Programming with Qt/QML

Material based on Qt 5.4
Introduction to QtQuick

- Fundamentals of Qt
  - The Story of Qt
  - Hello World with QtQuick
  - Important Application classes
  - Introducing Qt Creator
  - Practical Tips for Developers
- Introduction to Qt Quick
- Composing User Interfaces
  - Graphical Elements
  - Text Elements
  - Anchor Layout
- User Interaction
  - Mouse Input
  - Touch Input
  - Keyboard Input
- Components

Animations and Data Presentation

- Animations
- Presenting Data
  - Arranging Items
  - Simple Data Models
  - Views

Under the hood - Introduction to Qt

- Objects in Qt
  - Common Features of Qt’s Object Model
  - Object Communication using Signals & Slots
- Variants and Properties
  - Properties

Integrating QtQuick with Qt

- Integrating QML with C++
  - Exporting C++ objects to QML
  - Creating new QML elements
  - Using Custom Types
  - Attached Properties
  - Tips and Tricks
- Customized Drawing
  - Painting basics
  - Color Handling
  - Painting Operations
QML Topics
- States and Transitions
- Declarative State Machines
- In-depth Model/View
- Painting and Effects
- The Loader Element
- Modules
- Plug-ins
- Internationalization
- WebKit
- Drag and Drop
- QtQuick Controls

Qt Core Extras
- String Handling
- Container Classes
- Advanced Container Classes
- File I/O
- Memory mapped files
- Smart Pointers in Qt

Modern C++ Quick Tour
- C++11 Intro
- Explicit Virtual Overrides
- Uniform Initialization
- Constructors
- Type Inference
- Range-Based For Loop
- Lambdas
- Functional Programming

Multithreading
- Concepts
- Synchronization Primitives
- Foundation
- QtConcurrent
- Atomic Operations

Supplemental Topics

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Model/View
- Item Widgets
- Model/View Concept
- Custom Models
- Tree Models
- Value based models
- Proxy Models
- Item Views
- Delegates
- Selection
- Drag and Drop

XML, JSON and SQL
- Basic XML API's
- XPath, XQuery and XSLT
- XML Schema
- JSON
- SQL Database API

Application Infrastructure
- The Event System
- Printing
- Internationalization
- Plug-ins
- State Machine Framework
- Resources
- Settings
- Platform, device, locale or resolution specific files
- Multimedia with Phonon

Development and Testing
- Deployment
- Development Tools for Linux
- QMake
- Some Thoughts About Portability
- Qt Debugging Aids
- QTestLib
- QTestLib (QML)
- Testing with Squish
- Introduction to Git
- Introduction to CMake
### Graphics and Styling
- Graphics View
- Graphics View II
- QImage
- Custom Image Formats
- OpenGL in Qt
- 2D transformations

### Interprocess Communication
- Network Programming
- QtDBus
- QtDBus II
- QProcess
- Shared Memory with Qt

### Qt Widgets
- QtWidgets
- Main Windows
- WebKit (C++)
- Application Scripting

### Qt for Embedded Linux
- Adaptation
- QPA

### Qt for Android
- Setup
- Extending using JNI
- Qt on Android tips and tricks

### Qt for iOS
- Setup
- Tips and Tricks