Installing Eclipse Cdt And Mingw

Provides information on designing devices that share and store data with PCs and other USB hosts.

Developers who want to access USB devices from their embedded systems will find a helpful resource in USB Embedded Hosts: The Developer’s Guide. This new book from the author of USB Complete shows how small systems can take advantage of the same wealth of USB devices available to conventional PCs. The book begins with a review of USB host communication protocols. Readers then learn which USB host requirements are relaxed for embedded systems and what new requirements some embedded systems must meet. To help in selecting a development platform, the book explores available hardware and software for USB host communications in small systems. The heart of the book focuses on communicating with USB devices. The topics (with example code) include USB drives, keyboards, virtual serial ports, network bridges, mics, speakers, video cameras, and printers, plus devices that don’t fit defined USB classes. Also discussed are systems that support both USB host and device functions. The example code is written for the BeagleBoard-xM open development board using a distribution of Linux targeted to small systems. Also covered is how to use Linux commands and utilities to learn about, monitor, and debug communications with USB devices.

Sind Sie C/C++-Programmierer und wollen Sie Eclipse und die C/C++ Development Tools (CDT) in Ihren Projekten einsetzen? Dann bietet Ihnen dieses Buch einen schnellen Einstieg und wird Ihnen bei der täglichen Arbeit als Nachschlagewerk gute Dienste leisten. Im ersten Teil erläutert Autor Sebastian Bauer, wie Sie Eclipse und CDT auf einem Windowsoder Linux-Rechner installieren, bevor er Sie anhand eines einfachen Projektes mit den wichtigsten Merkmalen der Entwicklungsplattform vertraut macht. Der Hauptteil des Buches vermittelt Ihnen die Konzepte der IDE, gegliedert nach den typischen Phasen eines Entwicklungsprojektes: • Erstellen und Bearbeiten von Projekten • Build-Prozess • Ausführen und Debuggen Dabei werden konkrete Probleme angesprochen und gelöst, z.B.: Wie bindet man Codegeneratoren à la "bison" ein? Oder: Wie lässt sich Remote Compiling realisieren? Der dritte Teil widmet sich weiterführenden Themen und behandelt u.a. die Verwaltung entfernter Ressourcen, das Remote Debuggingund das Profiling. Nach der Lektüre des Buches kennen Sie die Stärken - und auch die Schwächen - von Eclipse CDT und wissen den Alltag eines C/C++-Entwicklers mit Eclipse zu meistern. Die 3. Auflage wurde komplett aktualisiert und ergänzt um aktuelle Themen wie dem Cross-Compiling für den Raspberry Pi, Git als Versionskontrollsystem sowie der Docker-Anbindung von Eclipse. This book is free preview of an easy to understand yet thorough guide on using Eclipse for C/C++ Software Development. This book is not about a traditional introduction to Eclipse. This book gives a practical introduction to Eclipse. It introduces the features of

Eclipse in the logical order in which any C/C++ programmer would need them; use them. The book is appeals to a wide range of audience: It can help a student/freshman who has just started programming It can help a full time programmer to be more productive with Eclipse It can help a seasoned programmer maintaining a huge software stack

Now in its second edition, D.S. Malik brings his proven approach to C++ programming to the CS2 course. Clearly written with the student in mind, this text focuses on Data Structures and includes advanced topics in C++ such as Linked Lists and the Standard Template Library (STL). The text features abundant visual diagrams, examples, and extended Programming Examples, all of which serve to illuminate difficult concepts. Complete programming code and clear display of syntax, explanation, and example are used throughout the text, and each chapter concludes with a robust exercise set. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

The new edition of this classic O'Reilly reference provides clear, detailed explanations of every feature in the C language and runtime library, including multithreading, type-generic macros, and library functions that are new in the 2011 C standard (C11). If you want to understand the effects of an unfamiliar function, and how the standard library requires it to behave, you'll find it here, along with a typical example. Ideal for experienced C and C++ programmers, this book also includes popular tools in the GNU software collection. You’ll learn how to build C programs with GNU Make, compile executable programs from C source code, and test and debug your programs with the GNU debugger. In three sections, this authoritative book covers: C language concepts and language elements, with separate chapters on types, statements, pointers, memory management, I/O, and more The C standard library, including an overview of standard headers and a detailed function reference Basic C programming tools in the GNU software collection, with instructions on how use them with the Eclipse IDE

