

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
AnimatedImage	Rectangle
AnimatedSprite	Repeater
BorderImage	Rotation
FontLoader	Scale
Gradient	Screen
GradientStop	Sprite
Image	SpriteSequence

■ States, Transitions and Animations

AnchorAnimation	ParallelAnimation	PathCurve
AnchorChanges	ParentAnimation	PathInterpolator
Animation	ParentChange	PathLine
Controller	Path	PathPercent
Behavior	PathAnimation	PathQuad
ColorAnimation	PathArc	PathSvg
NumberAnimation	PathAttribute	PauseAnimation
OpacityAnimator	PathCubic	PropertyAction

■ Model/View

GridView	VisualDataGroup
ListElement	VisualDataModel
ListModel	VisualItemModel
ListView	XmlListModel
Package	XmlRole
PathView	

■ Convenience

Binding	TextMetrics
Connections	Timer
FontMetrics	WorkerScript
ItemGrabResult	
Matrix4x4	
OpenGLInfo	

■ User Input

DoubleValidator	KeyEvent
Drag	KeyNavigation
DragEvent	Keys
DropArea	MouseArea
EnterKey	MouseEvent
Flickable	MultiPoint
FocusScope	TouchArea
IntValidator	PinchArea

■ Positioning

Column
Flow
Grid
LayoutMirroring
Positioner
Row

■ Qt Test

SignalSpy
TestCase

■ Graphical Effects

Flipable
GridMesh
ShaderEffect
ShaderEffect
Source

■ Canvas

Canvas
CanvasGradient
CanvasImageData
CanvasPixelArray
Context2D
TextMetrics

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	TabView
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	

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	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	

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.fill	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()
btob()	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 <i>[options]</i> 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 <i>path</i>	Add <i>path</i> to the list of import paths
-B <i>name</i>	Add a named bundle
-translation <i>translationfile</i>	Set the language to run in

QML Item Methods	
childAt	mapFromItem
contains	mapToItem
forceActiveFocus	nextItemInFocusChain
grabToImage	

QML Profiler Options	
qmlprofiler <i>[options]</i> <i>[program]</i> <i>[program-options]</i>	
qmlprofiler <i>[options]</i> -a,-attach <i><hostname></i>	
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 Program Options	
Usage: qml <i>[options]</i> <i>[files]</i>	
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
-I <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: <i>#!/usr/bin/env qml</i>	

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