

## Application Development With Qt Creator 2nd Edition Format

Mastering GUI Programming with PythonQt 5 ProjectsC++ GUI Programming with Qt4Application Development with Qt Creator - Second EditionMastering Qt 5Advanced C++ Programming CookbookOpenCV EssentialsLearn Qt 5Game Programming Using Qt: Beginner's GuideHands-On GUI Application Development in GoHands-On High Performance Programming with Qt 5C++ GUI Programming with Qt 4Qt5 C++ GUI Programming CookbookComputer SystemsApplication Development with Qt CreatorGetting Started with Qt 5Hands-On Mobile and Embedded Development with Qt 5Hands-On GUI Programming with C++ and Qt5Game Programming using Qt 5 Beginner's GuideExploring Raspberry PiEnd to End GUI Development with Qt5OpenCV 2 Computer Vision Application Programming CookbookMastering Qt 5Application Development with Qt CreatorFoundations of Qt DevelopmentGui Programming With PythonRapid GUI Programming with Python and QtThe Book of Qt 4Qt 5 ProjectsQt 5 and OpenCV 4 Computer Vision ProjectsQt 5 BlueprintsComputer Vision with OpenCV 3 and Qt5Qt5 C++ GUI Programming CookbookApplication Development with Qt CreatorIntroduction to Design Patterns in C++ with QtExploring BeagleBoneLearning Image Processing with OpenCVAdvanced Qt ProgrammingGUI Design HandbookHands-On Embedded Programming with Qt

### Mastering GUI Programming with Python

If you are a competent C++ programmer and want to learn the tricks of image processing with OpenCV, then this book is for you. A basic understanding of image processing is required.

### Qt 5 Projects

An In-depth guide updated with the latest version of Qt 5.11 including new features such as Quick Controls and Qt Gamepad Key Features Unleash the power of Qt 5.11 with C++ Build applications using Qt Widgets (C++) or Qt Quick (QML) Create cross-platform applications for mobile and desktop platforms with Qt 5 Book Description Qt 5.11 is an app development framework that provides a great user experience and develops full capability applications with Qt Widgets, QML, and even Qt 3D. Whether you're building GUI prototypes or fully-fledged cross-platform GUI applications with a native look and feel, Mastering Qt 5 is your fastest, easiest, and most powerful solution. This book addresses various challenges and teaches you to successfully develop cross-platform applications using the Qt framework, with the help of well-organized projects. Working through this book, you will gain a better understanding of the Qt framework, as well as the tools required to resolve serious issues, such as linking, debugging, and multithreading. You'll start off your journey by discovering the new Qt 5.11 features, soon followed by exploring different platforms and learning to tame them. In addition to this, you'll interact with a gamepad using Qt Gamepad. Each chapter is a logical step for you to complete in order to master Qt. By the end of this book, you'll have created an application that has been tested and is ready to be shipped. What you will learn

Create stunning UIs with Qt Widgets and Qt Quick 2 Develop powerful, cross-platform applications with the Qt framework Design GUIs with the Qt Designer and build a library in it for UI previews Handle user interaction with the Qt signal or slot mechanism in C++ Prepare a cross-platform project to host a third-party library Use the Qt Animation framework to display stunning effects Deploy mobile apps with Qt and embedded platforms Interact with a gamepad using Qt Gamepad Who this book is for Mastering Qt 5 is for developers and programmers who want to build GUI-based applications. C++ knowledge is necessary, and knowing QT basics will help you get the most out of this book.

## **C++ GUI Programming with Qt4**

Master application development by writing succinct, robust, and reusable code with Qt 5 About This Book Unleash the power of Qt 5 with C++14 Integrate useful third-party libraries such as OpenCV Package and deploy your application on multiple platforms Who This Book Is For This book will appeal to developers and programmers who would like to build GUI-based applications. Knowledge of C++ is necessary and the basics of Qt would be helpful. What You Will Learn Create stunning UIs with Qt Widget and Qt Quick Develop powerful, cross-platform applications with the Qt framework Design GUIs with the Qt Designer and build a library in it for UI preview Handle user interaction with the Qt signal/slot mechanism in C++ Prepare a cross-platform project to host a third-party library Build a Qt application using the OpenCV API Use the Qt Animation framework to display stunning effects Deploy mobile apps with Qt and embedded platforms In Detail Qt 5.7 is an application development framework that provides a great user experience and develops full-capability applications with Qt Widgets, QML, and even Qt 3D. This book will address challenges in successfully developing cross-platform applications with the Qt framework. Cross-platform development needs a well-organized project. Using this book, you will have a better understanding of the Qt framework and the tools to resolve serious issues such as linking, debugging, and multithreading. Your journey will start with the new Qt 5 features. Then you will explore different platforms and learn to tame them. Every chapter along the way is a logical step that you must take to master Qt. The journey will end in an application that has been tested and is ready to be shipped. Style and approach This is an easy-to-follow yet comprehensive guide to building applications in Qt. Each chapter covers increasingly advanced topics, with subjects grouped according to their complexity as well as their usefulness. Packed with practical examples and explanations, Mastering Qt contains everything you need to take your applications to the next level.

## **Application Development with Qt Creator - Second Edition**

In-depth instruction and practical techniques for buildingwith the BeagleBone embedded Linux platform Exploring BeagleBone is a hands-on guide to bringinggadgets, gizmos, and robots to life using the popular BeagleBoneembedded Linux platform. Comprehensive content and deep detailprovide more than just a BeagleBone instructionmanual—you'll also learn the underlying engineeringtechniques that will allow you to create your own projects. Thebook begins with a foundational primer on essential skills, andthen gradually moves into communication, control, and advancedapplications using C/C++,

allowing you to learn at your own pace. In addition, the book's companion website features instructional videos, source code, discussion forums, and more, to ensure that you have everything you need. The BeagleBone's small size, high performance, low cost, and extreme adaptability have made it a favorite development platform, and the Linux software base allows for complex yet flexible functionality. The BeagleBone has applications in smart buildings, robot control, environmental sensing, to name a few; and, expansion boards and peripherals dramatically increase the possibilities. Exploring BeagleBone provides a reader-friendly guide to the device, including a crash course in computer engineering. While following step by step, you can: Get up to speed on embedded Linux, electronics, and programming Master interfacing electronic circuits, buses and modules, with practical examples Explore the Internet-connected BeagleBone and the BeagleBone with a display Apply the BeagleBone to sensing applications, including video and sound Explore the BeagleBone's Programmable Real-Time Controllers Hands-on learning helps ensure that your new skills stay with you, allowing you to design with electronics, modules, or peripherals even beyond the BeagleBone. Insightful guidance and online peer support help you transition from beginner to expert as you master the techniques presented in Exploring BeagleBone, the practical handbook for the popular computing platform.