Become an expert at C++ by learning all the key C++ concepts and working through interesting exercises Key Features Explore C++ concepts through descriptive graphics and interactive exercises Learn how to keep your development bug-free with testing and debugging Discover various techniques to optimize your code Book Description C++ is one of the most widely used programming languages and is applied in a variety of domains, right from gaming to graphical user interface (GUI) programming and even operating systems. If you're looking to expand your career opportunities, mastering the advanced features of C++ is key. The book begins with advanced C++ concepts by helping you decipher the sophisticated C++ type system and understand how various stages of compilation convert source code to object code. You'll then learn how to recognize the tools that need to be used in order to control the flow of execution, capture data, and pass data around. By creating small models, you'll even discover how to use advanced lambdas and captures and express common API design patterns in C++. As you cover later chapters, you'll explore ways to optimize your code by learning about memory alignment, cache access, and the time a program takes to run. The concluding chapter will help you to maximize performance by understanding modern CPU branch prediction and how to make your code cache-friendly. By the end of this book, you'll have developed programming skills that will set you apart from other C++ programmers. What you will learn Delve into the anatomy and workflow of C++ Study the pros and cons of different approaches to coding in C++ Test, run, and debug your programs Link object files as a dynamic library Use templates, SFINAE, constexpr if expressions and variadic templates Apply best practice to resource management Who this book is for If you have worked in C++ but want to learn how to make the most of this language, especially for large projects, this book is for you. A general understanding of programming and knowledge of using an editor to produce code files in project directories is a must. Some experience with strongly typed languages, such as C and C++, is also recommended.

"This is Effective C++ volume three - it's really that good." - Herb Sutter, independent consultant and secretary of the ISO/ANSI C++ standards committee "There are very few books which all C++ programmers must have. Add Effective STL to that list." - Thomas Becker, Senior Software Engineer, Zephyr Associates, Inc., and columnist, C/C++ Users Journal C++'s Standard Template Library is revolutionary, but learning to use it well has always been a challenge. Until now. In this book, best-selling author

Scott Meyers (Effective C++ , and More Effective C++) reveals the critical rules of thumb employed by the experts - the things they almost always do or almost always avoid doing - to get the most out of the library. Other books describe what's in the STL. Effective STL shows you how to use it. Each of the book's 50 guidelines is backed by Meyers' legendary analysis and incisive examples, so you'll learn not only what to do, but also when to do it - and why. Highlights of Effective STL include: Advice on choosing among standard STL containers (like vector and list), nonstandard STL containers (like hash_set and hash_map), and non-STL containers (like bitset). Techniques to maximize the efficiency of the STL and the programs that use it. Insights into the behavior of iterators, function objects, and allocators, including things you should not do. Guidance for the proper use of algorithms and member functions whose names are the same (e.g., find), but whose actions differ in subtle (but important) ways. Discussions of potential portability problems, including straightforward ways to avoid them. Like Meyers' previous books, Effective STL is filled with proven wisdom that comes only from experience. Its clear, concise, penetrating style makes it an essential resource for every STL programmer.

Aufbau eines Entwicklungssystems mit Eclipse und der GNU Toolchain Fehlersuche mit dem GNU-Debugger und weiteren Hilfsmitteln Korrekte Dimensionierung elektronischer Komponenten Typische Programmiertechniken Aus dem Inhalt: Digitale Aus- und Eingänge (PIO, Parallel Input/Output Controller) LC-Displays und 7-Segment-

