

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

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	Vector3dAnimation	
Behavior	PathAnimation	PathQuad	Animation	SpringAnimation	ViewTransition	
ColorAnimation	PathArc	PathSvg	RotationAnimator	State	XAnimator	
NumberAnimation	PathAttribute	PauseAnimation	ScaleAnimator	StateChange	YAnimator	
OpacityAnimator	PathCubic	PropertyAction	ScriptAction	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

Canvas

Flipable	Canvas
GridMesh	CanvasGradient
ShaderEffect	CanvasImageData
ShaderEffect	CanvasPixelArray
Source	Context2D
	TextMetrics

User Input

DoubleValidator	KeyEvent	PinchEvent
Drag	KeyNavigation	Column
DragEvent	Keys	Flow
DropArea	MouseArea	Grid
EnterKey	MouseEvent	LayoutMirroring
Flickable	MultiPoint	Positioner
FocusScope	TouchArea	Row
IntValidator	PinchArea	

Positioning

Column
Flow
Grid
LayoutMirroring
Positioner
Row

Qt Test

SignalSpy
TestCase

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

ColorDialog	FileDialog	MessageDialog
Dialog	FontDialog	

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

ColumnLayout	Layout
GridLayout	RowLayout

Other QML Modules

QtAudioEngine 1.0	QtTest 1.0
Enginio 1.0	QtWebChannel 1.0
Qt.labs.calendar 1.0	QtWebEngine 1.2
Qt.labs.controls 1.0	QtWebSockets 1.0
Qt.labs.folderlistmodel 2.1	QtWebView 1.0
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	

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

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

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

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

QML Item Properties

activeFocus	anchors.left	childrenRect.width	layer.samplerName	states
activeFocusOnTab	anchors.leftMargin	childrenRect.x	layer.smooth	transform
anchors	anchors.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.verticalCenterOffset	implicitHeight	parent	y
anchors.centerIn	anchors.verticalCenterOffset	implicitWidth	resources	z
anchors.fill	antialiasing	layer.effect	rotation	
anchors.horizontalCenter	baselineOffset	layer.enabled	scale	
anchors.horizontalCenterOffset	children	layer.format	smooth	
	childrenRect.height	layer.mipmap	state	

QML Global Object

Qt Object

application	hsva	qsTrNoOp()
atob()	include()	qsTranslate()
binding()	inputMethod	qsTranslateNoOp()
btoa()	isQtObject()	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
-l <i>path</i>	.....	Add <i>path</i> to the list of import paths
-B <i>name file</i>	.....	Add a named bundle
-translation <i>translationfile</i>	.....	Set the language to run in

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 <i>[core|gui|widget]</i>	.....	Select which application class to use
		Default is gui
-quiet	.....	Suppress all output
-l <i>[path]</i>	.....	Prepend the given path to the import paths
-f <i>[file]</i>	.....	Load the given file as a QML file
-config <i>[file]</i>	.....	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 <i>[file]</i>	.....	Load the given file as the translations file
-dummy-data <i>[directory]</i>	.....	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 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 <i><number></i>	.....	TCP/IP port to use, default is 3768
-o, --output <i><file></i>	.....	Save tracing data in <i><file></i>
--record <i><on|off></i>	.....	Controls whether recording starts immediately
--include <i><feature,...></i>	.....	Comma-separated list of features to include when recording
--exclude <i><feature,...></i>	.....	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 JavaScript Debugger Options

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

QML Environment Variables

QML2_IMPORT_PATH	QSG_FIXED_ANIMATION_STEP
QMLSCENE_DEVICE	QSG_INFO
QMLSCENE_IMPORT_NAME	QSG_NO_DEPTH_BUFFER
QML_ANIMATION_TICK_DUMP	QSG_NO_STENCIL_BUFFER
QML_BAD_GUI_RENDER_LOOP	QSG_OPENGL_DEBUG
QML_CHECK_TYPES	QSG_PREFER_FULLSIZE_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