## Mastering Qt 5

A complete guide to designing and building fun games with Qt and Qt Quick 2 using associated toolsets About This Book Learn to create simple 2D to complex 3D graphics and games using all possible tools and widgets available for game development in Qt Understand technologies such as QML, Qt Quick, OpenGL, and Qt Creator, and learn the best practices to use them to design games Learn Qt with the help of many sample games introduced step-by-step in each chapter Who This Book Is For If you want to create great graphical user interfaces and astonishing games with Qt, this book is ideal for you. Any previous knowledge of Qt is not required, however knowledge of C++ is mandatory. What You Will Learn Install Qt on your system Understand the basic concepts of every Qt game and application Develop 2D object-oriented graphics using Qt Graphics View Build multiplayer games or add a chat function to your games with Qt's Network module Script your game with Qt Script Program resolution-independent and fluid UI using QML and Qt Quick Control your game flow as per the sensors of a mobile device See how to test and debug your game easily with Qt Creator and Qt Test In Detail Qt is the leading cross-platform toolkit for all significant desktop, mobile, and embedded platforms and is becoming more popular by the day, especially on mobile and embedded devices. Despite its simplicity, it's a powerful tool that perfectly fits game developers' needs. Using Qt and Qt Quick, it is easy to build fun games or shiny user interfaces. You only need to create your game once and deploy it on all major platforms like iOS, Android, and WinRT without changing a single source file. The book begins with a brief introduction to creating an application and preparing a working environment for both desktop and mobile platforms. It then dives deeper into the basics of creating graphical interfaces and Qt core concepts of data processing and display before you try creating a game. As you progress through the chapters, you'll learn to enrich your games by implementing network connectivity and employing scripting. We then delve into Qt Quick, OpenGL, and various other tools to add game logic, design animation, add game physics, and

build astonishing UI for the games. Towards the final chapters, you'll learn to exploit mobile device features such as accelerators and sensors to build engaging user experiences. If you are planning to learn about Qt and its associated toolsets to build apps and games, this book is a must have. Style and approach This is an easy-to-follow, example-based, comprehensive introduction to all the major features in Qt. The content of each chapter is explained and organized around one or multiple simple game examples to learn Qt in a fun way.

## **Advanced C++ Programming Cookbook**

Create visually appealing and feature-rich applications by using Qt 5 and the C++ language

**Key Features**

- Explore Qt 5's powerful features to easily design your GUI application
- Leverage Qt 5 to build attractive cross-platform applications
- Work with Qt modules for multimedia, networking, and location, to customize your Qt applications

**Book Description** Qt 5, the latest version of Qt, enables you to develop applications with complex user interfaces for multiple targets. It provides you with faster and smarter ways to create modern UIs and applications for multiple platforms. This book will teach you to design and build graphical user interfaces that are functional, appealing, and user-friendly. In the initial part of the book, you will learn what Qt 5 is and what you can do with it. You will explore the Qt Designer, discover the different types of widgets generally used in Qt 5, and then connect your application to the database to perform dynamic operations. Next, you will be introduced to Qt 5 chart which allows you to easily render different types of graphs and charts and incorporate List View Widgets in your application. You will also work with various Qt modules, like QtLocation, QtWebEngine, and the networking module through the course of the book. Finally, we will focus on cross-platform development with QT 5 that enables you to code once and run it everywhere, including mobile platforms. By the end of this book, you will have successfully learned about high-end GUI applications and will be capable of building many more powerful, cross-platform applications. What you will learn

- Implement tools provided by Qt 5 to design a beautiful GUI
- Understand different types of graphs and charts supported by Qt 5
- Create a web browser using the Qt 5 WebEngine module and web view widget
- Connect to the MySQL database and display data obtained from it onto the Qt 5 GUI
- Incorporate the Qt 5 multimedia and networking module in your application
- Develop Google Map-like applications using Qt 5's location module
- Discover cross-platform development by exporting the Qt 5 application to different platforms
- Uncover the secrets behind debugging Qt 5 and C++ applications

**Who this book is for** This book will appeal to developers and programmers who would like to build GUI-based applications. Basic knowledge of C++ is necessary and the basics of Qt would be helpful.

## **OpenCV Essentials**

A recipe-based guide to refining your C++ programming skills with the help of coding best practices, advanced programming concepts, and the latest features of C++17 and C++20

**Key Features**

- Learn how to develop and design your own libraries
- Find solutions to your app development problems and implement them in a highly reusable manner, following library development best practices
- Explore advanced C++ features such as containers, coroutines, and modules

**Book Description** If you think you've mastered C++ and know everything it takes to

write robust applications, you'll be in for a surprise. With this book, you'll gain comprehensive insights into C++, covering exclusive tips and interesting techniques to enhance your app development process. You'll kick off with the basic principles of library design and development, which will help you understand how to write reusable and maintainable code. You'll then discover the importance of exception safety, and how you can avoid unexpected errors or bugs in your code. The book will take you through the modern elements of C++, such as move semantics, type deductions, and coroutines. As you advance, you'll delve into template programming - the standard tool for most library developers looking to achieve high code reusability. You'll explore the STL and learn how to avoid common pitfalls while implementing templates. Later, you'll learn about the problems of multithreaded programming such as data races, deadlocks, and thread starvation. You'll also learn high-performance programming by using benchmarking tools and libraries. Finally, you'll discover advanced techniques for debugging and testing to ensure code reliability. By the end of this book, you'll have become an expert at C++ programming and will have gained the skills to solve complex development problems with ease. What you will learn

- Solve common C++ development problems by implementing solutions in a more generic and reusable way
- Achieve different levels of exception safety guarantees by introducing precise declarations
- Write library-quality code that meets professional standards
- Practice writing reliable, performant code that exposes consistent behavior in programs
- Understand why you need to implement design patterns and how it's done
- Work with complex examples to understand various aspects of good library design

Who this book is for This book is for intermediate and expert-level C++ developers who are looking to explore the lesser known functionalities of the language to improve the efficiency of their code and the way they develop applications. Basic knowledge of object-oriented programming concepts and the Standard Template Library (STL) is assumed.

### Learn Qt 5

Blend the power of Qt with OpenCV to build cross-platform computer vision applications

Key Features

- Start creating robust applications with the power of OpenCV and Qt combined
- Learn from scratch how to develop cross-platform computer vision applications
- Accentuate your OpenCV applications by developing them with Qt

Book Description Developers have been using OpenCV library to develop computer vision applications for a long time. However, they now need a more effective tool to get the job done and in a much better and modern way. Qt is one of the major frameworks available for this task at the moment. This book will teach you to develop applications with the combination of OpenCV 3 and Qt5, and how to create cross-platform computer vision applications. We'll begin by introducing Qt, its IDE, and its SDK. Next you'll learn how to use the OpenCV API to integrate both tools, and see how to configure Qt to use OpenCV. You'll go on to build a full-fledged computer vision application throughout the book. Later, you'll create a stunning UI application using the Qt widgets technology, where you'll display the images after they are processed in an efficient way. At the end of the book, you'll learn how to convert OpenCV Mat to Qt QImage. You'll also see how to efficiently process images to filter them, transform them, detect or track objects as well as analyze video. You'll become better at developing OpenCV applications.

