

QML Quick Reference

Basic Syntax

```
// Simple QML example
import QtQuick 2.6
Rectangle {
    width: 640
    height: 480
    Text {
        anchors.centerIn: parent
        text: "Hello, world!"
    }
    MouseArea {
        anchors.fill: parent
        onClicked: {
            Qt.quit()
        }
    }
}
```

QML Basic Types

bool	double	enumeration
int	list	real
string	url	var

Qt Quick Basic Types ("import QtQuick 2.6")

color	date	font
matrix4x4	point	quaternion
rect	size	vector2d
vector3d	vector4d	

Qt Quick XmlListModel QML Types ("import QtQuick.XmlListModel 2.0")

XmlListModel	XmlRole
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Qt Quick Window QML Types ("import QtQuick.Window 2.2")

CloseEvent	StackLayout
Screen	Window

Qt Quick Object Types ("import QtQuick 2.6")

Visual Types

Accessible	ItemLoader	SystemPalette
AnimatedImage	Rectangle	Text
AnimatedSprite	Repeater	Transform
BorderImage	Rotation	Translate
FontLoader	Scale	Window
Gradient	Screen	
GradientStop	Sprite	
Image	SpriteSequence	

States, Transitions and Animations

AnchorAnimatio	ParallelAnimation	PathCurve	Property	Sequential	StateGroup	SignalSpy
AnchorChanges	ParentAnimatio	PathInterpolator	Animation	Animation	Transition	TestCase
Animation	ParentChange	PathLine	Property Changes	Smoothed	UniformAnimator	
Controller	Path	PathPercent	Rotation Animation	Animation	Vector3dAnimation	
Behavior	PathAnimation	PathQuad	RotationAnimator	SpringAnimation	ViewTransition	
ColorAnimation	PathArc	PathSvg	ScaleAnimator	State	XAnimator	
NumberAnimation	PathAttribute	PauseAnimation	ScriptAction	StateChange	YAnimator	
OpacityAnimator	PathCubic	PropertyAction		Script		

Model/View

GridView	VisualDataGroup	Binding	TextMetrics
ListElement	VisualDataModel	Connections	Timer
ListModel	VisualItemModel	FontMetrics	WorkerScript
ListView	XmlListModel	ItemGrabResult	
Package	XmlRole	Matrix4x4	
PathView		OpenGLInfo	

Convenience

Graphical Effects

Flipable
GridMesh
ShaderEffect
ShaderEffect
Source

Positioning

PinchEvent	Column
RegExpValidator	Flow
Shortcut	Grid
TextEditTextInput	LayoutMirroring
TouchPoint	Positioner
WheelEvent	Row

Qt Test

SignalSpy
TestCase

Canvas

Canvas
CanvasGradient
CanvasImageData
CanvasPixelArray
Context2D
TextMetrics

Qt Quick Dialogs QML Types ("import QtQuick.Dialogs 1.2")

ColorDialog	FileDialog	MessageDialog
Dialog	FontDialog	

Qt Quick Layouts QML Types ("import QtQuick.Layouts 1.3")

ColumnLayout	Layout
GridLayout	RowLayout

Other QML Modules

QtAudioEngine 1.0	QtWebEngine 1.2
Enginio 1.0	QtWebSockets 1.0
Qt.labs.calendar 1.0	QtWebView 1.0
Qt.labs.controls 1.0	
Qt.labs.folderlistmodel 2.1	
Qt.labs.settings 1.0	
Qt.labs.templates 1.0	
Qt3D.Core 2.0	
Qt3D.Input 2.0	
Qt3D.Logic 2.0	
Qt3D.Render 2.0	
QtBluetooth 5.6	
QtCanvas3D 1.1	
QtGraphicalEffects 1.0	
QtLocation 5.6	
QtMultimedia 5.6	
QtNfc 5.6	
QtPositioning 5.6	
QtQml 2.2	
QtQml.Models 2.3	
QtQml.StateMachine 1.0	
QtQuick 2.6	
QtQuick.Controls 1.5	
QtQuick.Dialogs 1.2	
QtQuick.Extras 1.4	
QtQuick.Layouts 1.2	
QtQuick.LocalStorage 2.0	
QtQuick.Particles 2.0	
QtQuick.PrivateWidgets 1.1	
QtQuick.Scene3D 2.0	
QtQuick.Window 2.2	
QtQuick.XmlListModel 2.0	
QtSensors 5.6	
QtTest 1.0	
QtWebChannel 1.0	

