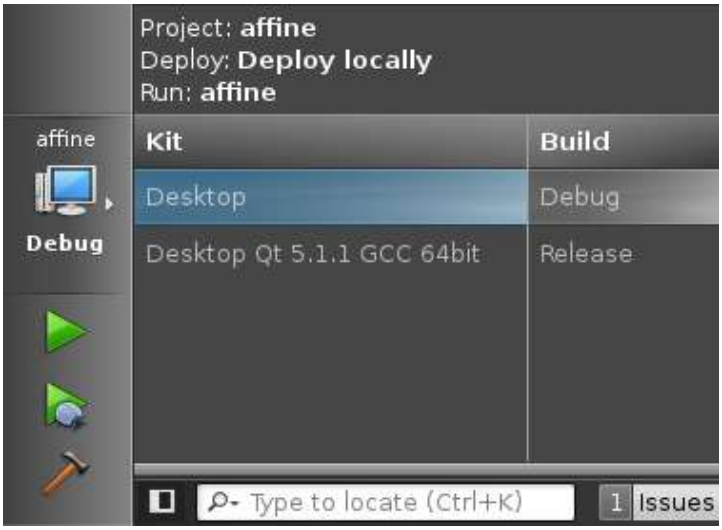
Chapter 1: Introduction to Qt

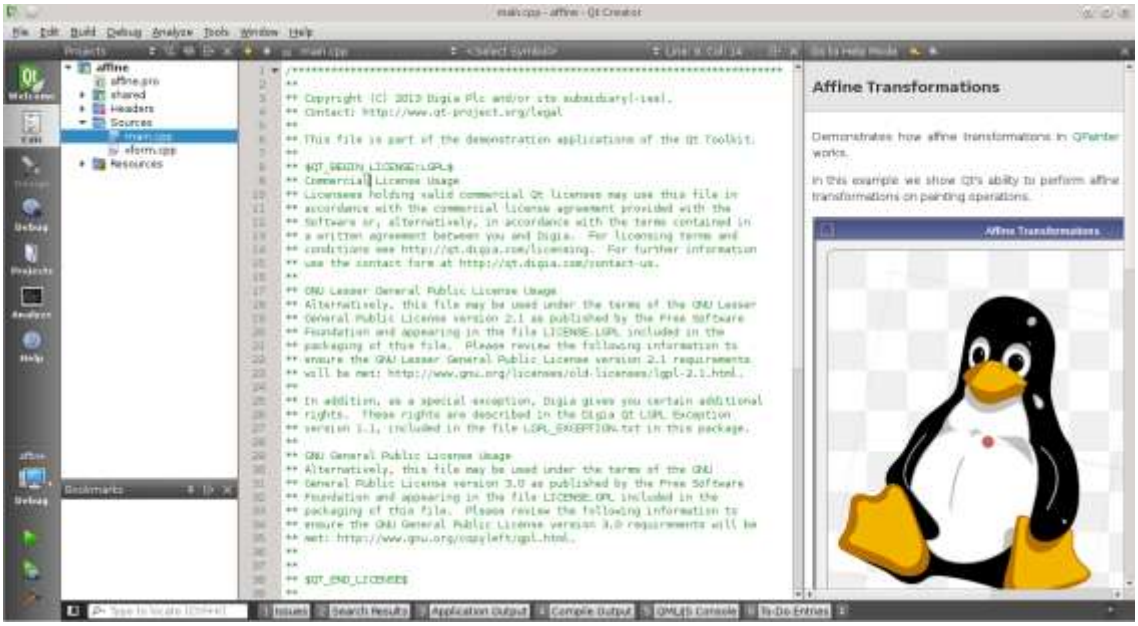




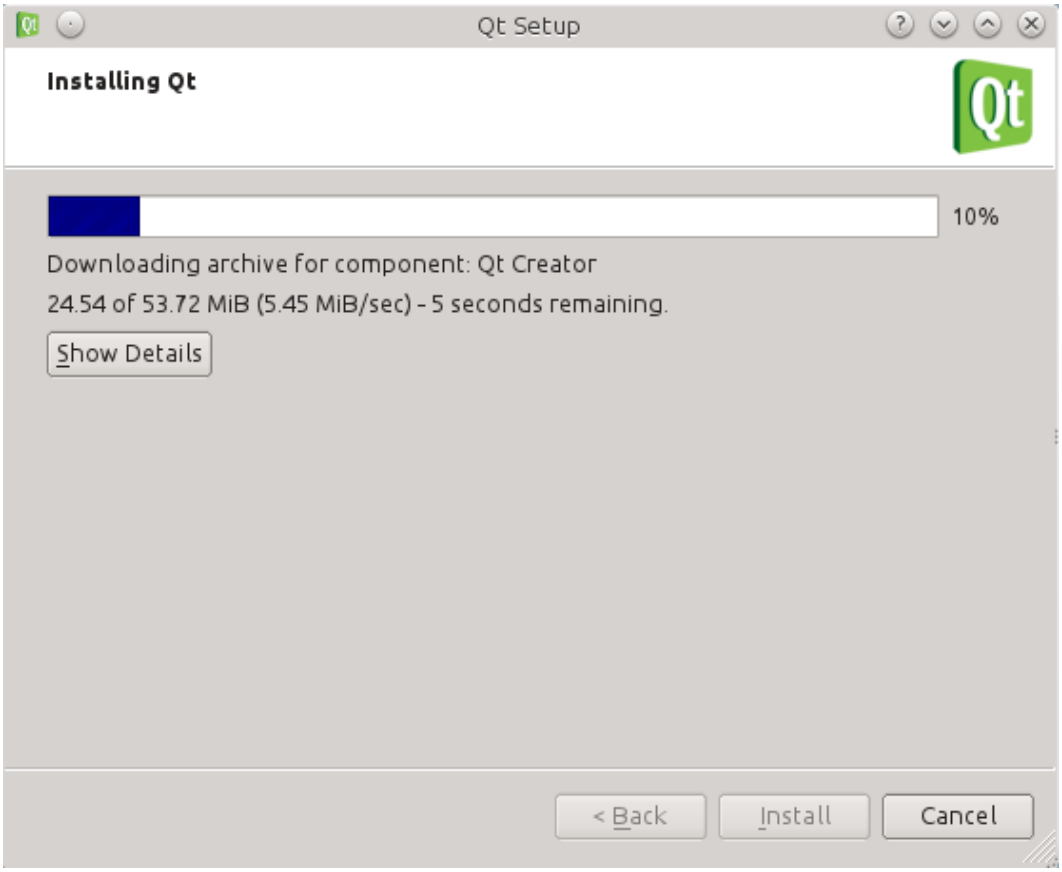
Chapter 2: Installation



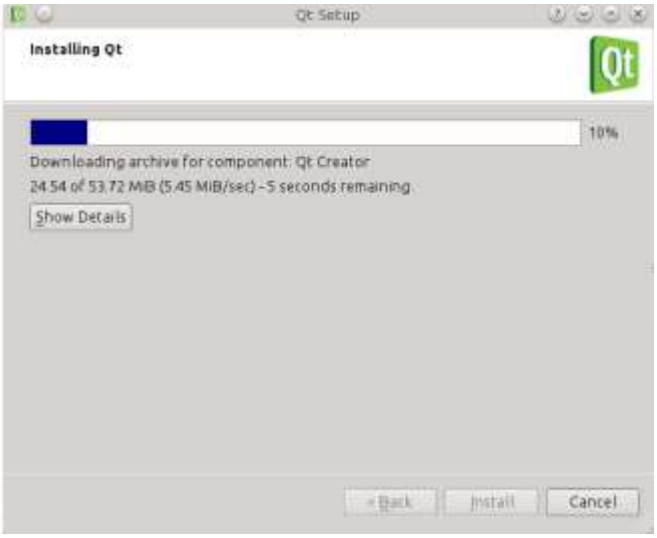

Project: affine
Deploy: Deploy locally
Run: affine
affine
Debug
Kit
Build
Desktop
Debug
Desktop Qt 5.1.1 GCC 64bit
Release
Type to locate (Ctrl+K)
1 Issues

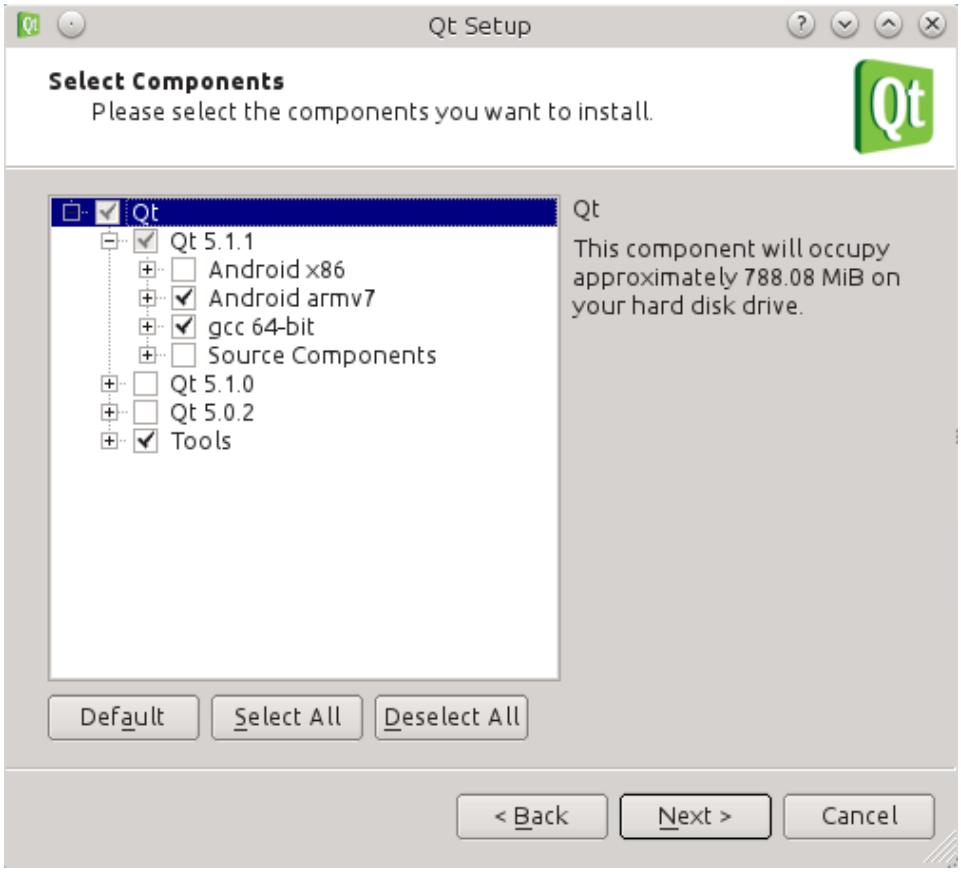

Affine Transformations
Demonstrates how affine transformations in QPainter works.
In this example we show Qt's ability to perform affine transformations on painting operations.

Qt Creator
File Edit Build Debug Analyze Tools Window Help
Welcome
Edit
Design
Debug
Projects
Analyze
Help
Qt Creator
Getting Started
Getting Started Develop Examples Tutorials
CREATE
DESIGN
CODE
BUILD
TEST
PUBLISH
READY?
Tutorials
IDE Overview
To find out what kind of integrated environment (IDE) Qt Creator is.
User Interface
To become familiar with the parts of the Qt Creator user interface and to learn how to use them.
Building and Running an Example Application
To check that the Qt SDK installation was successful, open an example application and run it.
Start Developing
To select a tutorial and learn how to develop applications.
User Guide
Online Community
Blogs
Type to locate (Ctrl+K)
1 Issues
2 Search ...
3 Applica...
4 Compile...
5 QML/JS ...
6 To-Do E...


Qt Setup
Installing Qt
10%
Downloading archive for component: Qt Creator
24.54 of 53.72 MiB (5.45 MiB/sec) - 5 seconds remaining.
Show Details
< Back
Install
Cancel

Qt Setup
License Agreement
Please read the following license agreements. You must accept the terms contained in these agreements before continuing with the installation.
Qt Installer LGPL Agreement
Qt Installer FDL Agreement
Qt Installer GPL Agreement
Qt Installer LGPL Exception Agreement
GNU LESSER GENERAL PUBLIC LICENSE
The Qt Toolkit is Copyright (C) 2013 Digia Plc and/or its subsidiary(-ies).
Contact: http://www.qt-project.org/legal
You may use, distribute and copy the Qt GUI Toolkit under the terms of GNU Lesser General Public License version 2.1, which is displayed below
I have read and agree to the following terms contained in the license agreements accompanying the Qt installer and additional items. I agree that my use of the Qt installer is governed by the terms and conditions contained in these license agreements.
I do not accept the terms and conditions of the above listed license agreements. Please note by checking the box, you must cancel the installation or downloading the Qt and must destroy all copies, or portions thereof, of the Qt in your possessions.
< Back
Next >
Cancel


Qt Setup
Installing Qt
10%
Downloading archive for component: Qt Creator
24.54 of 53.72 MiB (5.45 MiB/sec) - 5 seconds remaining
Show Details
< Back
Install
Cancel


Qt Setup
Select Components
Please select the components you want to install.
Qt
Qt 5.1.1
Android x86
Android armv7
gcc 64-bit
Source Components
Qt 5.1.0
Qt 5.0.2
Tools
Qt
This component will occupy approximately 788.08 MiB on your hard disk drive.
Default
Select All
Deselect All
< Back
Next >
Cancel

Qt Setup
Setup - Qt
Welcome to the Qt Setup Wizard.
Code less.
Create more.
Deploy everywhere.
Settings
Next >
Quit

Recommended

We detected your operating system as: **Linux**
Recommended download: **Qt Online Installer for Linux**

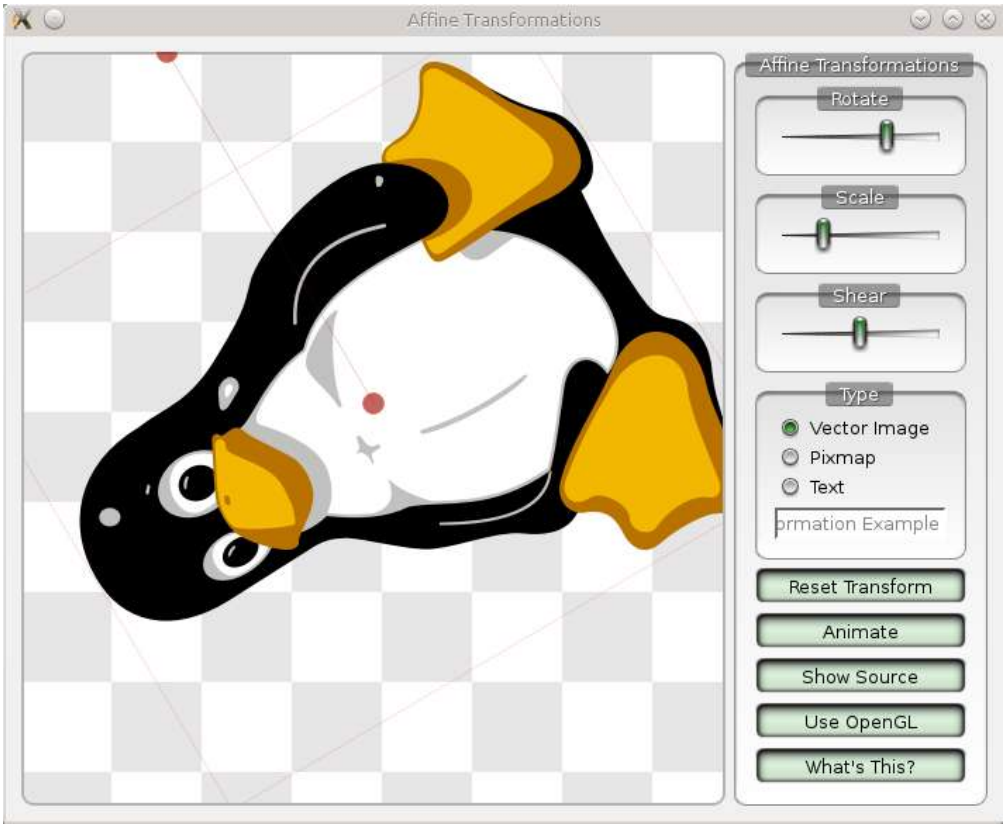
Before you begin your download, please make sure you:

- learn about the obligations of the LGPL.
- read the FAQ about developing with the LGPL.

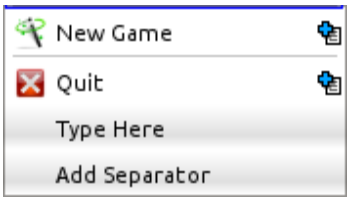
Download Now

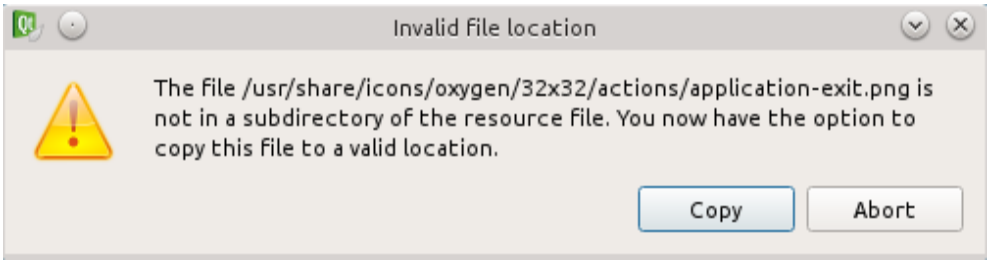
Qt online installer is a small executable which downloads content over internet based on your selections. It provides all Qt 5.x binary & source packages and latest Qt Creator.

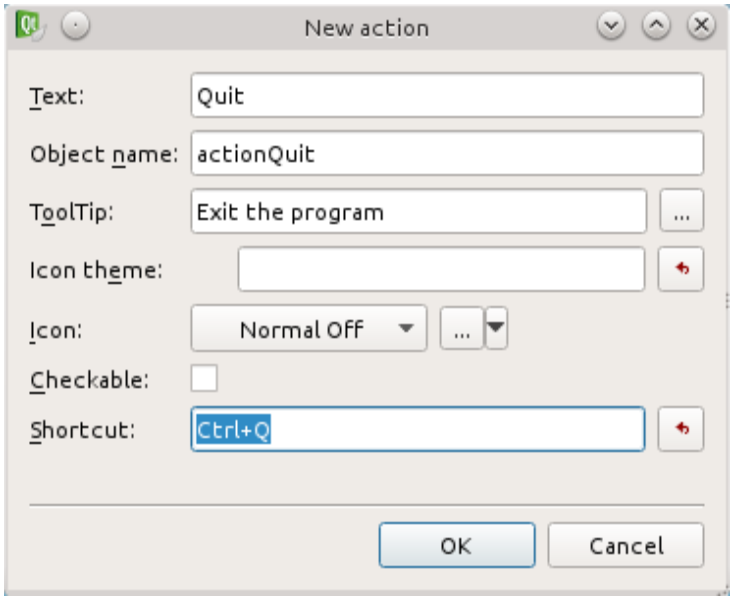
For more information visit our Developers page.
Not the download package you need? View All Downloads

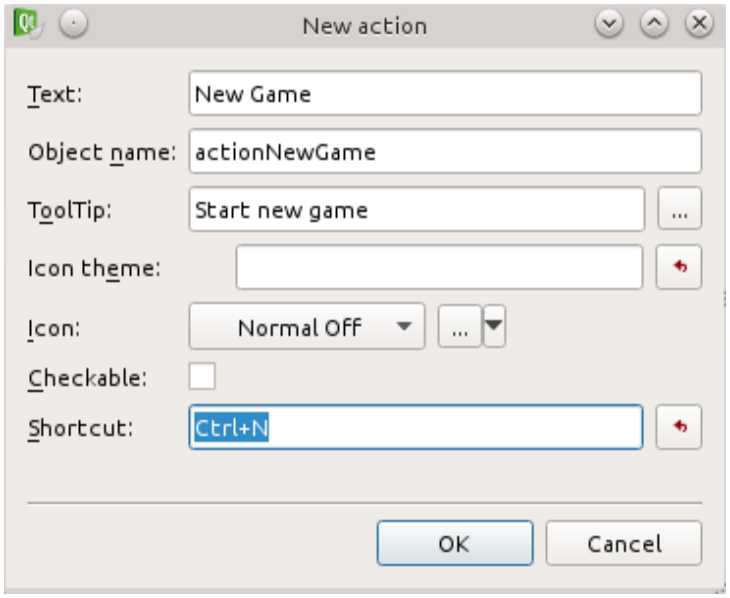

Affine Transformations
Affine Transformations
Rotate
Scale
Shear
Type
Vector Image
Pixmap
Text
ormation Example
Reset Transform
Animate
Show Source
Use OpenGL
What's This?

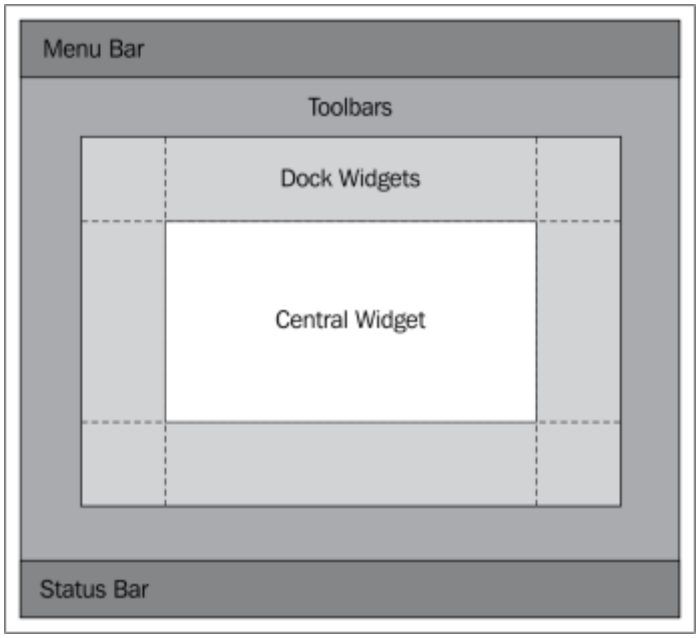
Chapter 3: Qt GUI Programming

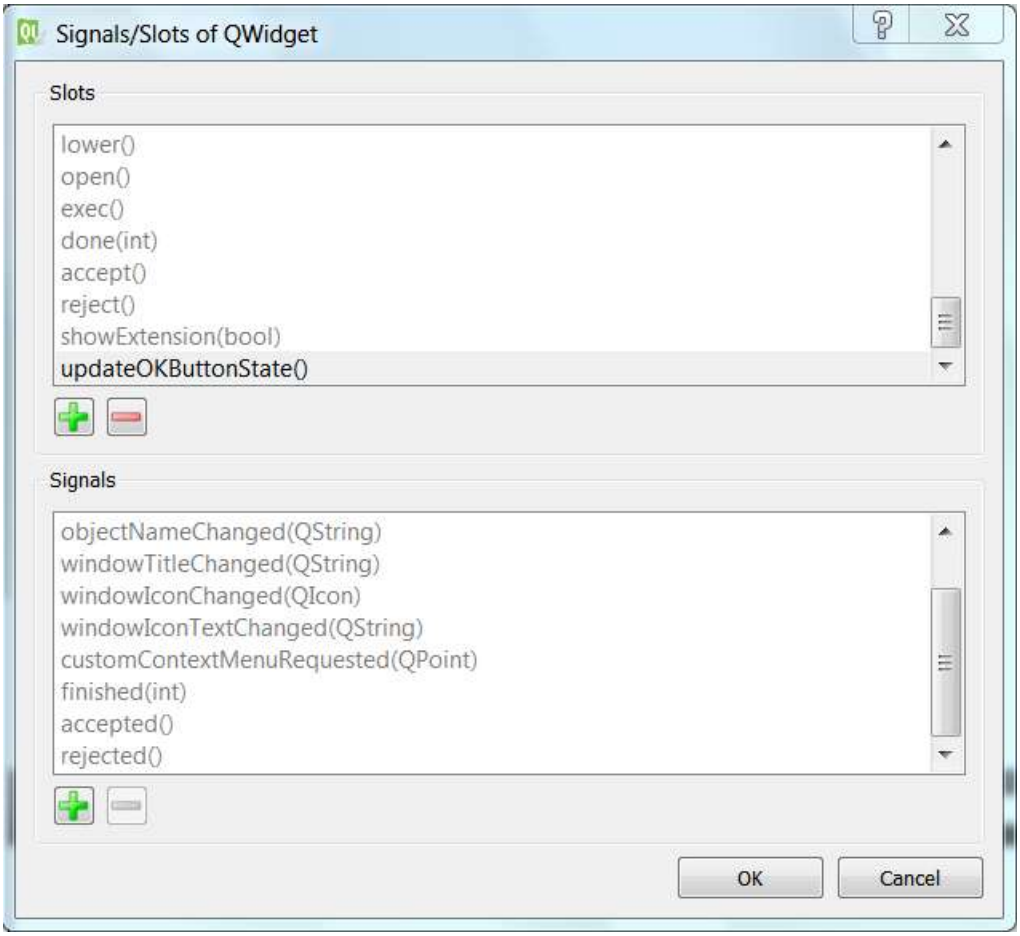




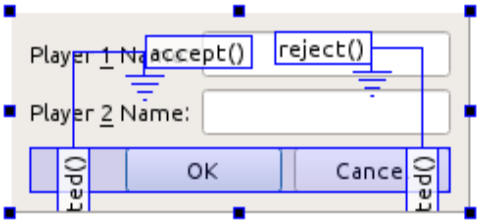

New action
Text:
Quit
Object name:
actionQuit
ToolTip:
Exit the program
Icon theme:
Icon:
Normal Off
Checkable:
Shortcut:
Ctrl+Q
OK
Cancel