What you will learn

- Get an introduction to Qt IDE and SDK
- Be introduced to

OpenCV and see how to communicate between OpenCV and Qt ● Understand how to create UI using Qt Widgets ● Learn to develop cross-platform applications using OpenCV 3 and Qt 5 ● Explore the multithreaded application development features of Qt5 ● Improve OpenCV 3 application development using Qt5 ● Build, test, and deploy Qt and OpenCV apps, either dynamically or statically ● See Computer Vision technologies such as filtering and transformation of images, detecting and matching objects, template matching, object tracking, video and motion analysis, and much more ● Be introduced to QML and Qt Quick for iOS and Android application development Who this book is for This book is for readers interested in building computer vision applications. Intermediate knowledge of C++ programming is expected. Even though no knowledge of Qt5 and OpenCV 3 is assumed, if you're familiar with these frameworks, you'll benefit.

## **Game Programming Using Qt: Beginner's Guide**

## **Hands-On GUI Application Development in Go**

Create image processing, object detection and face recognition apps by leveraging the power of machine learning and deep learning with OpenCV 4 and Qt 5 Key Features Gain practical insights into code for all projects covered in this book Understand modern computer vision concepts such as character recognition, image processing and modification Learn to use a graphics processing unit (GPU) and its parallel processing power for filtering images quickly Book Description OpenCV and Qt have proven to be a winning combination for developing cross-platform computer vision applications. By leveraging their power, you can create robust applications with both an intuitive graphical user interface (GUI) and high-performance capabilities. This book will help you learn through a variety of real-world projects on image processing, face and text recognition, object detection, and high-performance computing. You'll be able to progressively build on your skills by working on projects of increasing complexity. You'll begin by creating an image viewer application, building a user interface from scratch by adding menus, performing actions based on key-presses, and applying other functions. As you progress, the book will guide you through using OpenCV image processing and modification functions to edit an image with filters and transformation features. In addition to this, you'll explore the complex motion analysis and facial landmark detection algorithms, which you can use to build security and face detection applications. Finally, you'll learn to use pretrained deep learning models in OpenCV and GPUs to filter images quickly. By the end of this book, you will have learned how to effectively develop full-fledged computer vision applications with OpenCV and Qt. What you will learn Create an image viewer with all the basic requirements Construct an image editor to filter or transform images Develop a security app to detect movement and secure homes Build an app to detect facial landmarks and apply masks to faces Create an app to extract text from scanned documents and photos Train and use cascade classifiers and DL models for object detection Build an app to measure the distance between detected objects Implement high-speed image filters on GPU with Open Graphics Library (OpenGL) Who this book is for This book is for engineers and developers who are familiar with both Qt and OpenCV frameworks and are capable of creating simple projects using them, but want to build their skills to create professional-level projects using them. Familiarity with

the C++ language is a must to follow the example source codes in this book.

## **Hands-On High Performance Programming with Qt 5**

Master C++ “The Qt Way” with Modern Design Patterns and Efficient Reuse This fully updated, classroom-tested book teaches C++ “The Qt Way,” emphasizing design patterns and efficient reuse. Readers will master both the C++ language and Qt libraries, as they learn to develop maintainable software with well-defined code layers and simple, reusable classes and functions. Every chapter of this edition has been improved with new content, better organization, or both. Readers will find extensively revised coverage of QObjects, Reflection, Widgets, Main Windows, Models and Views, Databases, Multi-Threaded Programming, and Reflection. This edition introduces the powerful new Qt Creator IDE; presents new multimedia APIs; and offers extended coverage of Qt Designer and C++ Integration. It has been restructured to help readers start writing software immediately and write robust, effective software sooner. The authors introduce several new design patterns, add many quiz questions and labs, and present more efficient solutions relying on new Qt features and best practices. They also provide an up-to-date C++ reference section and a complete application case study. Master C++ keywords, literals, identifiers, declarations, types, and type conversions. Understand classes and objects, organize them, and describe their interrelationships. Learn consistent programming style and naming rules. Use lists, functions, and other essential techniques. Define inheritance relationships to share code and promote reuse. Learn how code libraries are designed, built, and reused. Work with QObject, the base class underlying much of Qt. Build graphical user interfaces with Qt widgets. Use templates to write generic functions and classes. Master advanced reflective programming techniques. Use the Model-View framework to cleanly separate data and GUI classes. Validate input using regular expressions and other techniques. Parse XML data with SAX, DOM, and QDomStreamReader. Master today’s most valuable creational and structural design patterns. Create, use, monitor, and debug processes and threads. Access databases with Qt’s SQL classes. Manage memory reliably and efficiently. Understand how to effectively manage QThreads and use QtConcurrent algorithms. [Click here to obtain supplementary materials for this book.](#)

## **C++ GUI Programming with Qt 4**

This book is intended for C++ developers who want to learn how to implement the main techniques of OpenCV and get started with it quickly. Working experience with computer vision / image processing is expected.

## **Qt5 C++ GUI Programming Cookbook**

Explore Qt Creator, Qt Quick, and QML to design and develop applications that work on desktop, mobile, embedded, and IoT platforms Key Features Build a solid foundation in Qt by learning about its core classes, multithreading, File I/O, and networking Learn GUI programming and build custom interfaces using Qt Widgets, Qt Designer, and QML Use the latest features of C++17 for improving the performance of your Qt applications Book Description Qt is a powerful

development framework that serves as a complete toolset for building cross-platform applications, helping you reduce development time and improve productivity. Completely revised and updated to cover C++17 and the latest developments in Qt 5.12, this comprehensive guide is the third edition of *Application Development with Qt Creator*. You'll start by designing a user interface using Qt Designer and learn how to instantiate custom messages, forms, and dialogues. You'll then understand Qt's support for multithreading, a key tool for making applications responsive, and the use of Qt's Model-View-Controller (MVC) to display data and content. As you advance, you'll learn to draw images on screen using Graphics View Framework and create custom widgets that interoperate with Qt Widgets. This Qt programming book takes you through Qt Creator's latest features, such as Qt Quick Controls 2, enhanced CMake support, a new graphical editor for SCXML, and a model editor. You'll even work with multimedia and sensors using Qt Quick, and finally develop applications for mobile, IoT, and embedded devices using Qt Creator. By the end of this Qt book, you'll be able to create your own cross-platform applications from scratch using Qt Creator and the C++ programming language. What you will learn

- Create programs from scratch using the Qt framework and C++ language
- Compile and debug your Qt Quick and C++ applications using Qt Creator
- Implement map view with your Qt application and display device location on the map
- Understand how to call Android and iOS native functions from Qt C++ code
- Localize your application with Qt Linguist
- Explore various Qt Quick components that provide access to audio and video playbacks
- Develop GUI applications using both Qt and Qt Quick

Who this book is for

If you are a beginner looking to harness the power of Qt and the Qt Creator framework for cross-platform development, this book is for you. Although no prior knowledge of Qt and Qt Creator is required, basic knowledge of C++ programming is assumed.