Anzeigen Wichtige Systemkomponenten (NVIC, PMC, Supply Controller, etc.) Timer, Counter, Real Time Clock Peripheral DMA Controller (PDC) PWM – Pulsweitenmodulation Analog-/Digital-Wandlung und Digital-/Analog-Umsetzung Serielle Kommunikation (z.B. mit SD-Karten) Dieses Buch behandelt den Einsatz und die Programmierung von ARM Cortex-M3-Mikrocontrollern. Am Beispiel des AT91SAM3S4B von ATMEL lernen Sie alle wichtigen Aspekte im Umgang mit modernen Mikrocontrollern kennen. Viele praktische Anwendungen und zahlreiche Tabellen erleichtern das Verständnis. Der praxisnahe Einsatz von Datenblättern hilft zudem beim Einsatz anderer Mikrocontroller und Bauelemente. Zunächst erstellt der Autor ein kostenloses Entwicklungssystem auf der Basis von Eclipse, dem CDT und der GNU Toolchain. Alternativen dazu werden ebenfalls vorgestellt. Im weiteren Verlauf werden sämtliche internen Komponenten der AT91SAM3S-Familie erläutert. Die Entwicklung wiederverwendbarer Software unter Einsatz gängiger Bauelemente zeigt Lösungen für Anforderungen der täglichen Praxis. Die Beispiele in diesem Buch befassen sich mit der Ansteuerung von Displays, der Erfassung analoger Größen (z.B. Temperaturen), der Digital-/Analog-Umsetzung und der seriellen Datenübertragung unter Einsatz von SD-Karten. Die korrekte Dimensionierung externer Komponenten wird anhand einfacher Berechnungen erläutert und geübt. Dieses Buch wendet sich an Ingenieure, Studenten technischer Fachrichtungen und Hobby-Elektroniker, die sich erstmals mit der Programmierung von Mikrocontrollern befassen. Es werden dabei durchschnittliche Kenntnisse der Programmiersprache C vorausgesetzt. Über den Autor: Ralf Jesse ist Diplom-Ingenieur der Elektrotechnik mit mehr als 25 Jahren beruflicher Praxis im Einsatz von Mikroprozessoren und -controllern. Nach ersten Erfahrungen als Entwicklungsingenieur in einem Maschinenbau-Unternehmen folgten mehr als 20 Jahre als Software-Ingenieur in einem großen japanischen Konzern.

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More Exceptional C++ continues where Herb Sutter's best-selling Exceptional C++ left off, delivering 40 puzzles that illuminate the most challenging -- and most powerful -- aspects of C++. More Exceptional C++ offers many new puzzles focused on generic programming and the C++ Standard Template Library, including important techniques such as traits and predicates, as well as key considerations in using standard containers and algorithms -- many of them never covered elsewhere. More Exceptional C++ contains a detailed new section (and two appendices) on optimization in single- and multithreaded environments. It also provides important new insights on crucial topics first introduced in Exceptional C++, including exception safety, generic programming, and memory management. For all C++ programmers.

The ultimate preparation guide for the unique CEH exam. The CEH v10: Certified Ethical Hacker Version 10 Study Guide is your ideal companion for CEH v10 exam preparation. This comprehensive, in-depth review of CEH certification requirements is designed to help you internalize critical information using concise, to-the-point explanations and an easy-to-follow approach to the material. Covering all sections of the exam, the discussion highlights essential topics like intrusion detection, DDoS attacks, buffer overflows, and malware creation in detail, and puts the concepts into the context of real-world scenarios. Each chapter is mapped to the corresponding exam objective for easy reference, and the Exam Essentials feature helps you identify areas in need of further study. You also get access to online study tools including chapter review questions, full-length practice exams, hundreds of electronic flashcards, and a glossary of key terms to help you ensure full mastery of the exam material. The Certified Ethical Hacker is one-of-a-kind in the cybersecurity sphere, allowing you to delve into the mind of a hacker for a unique perspective into penetration testing. This guide is your ideal exam preparation resource, with specific coverage of all CEH objectives and plenty of practice material. Review all CEH v10 topics systematically Reinforce critical skills with hands-on exercises Learn how concepts apply in real-world scenarios Identify key proficiencies prior to the exam The CEH certification puts you in professional demand, and satisfies the Department of Defense's 8570 Directive for all Information Assurance government positions. Not only is it a highly-regarded credential, but it's also an expensive exam—making the stakes even higher on exam day. The CEH v10: Certified Ethical Hacker Version 10 Study Guide gives you the intense preparation you need to pass with flying colors.

Consistent, high-quality coding standards improve software quality, reduce time-to-market, promote teamwork, eliminate time wasted on inconsequential matters, and simplify maintenance. Now, two of the world's most respected C++ experts distill the rich collective experience of the global C++ community into a set of coding standards that every developer and development team can understand and use as a basis for their own coding standards. The authors cover virtually every facet of C++

programming: design and coding style, functions, operators, class design, inheritance, construction/destruction, copying, assignment, namespaces, modules, templates, genericity, exceptions, STL containers and algorithms, and more. Each standard is described concisely, with practical examples. From type definition to error handling, this book presents C++ best practices, including some that have only recently been identified and standardized-techniques you may not know even if you've used C++ for years. Along the way, you'll find answers to questions like What's worth standardizing--and what isn't? What are the best ways to code for scalability? What are the elements of a rational error handling policy? How (and why) do you avoid unnecessary initialization, cyclic, and definitional dependencies? When (and how) should you use static and dynamic polymorphism together? How do you practice "safe" overriding? When should you provide a no-fail swap? Why and how should you prevent exceptions from propagating across module boundaries? Why shouldn't you write namespace declarations or directives in a header file? Why should you use STL vector and string instead of arrays? How do you choose the right STL search or sort algorithm? What rules should you follow to ensure type-safe code? Whether you're working alone or with others, C++ Coding Standards will help you write cleaner code--and write it faster, with fewer hassles and less frustration.