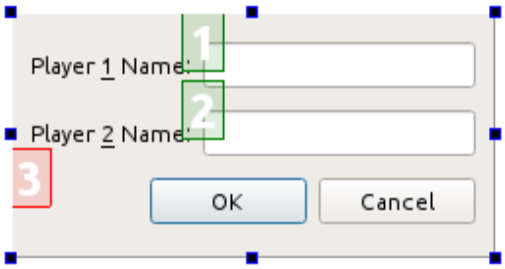

New action
Text:
New Game
Object name:
actionNewGame
ToolTip:
Start new game
Icon theme:
Icon:
Normal Off
Checkable:
Shortcut:
Ctrl+N
OK
Cancel


Menu Bar
Toolbars
Dock Widgets
Central Widget
Status Bar

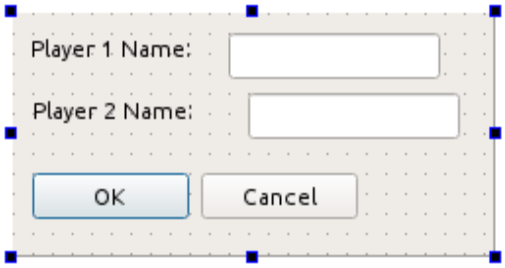

Signals/Slots of QWidget
Slots
lower()
open()
exec()
done(int)
accept()
reject()
showExtension(bool)
updateOKButtonState()
Signals
objectNameChanged(QString)
windowTitleChanged(QString)
windowIconChanged(QIcon)
windowIconTextChanged(QString)
customContextMenuRequested(QPoint)
finished(int)
accepted()
rejected()
OK
Cancel

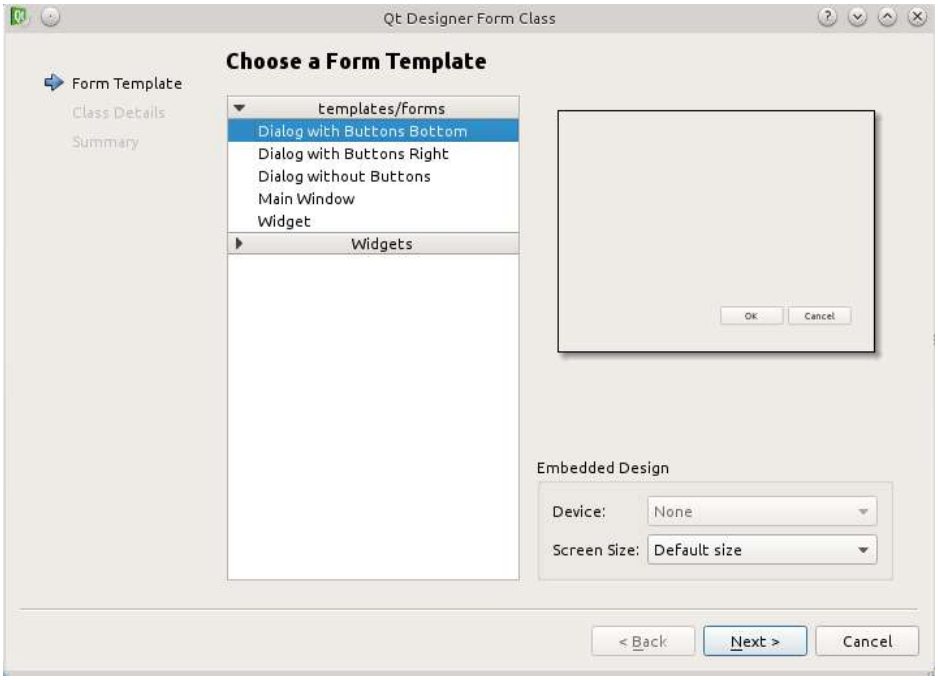
Signals/Slots of Dialog
Slots
raise()
lower()
open()
exec()
done(int)
accept()
reject()
showExtension(bool)
Signals
destroyed(QObject*)
destroyed()
objectNameChanged(QString)
customContextMenuRequested(QPoint)
finished(int)
accepted()
rejected()
OK
Cancel

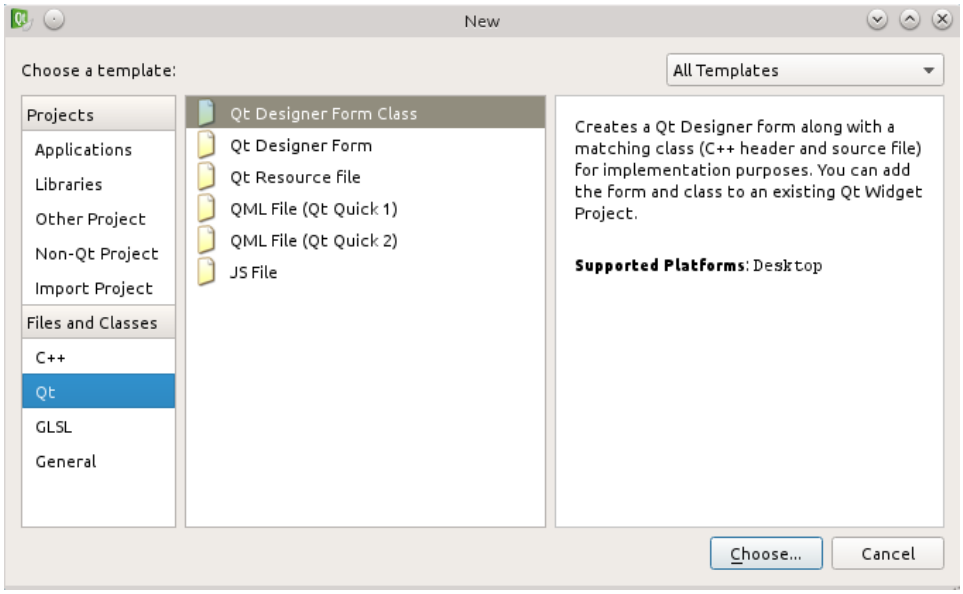

accept()
reject()
Player 2 Name:
OK
Cance

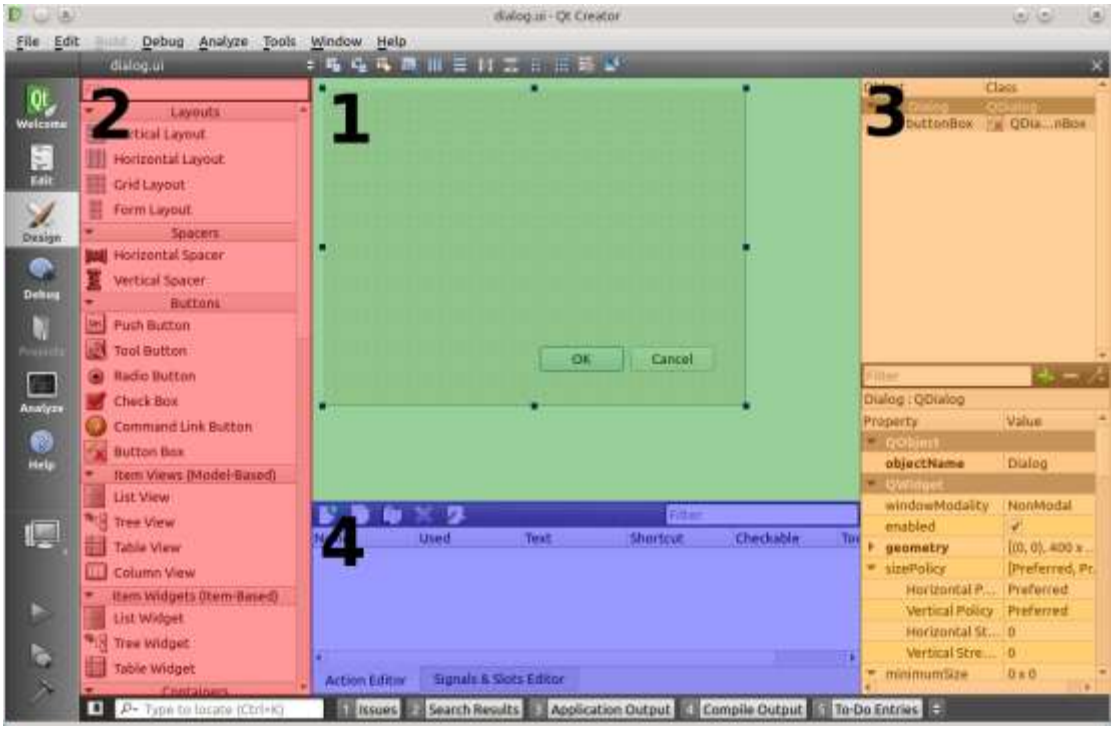

Player 1 Name:
Player 2 Name:
1
2
3
OK
Cancel

Name:


Player 1 Name:
Player 2 Name:
OK
Cancel

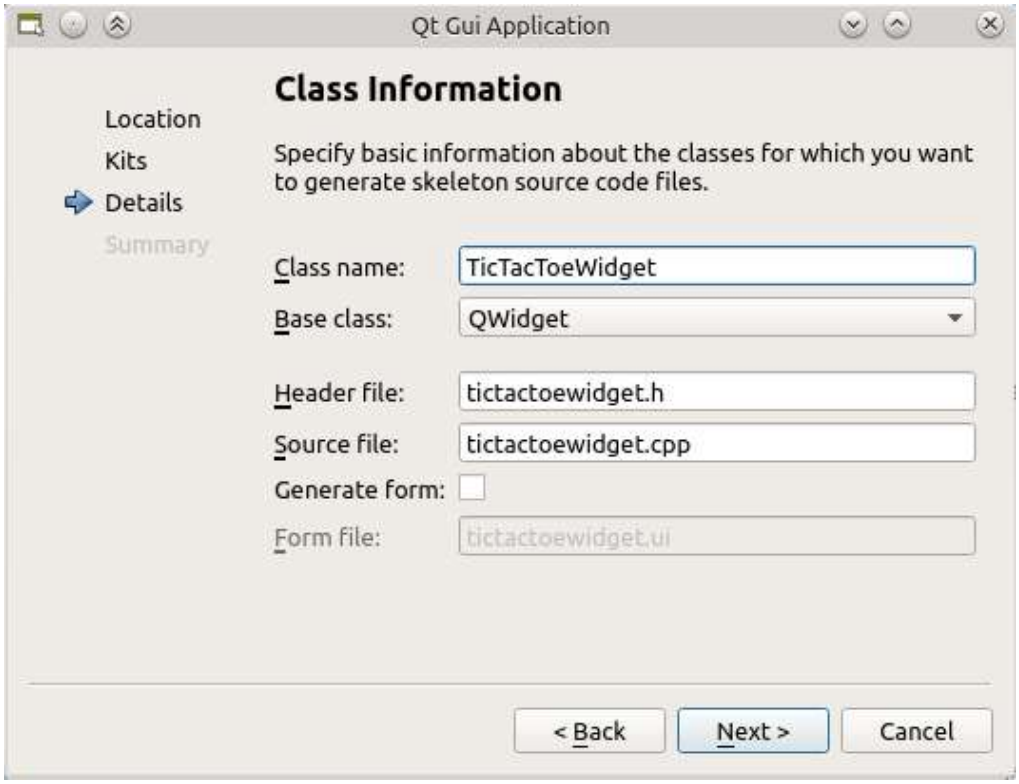

Qt Designer Form Class
Choose a Form Template
Form Template
Class Details
Summary
templates/forms
Dialog with Buttons Bottom
Dialog with Buttons Right
Dialog without Buttons
Main Window
Widget
Widgets
OK
Cancel
Embedded Design
Device:
None
Screen Size:
Default size
< Back
Next >
Cancel

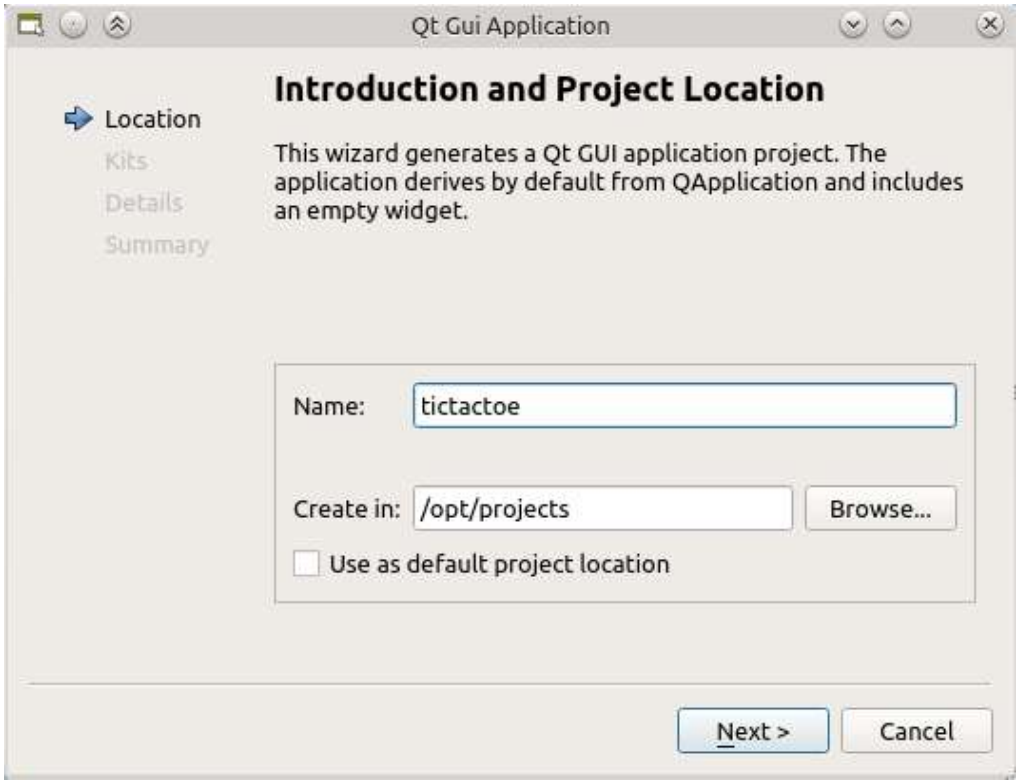

New
Choose a template:
All Templates
Projects
Applications
Libraries
Other Project
Non-Qt Project
Import Project
Files and Classes
C++
Qt
GLSL
General
Qt Designer Form Class
Qt Designer Form
Qt Resource file
QML File (Qt Quick 1)
QML File (Qt Quick 2)
JS File
Creates a Qt Designer form along with a matching class (C++ header and source file) for implementation purposes. You can add the form and class to an existing Qt Widget Project.
Supported Platforms: Desktop
Choose...
Cancel

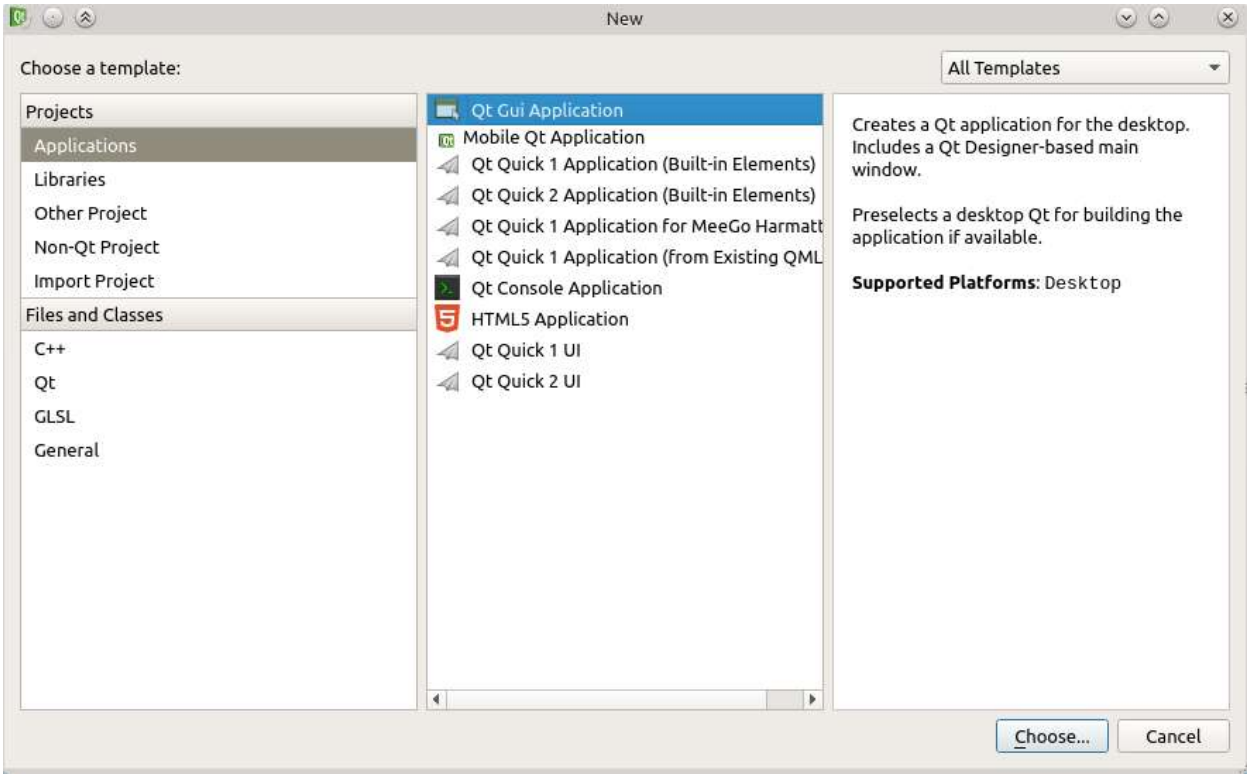

dialog.ui - Qt Creator
File Edit Debug Analyze Tools Window Help
dialog.ui
Welcome
Edit
Design
Debug
Analyze
Help
2
Layouts
Horizontal Layout
Grid Layout
Form Layout
Spacers
Horizontal Spacer
Vertical Spacer
Buttons
Push Button
Tool Button
Radio Button
Check Box
Command Link Button
Button Box
Item Views (Model-Based)
List View
Tree View
Table View
Column View
Item Widgets (Item-Based)
List Widget
Tree Widget
Table Widget
1
OK
Cancel
4
Used
Text
Shortcut
Checkable
Action Editor
Signals & Slots Editor
3
Class
buttonBox
Dialog : QDialog
Property
Value
objectName
Dialog
windowModality
NonModal
enabled
geometry
sizePolicy
Horizontal Policy
Preferred
Vertical Policy
Preferred
minimumSize
Type to locate (Ctrl+K)
1 Issues
2 Search Results
3 Application Output
4 Compile Output
5 To-Do Entries

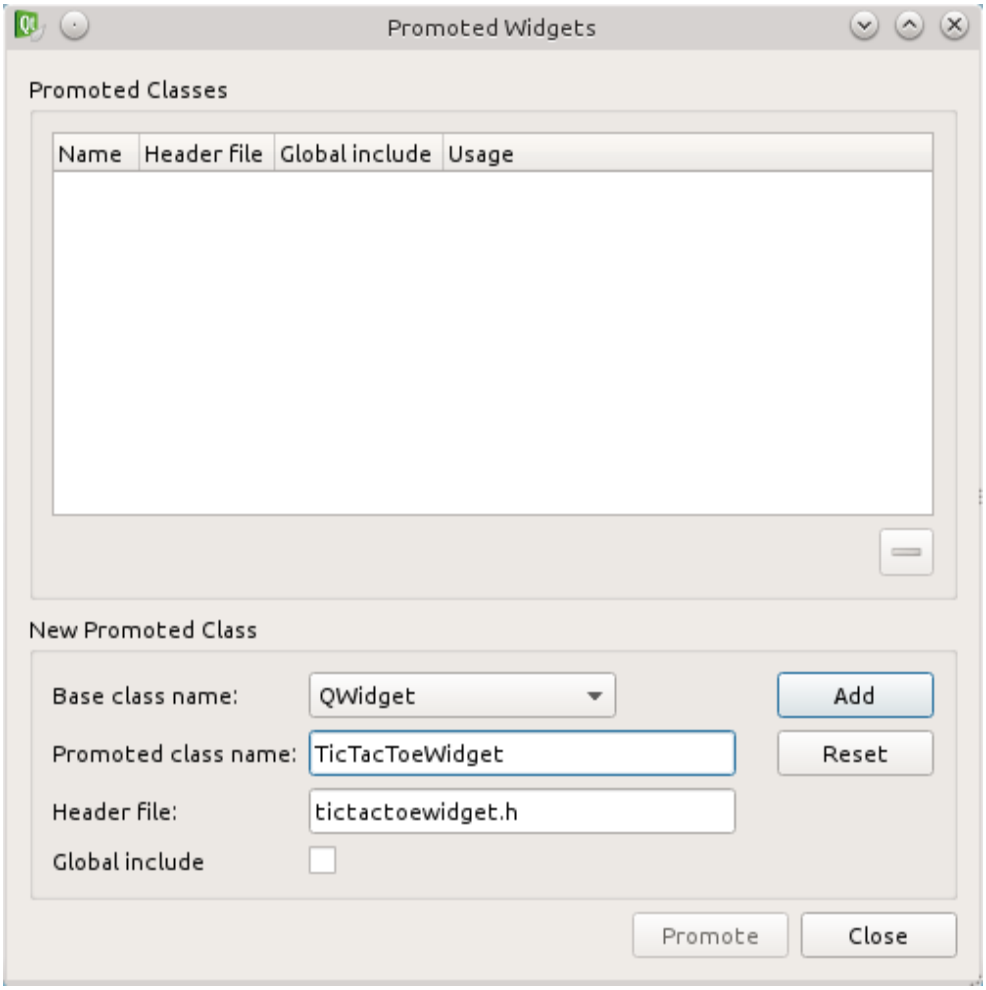
tictactoe

QHBoxLayout **QVBoxLayout** **QGridLayout** **QFormLayout**

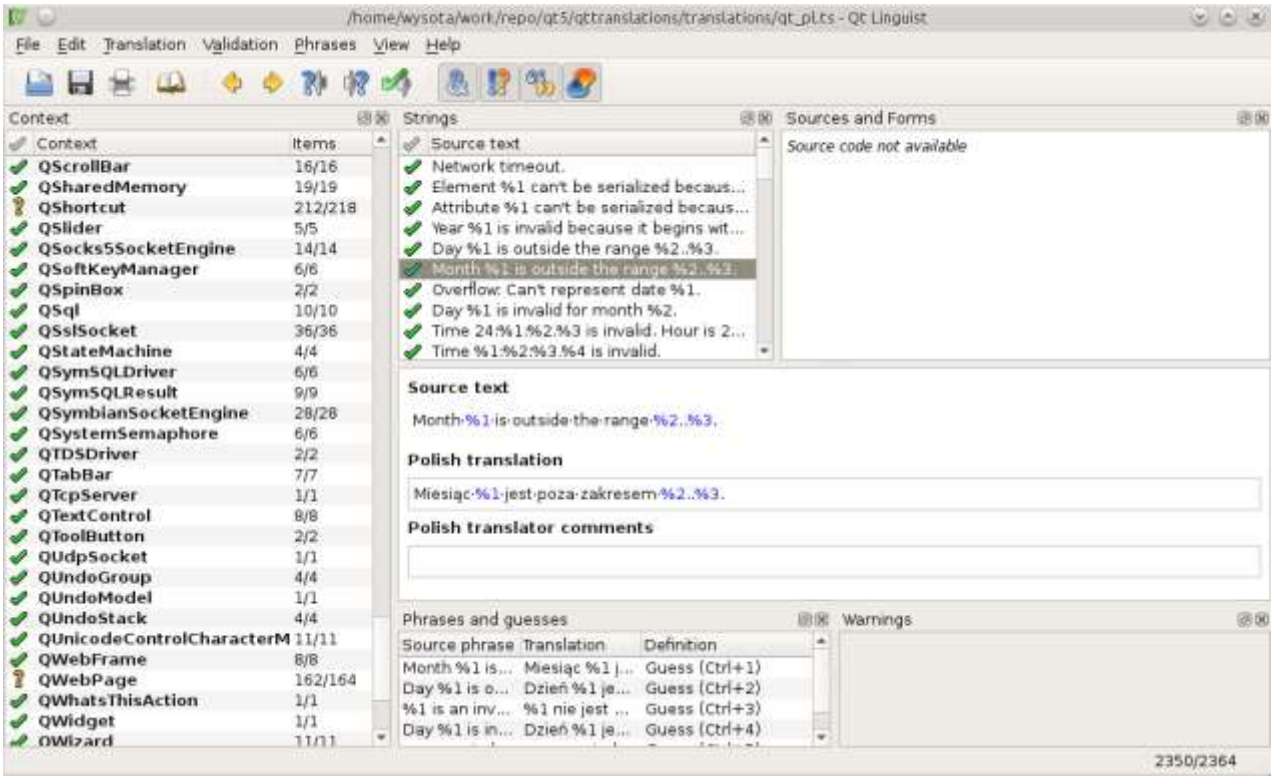



Qt Gui Application
Location
Kits
Details
Summary
Introduction and Project Location
This wizard generates a Qt GUI application project. The application derives by default from QApplication and includes an empty widget.
Name:
tictactoe
Create in:
/opt/projects
Browse...
Use as default project location
Next >
Cancel