## Computer Systems

Presenting hints on developing user-friendly applications, Molkenstin explores tools needed to create dialog boxes, steps to follow when developing a GUI-based application, and how to visualize data using Qt's "model-view concept."

## Application Development with Qt Creator

The Only Official, Best-Practice Guide to Qt 4.3 Programming Using Trolltech's Qt you can build industrial-strength C++ applications that run natively on Windows, Linux/Unix, Mac OS X, and embedded Linux without source code changes. Now, two Trolltech insiders have written a start-to-finish guide to getting outstanding results with the latest version of Qt: Qt 4.3. Packed with realistic examples and in-depth advice, this is the book Trolltech uses to teach Qt to its own new hires. Extensively revised and expanded, it reveals today's best Qt programming patterns for everything from implementing model/view architecture to using Qt 4.3's improved graphics support. You'll find proven solutions for virtually every GUI development task, as well as sophisticated techniques for providing database access, integrating XML, using subclassing, composition, and more. Whether you're new to Qt or upgrading from an older version, this book can help you accomplish everything that Qt 4.3 makes possible. Completely updated throughout, with significant new coverage of databases, XML, and Qtopia embedded programming

Covers all Qt 4.2/4.3 changes, including Windows Vista support, native CSS support for widget styling, and SVG file generation Contains separate 2D and 3D chapters, coverage of Qt 4.3's new graphics view classes, and an introduction to QPainter's OpenGL back-end Includes new chapters on look-and-feel customization and application scripting Illustrates Qt 4's model/view architecture, plugin support, layout management, event processing, container classes, and much more Presents advanced techniques covered in no other book—from creating plugins to interfacing with native APIs Includes a new appendix on Qt Jambi, the new Java version of Qt

## **Getting Started with Qt 5**

Use Qt5 to design and build a graphical user interface that is functional, appealing, and user-friendly for your software application About This Book Learn to make use of Qt5 to design and customize the look-and-feel of your application Improve the visual quality of your application by utilizing the graphic rendering system and animation system provided by Qt5 A good balance of visual presentation and its contents will make an application appealing yet functional Who This Book Is For This book intended for those who want to develop software using Qt5. If you want to improve the visual quality and content presentation of your software application, this book is best suited to you. What You Will Learn Customize the look and feel of your application using the widget editor provided by Qt5 Change the states of the GUI elements to make them appear in a different form Animating the GUI elements using the built-in animation system provided by Qt5 Draw shapes and 2D images in your application using Qt5's powerful rendering system Draw 3D graphics in your application by implementing OpenGL, an industry-standard graphical library to your project Build a mobile app that supports touch events and export it to your device Parse and extract data from an XML file, then present it on your software's GUI Display web content on your program and interact with it by calling JavaScript functions from C++, or calling C++ functions from the web content Access to MySQL and SQLite databases to retrieve data and display it on your software's GUI In Detail With the advancement of computer technology, the software market is exploding with tons of software choices for the user, making their expectations higher in terms of functionality and the look and feel of the application. Therefore, improving the visual quality of your application is vital in order to overcome the market competition and stand out from the crowd. This book will teach you how to develop functional and appealing software using Qt5 through multiple projects that are interesting and fun. This book covers a variety of topics such as look-and-feel customization, GUI animation, graphics rendering, implementing Google Maps, and more. You will learn tons of useful information, and enjoy the process of working on the creative projects provided in this book. Style and approach This book focuses on customizing the look and feel and utilizing the graphical features provided by Qt5. It takes a step-by-step approach, providing tons of screenshots and sample code for you to follow and learn. Each topic is explained sequentially and placed in context.

## **Hands-On Mobile and Embedded Development with Qt 5**

Completely revised and updated, Computer Systems, Fourth Edition offers a clear, detailed, step-by-step introduction to the central concepts in computer

organization, assembly language, and computer architecture. Important Notice: The digital edition of this book is missing some of the images or content found in the physical edition.

## **Hands-On GUI Programming with C++ and Qt5**

This book is great for developers who are new to Qt and Qt Creator and who are interested in harnessing the power of Qt for cross-platform development. If you have basic experience programming in C++, you have what it takes to create engaging cross-platform applications using Qt and Qt Creator!

## **Game Programming using Qt 5 Beginner's Guide**

A comprehensive guide that will get you up and running with embedded software development using Qt5 Key Features Learn to create fluid, cross-platform applications for embedded devices Achieve optimum performance in your applications with QT Lite project Explore the implementation of Qt with IoT using QtMqtt, QtKNX, and QtWebSockets Book Description Qt is an open-source toolkit suitable for cross-platform and embedded application development. This book uses inductive teaching to help you learn how to create applications for embedded and Internet of Things (IoT) devices with Qt 5. You'll start by learning to develop your very first application with Qt. Next, you'll build on the first application by understanding new concepts through hands-on projects and written text. Each project will introduce new features that will help you transform your basic first project into a connected IoT application running on embedded hardware. In addition to practical experience in developing an embedded Qt project, you will also gain valuable insights into best practices for Qt development, along with exploring advanced techniques for testing, debugging, and monitoring the performance of Qt applications. Through the course of the book, the examples and projects are demonstrated in a way so that they can be run both locally and on an embedded platform. By the end of this book, you will have the skills you need to use Qt 5 to confidently develop modern embedded applications. What you will learn Understand how to develop Qt applications using Qt Creator under Linux Explore various Qt GUI technologies to build resourceful and interactive applications Understand Qt's threading model to maintain a responsive UI Get to grips with remote target load and debug under Qt Creator Become adept at writing IoT code using Qt Learn a variety of software best practices to ensure that your code is efficient Who this book is for This book is for software and hardware professionals with experience in different domains who are seeking new career opportunities in embedded systems and IoT. Working knowledge of the C++ Linux command line will be useful to get the most out of this book.

## **Exploring Raspberry Pi**

Explore Qt framework and APIs for building cross-platform applications for mobile devices, embedded systems, and IoT Key Features Build cross-platform applications and deploy them across mobile and connected devices Design 2D and 3D UIs for embedded systems using Yocto and Qt Creator Build machine to machine automation solution using QtSensors, QtMQTT, and QtWebSockets Book

Description Qt is a world-class framework, helping you to develop rich graphical user interfaces (GUIs) and multi-platform applications that run on all major desktop platforms and most mobile or embedded platforms. The framework helps you connect the dots across platforms and between online and physical experience. This book will help you leverage the fully-featured Qt framework and its modular cross-platform library classes and intuitive APIs to develop applications for mobile, IoT, and industrial embedded systems. Considerations such as screen size, device orientation changes, and small memory will be discussed. We will focus on various core aspects of embedded and mobile systems, such as connectivity, networking, and sensors; there is no IoT without sensors. You will learn how to quickly design a flexible, fast, and responsive UI that looks great. Going further, you will implement different elements in a matter of minutes and synchronize the UI elements with the 3D assets with high precision. You will learn how to create high-performance embedded systems with 3D/2D user interfaces, and deploy and test on your target hardware. The book will explore several new features, including Qt for WebAssembly. At the end of this book, you will learn about creating a full software stack for embedded Linux systems using Yocto and Boot to Qt for Device Creation. What you will learn Explore the latest features of Qt, such as preview for Qt for Python and Qt for WebAssembly Create fluid UIs with a dynamic layout for different sized screens Deploy embedded applications on Linux systems using Yocto Design Qt APIs for building applications for embedded and mobile devices Utilize connectivity for networked and machine automated applications Discover effective techniques to apply graphical effects using Qt Quick apps Who this book is for The book is ideal for mobile developers, embedded systems engineers and enthusiasts who are interested in building cross-platform applications with Qt. Prior knowledge of C++ is required.

