

In-Depth QML

This 3-day course approaches common issues inherent to Qt/QML development. We cover a wide-range of advanced topics such as keyboard focus, gestures, virtual keyboard, unit-testing, profiling, rendering; and provide helpful design patterns and debugging tips. The target audience is the intermediate QML developer.

Course Availability:
On-site, open enrollment

Subject: Qt

Duration: 3 days

Course Prerequisites:

- Basic knowledge of programming with Qt on the desktop using widgets
- Basic QML experience

Course Outline

Day 1

User Input

- Keyboard Navigation and Focus
- Input Focus
 - Focus Order
 - Focus Property
 - Active Focus
 - FocusScope
- Virtual Keyboard
- Handling Keyboard Input
 - Key-Specific Handlers
 - All Keys Handler
 - Key Event Propagation
 - Event Propagation is Convenient
- Multi-Touch
 - Common Multi-Touch Gestures
 - Handling Overlapping Touch Areas

Dynamic Creation of Items

- Creating Items Dynamically
 - Procedural Method
 - Declarative Method
- Procedural Creation
- Procedural/Declarative Creation
- Declarative Creation
- Creating Multiple Items
- Repeaters

Debugging and Profiling QML Applications

- The Scene Graph
- QML Profiler

Day 2

Model/View

- Model/View Concepts
- Showing Simple Data
- Custom Models
- Proxy Models
- Delegates
- Tree Models

Multithreaded Programming

- Qt Multithreading
- Thread Synchronization and Primitives
- QtConcurrent

C++/QML Layer

- Layered Design
- Exporting QPainter based GUI Classes
- Exporting Scene Graph GUI classes
- Defining Custom Property Types
- Qt Serial Bus C++ Classes

Day 3

Testing

- QTest Framework in QML
 - Overview
 - Adding a Test Suite
 - Implementing a Test
 - Adding a Testing Main()
 - Running the Test
 - Simulating GUI Events
 - Mocking C++ Classes with QML
 - Signal Spy
- Design for Testability
- Notes on Google Test Framework and Qt

Additional Topics

- Animations
- QML Charts
- QML Canvas
- Particles
- OpenGL and QML
- Intro to Qt 3D