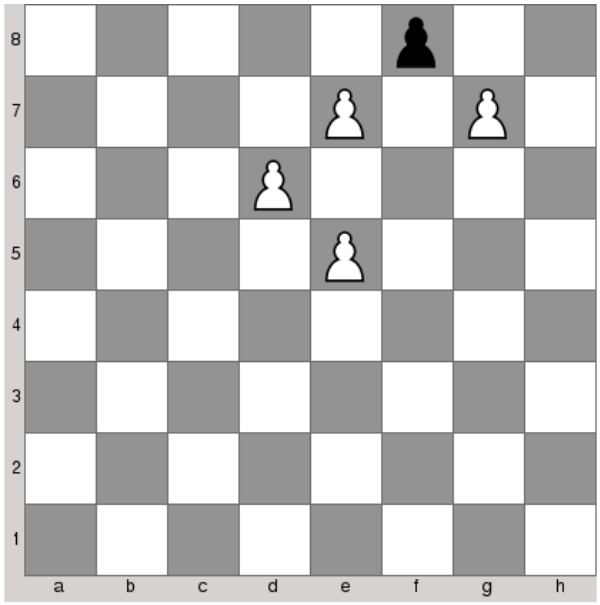

New
Choose a template:
All Templates
Projects
Applications
Libraries
Other Project
Non-Qt Project
Import Project
Files and Classes
C++
Qt
GLSL
General
Qt Gui Application
Mobile Qt Application
Qt Quick 1 Application (Built-in Elements)
Qt Quick 2 Application (Built-in Elements)
Qt Quick 1 Application for MeeGo Harmatt
Qt Quick 1 Application (from Existing QML
Qt Console Application
HTML5 Application
Qt Quick 1 UI
Qt Quick 2 UI
Creates a Qt application for the desktop. Includes a Qt Designer-based main window.
Preselects a desktop Qt for building the application if available.
Supported Platforms: Desktop
Choose...
Cancel


Promoted Widgets
Promoted Classes
Name
Header file
Global include
Usage
New Promoted Class
Base class name:
QWidget
Add
Promoted class name:
TicTacToeWidget
Reset
Header file:
tictactoewidget.h
Global include
Promote
Close

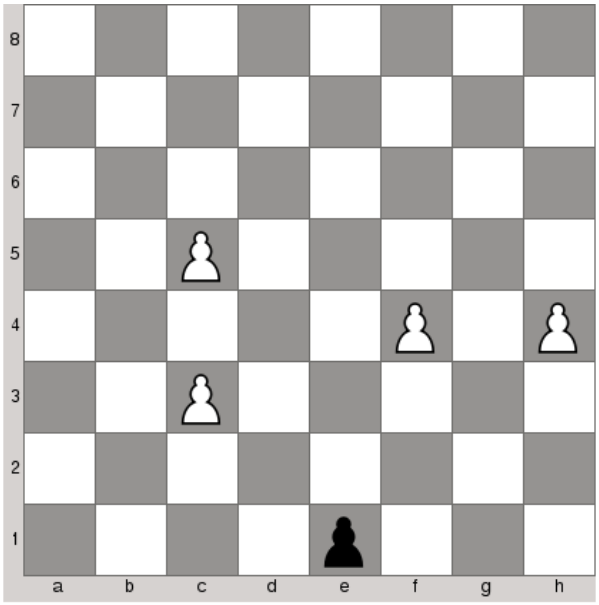
Chapter 4: Qt Core Essentials



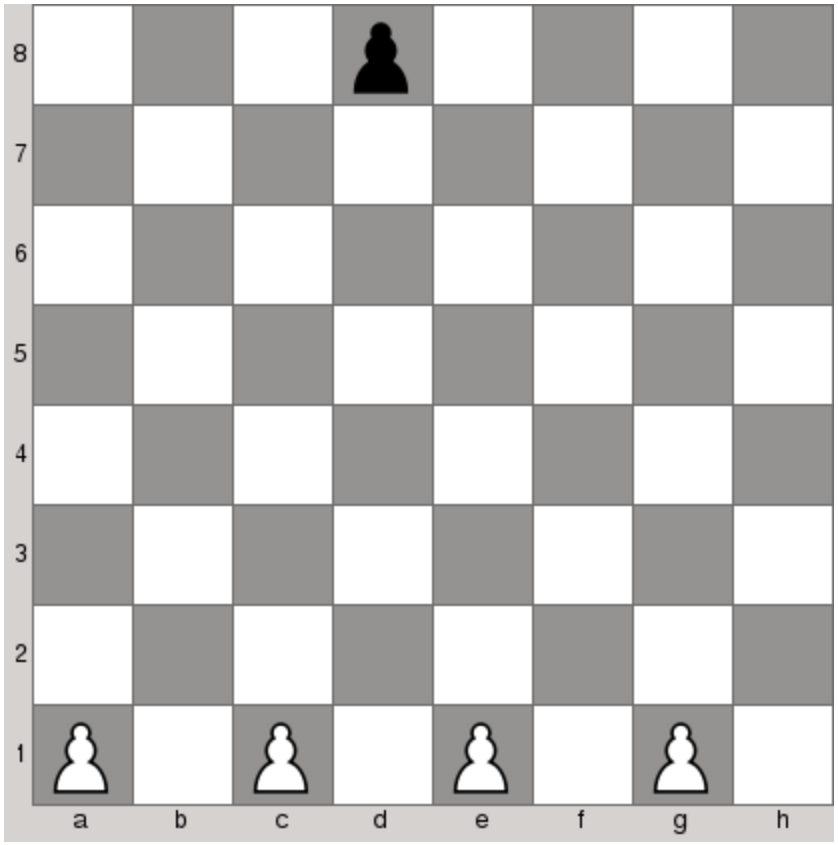
Chapter 5: Graphics with Qt

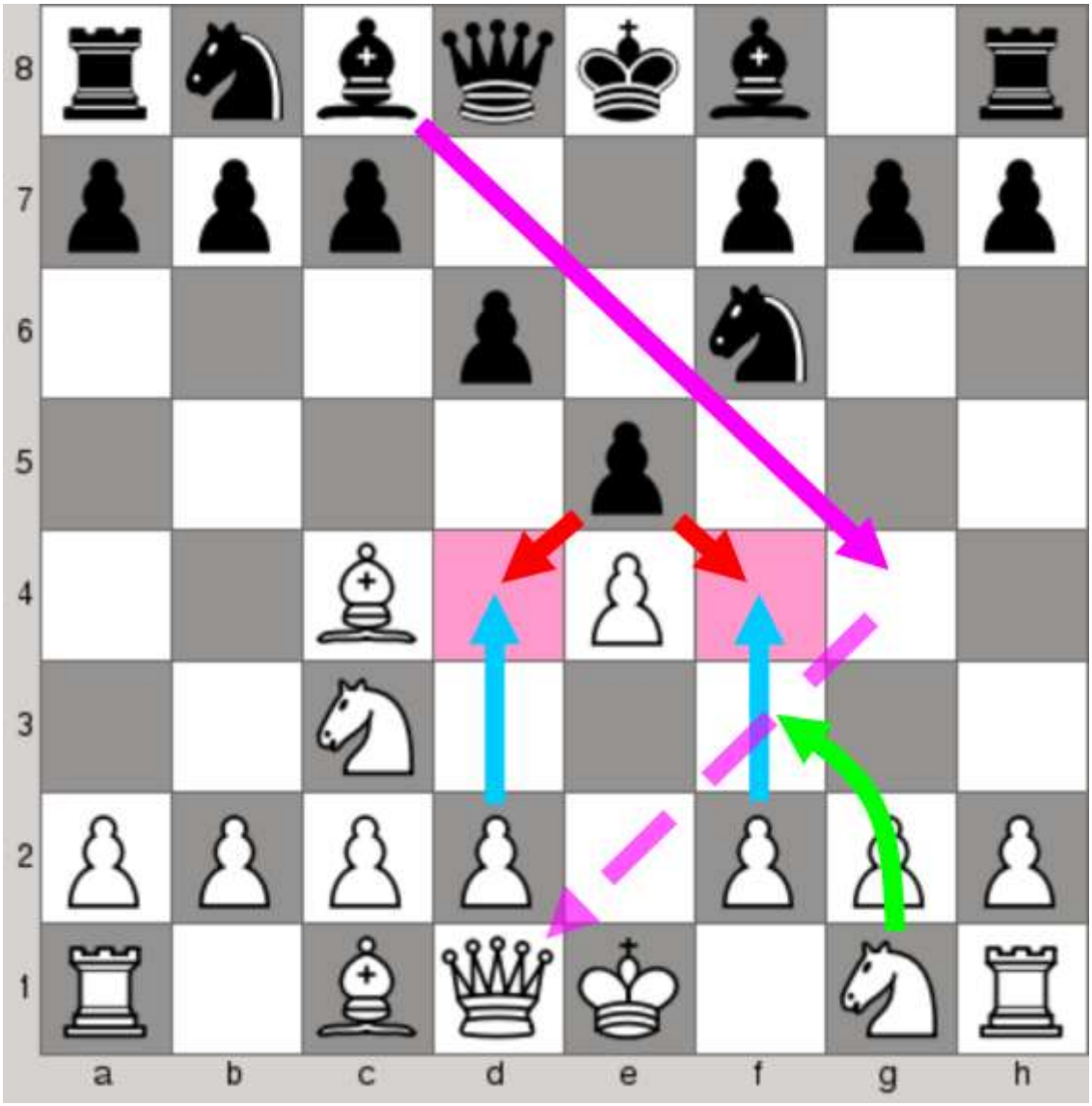


Fox loses



Fox wins


8
7
6
5
4
3
2
1
a
b
c
d
e
f
g
h


8
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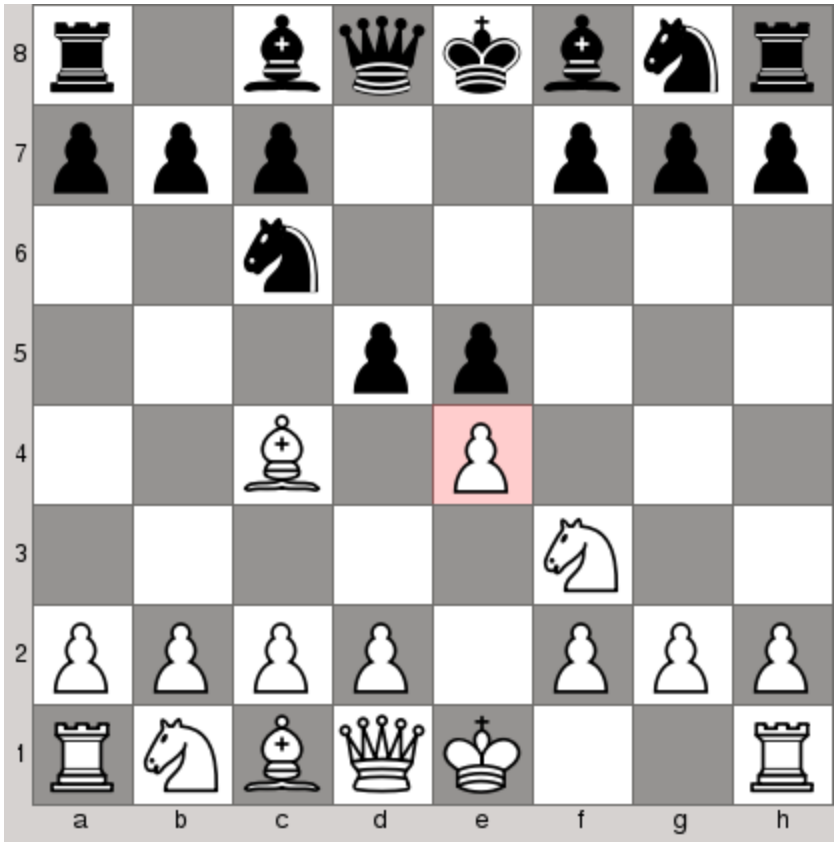
d
e
f
g
h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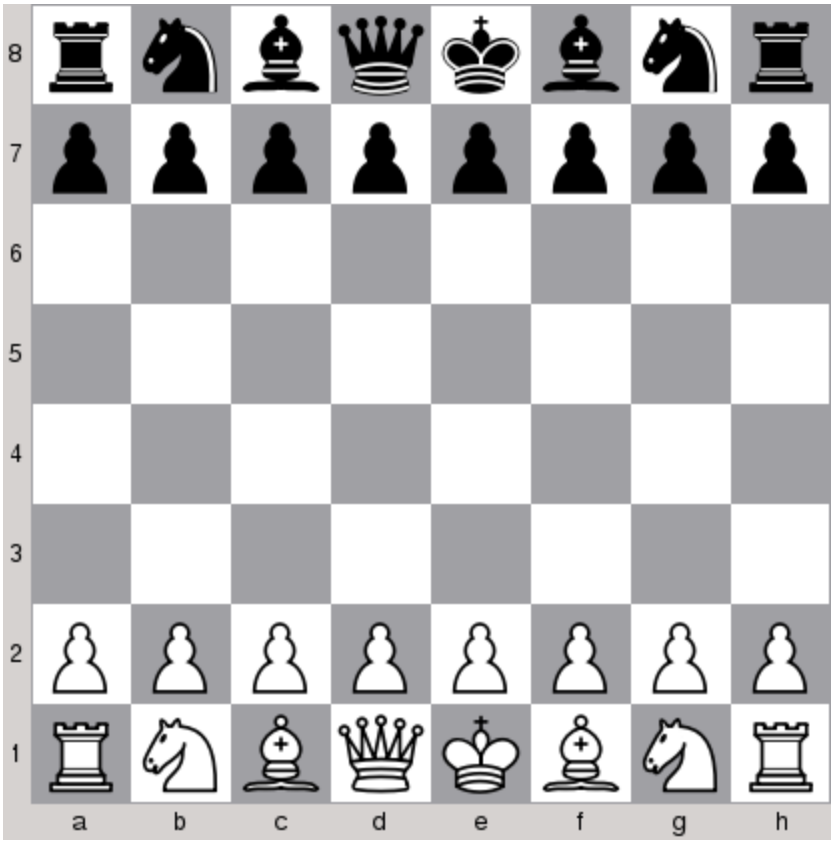
a b c d e f g h


8
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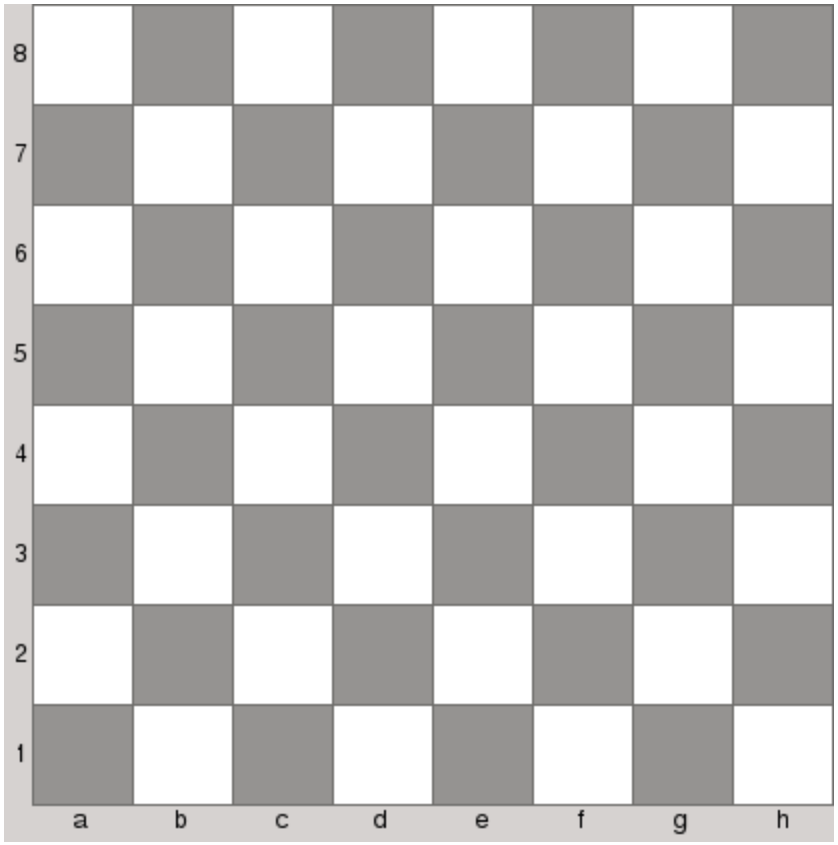
8
7
6
5
4
3
2
1
a
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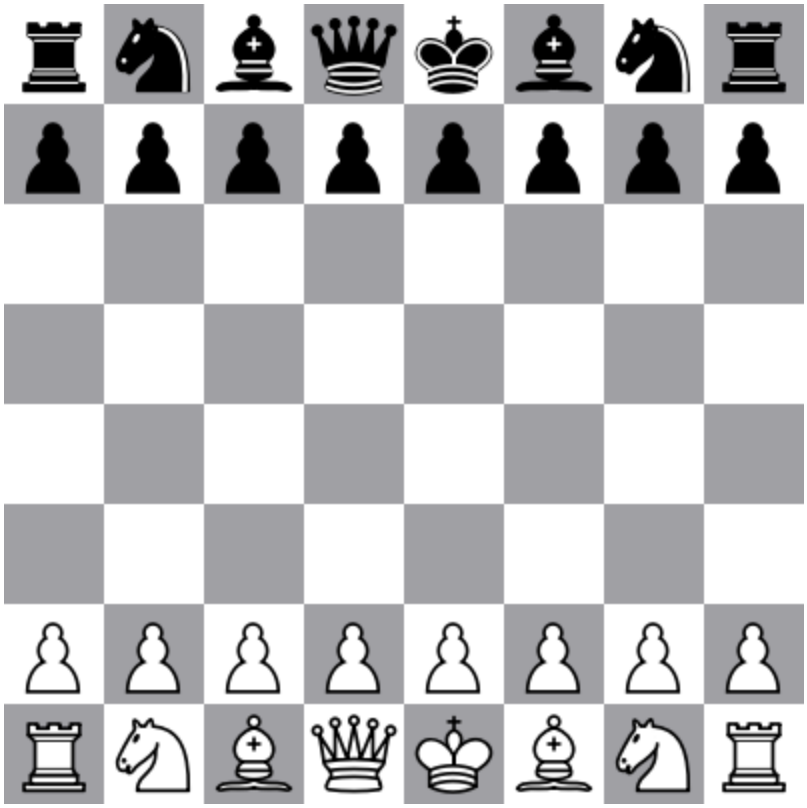
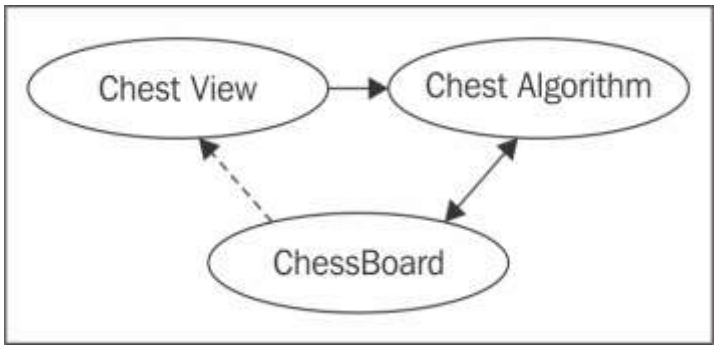
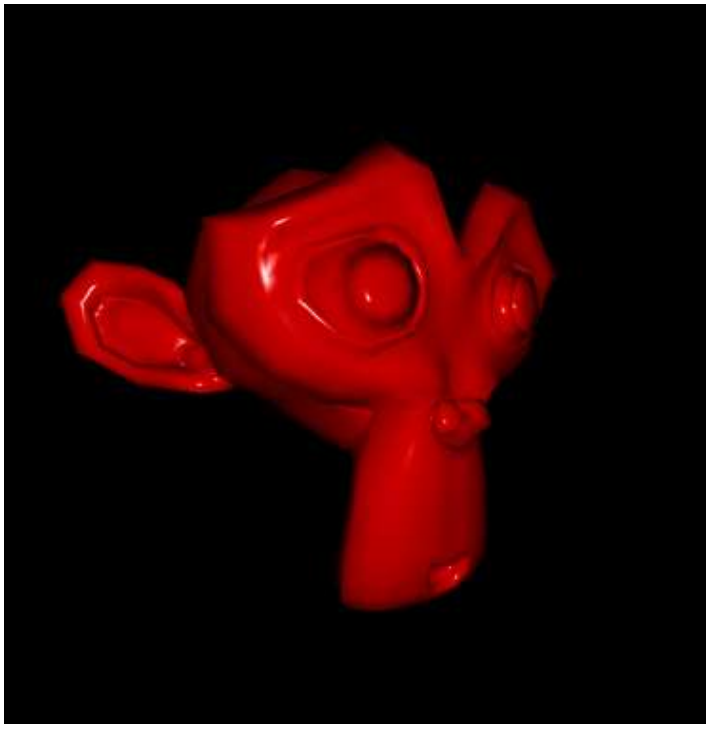
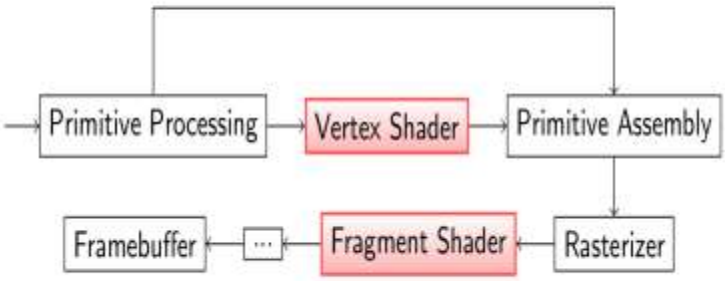
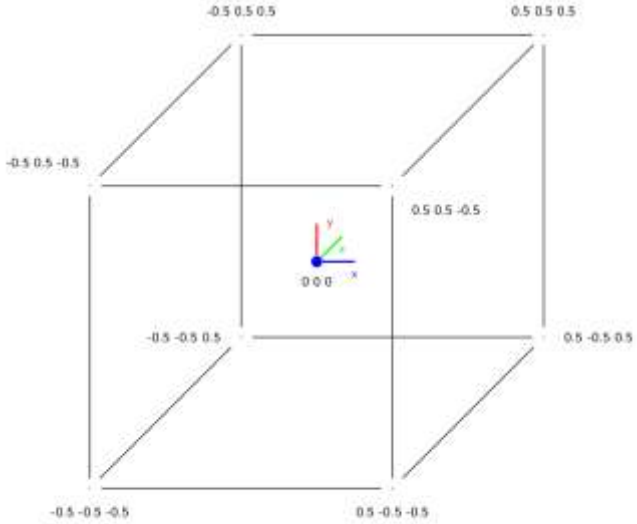
c
d
e
f
g
h

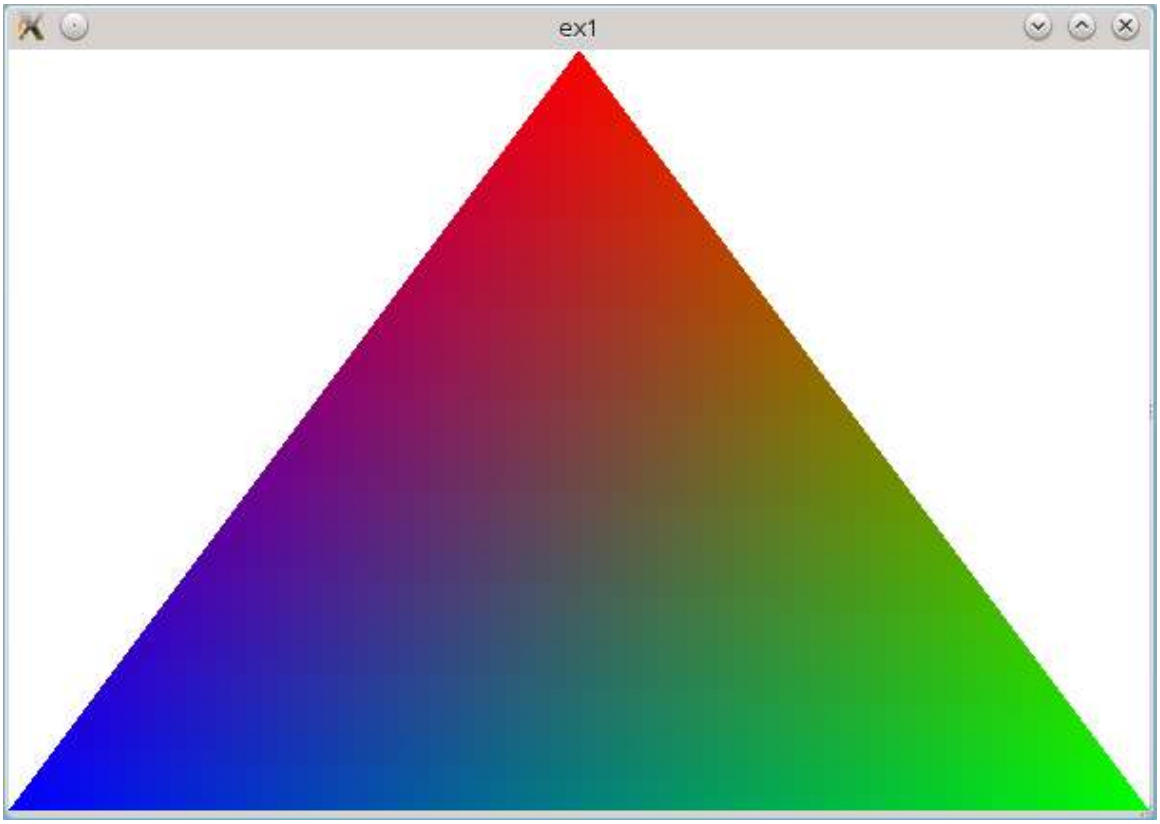



Chest View
Chest Algorithm
ChessBoard




Primitive Processing
Vertex Shader
Primitive Assembly
Framebuffer
...
Fragment Shader
Rasterizer


