Qt Group

Qt Quick Specialist Certificate Curriculum

Qt 6.12 LTS

PUBLIC

1. Qt Quick Specialist (Qt 6.12 LTS)

This test is designed for experienced Qt developers pursuing advanced certification in Qt Quick and QML. It covers mastery of concepts such as animations, performance optimization, QML application development patterns, advanced QML and C++ integration, efficient image handling, and the Qt Quick Scene Graph. Successfully passing this test earns you the Qt Quick Specialist certificate.

The exam contains 30 single- and multi-select questions and the passing score is 60%.

Animations

- Animation elements
- Animation groups
- Animation thread
- Animation types
- Easing curves

States and transitions

- The concept of state in Qt Quick
- Managing state transitions
- PropertyChanges
- Transition-based animations
- Reversible transitions

Advanced QML topics

- Property qualifiers: default, required
- Type annotations
- JavaScript use
- Qt.createComponent(), Qt.createObject(), Qt.binding()
- Object incubation

Efficient Image Handling

- Graphical effects: ShaderEffect, MultiEffect
- Clipping, antialising
- QQuickImageProvider
- Large images: loading, size management
- Item layers

Advanced QML – C++ Integration

- Advanced type declarations: QML_EXTENDED, QML_FOREIGN, QML_UNCREATABLE, FINAL, CONSTANT, namespaces

Copyright © The Qt Company.
All rights reserved.

Public

- QQmEngine: threading, contexts
- Subclassing QQuickItem
- QQuickPaintedItem use
- Interface types
- Advanced use of C++ models
- Dynamically loaded objects and memory management

QML Modules

- Folder structure
- Files in modules
- Import path
- CMake commands

Performance Optimization

- Efficient QML: optimal delegate use, pragma commands
- Use of qmllint
- Asynchronous vs synchronous loading
- Qt Quick Compiler technologies: qmlcachegen, qmlsc and qlmtc

Scene Graph Rendering

- Rendering principles
- Custom Scene Graph nodes
- Rendering phases
- Scene graph rendering optimizations
- Qt Canvas Painter
- The concept of Rendering Hardware Interface

Copyright © The Qt Company.
All rights reserved.