### **End to End GUI Development with Qt5**

Written in a concise and easy-to-follow approach, this book will guide you to develop your first application with Qt with illustrated examples and screenshots. If you are a developer who is new to Qt and Qt Creator and is interested in harnessing the power of Qt for cross-platform development, this book is great for you. If you have basic experience programming in C++, you have what it takes to create great cross-platform applications using Qt and Qt Creator!

### **OpenCV 2 Computer Vision Application Programming Cookbook**

Use Qt 5 to design and build functional, appealing, and user-friendly graphical user interfaces (GUIs) for your applications. Key Features Learn to use Qt 5 to design and customize the look and feel of your application Improve the visual quality of an application by using graphics rendering and animation Understand the balance of presentation and web content that will make an application appealing yet functional Book Description With the growing need to develop GUIs for multiple targets and multiple screens, improving the visual quality of your application becomes important so that it stands out from your competitors. With its cross-platform ability and the latest UI paradigms, Qt makes it possible to build intuitive, interactive, and user-friendly user interfaces for your applications. Qt5 C++ GUI Programming Cookbook, Second Edition teaches you how to develop functional and appealing user interfaces using the latest version of QT5 and C++. This book will

help you learn a variety of topics such as GUI customization and animation, graphics rendering, implementing Google Maps, and more. You will also be taken through advanced concepts like asynchronous programming, event handling using signals and slots, network programming, various aspects of optimizing your application. By the end of the book, you will be confident to design and customize GUI applications that meet your clients' expectations and have an understanding of best practice solutions for common problems. What you will learn Animate GUI elements using Qt5's built-in animation system Draw shapes and 2D images using Qt5's powerful rendering system Implement an industry-standard OpenGL library in your project Build a mobile app that supports touch events and exports it onto devices Parse and extract data from an XML file and present it on your GUI Interact with web content by calling JavaScript functions from C++ Access MySQL and SQLite databases to retrieve data and display it on your GUI Who this book is for This intermediate-level book is designed for those who want to develop software using Qt 5. If you want to improve the visual quality and content presentation of your software application, this book is for you. Prior experience of C++ programming is required.

## Mastering Qt 5

Discover Golang's GUI libraries such as Go-GTK (GIMP Toolkit) and Go-Qt and build beautiful, performant, and responsive graphical applications Key Features Conceptualize and build state-of-art GUI applications with Golang (Go) Tackle the complexity of varying GUI application sizes with a structured and scalable approach Get hands-on experience of GUI development with Shiny, and labs/ui, Fyne, and Walk Book Description Go is often compared to C++ when it comes to low-level programming and implementations that require faster processing, such as Graphical User Interfaces (GUIs). In fact, many claim that Go is superior to C++ in terms of its concurrency and ease of use. Most graphical application toolkits, though, are still written using C or C++, and so they don't enjoy the benefits of using a modern programming language such as Go. This guide to programming GUIs with Go 1.11 explores the various toolkits available, including UI, Walk, Shiny, and Fyne. The book compares the vision behind each project to help you pick the right approach for your project. Each framework is described in detail, outlining how you can build performant applications that users will love. To aid you further in creating applications using these emerging technologies, you'll be able to easily refer to code samples and screenshots featured in the book. In addition to toolkit-specific discussions, you'll cover more complex topics, such as how to structure growing graphical applications, and how cross-platform applications can integrate with each desktop operating system to create a seamless user experience. By delving into techniques and best practices for organizing and scaling Go-based graphical applications, you'll also glimpse Go's impressive concurrency system. In the concluding chapters, you'll discover how to distribute to the main desktop marketplaces and distribution channels. By the end of this book, you'll be a confident GUI developer who can use the Go language to boost the performance of your applications. What you will learn Understand the benefits and complexities of building native graphical applications Gain insights into how Go makes cross-platform graphical application development simple Build platform-native GUI applications using andlabs/ui Develop graphical Windows applications using Walk Create multiplatform GUI applications using Shiny, Nuklear, and Fyne Use Go

wrappers for GTK and Qt for GUI application development Streamline your requirements to pick the correct toolkit strategy Who this book is for This book is designed for Go developers who are interested in building native graphical applications for desktop computers and beyond. Some knowledge of building applications using Go is useful, but not essential. Experience in developing GUIs is not required as the book explores the benefits and challenges they pose. This book will also be beneficial for GUI application developers who are interested in trying Go.

## **Application Development with Qt Creator**

Build efficient and fast Qt applications, target performance problems, and discover solutions to refine your code Key Features Build efficient and concurrent applications in Qt to create cross-platform applications Identify performance bottlenecks and apply the correct algorithm to improve application performance Delve into parallel programming and memory management to optimize your code Book Description Achieving efficient code through performance tuning is one of the key challenges faced by many programmers. This book looks at Qt programming from a performance perspective. You'll explore the performance problems encountered when using the Qt framework and means and ways to resolve them and optimize performance. The book highlights performance improvements and new features released in Qt 5.9, Qt 5.11, and 5.12 (LTE). You'll master general computer performance best practices and tools, which can help you identify the reasons behind low performance, and the most common performance pitfalls experienced when using the Qt framework. In the following chapters, you'll explore multithreading and asynchronous programming with C++ and Qt and learn the importance and efficient use of data structures. You'll also get the opportunity to work through techniques such as memory management and design guidelines, which are essential to improve application performance. Comprehensive sections that cover all these concepts will prepare you for gaining hands-on experience of some of Qt's most exciting application fields - the mobile and embedded development domains. By the end of this book, you'll be ready to build Qt applications that are more efficient, concurrent, and performance-oriented in nature What you will learn Understand classic performance best practices Get to grips with modern hardware architecture and its performance impact Implement tools and procedures used in performance optimization Grasp Qt-specific work techniques for graphical user interface (GUI) and platform programming Make Transmission Control Protocol (TCP) and Hypertext Transfer Protocol (HTTP) performant and use the relevant Qt classes Discover the improvements Qt 5.9 (and the upcoming versions) holds in store Explore Qt's graphic engine architecture, strengths, and weaknesses Who this book is for This book is designed for Qt developers who wish to build highly performance applications for desktop and embedded devices. Programming Experience with C++ is required.