-0.5 0.5 0.5
0.5 0.5 0.5
-0.5 0.5 -0.5
0.5 0.5 -0.5
y
z
0 0 0
x
-0.5 -0.5 0.5
0.5 -0.5 0.5
-0.5 -0.5 -0.5
0.5 -0.5 -0.5



&ABC — Qt::AlignRight, Qt::AlignTop

&ABC — Qt::AlignHCenter, Qt::AlignVCenter

ABC — Qt::AlignLeft, Qt::TextShowMnemonic

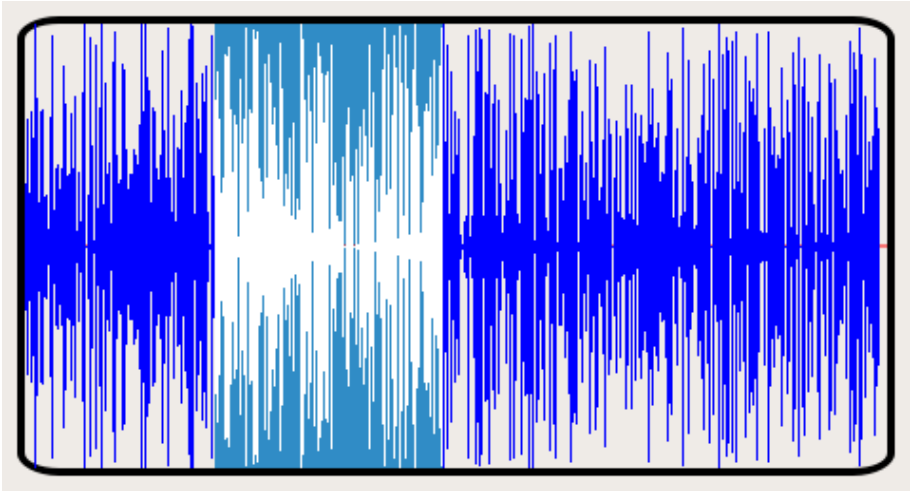
ext wrapping mu — Qt::AlignHCenter, Qt::AlignVCenter

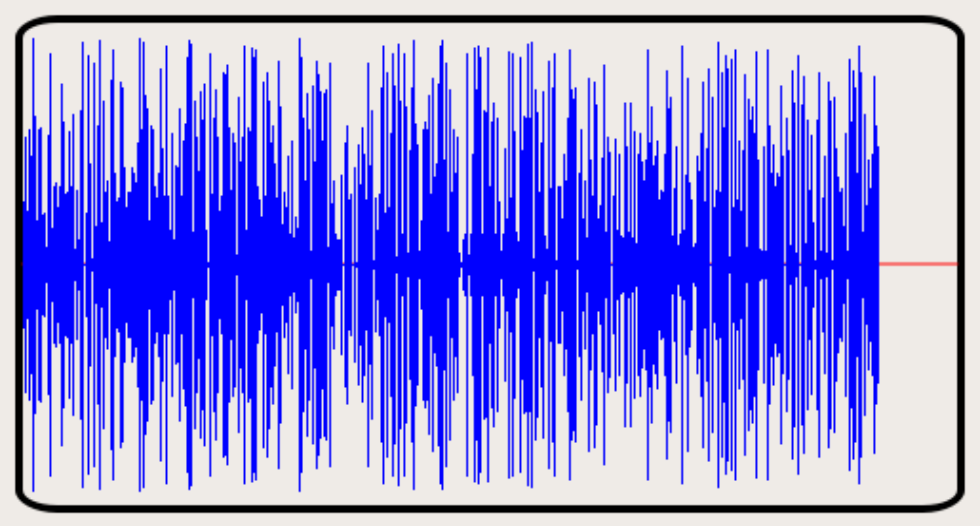
Very long text wrapping multiple lines — Qt::AlignHCenter, Qt::AlignVCenter, Qt::TextWordWrap

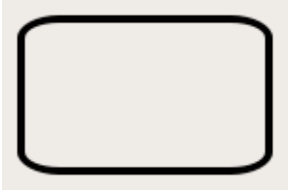
Very long text wrapping multiple lines — Qt::AlignJustify, Qt::TextWordWrap

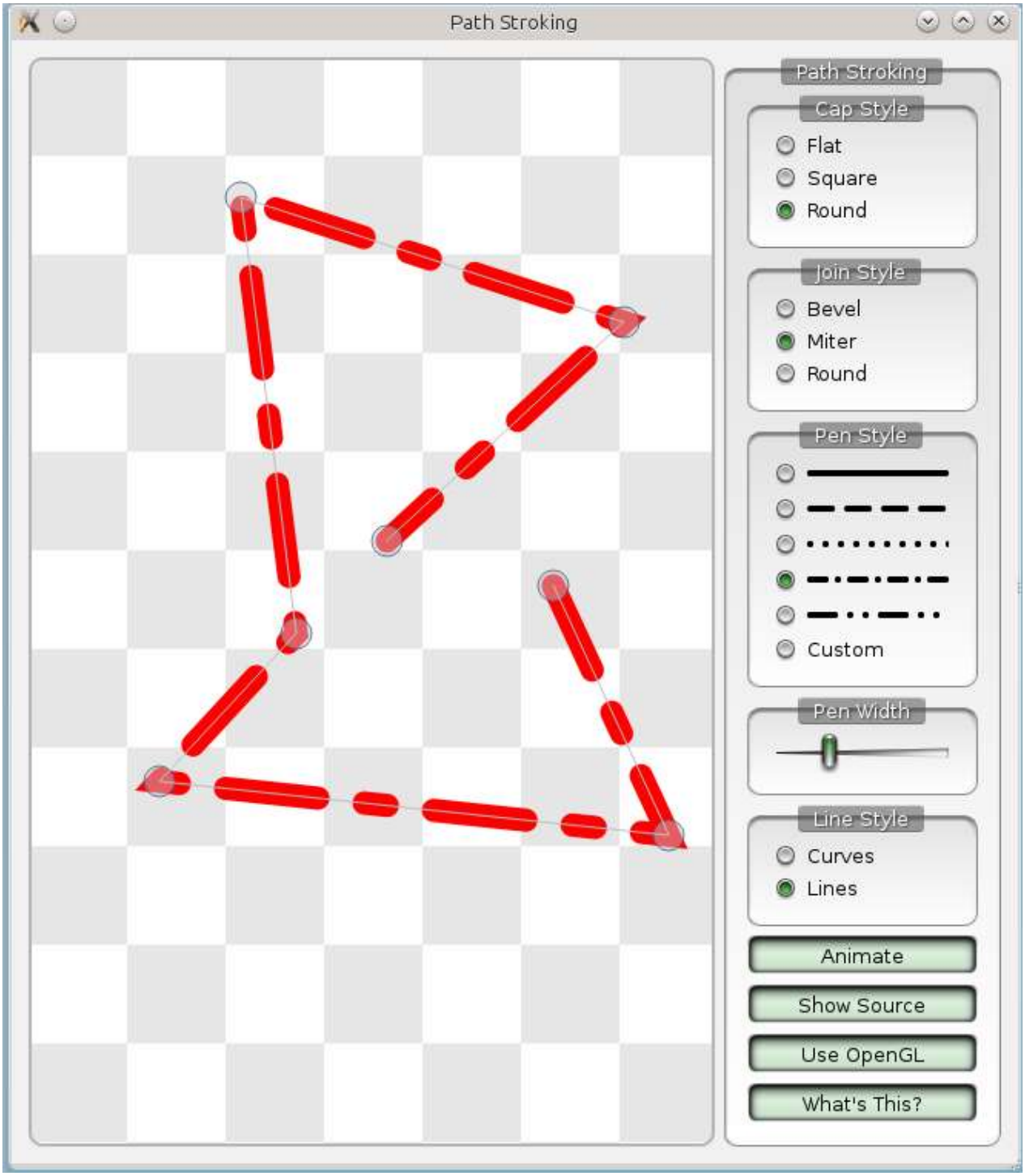
Very long text wrapping multiple lines without clipping — Qt::TextDontClip, Qt::TextWordWrap

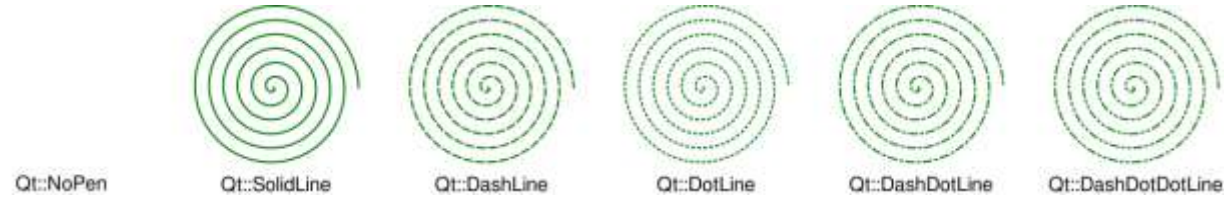
Multiline text as single line with word-wrapping — Qt::TextSingleLine, Qt::TextWordWrap

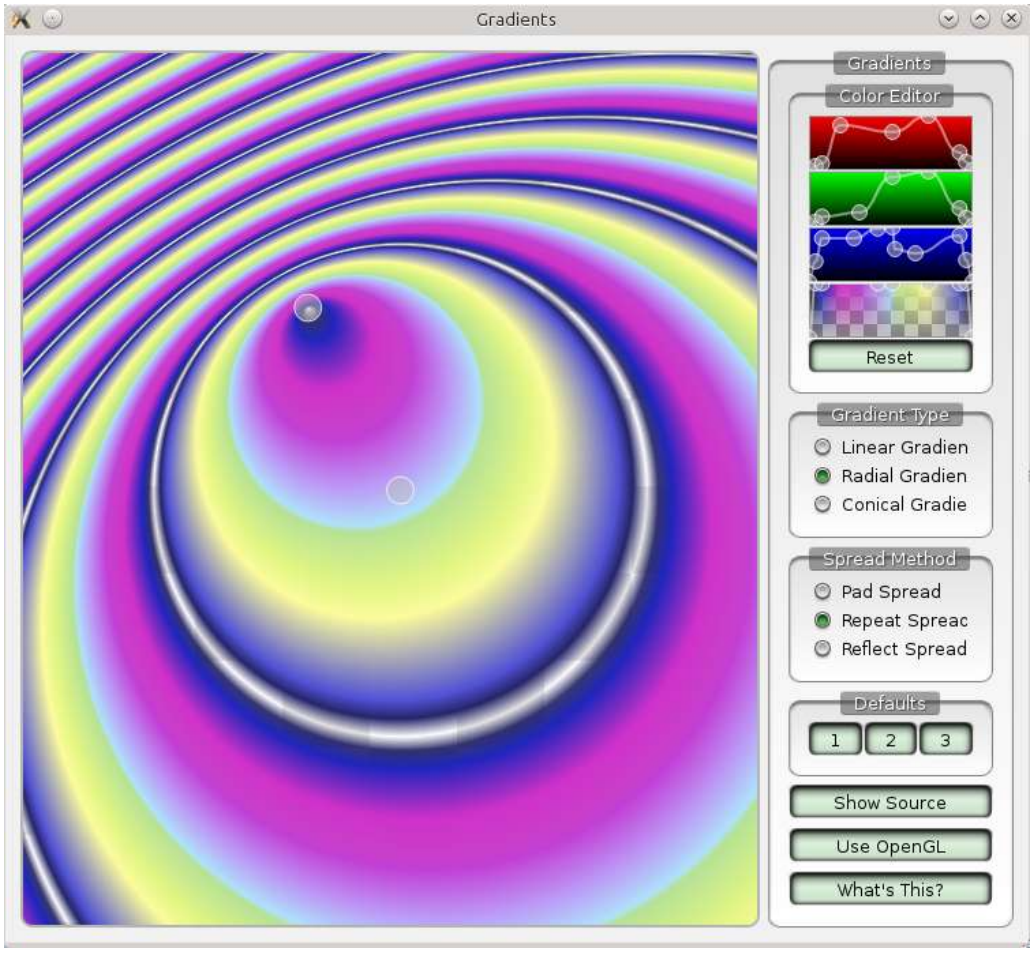




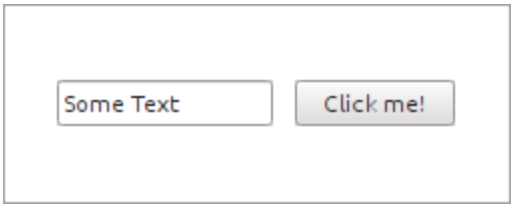


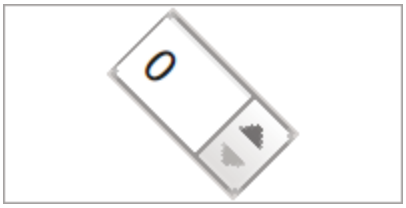

Path Stroking
Path Stroking
Cap Style
Flat
Square
Round
Join Style
Bevel
Miter
Round
Pen Style
Custom
Pen Width
Line Style
Curves
Lines
Animate
Show Source
Use OpenGL
What's This?

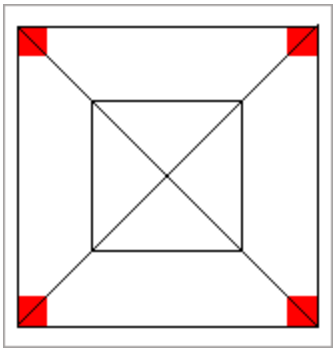

Qt::NoPen
Qt::SolidLine
Qt::DashLine
Qt::DotLine
Qt::DashDotLine
Qt::DashDotDotLine


Gradients
Gradients
Color Editor
Reset
Gradient Type
Linear Gradien
Radial Gradien
Conical Gradie
Spread Method
Pad Spread
Repeat Spreac
Reflect Spread
Defaults
1
2
3
Show Source
Use OpenGL
What's This?