The Eclipse environment solves the problem of having to maintain your own Integrated Development Environment (IDE), which is time consuming and costly. Embedded tools can also be easily integrated into Eclipse. The C/C++CDT is ideal for the embedded community with more than 70% of embedded developers using this language to write embedded code. Eclipse simplifies embedded system development and then eases its integration into larger platforms and frameworks. In this book, Doug Abbott examines Eclipse, an IDE, which can be vital in saving money and time in the design and development of an embedded system. Eclipse was created by IBM in 2001 and then became an open-source project in 2004. Since then it has become the de-facto IDE for embedded developers. Virtually all of the major Linux vendors have adopted this platform, including MontVista, LynuxWorks, and Wind River. *Details the Eclipse Integrated Development Environment (IDE) essential to streamlining your embedded development process *Overview of the latest C/C++ Developer's Toolkit (CDT) *Includes case studies of Eclipse use including Monta Vista, LynuxWorks, and Wind River

Practical UML Statecharts in C/C++ Second Edition bridges the gap between high-level abstract concepts of the Unified Modeling Language (UML) and the actual programming aspects of modern hierarchical state machines (UML statecharts). The book describes a lightweight, open source, event-driven infrastructure, called QP that enables direct manual coding UML statecharts and concurrent event-driven applications in C or C++ without big tools. This book is presented in two parts. In Part I, you get a practical description of the relevant state machine concepts starting from traditional finite state automata to modern UML state machines followed by state machine coding techniques and state-machine design patterns, all illustrated with executable examples. In Part II, you find a detailed design study of a generic real-time framework indispensable for combining concurrent, event-driven state machines into robust applications. Part II begins with a clear explanation of the key event-driven programming concepts such as inversion of control (Hollywood Principle), blocking versus non-blocking code, run-to-completion (RTC) execution semantics, the importance of event queues, dealing with time, and the role of state machines to maintain the context from one event to the next. This background is designed to help software developers in making the transition from the traditional sequential to the modern event-driven programming, which can be one of the trickiest paradigm shifts. The lightweight QP event-driven infrastructure goes several steps beyond the traditional real-time operating system (RTOS). In the simplest configuration, QP runs on bare-metal microprocessor, microcontroller, or DSP completely replacing the RTOS. QP can also work with almost any OS/RTOS to take advantage of the existing device drivers, communication stacks, and other middleware. The accompanying website to this book contains complete open source code for QP, ports to popular processors and operating systems, including 80x86, ARM Cortex-M3, MSP430, and Linux, as well as all examples described in the book.

Learn how to program robotic vehicles with ardupilot libraries and pixhawk autopilot, both of which are open source technologies with a global scope. This book is focused on quadcopters but the knowledge is easily extendable to three-dimensional vehicles such as drones, submarines, and rovers. Pixhawk and the ardupilot libraries have grown dramatically in popularity due to the fact that the hardware and software offer a real-time task scheduler, huge data processing capabilities, interconnectivity, low power consumption, and a global developer support. This book shows you how take your robotic programming skills to the next level. From hardware to software, Advanced Robotic Vehicles Programming links theory with practice in the development of unmanned vehicles. By the end of this book, you'll learn the pixhawk software and ardupilot libraries to develop your own autonomous vehicles. What You'll Learn Model and implement elementary controls in any unmanned vehicle Select hardware and software components during the design process of an unmanned vehicle Use other compatible hardware and software development packages Understand popular scientific and technical nomenclature in the field Identify relevant complexities and processes for the operation of an unmanned vehicle Who This Book Is For Undergraduate and graduate students, researchers, makers, hobbyists, and those who want to go beyond basic programming of an Arduino for any kind of robotic vehicle.

