Advanced Programming with QML

Based on Qt 5.9, created on February 11, 2019

KDAB

The Qt, OpenGL and C++ Experts
Fundamentals of Qt
- The Story of Qt
- "Hello World" with QtQuick
- Important Application Classes
- Introducing Qt Creator
- Practical Tips for Developers

Under the Hood - Introduction to Qt
- Objects in Qt
  - Common Features of Qt's Object Model
  - Qt Meta Object System
  - Object Communication Using Signals & Slots
  - Defining Invokable Methods
- Variants and Properties
  - Variants
  - Properties

Integrating QML with C++
- Exporting Data and Functions to QML
  - Exporting Values to QML
  - Exporting Qt Objects to QML
- Creating New QML Elements
  - Creating Non-GUI Elements
  - Creating GUI Elements
- Advanced Custom Property Types
  - Grouped Properties
  - Collections of Custom Types
  - Attached Properties
- Tips and Tricks

Advanced Qt/QML
- Advanced QML and C++ Integration
  - Advanced Component Creation
  - QML C++ Singletons
  - QJSValue
  - qmlRegisterType
- Further Qml and OpenGL Integration
  - OpenGL underlays and overlays
  - Controlling the Rendering
- The (basic) OpenGL pipeline
- Advanced QML Performance
  - Advanced QML SceneGraph
  - Texture Compression
- Advanced Animations
  - Animations
  - Animators
### QML Topics
- States and Transitions
- Declarative State Machines
- In-depth Model/View
- Painting and Effects
- JavaScript in QML
- Modules
- Plug-ins
- WebEngine
- WebKit
- Drag and Drop
- Layouts
- QtQuick Controls
- QtQuick Controls 2

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

### Modern C++ Quick Tour
- Introduction to Modern C++
- Explicit Virtual Overrides
- Uniform Initialization
- Constructors
- Type Inference
- Range-Based for Loop
- Lambdas
- Functional Programming

### Multithreading
- Concepts
- Synchronization Primitives
- Foundation
- QtConcurrent
- Atomic Operations
- Relation to Model/View

### Model/View
- Concepts
- Models
- ObjectModel

### XML, JSON and SQL
- Basic XML APIs
- 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
- Visual Studio Integration
- Deployment
- Development Tools for Linux
- QMake
- Some Thoughts About Portability
- Qt Debugging Aids
- QtTestLib
- Testing with Squish
- Introduction to Git
- Introduction to CMake