## **Foundations of Qt Development**

Learn the complete Qt ecosystem and its tools and build UIs for mobile and desktop applications Key Features Unleash the power of the latest Qt 5.9 with C++14 Easily compile, run, and debug your applications from the powerful Qt Creator IDE Build multi-platform projects that target Android, iOS, Windows,

MacOS, Linux, and more Book Description Qt 5.9 is an application development framework that provides a great user experience and develops full-capability applications with Qt Widgets, QML, and even Qt 3D. This learning path demonstrates the power and flexibility of the Qt framework for desktop application development and shows how you can write an application once and deploy it to multiple operating systems. It will address all the challenges while developing cross-platform applications with the Qt framework. This course will give you a better understanding of the Qt framework and tools to resolve serious issues such as linking, debugging, and multithreading. It will also upskill you by explaining how to create a to-do-style app and taking you through all the stages in building a successful project. You will build a suite of apps; while developing these apps, you'll deepen your knowledge of Qt Quick's layout systems, and see Qt 3D and widgets in action. The next project will be in the industrial and agricultural sectors: making sense of sensor data via a monitoring system. Your apps should run seamlessly across devices and operating systems such as Android, iOS, Windows, or Mac, and be cost-effective by integrating with existing web technologies. You take the role of lead developer and prototype a monitoring system. In doing so, you'll get to know Qt's Bluetooth and HTTP APIs, as well as the Charts and Web Engine UI modules. These projects will help you gain a holistic view of the Qt framework. What you will learn Install and configure the Qt Framework and Qt Creator IDE Implement a rich user interface with QML Learn the fundamentals of QtTest and how to integrate unit testing Create stunning UIs with Qt Widget and Qt Quick Develop powerful, cross-platform applications with the Qt framework Design GUIs with Qt Designer and build a library in it for UI previews Build a desktop UI with widgets and Designer Get familiar with multimedia components to handle visual input and output Who this book is for This book will appeal to developers and programmers who would like to build GUI-based applications. Knowledge of C++ is necessary and a basic familiarity with Qt would be helpful.

### **Gui Programming With Python**

Expand Raspberry Pi capabilities with fundamental engineering principles Exploring Raspberry Pi is the innovators guide to bringing Raspberry Pi to life. This book favors engineering principles over a 'recipe' approach to give you the skills you need to design and build your own projects. You'll understand the fundamental principles in a way that transfers to any type of electronics, electronic modules, or external peripherals, using a "learning by doing" approach that caters to both beginners and experts. The book begins with basic Linux and programming skills, and helps you stock your inventory with common parts and supplies. Next, you'll learn how to make parts work together to achieve the goals of your project, no matter what type of components you use. The companion website provides a full repository that structures all of the code and scripts, along with links to video tutorials and supplementary content that takes you deeper into your project. The Raspberry Pi's most famous feature is its adaptability. It can be used for thousands of electronic applications, and using the Linux OS expands the functionality even more. This book helps you get the most from your Raspberry Pi, but it also gives you the fundamental engineering skills you need to incorporate any electronics into any project. Develop the Linux and programming skills you need to build basic applications Build your inventory of parts so you can always "make it work" Understand interfacing, controlling, and communicating with almost any

component Explore advanced applications with video, audio, real-world interactions, and more Be free to adapt and create with Exploring Raspberry Pi.

## **Rapid GUI Programming with Python and Qt**

Learn GUI programming using Qt4, the powerful crossplatform framework, with the only official Qt book approved by Trolltech.

## **The Book of Qt 4**

Qt is one of the most influential graphical toolkits for the Linux operating system and is quickly being adopted on other platforms (Windows, Mac OS) as well. It is necessary to learn for all Linux programmers. This book takes the reader step by step through the complexities of Qt, laying the groundwork that allows the reader to make the step from novice to professional. This book is full of real world examples that can be quickly integrated into a developer's project. While the reader is assumed to be a beginner at Qt development, they are required to have a working knowledge of C++ programming.

## **Qt 5 Projects**

Over 50 recipes to master this library of programming functions for real-time computer vision.

## **Qt 5 and OpenCV 4 Computer Vision Projects**

Begin writing graphical user interface(GUI) applications for building human machine interfaces with a clear understanding of key concepts of the Qt framework  
Key Features Learn how to write, assemble, and build Qt application from the command line Understand key concepts like Signals and Slots in Qt Best practices and effective techniques for designing graphical user interfaces using Qt 5  
Book Description Qt is a cross-platform application framework and widget toolkit that is used to create GUI applications that can run on different hardware and operating systems. The main aim of this book is to introduce Qt to the reader. Through the use of simple examples, we will walk you through building blocks without focusing too much on theory. Qt is a popular tool that can be used for building a variety of applications, such as web browsers, media players such as VLC, and Adobe Photoshop. Following Qt installation and setup, the book dives straight into helping you create your first application. You will be introduced to Widgets, Qt's interface building block, and the many varieties that are available for creating GUIs. Next, Qt's core concept of signals and slots are well illustrated with sufficient examples. The book further teaches you how to create custom widgets, signals and slots, and how to communicate useful information via dialog boxes. To cap everything off, you will be taken through writing applications that can connect to databases in order to persist data. By the end of the book, you should be well equipped to start creating your own Qt applications and confident enough to pick up more advanced Qt techniques and materials to hone your skills. What you will learn Set up and configure your machine to begin developing Qt applications Discover different widgets and layouts for constructing UIs Understand the key concept of signals and

slots Understand how signals and slots help animate a GUI Explore how to create customized widgets along with signals and slots Understand how to subclass and create a custom windows application Understand how to write applications that can talk to databases. Who this book is for Anyone trying to start development of graphical user interface application will find this book useful. One does not need prior exposure to other toolkits to understand this book. In order to learn from this book you should have basic knowledge of C++ and a good grasp of Object Oriented Programming. Familiarity with GNU/Linux will be very useful though it's not a mandatory skill.

## **Qt 5 Blueprints**

Whether you're building GUI prototypes or full-fledged cross-platform GUI applications with native look-and-feel, PyQt 4 is your fastest, easiest, most powerful solution. Qt expert Mark Summerfield has written the definitive best-practice guide to PyQt 4 development. With *Rapid GUI Programming with Python and Qt* you'll learn how to build efficient GUI applications that run on all major operating systems, including Windows, Mac OS X, Linux, and many versions of Unix, using the same source code for all of them. Summerfield systematically introduces every core GUI development technique: from dialogs and windows to data handling; from events to printing; and more. Through the book's realistic examples you'll discover a completely new PyQt 4-based programming approach, as well as coverage of many new topics, from PyQt 4's rich text engine to advanced model/view and graphics/view programming. Every key concept is illuminated with realistic, downloadable examples—all tested on Windows, Mac OS X, and Linux with Python 2.5, Qt 4.2, and PyQt 4.2, and on Windows and Linux with Qt 4.3 and PyQt 4.3.