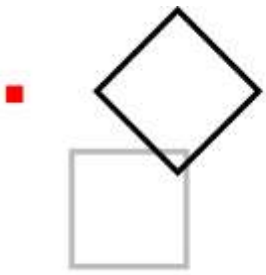
Chapter 6: Graphics View



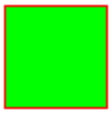


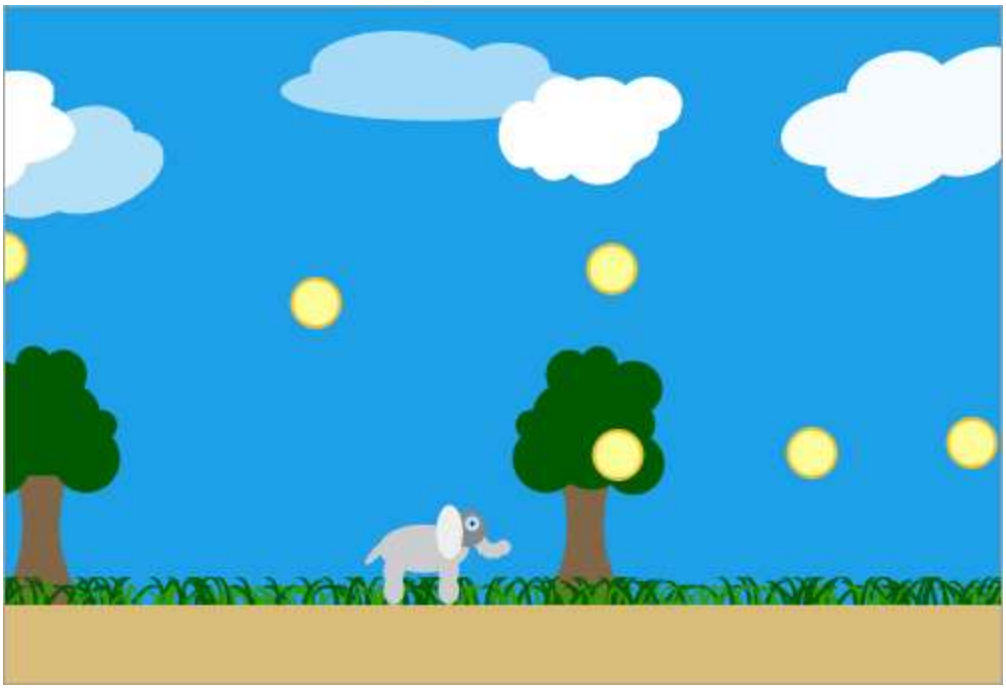


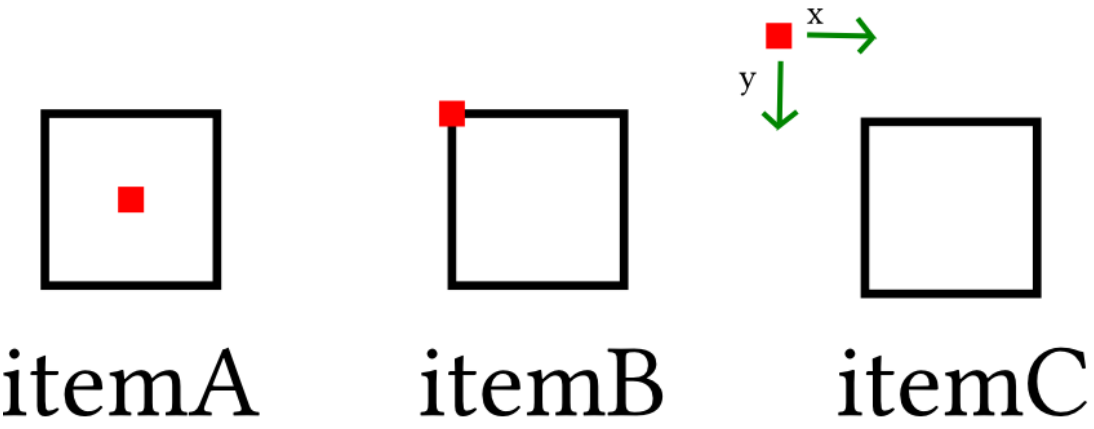
itemB

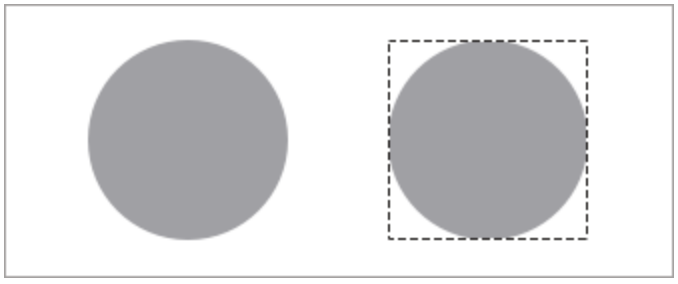


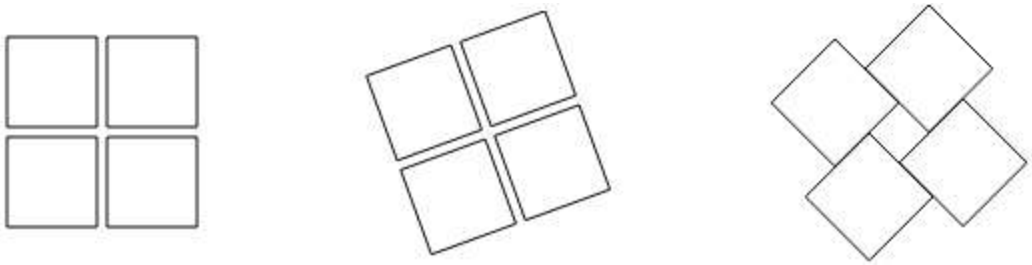
itemC

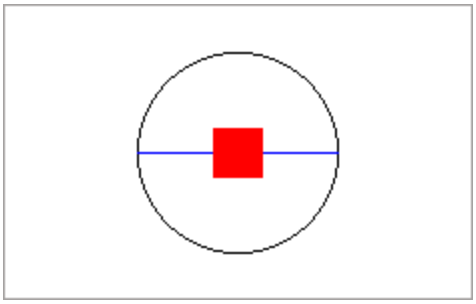


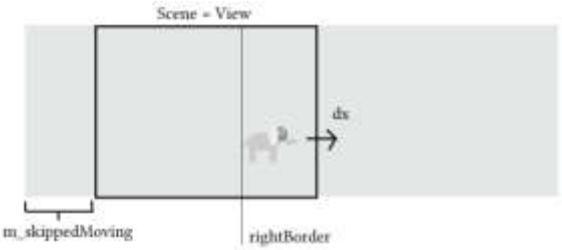


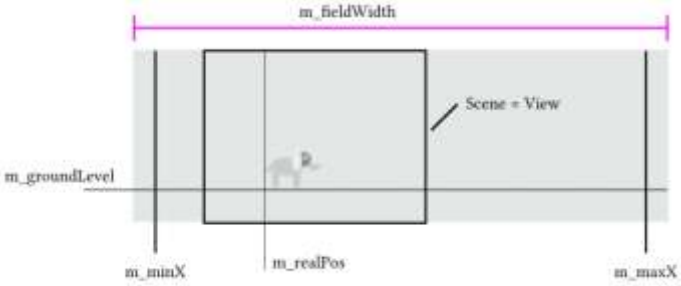

x
y
itemA
itemB
itemC

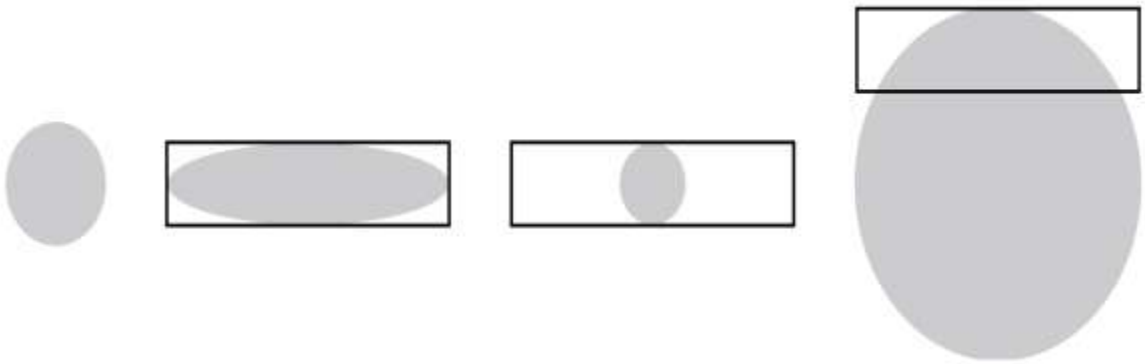


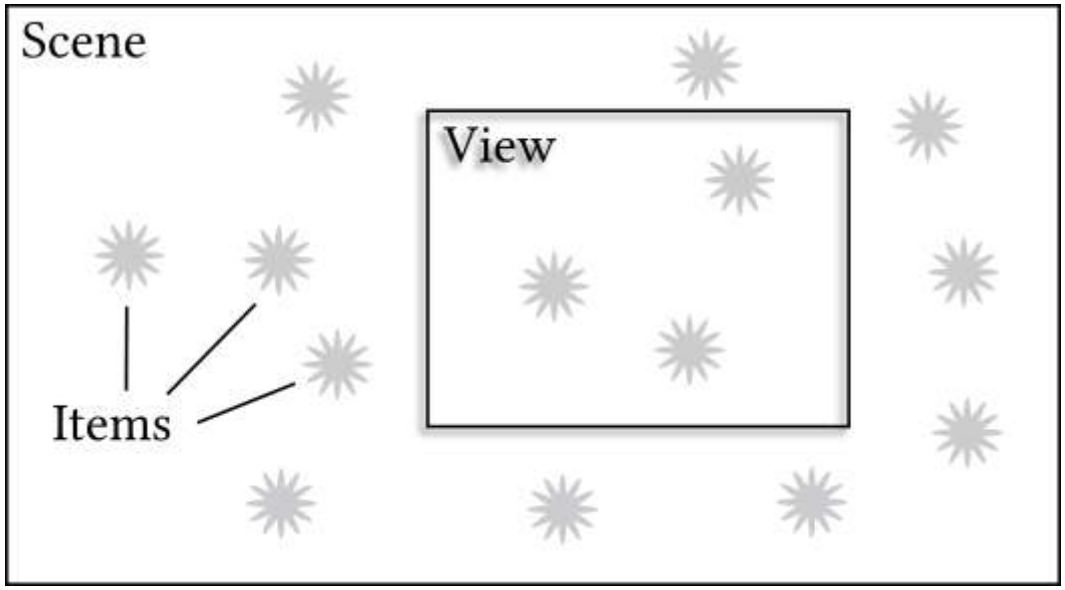


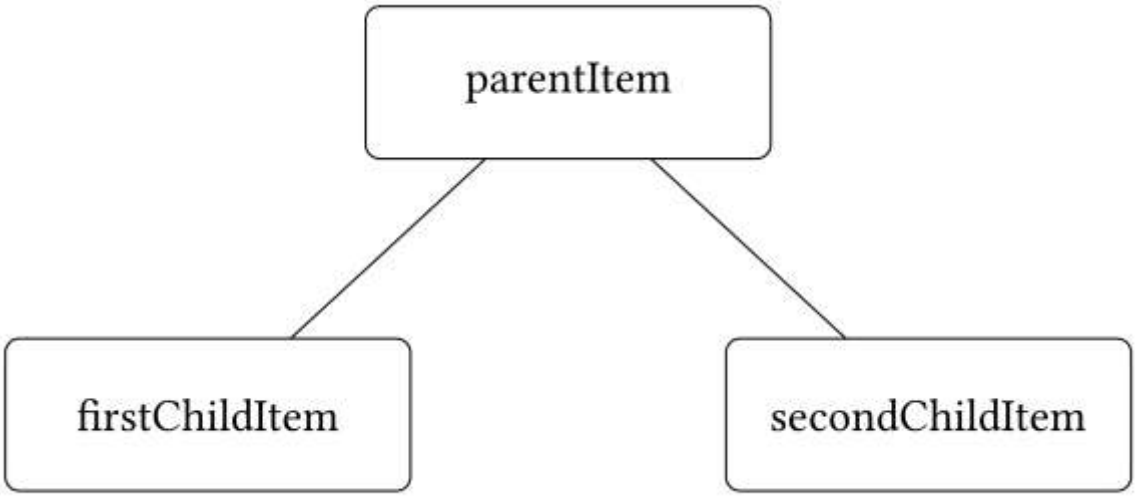



Scene + View
dx
m_skippedMoving
rightBorder

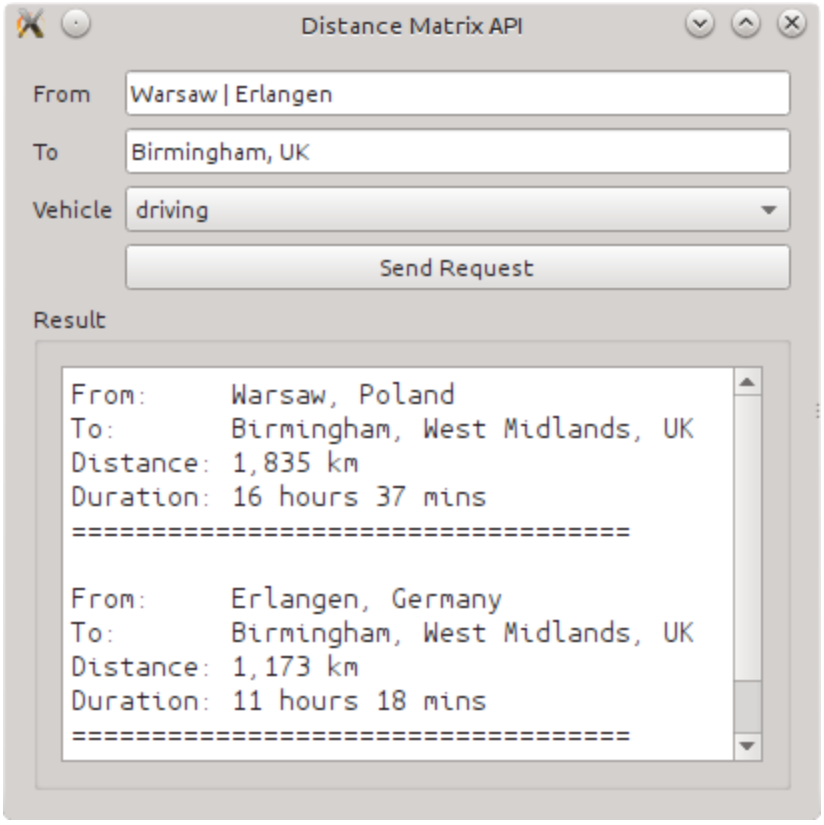

m_fieldWidth
Scene + View
m_groundLevel
m_minX
m_realPos
m_maxX

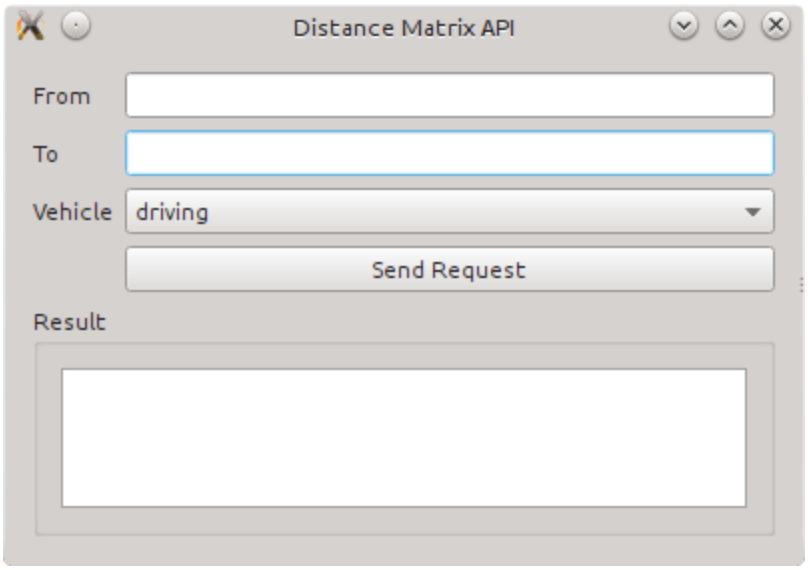


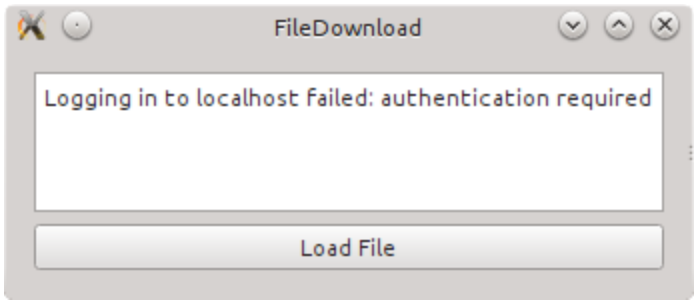

Scene
View
Items

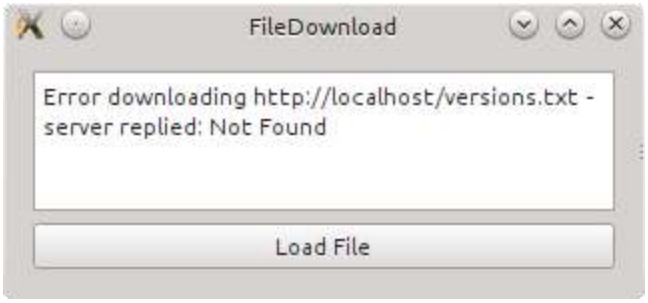

parentItem
firstChildItem
secondChildItem

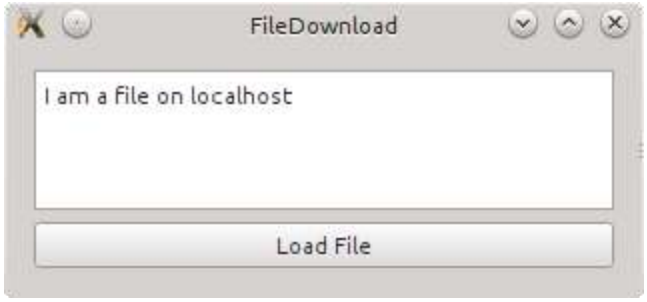
Chapter 7: Networking

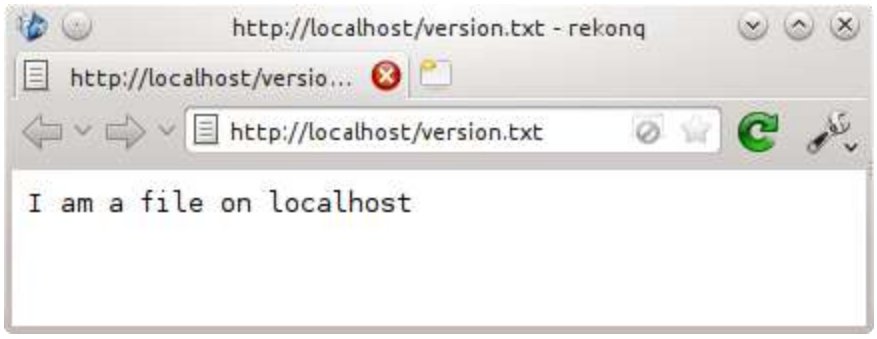



Distance Matrix API
From
To
Vehicle
driving
Send Request
Result


FileDownload
Logging in to localhost failed: authentication required
Load File

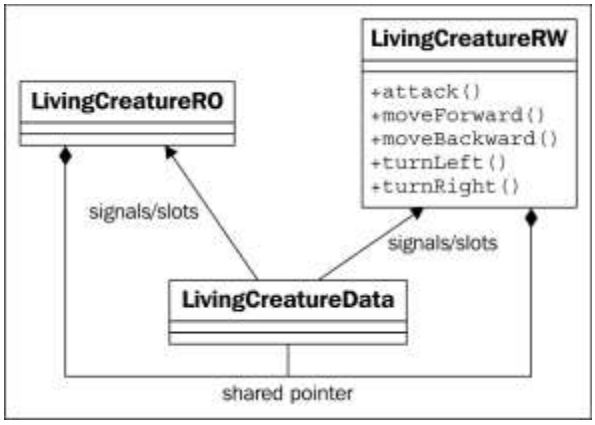

FileDownload
Error downloading http://localhost/versions.txt - server replied: Not Found
Load File

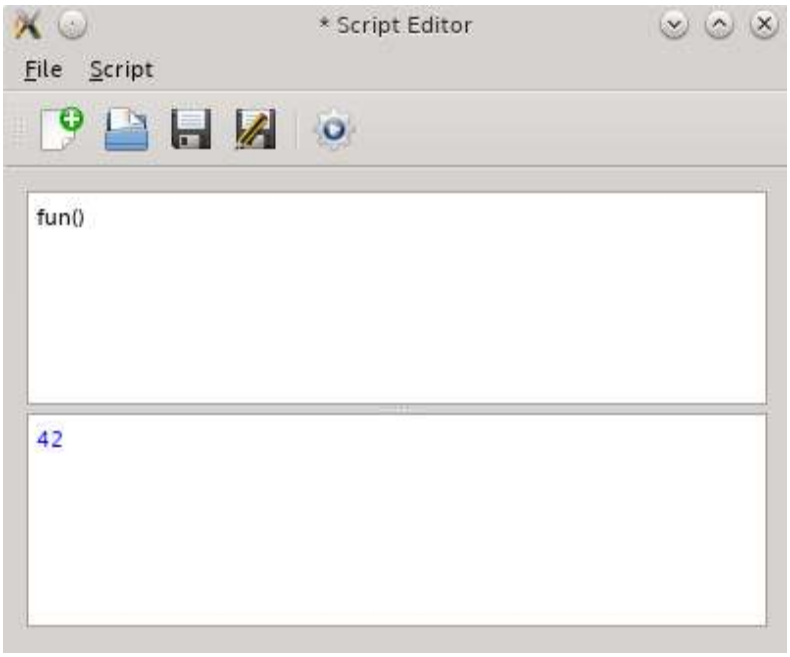

FileDownload
I am a file on localhost
Load File

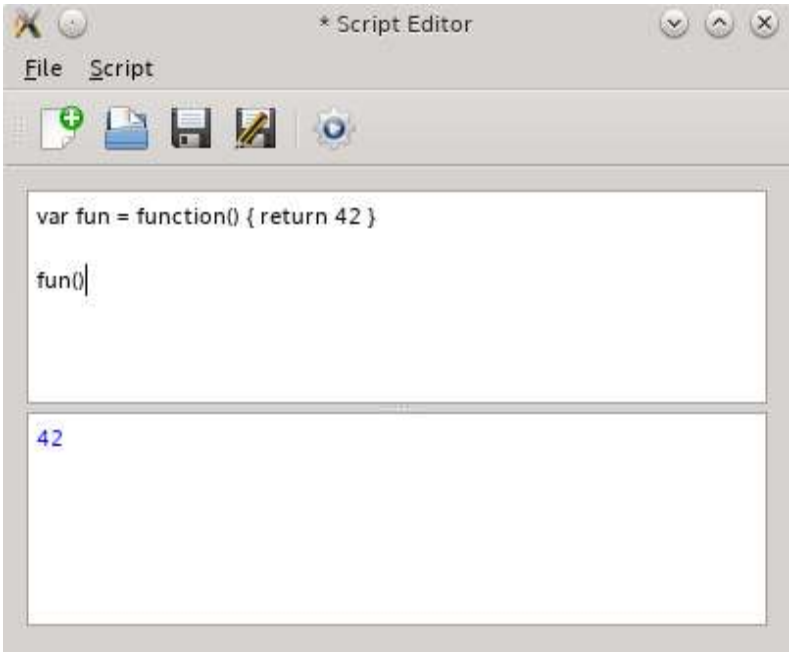

http://localhost/version.txt - rekonq
http://localhost/versio...
http://localhost/version.txt
I am a file on localhost

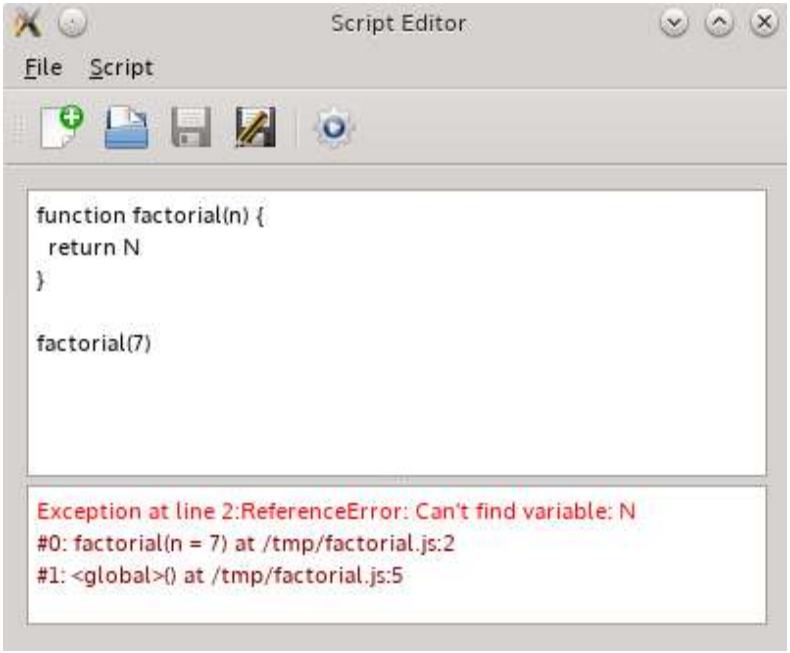
TcpClient
Server configuration
Address:
Port:
User:
connect
disconnect
Text:
Address: 127.0.0.1 Port: 52693
Disconnect
Log
* New connection: 127.0.0.1, port 34768
* New connection: 127.0.0.1, port 34769
Sending message: Client 1: Hi, how are you?
Server configuration
Address:
Port:
User:
connect
disconnect
Client 1: Hi, how are you?
Text:

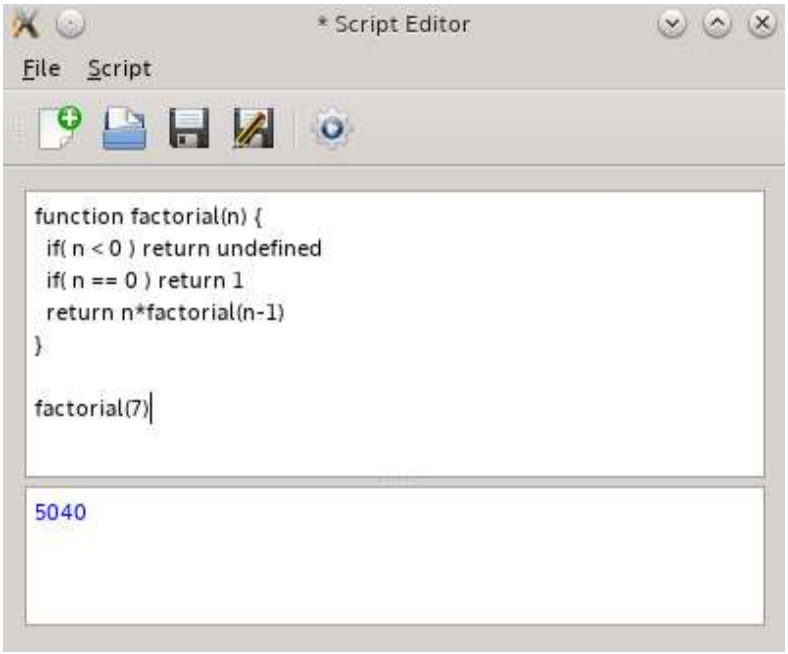
Chapter 8: Scripting

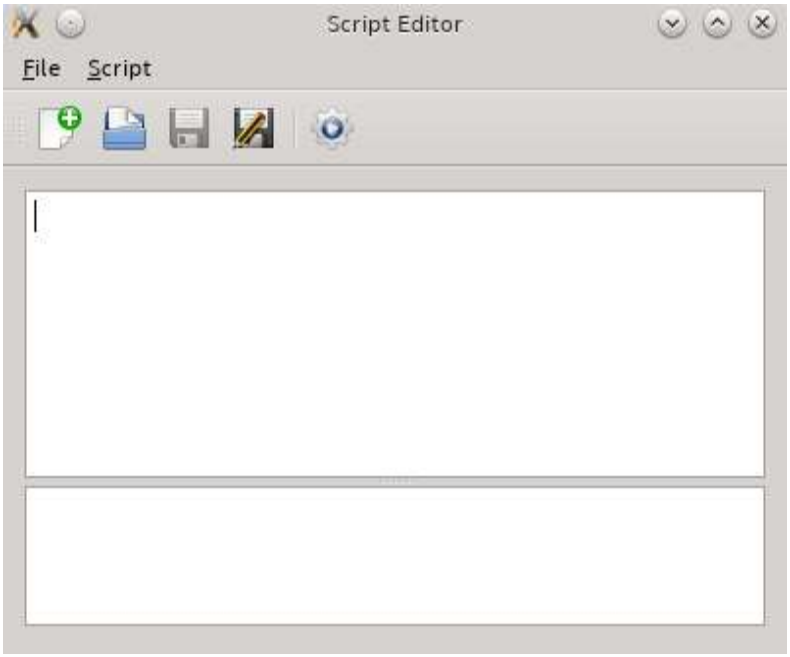


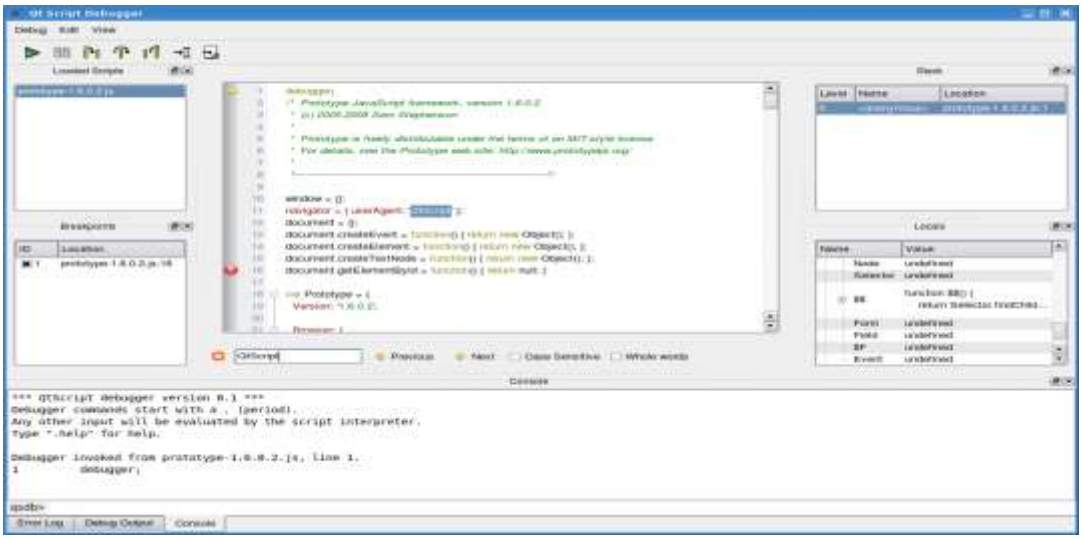



* Script Editor
File
Script
var fun = function() { return 42 }
fun()
42

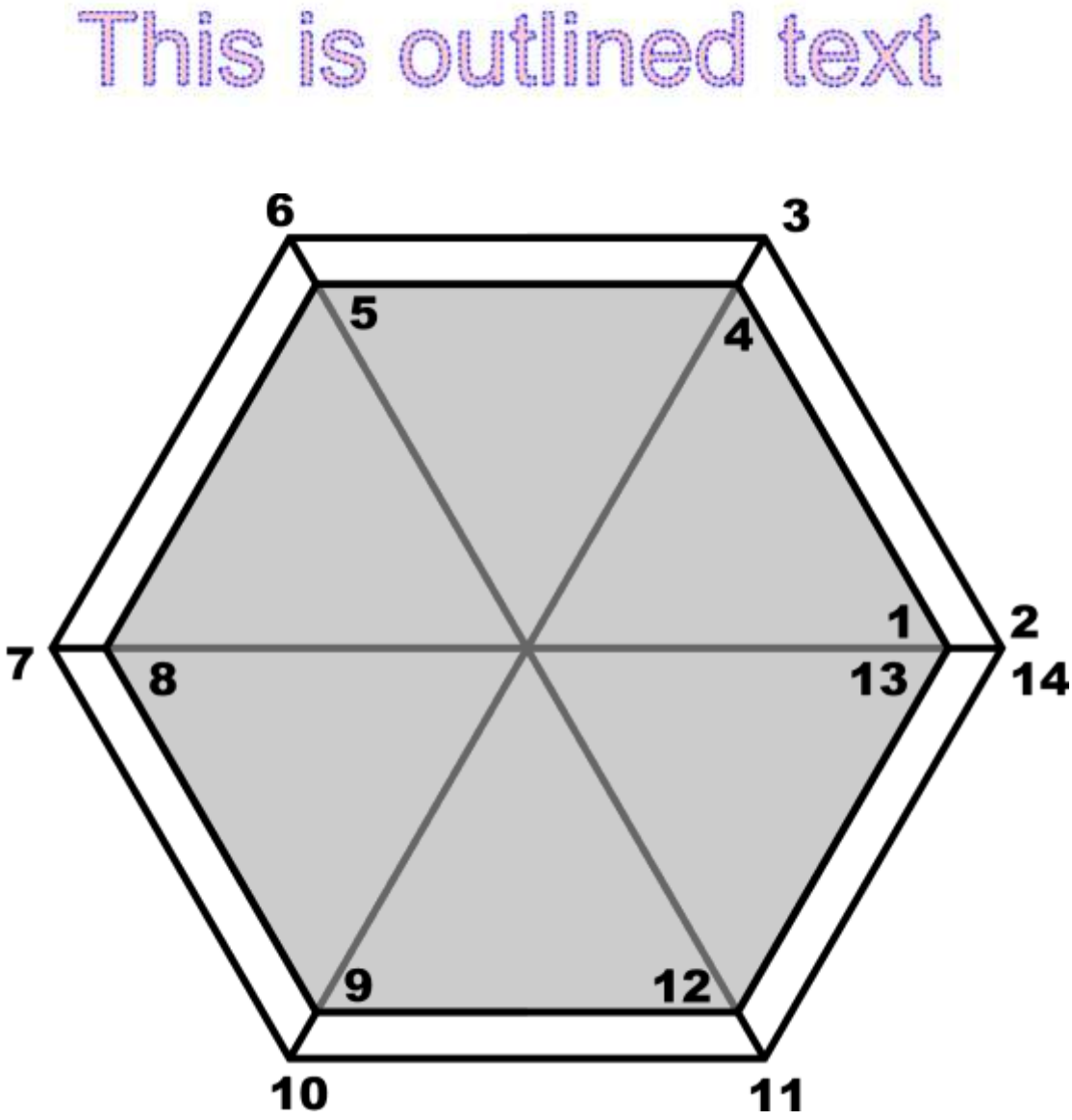

Script Editor
File
Script
function factorial(n) {
return N
}
factorial(7)
Exception at line 2:ReferenceError: Can't find variable: N
#0: factorial(n = 7) at /tmp/factorial.js:2
#1: <global>() at /tmp/factorial.js:5

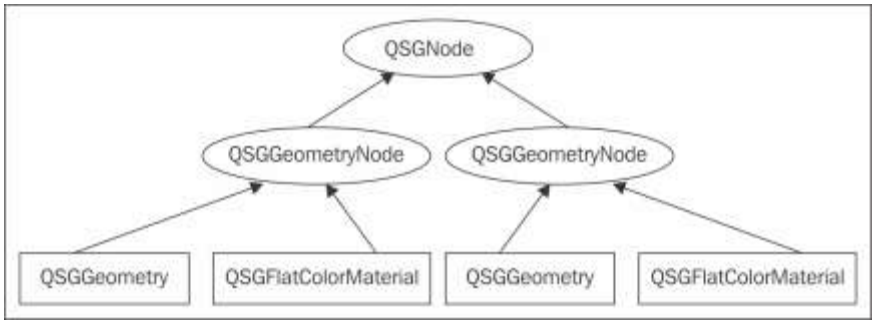

* Script Editor
File
Script
function factorial(n) {
if(n < 0) return undefined
if(n == 0) return 1
return n*factorial(n-1)
}
factorial(7)
5040