This updated handy quick C++ 14 guide is a condensed code and syntax reference based on the newly updated C++ 14 release of the popular programming language. It presents the essential C++ syntax in a well-organized format that can be used as a handy reference. You won’t find any technical jargon, bloated samples, drawn out history lessons, or witty stories in this book. What you will find is a language reference that is concise, to the point and highly accessible. The book is packed with useful information and is a must-have for any C++ programmer. In the C++ 14 Quick Syntax Reference, Second Edition, you will find a concise reference to the C++ 14 language syntax. It has short, simple, and focused code examples. This book includes a well laid out table of contents and a comprehensive index allowing for easy review. What You'll Learn: How to Compile and Run What are C++ Variables, Operators, Pointers and References What are Arrays, Strings, Conditionals, Loops and more How to use Functions How to work with Constructors and Inheritance How to use Access Levels, Static, Enum, String and Union, and more What are Custom Conversions, Namespaces, Constants, and Preprocessor How to do Event Handling What are Type Conversions, Templates, Headers, and more Audience This book is a quick, handy pocket syntax reference for experienced C++ programmers, and a concise, easily-digested introduction for other programmers new to C++.

Introduces the features of the C programming language, discusses data types, variables, operators, control flow, functions, pointers, arrays, and structures, and looks at the UNIX system interface

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.

Android on x86: an Introduction to Optimizing for Intel® Architecture serves two main purposes. First, it makes the case for adapting your applications onto Intel's x86 architecture, including discussions of the business potential, the changing landscape of the Android marketplace, and the unique challenges and opportunities that arise from x86 devices. The fundamental idea is that extending your applications to support x86 or creating new ones is not difficult, but it is imperative to know all of the technicalities. This book is dedicated to providing you with an awareness of these nuances and an understanding of how to tackle them. Second, and most importantly, this book provides a one-stop detailed resource for best practices and procedures associated with the installation issues, hardware optimization issues, software requirements, programming tasks, and performance optimizations that emerge when developers consider the x86 Android devices. Optimization discussions dive into native code, hardware acceleration, and advanced profiling of multimedia applications. The authors have collected this information so that you can use the book as a guide for the specific requirements of each application project. This book is not dedicated solely to code; instead it is filled with the information you need in order to take advantage of x86 architecture. It will guide you through installing the Android SDK for Intel Architecture, help you understand the differences and similarities between processor architectures available in Android devices, teach you to create and port applications, debug existing x86 applications, offer solutions for NDK and C++ optimizations, and introduce the Intel Hardware Accelerated Execution Manager. This book provides the most useful information to help you get the job done quickly while utilizing best practices. What you'll learnThe development-relevant differences between Android on ARM and Android on Intel x86 How to set up the SDK for an emulated Intel Android device How to build the Android OS for the Intel Mobile Processor How to create new x86 based Android applications, set up testing and performance tuning, and port existing Android applications to work with the x86 processor How to debug problems they encounter when working on the x86 Android test platform Intricacies of the Intel Hardware Accelerated Execution Manager. The reader will also gain significant insight into the OpenGL Android support. Who this book is for Android developers Hardware designers who need to understand how Android will work on their processorsCIOs and CEOs of technology-based companies IT staff who may encounter or need to understand the issues New startup founders and entrepreneurs Computer science students Table of ContentsChapter 1: History & Evolution of Android OS Chapter 2: Mobile Device Applications – Uses and Trends Chapter 3: Why x86 on Android? Chapter 4: Android Development – Business Overview andConsiderations Chapter 5: Android Devices with Intel Processors Chapter 6: Installing the Android SDK for IntelApplication Development Chapter 7: The Intel Mobile Processor Chapter 8: Creating and Porting NDK-based AndroidApplications Chapter 9: Debugging Android Chapter 10: Performance Optimization for AndroidApplications on x86 Chapter 11: x86 NDK and C++ Optimizations Chapter 12: Intel Hardware Accelerated Execution Manager Appendix: References

"This book gives a general coverage of learning management systems followed by a comparative analysis of the particular LMS products, review of technologies supporting different aspect of educational process, and, the best practices and methodologies for LMS-supported course delivery"--Provided by publisher.