## **Computer Vision with OpenCV 3 and Qt5**

Design, build, and deploy powerful applications with amazing user interfaces on embedded, mobile, and desktop platforms Key Features Easily compile, run, and debug your applications from the powerful Qt Creator IDE Future-proof your applications with Qt Test and modern architecture principles Build multi-platform projects that target Android, iOS, Windows, macOS, Linux, and more Book Description Qt is a professional cross-platform application framework used across industries like automotive, medical, infotainment, wearables, and more. In this book you'll initially create a to-do style app by going via all stages for building a successful project. You'll learn basics of Qt's C++ and QML APIs, test-driven development with Qt Test, application architecture, and UIs with Qt Quick & Quick Controls 2. Next, you'll help two startups build their products. The first startup, Cute Comics, wants to help independent comic creators with a suite of apps that let them experiment with comic pages, image composition, comic dialogues, and scene descriptions. While developing these apps you'll deepen your knowledge of Qt Quick's layout systems, and see Qt 3D and Widgets in action. The second startup, Cute Measures, wants to create apps for industrial and agricultural sectors, to make sense of sensor data via a monitoring system. The apps should run seamlessly across devices and operating systems like Android, iOS, Windows, or Mac, and be cost-effective by integrating with existing web technologies. You take the role of lead developer and prototype the monitoring system. In doing so you'll

get to know Qt's Bluetooth and HTTP APIs, as well as the Charts and Web Engine UI modules. These projects will help you gain a holistic view of the Qt framework.

What you will learn

- Learn the basics of modern Qt application development
- Develop solid and maintainable applications with BDD, TDD, and Qt Test Master
- the latest UI technologies and know when to use them: Qt Quick, Controls 2, Qt 3D and Charts
- Build a desktop UI with Widgets and the Designer
- Translate your user interfaces with QTranslator and Linguist
- Get familiar with multimedia components to handle visual input and output
- Explore data manipulation and transfer: the model/view framework, JSON, Bluetooth, and network I/O
- Take advantage of existing web technologies and UI components with WebEngine

Who this book is for

This book is for developers who want to successfully build and maintain cross-platform applications with advanced UI and connectivity features. Basic knowledge of C++ is required.

## **Qt5 C++ GUI Programming Cookbook**

If you are a programmer looking for a truly cross-platform GUI framework to help you save your time by side-stepping the incompatibility between different platforms and building applications using Qt 5 for multiple targets, then this book is most certainly intended for you. It is assumed that you have a basic programming experience of C++ and fundamental knowledge about Qt.

## **Application Development with Qt Creator**

Explore Qt Creator, Qt Quick, and QML to design and develop applications that work on desktop, mobile, embedded, and IoT platforms

Key Features

- Build a solid foundation in Qt by learning about its core classes, multithreading, File I/O, and networking
- Learn GUI programming and build custom interfaces using Qt Widgets, Qt Designer, and QML
- Use the latest features of C++17 for improving the performance of your Qt applications

Book Description

Qt is a powerful development framework that serves as a complete toolset for building cross-platform applications, helping you reduce development time and improve productivity. Completely revised and updated to cover C++17 and the latest developments in Qt 5.12, this comprehensive guide is the third edition of *Application Development with Qt Creator*. You'll start by designing a user interface using Qt Designer and learn how to instantiate custom messages, forms, and dialogues. You'll then understand Qt's support for multithreading, a key tool for making applications responsive, and the use of Qt's Model-View-Controller (MVC) to display data and content. As you advance, you'll learn to draw images on screen using Graphics View Framework and create custom widgets that interoperate with Qt Widgets. This Qt programming book takes you through Qt Creator's latest features, such as Qt Quick Controls 2, enhanced CMake support, a new graphical editor for SCXML, and a model editor. You'll even work with multimedia and sensors using Qt Quick, and finally develop applications for mobile, IoT, and embedded devices using Qt Creator. By the end of this Qt book, you'll be able to create your own cross-platform applications from scratch using Qt Creator and the C++ programming language. What you will learn

- Create programs from scratch using the Qt framework and C++ language
- Compile and debug your Qt Quick and C++ applications using Qt Creator
- Implement map view with your Qt application and display device location on the map
- Understand how to call Android and iOS

native functions from Qt C++ code Localize your application with Qt Linguist Explore various Qt Quick components that provide access to audio and video playbacks Develop GUI applications using both Qt and Qt Quick Who this book is for If you are a beginner looking to harness the power of Qt and the Qt Creator framework for cross-platform development, this book is for you. Although no prior knowledge of Qt and Qt Creator is required, basic knowledge of C++ programmin

## **Introduction to Design Patterns in C++ with Qt**

"Object Oriented GUI Design" explains how to create effective graphical user interfaces by using object-oriented methods and tools. GUI developers will value the book's exhaustive list of GUI components and explanation of how these components interact.

## **Exploring BeagleBone**

Design, build, and deploy powerful applications with amazing user interfaces on embedded, mobile, and desktop platforms Key Features Easily compile, run, and debug your applications from the powerful Qt Creator IDE Future-proof your applications with Qt Test and modern architecture principles Build multi-platform projects that target Android, iOS, Windows, macOS, Linux, and more Book Description Qt is a professional cross-platform application framework used across industries like automotive, medical, infotainment, wearables, and more. In this book you'll initially create a to-do style app by going via all stages for building a successful project. You'll learn basics of Qt's C++ and QML APIs, test-driven development with Qt Test, application architecture, and UIs with Qt Quick & Quick Controls 2. Next, you'll help two startups build their products. The first startup, Cute Comics, wants to help independent comic creators with a suite of apps that let them experiment with comic pages, image composition, comic dialogues, and scene descriptions. While developing these apps you'll deepen your knowledge of Qt Quick's layout systems, and see Qt 3D and Widgets in action. The second startup, Cute Measures, wants to create apps for industrial and agricultural sectors, to make sense of sensor data via a monitoring system. The apps should run seamlessly across devices and operating systems like Android, iOS, Windows, or Mac, and be cost-effective by integrating with existing web technologies. You take the role of lead developer and prototype the monitoring system. In doing so you'll get to know Qt's Bluetooth and HTTP APIs, as well as the Charts and Web Engine UI modules. These projects will help you gain a holistic view of the Qt framework. What you will learn Learn the basics of modern Qt application development Develop solid and maintainable applications with BDD, TDD, and Qt Test Master the latest UI technologies and know when to use them: Qt Quick, Controls 2, Qt 3D and Charts Build a desktop UI with Widgets and the Designer Translate your user interfaces with QTranslator and Linguist Get familiar with multimedia components to handle visual input and output Explore data manipulation and transfer: the model/view framework, JSON, Bluetooth, and network I/O Take advantage of existing web technologies and UI components with WebEngine Who this book is for This book is for developers who want to successfully build and maintain cross-platform applications with advanced UI and connectivity features. Basic knowledge of C++ is required.