Qt Quick Particles QML Types ("import QtQuick.Particles 2.0")

Affector	ItemParticle	Turbulence
Age	LineShape	Wander
AngleDirection	MaskShape	
Attractor	Particle	
CumulativeDirection	ParticleGroup	
CustomParticle	ParticlePainter	
Direction	ParticleSystem	
EllipseShape	PointDirection	
Emitter	RectangleShape	
Friction	Shape	
Gravity	SpriteGoal	
GroupGoal	TargetDirection	
ImageParticle	TrailEmitter	

Qt Quick Controls QML Types ("import QtQuick.Controls 1.5")

Action	MenuSeparator	TabView
ApplicationWindow	ProgressBar	TableView
BusyIndicator	RadioButton	TableView
Button	ScrollView	Column
Calendar	Slider	TextArea
CheckBox	SpinBox	TextField
ComboBox	SplitView	ToolBar
ExclusiveGroup	Stack	ToolButton
GroupBox	StackView	TreeView
Label	StackViewDelegate	
Menu	StatusBar	
MenuBar	Switch	
MenuItem	Tab	

QML Item Properties

activeFocus	anchors.left	childrenRect.width	layer.samplerName	states
activeFocusOnTab	anchors.leftMargin	childrenRect.x	layer.smooth	transform
anchors	nchor.margins	childrenRect.y	layer.sourceRect	transformOrigin
anchors.align	anchors.right	clip	layer.textureSize	transitions
WhenCentered	anchors.rightMargin	data	layer.textureMirroring	visible
anchors.baseline	anchors.top	enabled	layer.wrapMode	visibleChildren
anchors.baselineOffset	anchors.topMargin	focus	objectName	width
anchors.bottom	anchors.verticalCenter	height	opacity	x
anchors.bottomMargin	anchors.vertical	implicitHeight	parent	y
anchors.centerIn	CenterOffset	implicitWidth	resources	z
anchors.fill	antialiasing	layer.effect	rotation	
anchors.horizontalCenter	baselineOffset	layer.enabled	scale	
anchors.horizontal	children	layer.format	smooth	
CenterOffset	childrenRect.height	layer.mipmap	state	

QML Global Object

Qt Object

application	hsva	qsTrNoOp()
atob()	include()	qsTranslate()
binding()	inputMethod	qsTranslateNoOp()
btoa()	isQObject()	quaternion()
colorEqual()	lighter()	quit()
createComponent()	locale()	rect()
createQmlObject()	matrix4x4()	resolvedUrl()
darker()	md5()	rgba()
font()	openUrlExternally()	size()
fontFamilies()	platform	styleHints
formatDate()	point()	tint()
formatDateTime()	qsTr()	vector2d()
formatTime()	qsTrId()	vector3d()
hsla()	qsTrIdNoOp()	vector4d()

Qmlscene Options

Usage: qmlscene [options] filename

Options:

--maximized	Run maximized
--fullscreen	Run fullscreen
--transparent	Make the window transparent
--multisample	Enable multisampling (OpenGL anti-aliasing)
--no-version-detection	Do not try to detect the version of the .qml file
--slow-animations	Run all animations in slow motion
--resize-to-root	Resize the window to the size of the root item
--quit	Quit immediately after starting
--disable-context-sharing	Disable the use of a shared GL context for QtQuick Windows
--desktop	Force use of desktop GL
--gles	Force use of GLES
--software	Force use of software rendering
--scaling	Enable high DPI scaling
--no-scaling	Disable high DPI scaling
--verbose	Print version and graphical diagnostics for the run-time
-I path	Add path to the list of import paths
-B name file	Add a named bundle
-translation translationfile	Set the language to run in

QML Item Methods

childAt	mapFromItem
contains	mapToItem
forceActiveFocus	nextItemInFocusChain
grabToImage	

QML Profiler Options

qmlprofiler [options] [program] [program-options]
qmlprofiler [options] -a,-attach <hostname>

Options:

-p,-port <number>	TCP/IP port to use, default is 3768
-o,-output <file>	Save tracing data in <file>
--record <on off>	Controls whether recording starts immediately
--include <feature,...>	Comma-separated list of features to include when recording
--exclude <feature,...>	Comma-separated list of features to exclude when recording
--interactive	Manually control the recording from the command line
--verbose	Print debugging output
-h,-help	Displays help information
-v,-version	Displays version information

