## **Qt Tutorials Course Outline Bryan Cairns**

## **Qt Core - Core functionality**

- Primer
  - Installing Qt Creator
    - Download and Install
    - Installation Options
    - Paid and Free version
    - Licensing issues
  - Project Types
    - Console
    - Widget
    - QML
    - Library
    - Unit Testing
  - Variables and Comments
    - Comments
    - Numbers
    - Booleans
    - Const
    - Enums
    - Structs
    - Classes
    - Object orientated programming
  - Flow Control
    - IF THEN ELSE
    - Switch
    - Do While
    - For and For Each
  - Error Handling
    - Try Catch
    - Finally
    - Catch All
  - Functions
    - Creating
    - Returning values
    - By value
    - By reference
  - Pointers
    - What are pointers
    - Stack vs Heap
    - Creating
    - Deleting

- Why use pointers
- Scope
  - Scope in main
  - Scope in flow control
  - Scope in functions
- Imports
  - What are imports
  - Why use imports
  - Working with imports
- Classes
  - Creating
  - Inheriting
  - Overriding
  - Importing
  - Name Spaces
  - Static values
- Macros
  - QObject Macro
  - qDeleteAll
  - qDebug
  - qFill
  - qSort
  - qCopy
  - qFind
  - qSort
- QMake
  - Working with make files
  - Including files
  - PWD
  - Adding libs
- Beginner
  - Types
    - QObject
    - QString
    - QByteArray
    - QDate
    - QTime
    - QDateTime
    - QVariant
  - Collections
    - QList
    - QSet
    - QHash
    - QMap

- Pointers
  - Child
  - QWeakPointer
  - QScopedPointer
  - QsharedPointer
- Signals and Slots
  - Signals
  - Slots
  - Connect
  - Disconnect
  - Connection Types
  - Q\_Property
- Intermediate
  - Directories
    - Add
    - Edit
    - Delete
    - List
    - Properties
  - Files
    - Create
    - Append
    - Read
    - Write
    - Delete
    - Properties
  - o Timer
    - Single-shot
    - Recurring
  - Operating System
    - QSysInfo
    - Run time OS W\_OS\_LINUX
    - QProcess
- Advanced
  - Models
  - Threads
    - Thread
    - Concurence
  - Sockets
    - TCP Client
    - TCP Server
    - UDP

## Qt Widgets - Graphic user interface using the Qt widgets

- BeginnerIntermediate
- Advanced

## Qt QML

- Beginner
- Intermediate
- Advanced