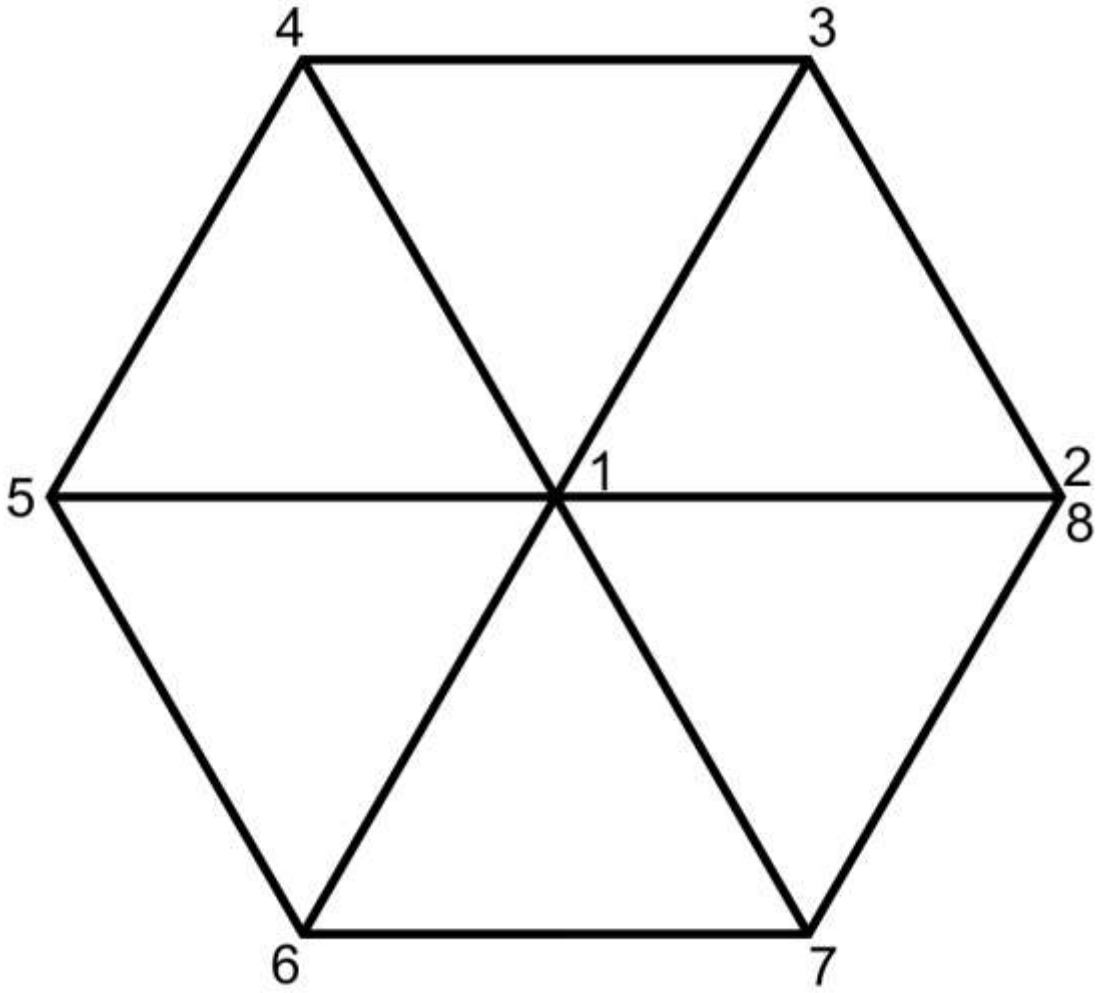

Script Editor
File
Script

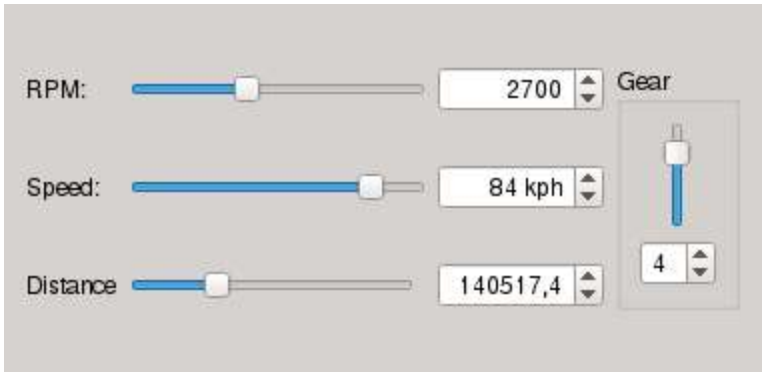


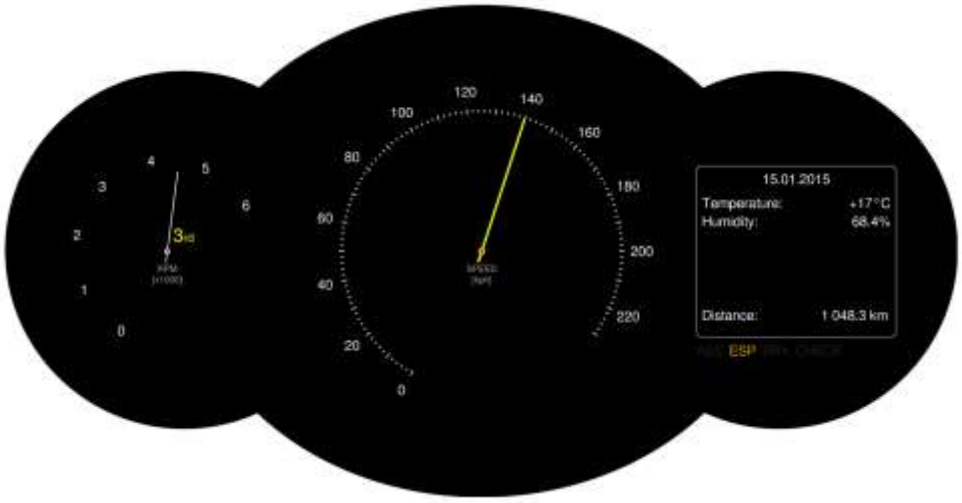
Chapter 9: Qt Quick Basics



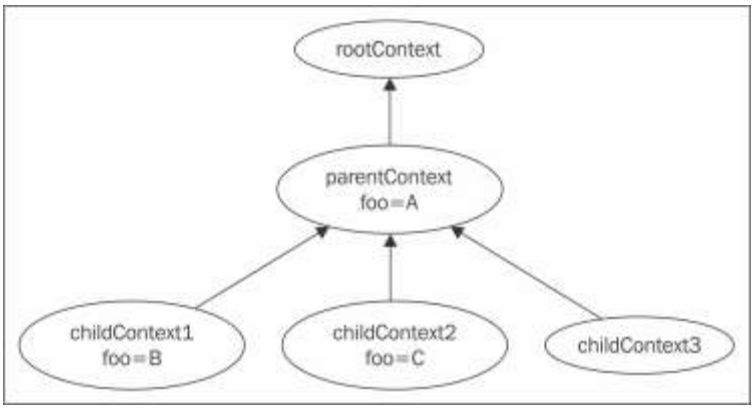

QSGNode
QSGGeometryNode
QSGGeometryNode
QSGGeometry
QSGFlatColorMaterial
QSGGeometry
QSGFlatColorMaterial

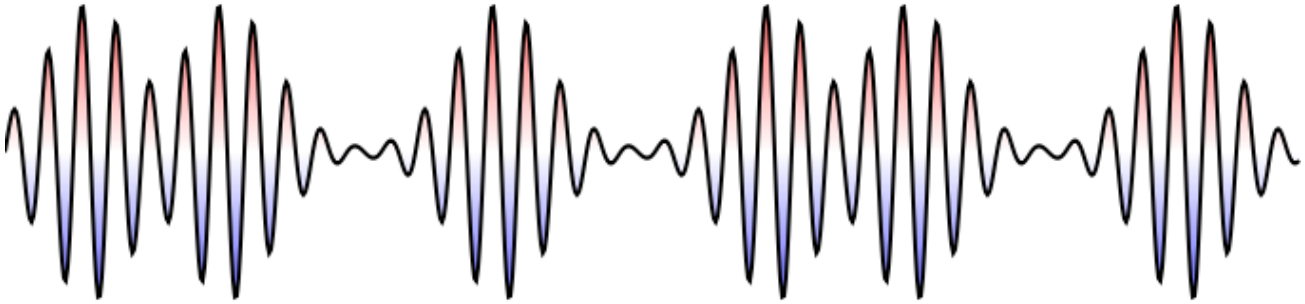

4
3
5
1
2
8
6
7

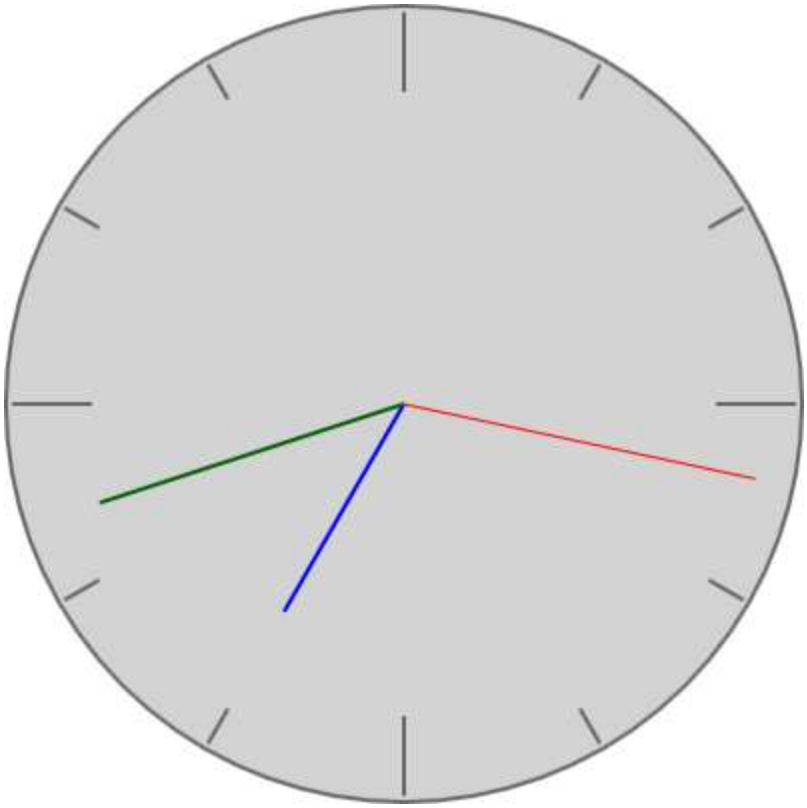

RPM:
2700
Gear
Speed:
84 kph
Distance
140517,4
4

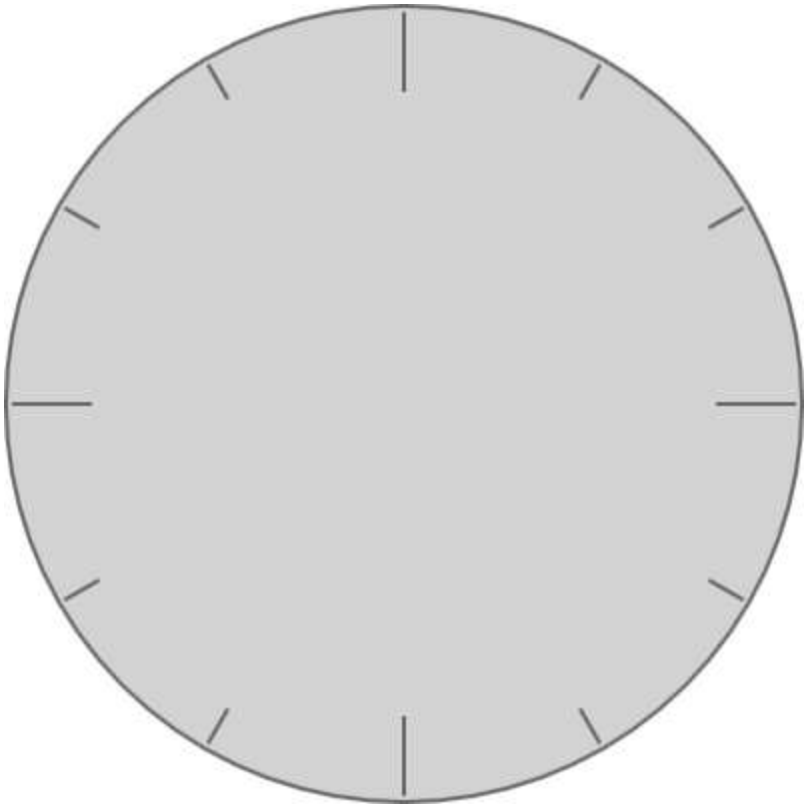

3
0
1
2
3
4
5
6
0
20
40
60
80
100
120
140
160
180
200
220
15.01.2015
Temperature:
+17°C
Humidity:
68.4%
Distance:
1 048.3 km

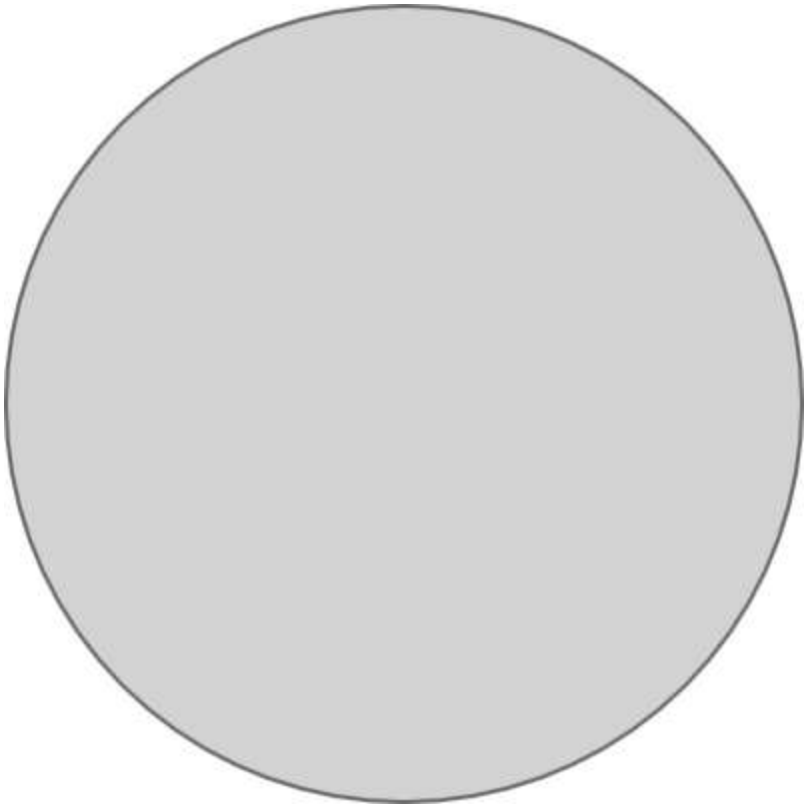
Weather for 10.01.2015
Temperature: 17°C
Humidity: 64.8%





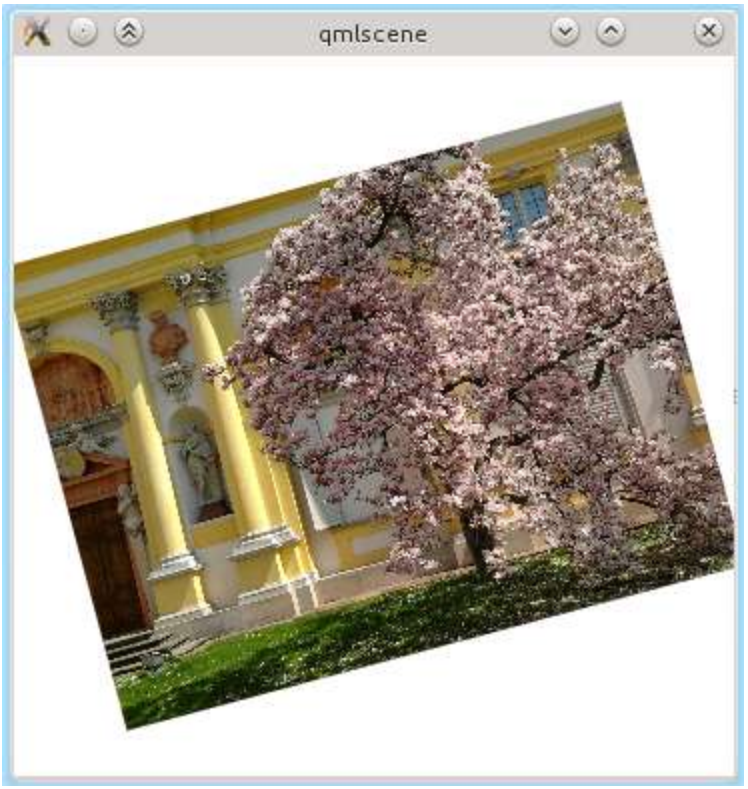


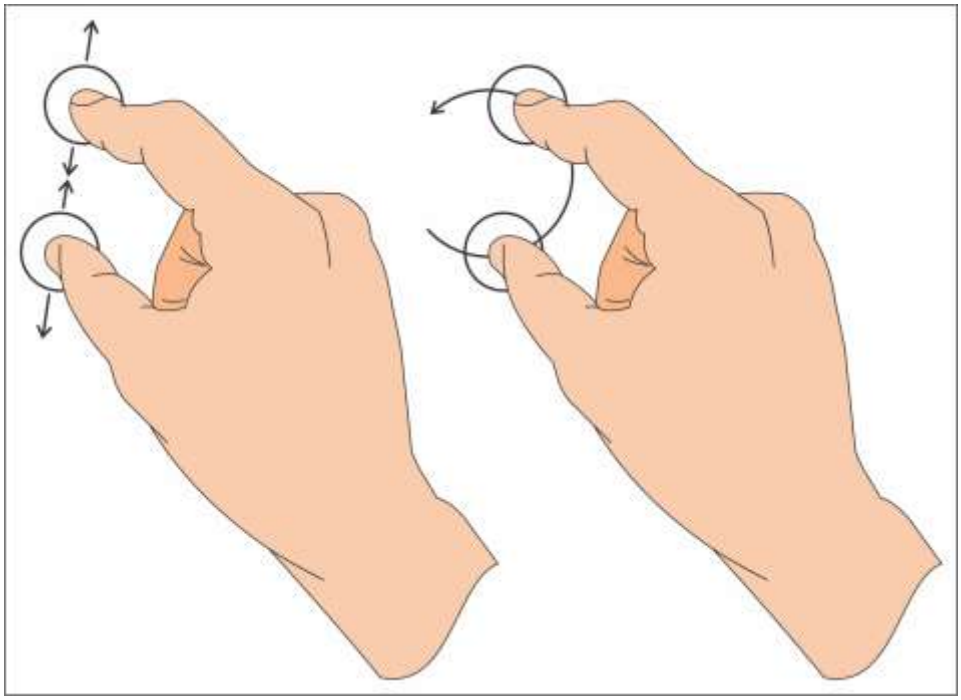


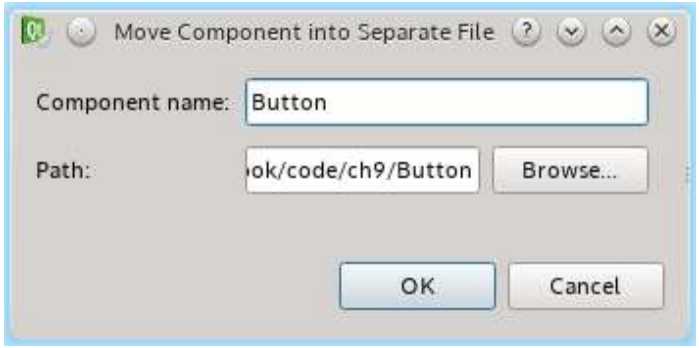


A quick brown f

- **spacePressed**(KeyEvent *event*)

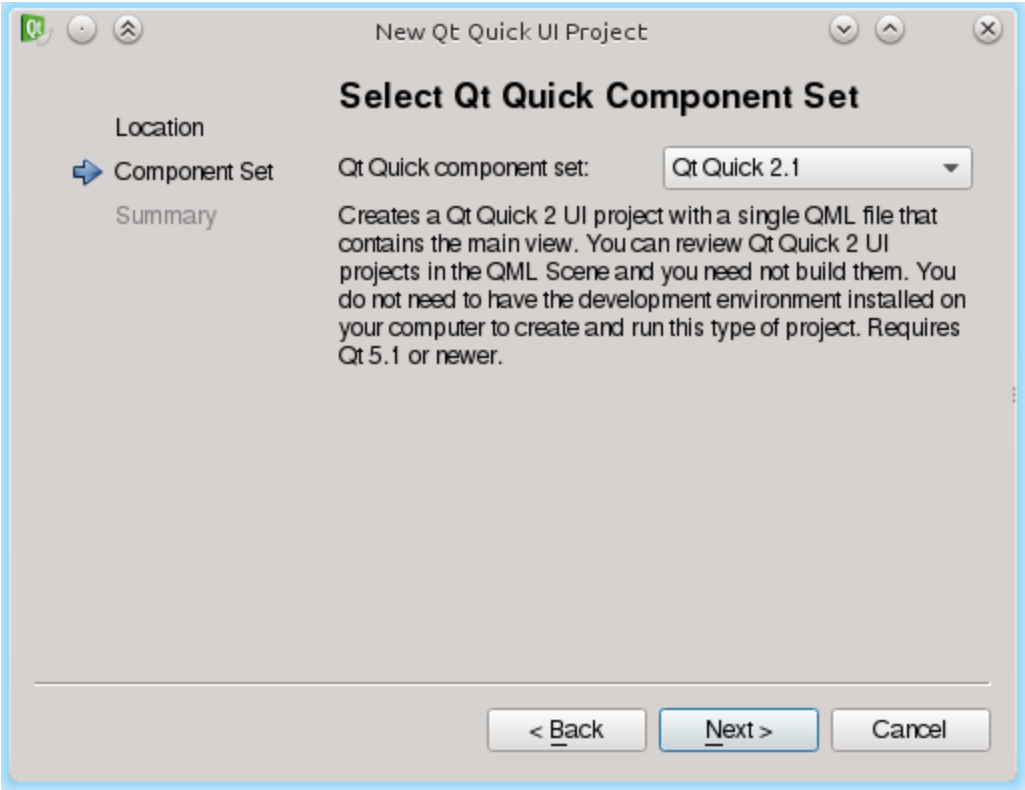

qmlscene

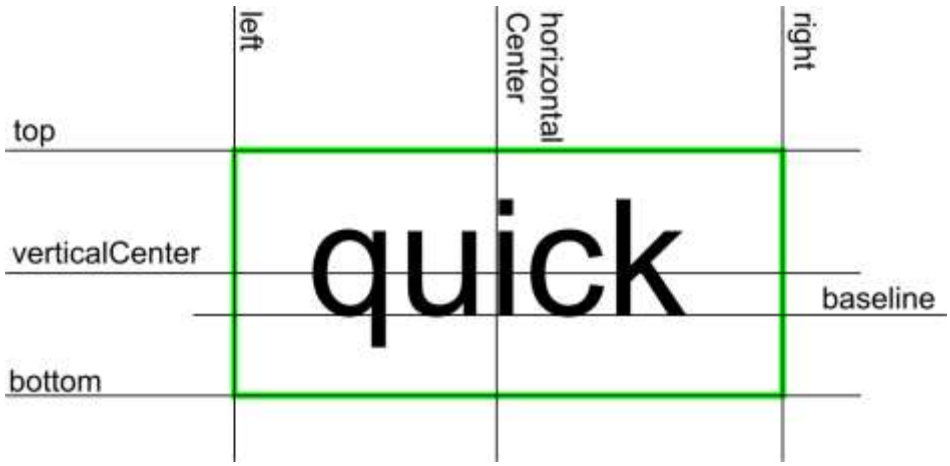



Move Component into Separate File
Component name:
Button
Path:
ok/code/ch9/Button
Browse...
OK
Cancel

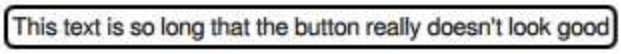
```
1  import QtQuick 2.0
2
3  Rectangle {
4      width: 360
5      height: 360
6
7      Rectangle {
8          id:
9
10         signal clicked()
11
12         anchors.centerIn: parent
13         border { width: 1; color: "black" }
14         radius: 5
15
16         gradient: Gradient {
17             GradientStop { position: 0; color: "#eeeeee" }
18             GradientStop { position: 1; color: "#777777" }
19         }
```

Move Component into Separate File
Wrap Component in Loader

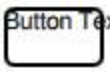

New Qt Quick UI Project
Select Qt Quick Component Set
Location
Component Set
Summary
Qt Quick component set:
Qt Quick 2.1
Creates a Qt Quick 2 UI project with a single QML file that contains the main view. You can review Qt Quick 2 UI projects in the QML Scene and you need not build them. You do not need to have the development environment installed on your computer to create and run this type of project. Requires Qt 5.1 or newer.
< Back
Next >
Cancel