Debugging Functions

console.assert	console.profileEnd
console.count	console.time
console.debug	console.timeEnd
console.error	console.trace
console.exception	console.warn
console.info	console.error
console.log	print

QML Program Options

Usage: qml [options] [files]

General Options:

-h, -help	Print this usage information and exit
-v, -version	Print the version information and exit
-apptype [core gui widget]	Select which application class to use
	Default is gui
-quiet	Suppress all output
-I [path]	Prepend the given path to the import paths
-f [file]	Load the given file as a QML file
-config [file]	Load the given file as the configuration file
--	Arguments after this one are ignored by the launcher, but may be used within the QML application

GL options:

-desktop	Force use of desktop GL
-gles	Force use of GLES
-software	Force use of software rendering
-scaling	Enable High DPI scaling
-no-scaling	Disable High DPI scaling

Debugging options:

-verbose	Print information about what QML is doing, like specific file URLs being loaded
-translation [file]	Load the given file as the translations file
-dummy-data [directory]	Load QML files from the given directory as context properties
-slow-animations	Run all animations in slow motion
-fixed-animations	Run animations off animation tick rather than wall time

Can make QML files executable on Linux/Unix/POSIX systems by adding first line like the following:

```
#!/usr/bin/env qml
```

QML Environment Variables

QML2_IMPORT_PATH	QSG_INFO
QMLSCENE_DEVICE	QSG_NO_DEPTH_BUFFER
QMLSCENE_IMPORT_NAME	QSG_NO_STENCIL_BUFFER
QML_ANIMATION_TICK_DUMP	QSG_OPENGL_DEBUG
QML_BAD_GUI_RENDER_LOOP	QSG_PREFER_FULLSIZE
QML_CHECK_TYPES	GLYPHCACHE_TEXTURES
QML_DEBUG_LEAK_BACKTRACE	QSG_RENDERER_BATCH_NODE_THRESHOLD
QML_DISABLE_DISTANCEFIELD	QSG_RENDERER_BATCH_VERTEX_THRESHOLD
QML_DUMP_ERRORS	QSG_RENDERER_BUFFER_STRATEGY
QML_FBO_FLUSH_BEFORE_DETACH	QSG_RENDERER_DEBUG
QML_FBO_OVERLAY	QSG_RENDER_LOOP
QML_FORCE_THREADED_RENDERER	QSG_RENDER_TIMING
QML_IMPORT_TRACE	QSG_TRANSIENT_IMAGES
QML_LEAK_CHECK	QSG_VISUALIZE
QML_LOOKUP_HINTS	QT_HIGHDPI_DISABLE_2X_IMAGE_LOADING
QML_NO_TOUCH_COMPRESSION	QT_QUICK_CORE_PROFILE
QML_PARENT_TEST	QV4_FORCE_INTERPRETER
QML_PARTICLES_DEBUG	QV4_MM_AGGRESSIVE_GC
QML_USE_GLYPHCACHE_WORKAROUND	QV4_MM_MAXBLOCK_SHIFT
QML_VISUAL_TOUCH_DEBUGGING	QV4_MM_MAX_CHUNK_SIZE
QML_XHR_DUMP	QV4_MM_STATS
QSG_ANTIALIASING_METHOD	QV4_NO_INTERPRETER_STACK_SLOT_ALLOCATION
QSG_ATLAS_HEIGHT	QV4_NO_OPT
QSG_ATLAS_NO_BGRA_WORKAROUNDS	QV4_NO_REGALLOC
QSG_ATLAS_OVERLAY	QV4_NO_SSA
QSG_ATLAS_SIZE_LIMIT	QV4_PROFILE_WRITE_PERF_MAP
QSG_ATLAS_USE_BGRA_FALLBACK	QV4_SHOW_ASM
QSG_ATLAS_WIDTH	QV4_SHOW_IR
QSG_DISTANCEFIELD_ANTIALIASING	STATECHANGE_DEBUG
QSG_FIXED_ANIMATION_STEP	

QML JavaScript Debugger Options

Run application with option
-qmljsdebugger=port:
port from[,port to] [,host:
ip address][,block]