## Learning Image Processing with OpenCV

A complete guide to designing and building fun games with Qt and Qt Quick using associated toolsets

**Key Features**

- A step by step guide to learn Qt by building simple yet entertaining games
- Get acquainted with a small yet powerful addition—Qt Gamepad Module, that enables Qt applications to support the use of gamepad hardware
- Understand technologies such as QML, OpenGL, and Qt Creator to design intuitive games

**Book Description**

Qt is the leading cross-platform toolkit for all significant desktop, mobile, and embedded platforms and is becoming popular by the day, especially on mobile and embedded devices. It's a powerful tool that perfectly fits the needs of game developers. This book will help you learn the basics of Qt and will equip you with the necessary toolsets to build apps and games. The book begins by how to create an application and prepare a working environment for both desktop and mobile platforms. You will learn how to use built-in Qt widgets and Form Editor to create a GUI application and then learn the basics of creating graphical interfaces and Qt's core concepts. Further, you'll learn to enrich your games by implementing network connectivity and employing scripting. You will learn about Qt's capabilities for handling strings and files, data storage, and serialization. Moving on, you will learn about the new Qt Gamepad module and how to add it in your game and then delve into OpenGL and Vulkan, and how it can be used in Qt applications to implement hardware-accelerated 2D and 3D graphics. You will then explore various facets of Qt Quick: how it can be used in games to add game logic, add game physics, and build astonishing UIs for your games. By the end of this book, you will have developed the skillset to develop interesting games with Qt.

**What you will learn**

- Install the latest version of Qt on your system
- Understand the basic concepts of every Qt game and application
- Develop 2D object-oriented graphics using Qt Graphics View
- Build multiplayer games or add a chat function to your games with Qt Network module
- Script your game with Qt QML
- Explore the Qt Gamepad module in order to integrate gamepad support in C++ and QML applications
- Program resolution-independent and fluid UIs using QML and Qt Quick
- Control your game flow in line with mobile device sensors
- Test and debug your game easily with Qt Creator and Qt Test

**Who this book is for**

If you want to create great graphical user interfaces and astonishing games with Qt, this book is ideal for you. No previous knowledge of Qt is required; however knowledge of C++ is mandatory.

## Advanced Qt Programming

Learn the fundamentals of QT 5 framework to develop interactive cross-platform applications

**Key Features**

- A practical guide on the fundamentals of application development with QT 5
- Learn to write scalable, robust and adaptable C++ code with QT
- Deploy your application on different platforms such as Windows, Mac OS, and Linux

**Book Description**

Qt is a mature and powerful framework for delivering sophisticated applications across a multitude of platforms. It has a rich history in the Linux world, is widely used in embedded devices, and has made great strides in the Mobile arena over the past few years. However, in the Microsoft Windows and Apple Mac OS X worlds, the dominance of C#/.NET and Objective-C/Cocoa means that Qt is often overlooked. This book demonstrates the power and flexibility of the Qt framework for desktop application development and shows how you can write your application once and deploy it to multiple operating systems.

Build a complete real-world line of business (LOB) solution from scratch, with distinct C++ library, QML user interface, and QTest-driven unit-test projects. This is a suite of essential techniques that cover the core requirements for most LOB applications and will empower you to progress from a blank page to shipped application. What you will learn · Install and configure the Qt Framework and Qt Creator IDE · Create a new multi-project solution from scratch and control every aspect of it with QMake · Implement a rich user interface with QML · Learn the fundamentals of QTest and how to integrate unit testing · Build self-aware data entities that can serialize themselves to and from JSON · Manage data persistence with SQLite and CRUD operations · Reach out to the internet and consume an RSS feed · Produce application packages for distribution to other users Who this book is for This book is for application developers who want a powerful and flexible framework to create modern, responsive applications on Microsoft Windows, Apple Mac OS X, and Linux desktop platforms. You should be comfortable with C++ but no prior knowledge of Qt or QML is required.

## **GUI Design Handbook**

Master Qt's Most Powerful APIs, Patterns, and Development Practices Qt has evolved into a remarkably powerful solution for cross-platform desktop, Web, and mobile development. However, even the most experienced Qt programmers only use a fraction of its capabilities. Moreover, practical information about Qt's newest features has been scarce—until now. Advanced Qt Programming shows developers exactly how to take full advantage of Qt 4.5's and Qt 4.6's most valuable new APIs, application patterns, and development practices. Authored by Qt expert Mark Summerfield, this book concentrates on techniques that offer the most power and flexibility with the least added complexity. Summerfield focuses especially on model/view and graphics/view programming, hybrid desktop/Web applications, threading, and applications incorporating media and rich text. Throughout, he presents realistic, downloadable code examples, all tested on Windows, Mac OS X, and Linux using Qt 4.6 (and most tested on Qt 4.5) and designed to anticipate future versions of Qt. The book Walks through using Qt with WebKit to create innovative hybrid desktop/Internet applications Shows how to use the Phonon framework to build powerful multimedia applications Presents state-of-the-art techniques for using model/view table and tree models, QStandardItemModels, delegates, and views, and for creating custom table and tree models, delegates, and views Explains how to write more effective threaded programs with the QtConcurrent module and with the QThread class Includes detailed coverage of creating rich text editors and documents Thoroughly covers graphics/view programming: architecture, windows, widgets, layouts, scenes, and more Introduces Qt 4.6's powerful animation and state machine frameworks

## **Hands-On Embedded Programming with Qt**

An advanced guide to creating powerful high-performance GUIs for modern, media-rich applications in various domains such as business and game development Key Features Gain comprehensive knowledge of Python GUI development using PyQt 5.12 Explore advanced topics including multithreaded programming, 3D animation, and SQL databases Build cross-platform GUIs for Windows, macOS, Linux, and Raspberry Pi Book Description PyQt5 has long been the most powerful and

comprehensive GUI framework available for Python, yet there is a lack of cohesive resources available to teach Python programmers how to use it. This book aims to remedy the problem by providing comprehensive coverage of GUI development with PyQt5. You will get started with an introduction to PyQt5, before going on to develop stunning GUIs with modern features. You will then learn how to build forms using QWidgets and learn about important aspects of GUI development such as layouts, size policies, and event-driven programming. Moving ahead, you'll discover PyQt5's most powerful features through chapters on audio-visual programming with QtMultimedia, database-driven software with QtSQL, and web browsing with QtWebEngine. Next, in-depth coverage of multithreading and asynchronous programming will help you run tasks asynchronously and build high-concurrency processes with ease. In later chapters, you'll gain insights into QOpenGLWidget, along with mastering techniques for creating 2D graphics with QPainter. You'll also explore PyQt on a Raspberry Pi and interface it with remote systems using QtNetwork. Finally, you will learn how to distribute your applications using setuptools and PyInstaller. By the end of this book, you will have the skills you need to develop robust GUI applications using PyQt. What you will learn

- Get to grips with the inner workings of PyQt5
- Learn how elements in a GUI application communicate with signals and slots
- Learn techniques for styling an application
- Explore database-driven applications with the QtSQL module
- Create 2D graphics with QPainter
- Delve into 3D graphics with QOpenGLWidget
- Build network and web-aware applications with QtNetwork and QtWebEngine

Who this book is for This book is for programmers who want to create attractive, functional, and powerful GUIs using the Python language. You'll also find this book useful if you are a student, professional, or anyone who wants to start exploring GUIs or take your skills to the next level. Although prior knowledge of the Python language is assumed, experience with PyQt, Qt, or GUI programming is not required.

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