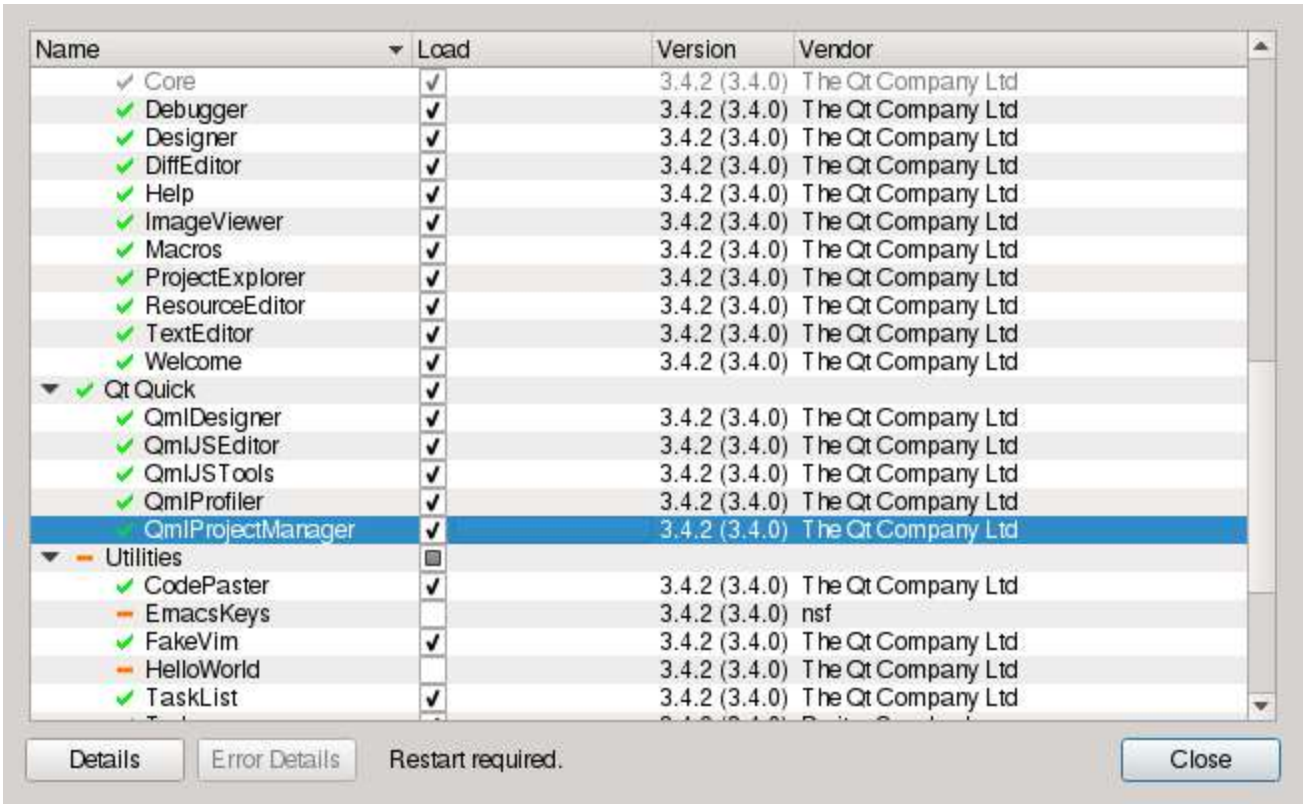

left
horizontal Center
right
top
verticalCenter
quick
baseline
bottom

Button Text

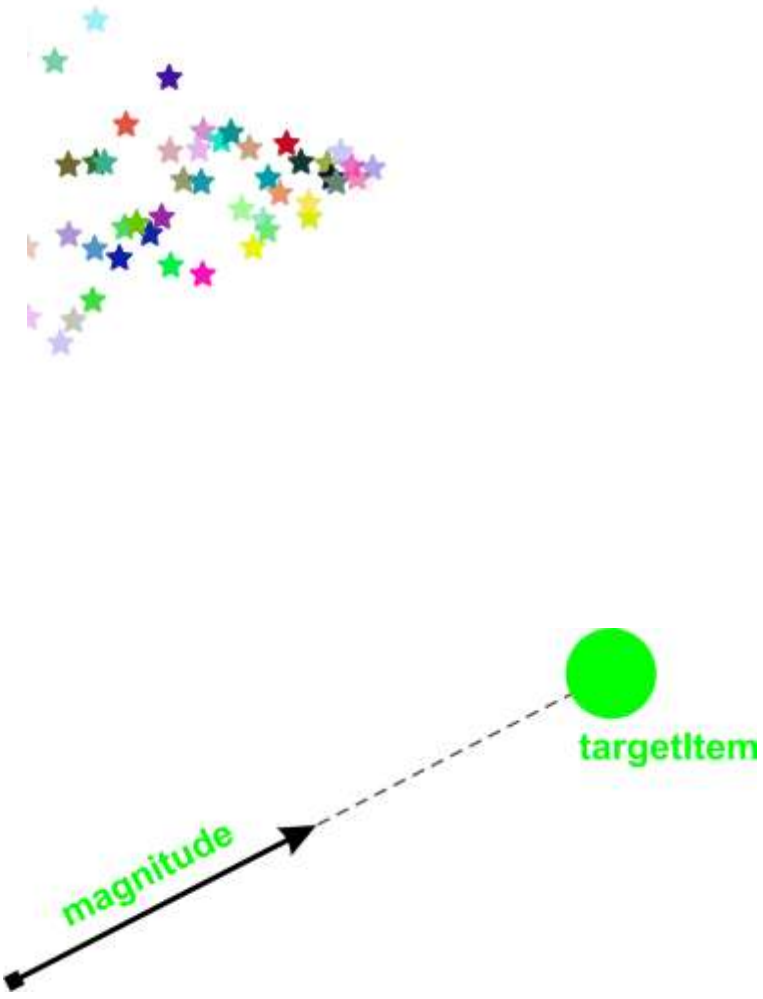

This text is so long that the button really doesn't look good

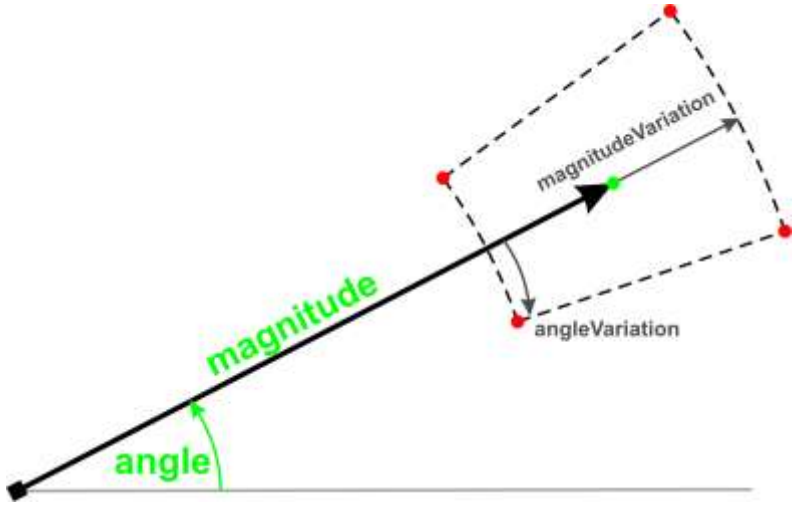
Button Text

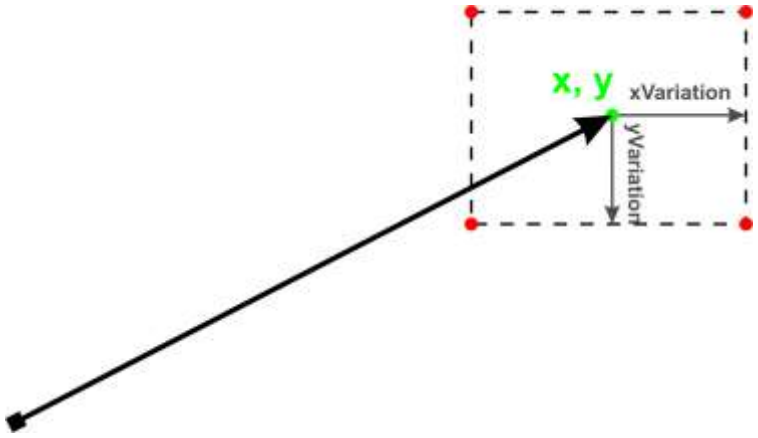

Button Text

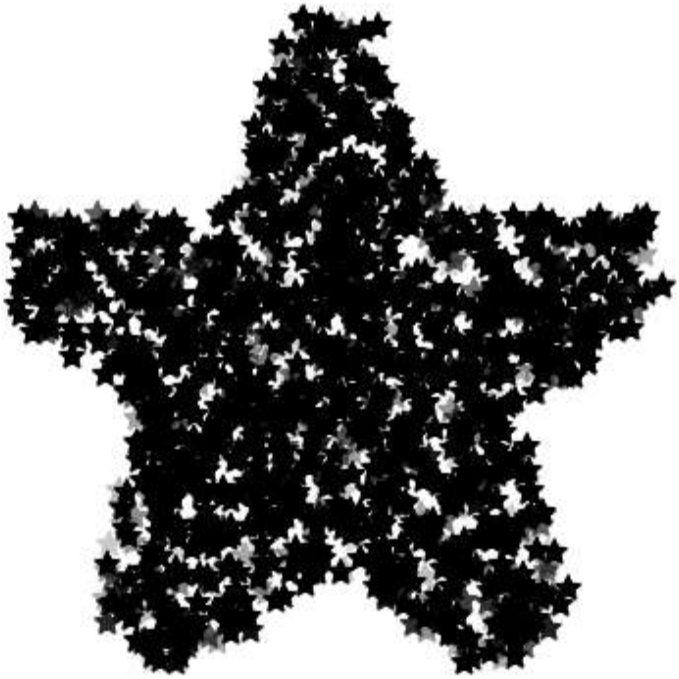

Name
Load
Version
Vendor
Core 3.4.2 (3.4.0) The Qt Company Ltd
Debugger 3.4.2 (3.4.0) The Qt Company Ltd
Designer 3.4.2 (3.4.0) The Qt Company Ltd
DiffEditor 3.4.2 (3.4.0) The Qt Company Ltd
Help 3.4.2 (3.4.0) The Qt Company Ltd
ImageViewer 3.4.2 (3.4.0) The Qt Company Ltd
Macros 3.4.2 (3.4.0) The Qt Company Ltd
ProjectExplorer 3.4.2 (3.4.0) The Qt Company Ltd
ResourceEditor 3.4.2 (3.4.0) The Qt Company Ltd
TextEditor 3.4.2 (3.4.0) The Qt Company Ltd
Welcome 3.4.2 (3.4.0) The Qt Company Ltd
Qt Quick
QmlDesigner 3.4.2 (3.4.0) The Qt Company Ltd
QmlJSEditor 3.4.2 (3.4.0) The Qt Company Ltd
QmlJSTools 3.4.2 (3.4.0) The Qt Company Ltd
QmlProfiler 3.4.2 (3.4.0) The Qt Company Ltd
QmlProjectManager 3.4.2 (3.4.0) The Qt Company Ltd
Utilities
CodePaster 3.4.2 (3.4.0) The Qt Company Ltd
EmacsKeys 3.4.2 (3.4.0) nsf
FakeVim 3.4.2 (3.4.0) The Qt Company Ltd
HelloWorld 3.4.2 (3.4.0) The Qt Company Ltd
TaskList 3.4.2 (3.4.0) The Qt Company Ltd
Details
Error Details
Restart required.
Close

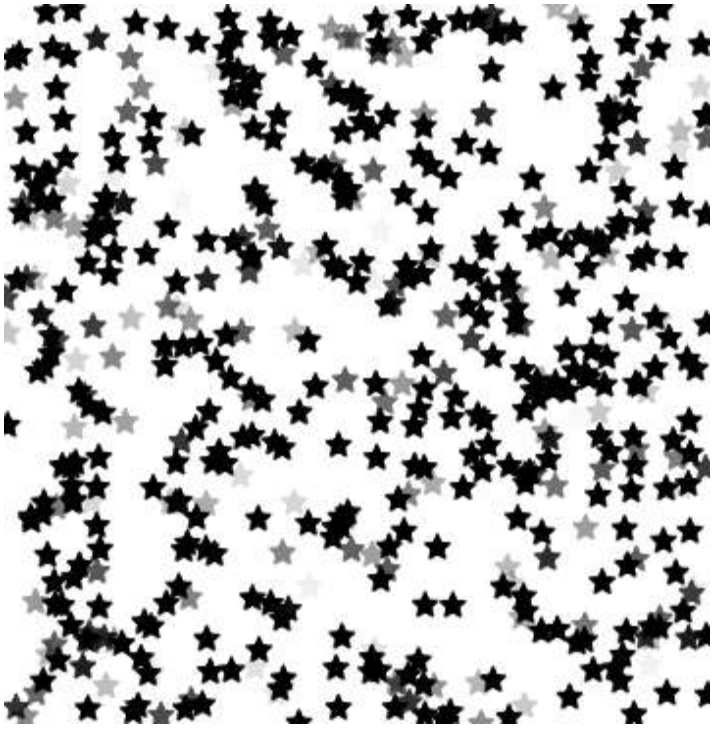
Chapter 10: Qt Quick

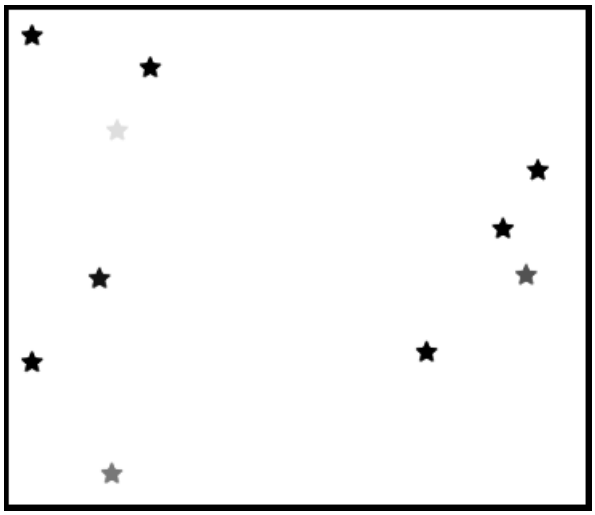

targetItem
magnitude

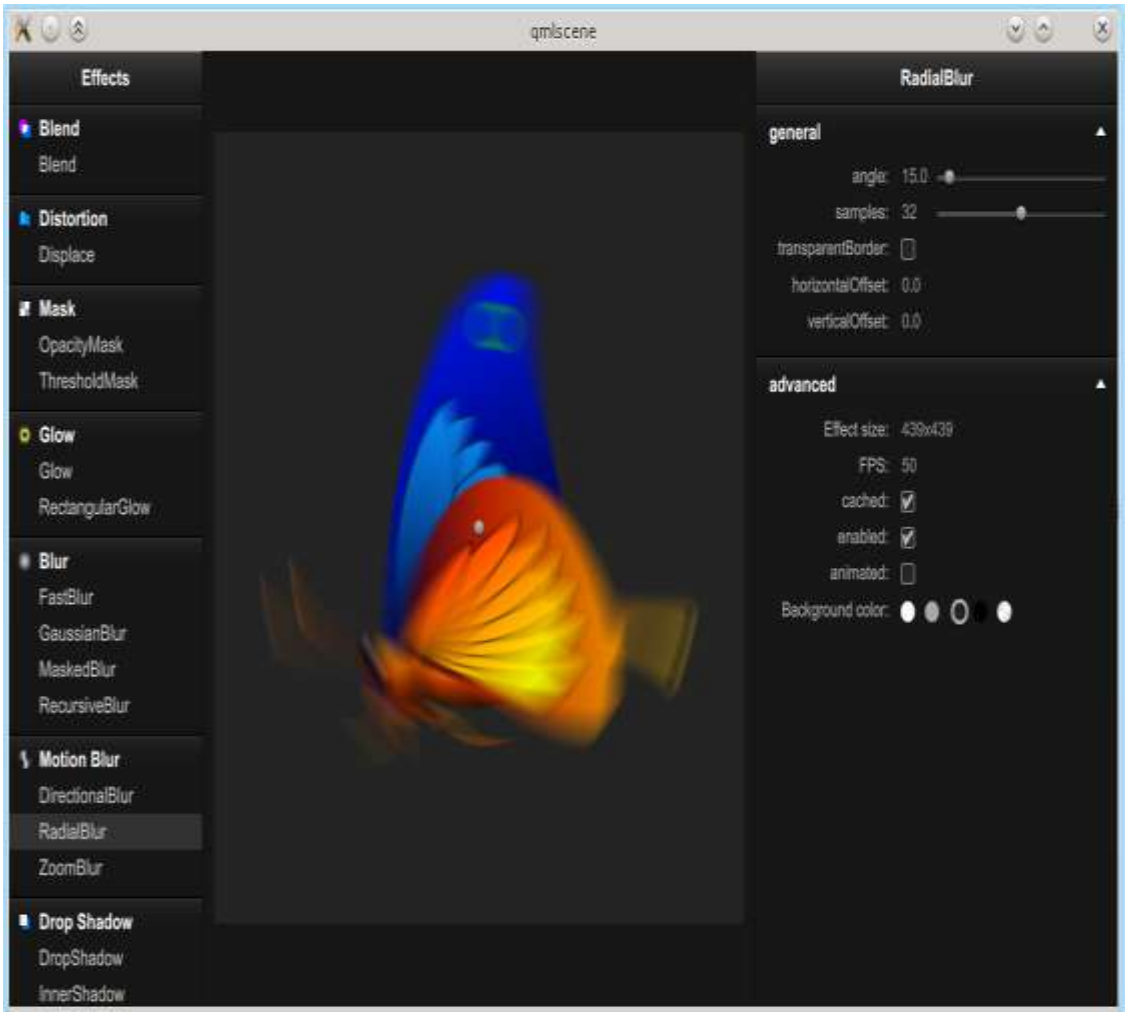

magnitudeVariation
angleVariation
magnitude
angle

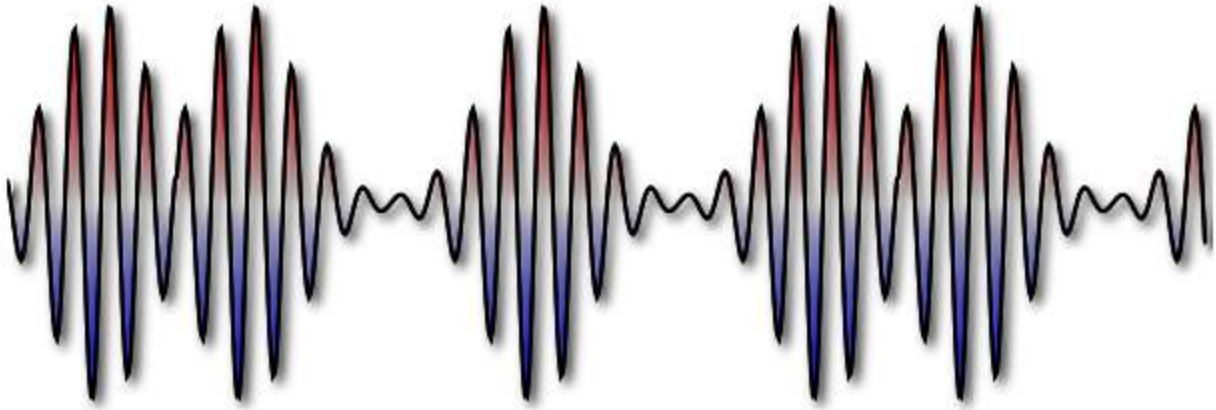

x, y
xVariation
yVariation



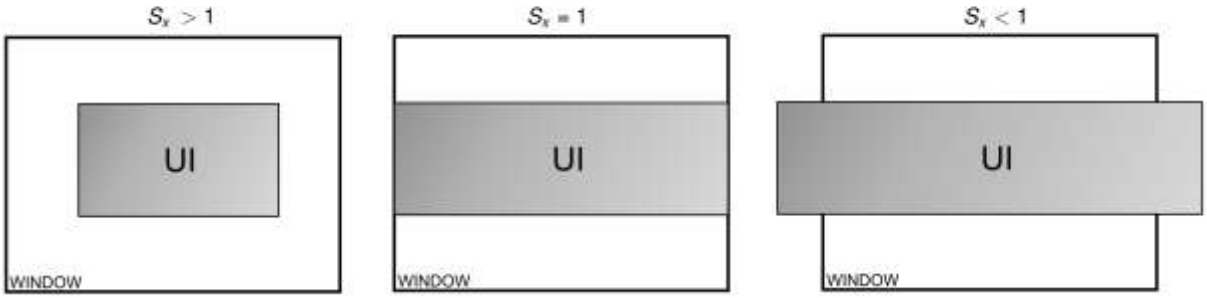




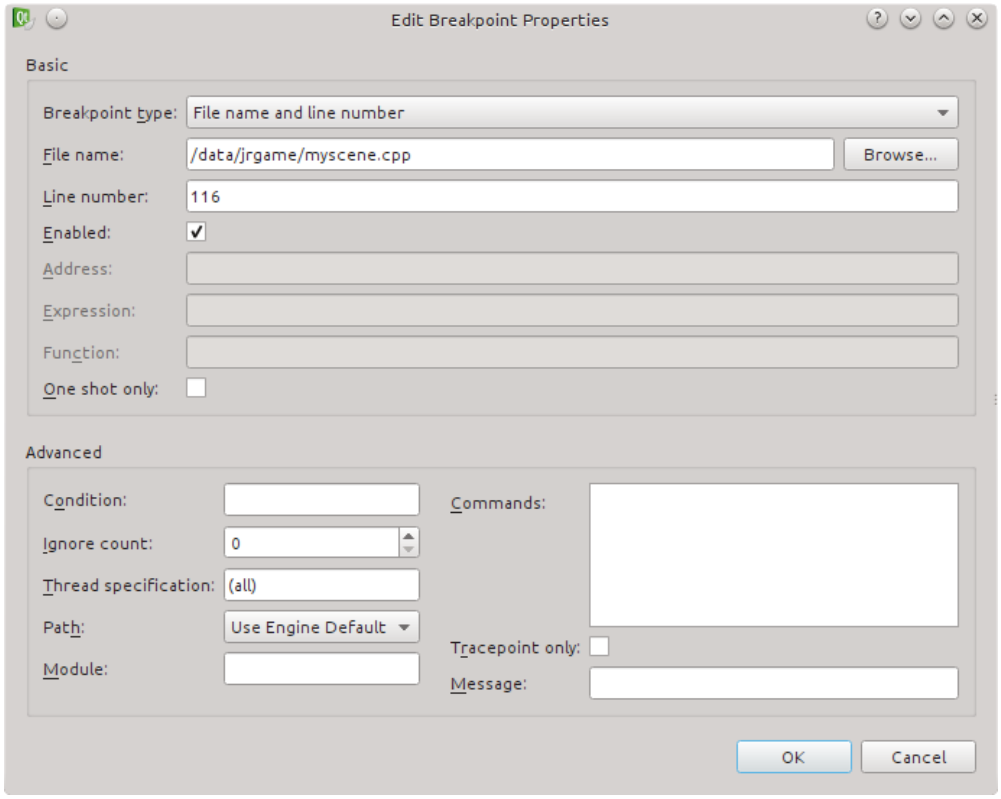

qmlscene
Effects
Blend
Blend
Distortion
Displace
Mask
OpacityMask
ThresholdMask
Glow
Glow
RectangularGlow
Blur
FastBlur
GaussianBlur
MaskedBlur
RecursiveBlur
Motion Blur
DirectionalBlur
RadialBlur
ZoomBlur
Drop Shadow
DropShadow
InnerShadow
RadialBlur
general
angle: 15.0
samples: 32
transparentBorder:
horizontalOffset: 0.0
verticalOffset: 0.0
advanced
Effect size: 439x439
FPS: 50
cached:
enabled:
animated:
Background color:

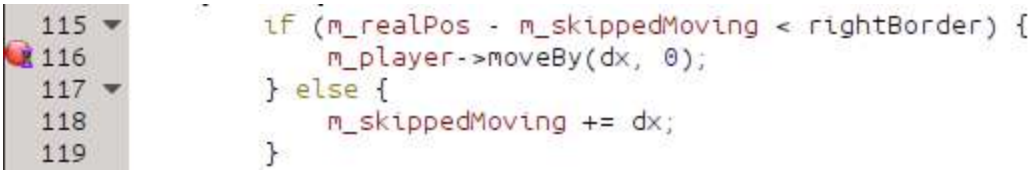


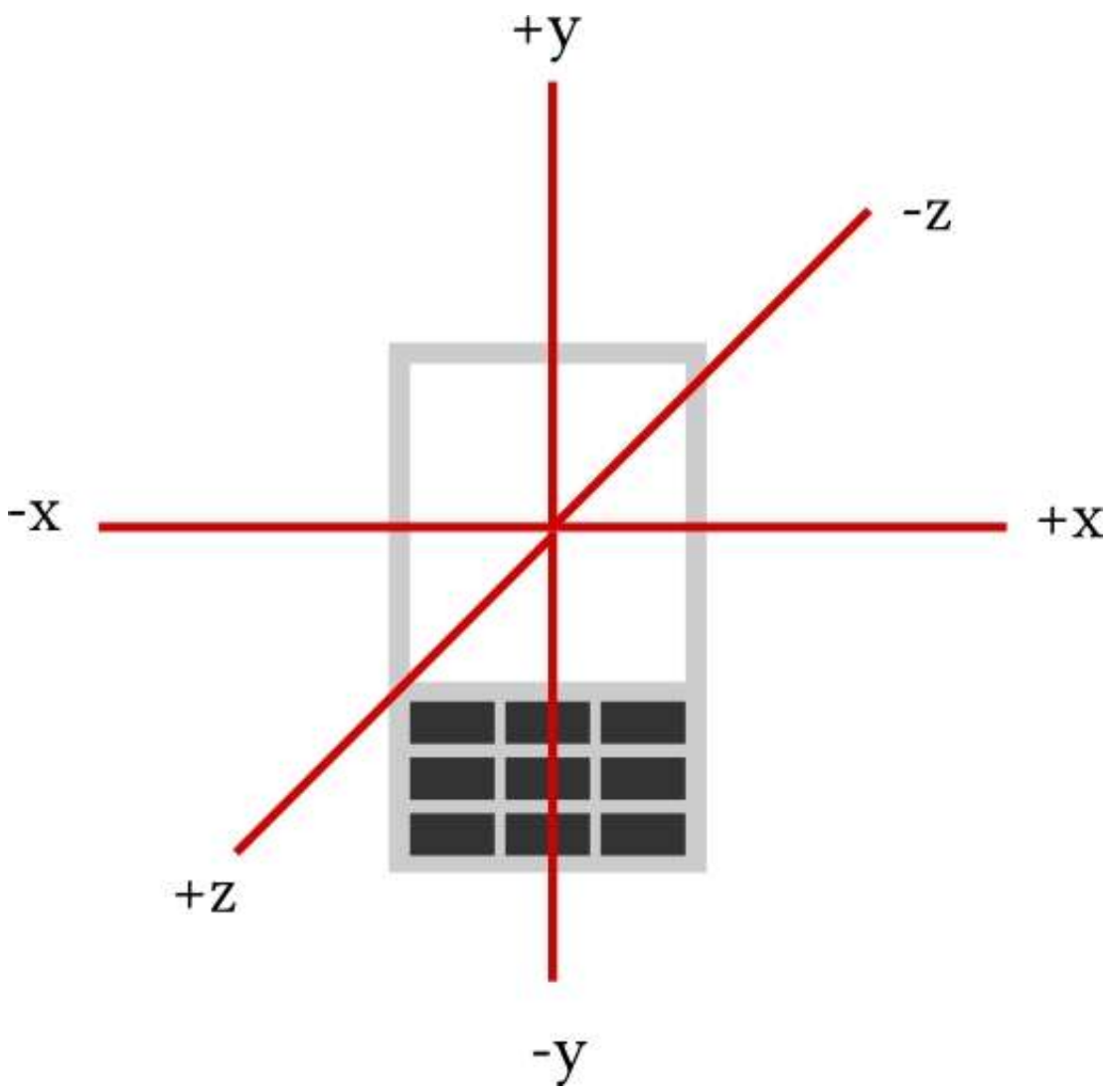
$$S_x = \frac{W_{wnd}}{W_{ui}}$$

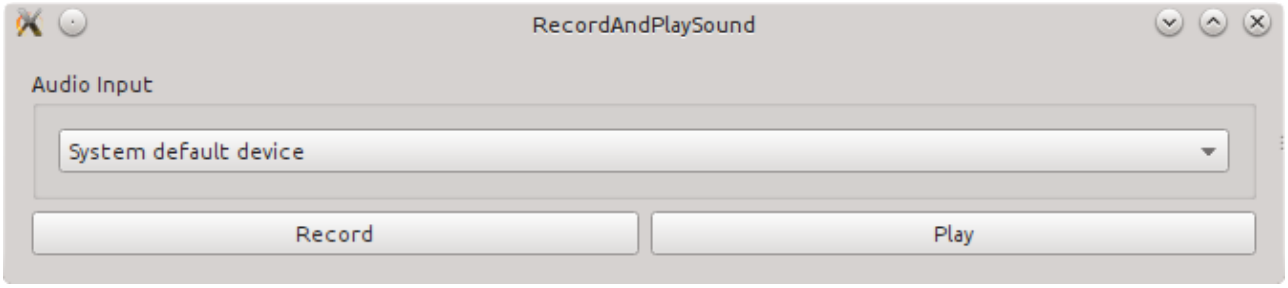


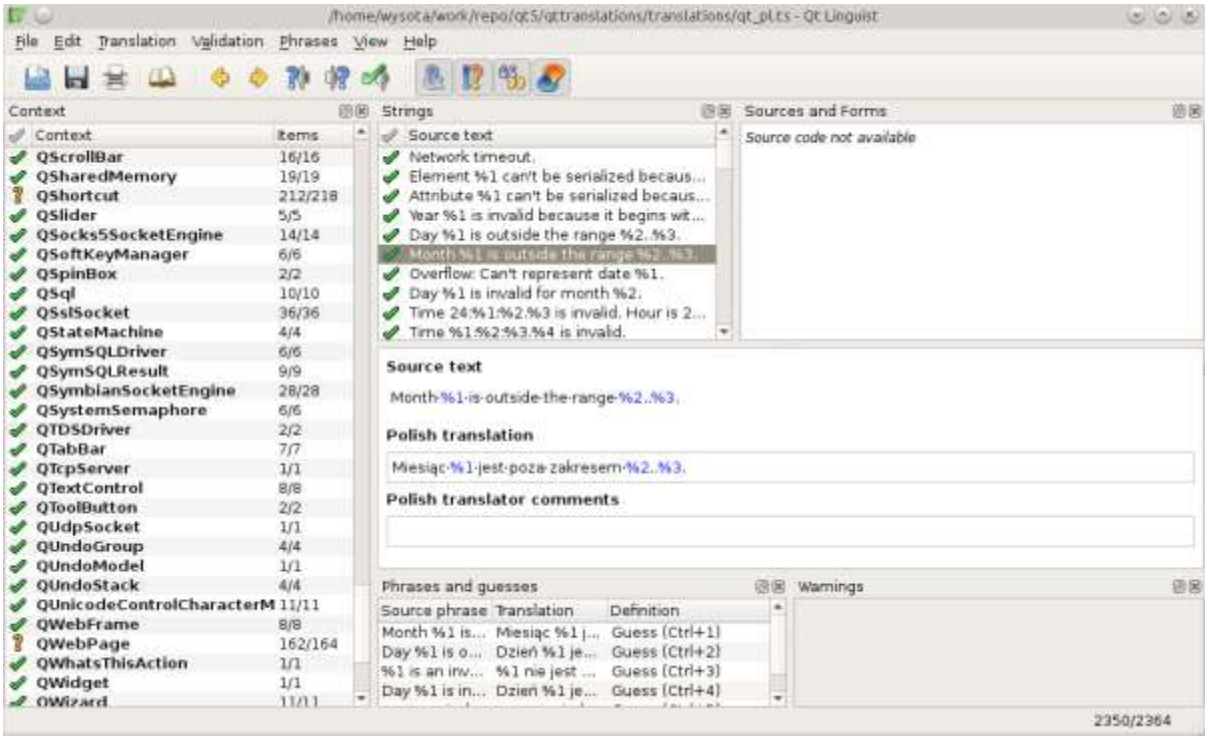
Chapter 11, Miscellaneous and Advanced Concepts

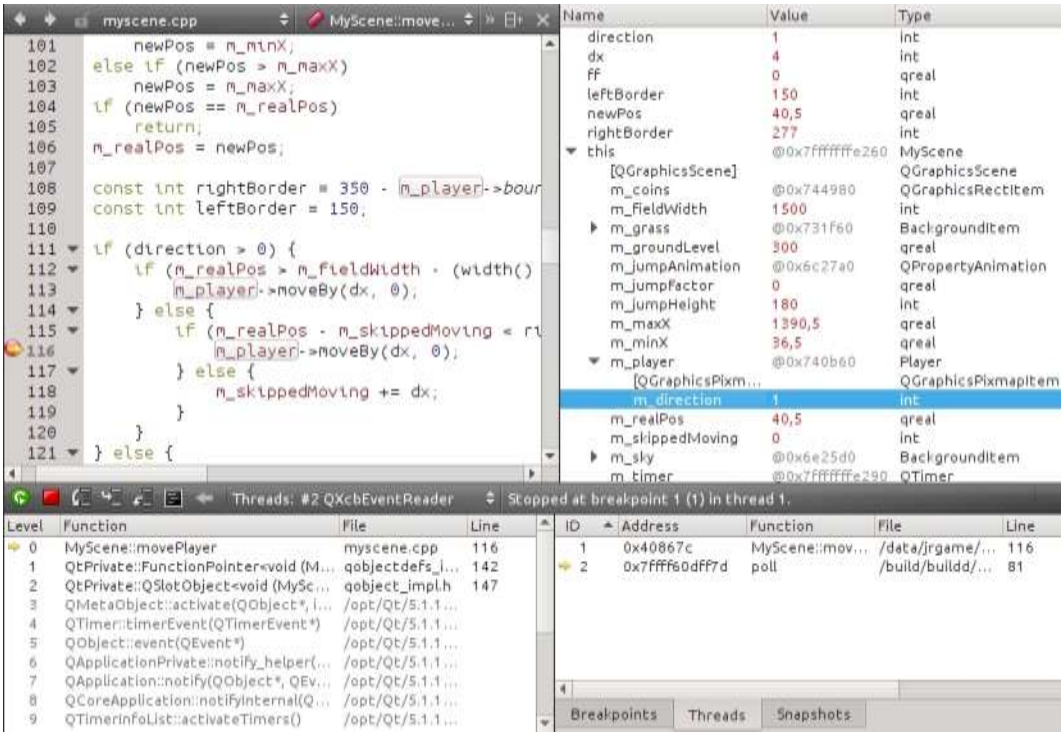


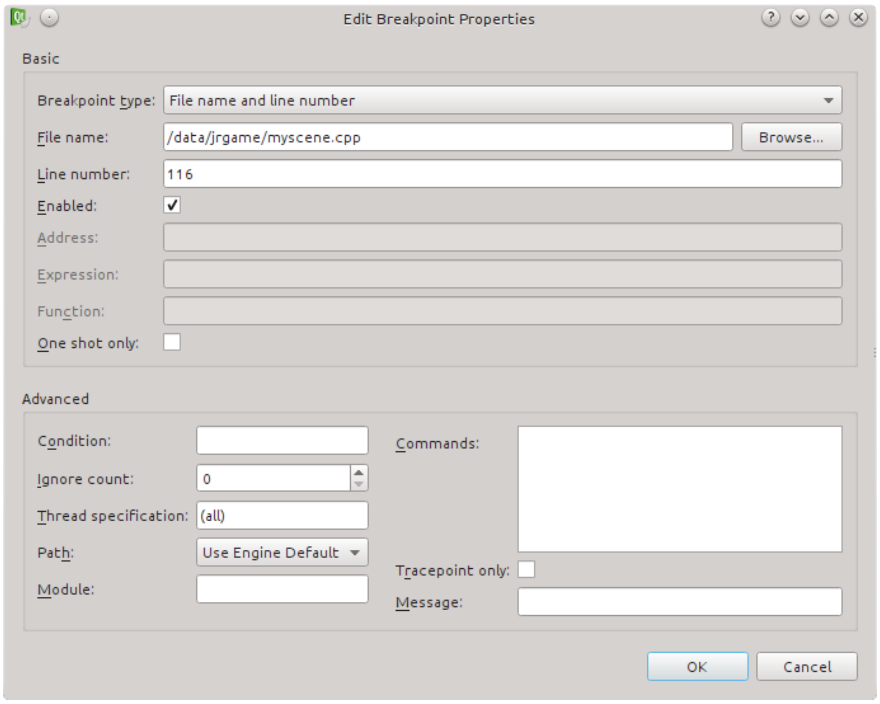



+y
-z
-x
+x
+z
-y

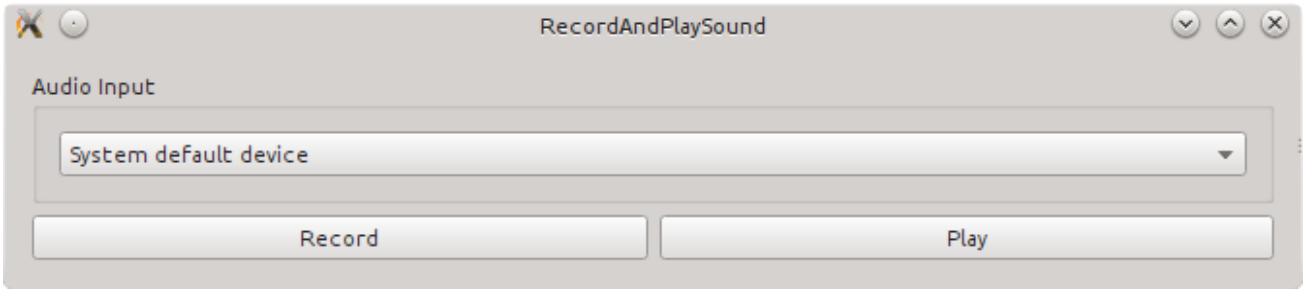

RecordAndPlaySound
Audio Input
System default device
Record
Play


/home/wysota/work/repo/qt5/qttranslations/translations/qt_pl.ts - Qt Linguist
File Edit Translation Validation Phrases View Help
Context
Strings
Sources and Forms
Source code not available
Source text
Month %1 is outside the range %2..%3.
Polish translation
Miesiąc %1 jest poza zakresem %2..%3.
Polish translator comments
Phrases and guesses
Warnings
2350/2364

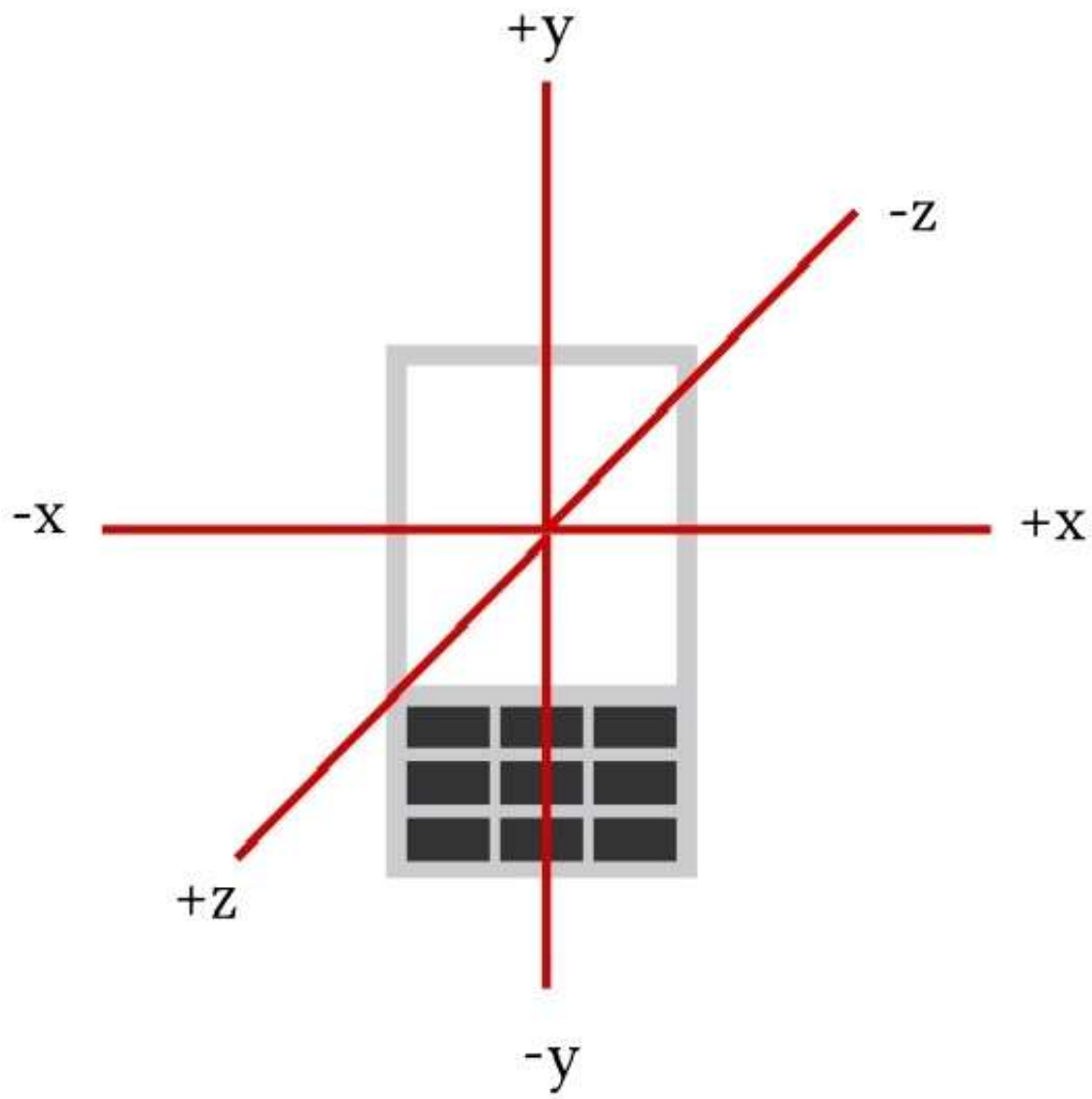

myscene.cpp
MyScene::move...
newPos = m_minX;
else if (newPos > m_maxX)
newPos = m_maxX;
if (newPos == m_realPos)
return;
m_realPos = newPos;
const int rightBorder = 350 - m_player->bour
const int leftBorder = 150;
if (direction > 0) {
if (m_realPos > m_fieldWidth - (width()
m_player->moveBy(dx, 0);
} else {
if (m_realPos - m_skippedMoving < ri
m_player->moveBy(dx, 0);
} else {
m_skippedMoving += dx;
}
}
} else {
Name
Value
Type
direction 1 int
dx 4 int
ff 0 qreal
leftBorder 150 int
newPos 40,5 qreal
rightBorder 277 int
this @0x7fffffffe260 MyScene
[QGraphicsScene] QGraphicsScene
m_coins @0x744980 QGraphicsRectItem
m_fieldWidth 1500 int
m_grass @0x731f60 BackgroundItem
m_groundLevel 300 qreal
m_jumpAnimation @0x6c27a0 QPropertyAnimation
m_jumpFactor 0 qreal
m_jumpHeight 180 int
m_maxX 1390,5 qreal
m_minX 36,5 qreal
m_player @0x740b60 Player
[QGraphicsPixm... QGraphicsPixmapItem
m_direction 1 int
m_realPos 40,5 qreal
m_skippedMoving 0 int
m_sky @0x6e25d0 BackgroundItem
m_timer @0x7fffffffe290 QTimer
Threads: #2 QXcbEventReader
Stopped at breakpoint 1 (1) in thread 1.
Level
Function
File
Line
0 MyScene::movePlayer myscene.cpp 116
1 QtPrivate::FunctionPointer<void (M... qobjectdefs_i... 142
2 QtPrivate::QSlotObject<void (MySc... qobject_impl.h 147
3 QMetaObject::activate(QObject*, i... /opt/Qt/5.1.1...
4 QTimer::timerEvent(QTimerEvent*) /opt/Qt/5.1.1...
5 QObject::event(QEvent*) /opt/Qt/5.1.1...
6 QApplicationPrivate::notify_helper(... /opt/Qt/5.1.1...
7 QApplication::notify(QObject*, QEv... /opt/Qt/5.1.1...
8 QCoreApplication::notifyInternal(Q... /opt/Qt/5.1.1...
9 QTimerInfoList::activateTimers() /opt/Qt/5.1.1...
ID
Address
Function
File
Line
1 0x40867c MyScene::mov... /data/jrgame/... 116
2 0x7ffff60dff7d poll /build/buildd/... 81
Breakpoints
Threads
Snapshots

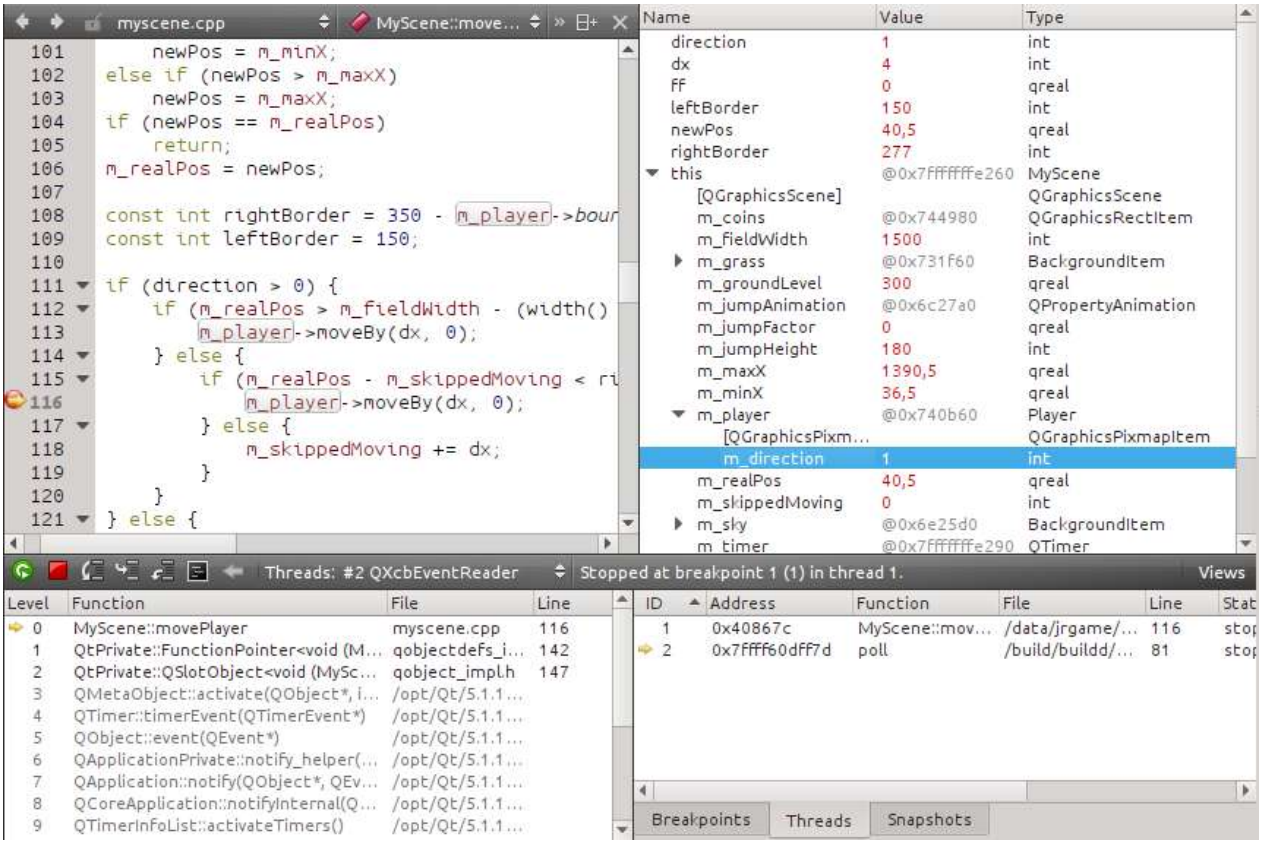



```
115        if (m_realPos - m_skippedMoving < rightBorder) {
116            m_player->moveBy(dx, 0);
117        } else {
118            m_skippedMoving += dx;
119        }
```



x: 15 y: -3




myscene.cpp
MyScene::move...
101 newPos = m_minX;
102 else if (newPos > m_maxX)
103 newPos = m_maxX;
104 if (newPos == m_realPos)
105 return;
106 m_realPos = newPos;
107
108 const int rightBorder = 350 - m_player->bour
109 const int leftBorder = 150;
110
111 if (direction > 0) {
112 if (m_realPos > m_fieldWidth - (width()
113 m_player->moveBy(dx, 0);
114 } else {
115 if (m_realPos - m_skippedMoving < ri
116 m_player->moveBy(dx, 0);
117 } else {
118 m_skippedMoving += dx;
119 }
120 }
121 } else {
Name Value Type
direction 1 int
dx 4 int
ff 0 qreal
leftBorder 150 int
newPos 40,5 qreal
rightBorder 277 int
this @0x7fffffffe260 MyScene
[QGraphicsScene] QGraphicsScene
m_coins @0x744980 QGraphicsRectItem
m_fieldWidth 1500 int
m_grass @0x731f60 BackgroundItem
m_groundLevel 300 qreal
m_jumpAnimation @0x6c27a0 QPropertyAnimation
m_jumpFactor 0 qreal
m_jumpHeight 180 int
m_maxX 1390,5 qreal
m_minX 36,5 qreal
m_player @0x740b60 Player
[QGraphicsPixm... QGraphicsPixmapItem
m_direction 1 int
m_realPos 40,5 qreal
m_skippedMoving 0 int
m_sky @0x6e25d0 BackgroundItem
m_timer @0x7fffffffe290 QTimer
Threads: #2 QXcbEventReader
Stopped at breakpoint 1 (1) in thread 1.
Views
Level Function File Line
0 MyScene::movePlayer myscene.cpp 116
1 QtPrivate::FunctionPointer<void (M... qobjectdefs_i... 142
2 QtPrivate::QSlotObject<void (MySc... qobject_impl.h 147
3 QMetaObject::activate(QObject*, i... /opt/Qt/5.1.1...
4 QTimer::timerEvent(QTimerEvent*) /opt/Qt/5.1.1...
5 QObject::event(QEvent*) /opt/Qt/5.1.1...
6 QApplicationPrivate::notify_helper(... /opt/Qt/5.1.1...
7 QApplication::notify(QObject*, QEv... /opt/Qt/5.1.1...
8 QCoreApplication::notifyInternal(Q... /opt/Qt/5.1.1...
9 QTimerInfoList::activateTimers() /opt/Qt/5.1.1...
ID Address Function File Line Stat
1 0x40867c MyScene::mov... /data/jrgame/... 116 stop
2 0x7ffff60dff7d poll /build/buildd/... 81 stop
Breakpoints
Threads
Snapshots