Embedded Linux Development Using EclipseNewnes

Geared to experienced C++ developers who may not be familiar with the more advanced features of the language, and therefore are not using it to its full capabilities Teaches programmers how to think in C++-that is, how to design effective solutions that maximize the power of the language The authors drill down into this notoriously complex language, explaining poorly understood elements of the C++ feature set as well as common pitfalls to avoid Contains several in-depth case studies with working code that's been tested on Windows, Linux, and Solaris platforms

This book is not about a traditional introduction to Eclipse. This book gives a practical introduction to Eclipse. It introduces the features of Eclipse in the logical order in which any C/C++ programmer would need them; use them. The book is appeals to a wide range of audience: It can help a student/freshman who has just started programming It can help a full time programmer to be more productive with Eclipse It can help a seasoned programmer maintaining a huge software stack

Another day without Test-Driven Development means more time wasted chasing bugs and watching your code deteriorate. You thought TDD was for someone else, but it's not! It's for you, the embedded C programmer. TDD helps you prevent defects and build software with a long useful life. This is the first book to teach the hows and whys of TDD for C programmers. TDD is a modern programming practice C developers need to know. It's a different way to program---unit tests are written in a tight feedback loop with the production code, assuring your code does what you think. You get valuable feedback every few minutes. You find mistakes before they become bugs. You get early warning of design problems. You get immediate notification of side effect defects. You get to spend more time adding valuable features to your product. James is one of the few experts in applying TDD to embedded C. With his 1.5 decades of training,coaching, and practicing TDD in C, C++, Java, and C# he will lead you from being a novice in TDD to using the techniques that few have mastered. This book is full of code written for embedded C programmers. You don't just see the end product, you see code and tests evolve. James leads you through the thought process and decisions made each step of the way. You'll learn techniques for test-driving code right nextto the hardware, and you'll learn design principles and how to apply them to C to keep your code clean and flexible. To run the examples in this book, you will need a C/C++ development environment on your machine, and the GNU GCC tool chain or Microsoft Visual Studio for C++ (some project conversion may be needed).

The technical resources, budgets, curriculum, and profile of the student body are all factors that play in implementing course design. Learning management systems administrate these aspects for the development of new methods for course delivery and corresponding instructional design. Learning Management

Systems and Instructional Design: Best Practices in Online Education provides an overview on the connection between learning management systems and the variety of instructional design models and methods of course delivery. This book is a useful source for administrators, faculty, instructional designers, course developers, and businesses interested in the technological solutions and methods of online education.

This updated reference offers a clear description of make, a central engine in many programming projects that simplifies the process of re-linking a program after re-compiling source files. Original. (Intermediate)

In this book, realistic examples show both the situations where threading is valuable and the ways to use threads to improve the modularity and efficiency of a program. The author takes the user behind the scenes to show them how threads work, where to expect problems, and what performance issues exist. Chapters on DCE, real-time, and multiprocessing are included.

Features intermediate and advanced projects that demonstrate the capabilities of Atmel AVR series microcontrollers.

Templates are among the most powerful features of C++, but they remain misunderstood and underutilized, even as the C++ language and development community have advanced. In C++ Templates, Second Edition, three pioneering

C++ experts show why, when, and how to use modern templates to build software that’s cleaner, faster, more efficient, and easier to maintain. Now extensively updated for the C++11, C++14, and C++17 standards, this new edition presents state-of-the-art techniques for a wider spectrum of applications. The authors provide authoritative explanations of all new language features that either improve templates or interact with them, including variadic templates, generic lambdas, class template argument deduction, compile-time if, forwarding references, and user-defined literals. They also deeply delve into fundamental language concepts (like value categories) and fully cover all standard type traits. The book starts with an insightful tutorial on basic concepts and relevant language features. The remainder of the book serves as a comprehensive reference, focusing first on language details and then on coding techniques, advanced applications, and sophisticated idioms. Throughout, examples clearly illustrate abstract concepts and demonstrate best practices for exploiting all that C++ templates can do. Understand exactly how templates behave, and avoid common pitfalls Use templates to write more efficient, flexible, and maintainable software Master today’s most effective idioms and techniques Reuse source code without compromising performance or safety Benefit from utilities for generic programming in the C++ Standard Library Preview the upcoming concepts feature The companion website, tmplbook.com, contains sample code and additional updates.

In this book wedescribe the basic elements of present computational technologies that use the algorithmic languages C/C++. The emphasis is on GNU compilers and libraries, FOSS for the solution of computational mathematics problems and visualization of the obtained data. At the beginning, a brief introduction to C is given with emphasis on its easy use in scientific and engineering computations.We describe the basic elements of the language, such as variables, data types, executable statements, functions, arrays, pointers, dynamic memory and file management. After that, we present some observations on the C++ programming language.We discuss the issues of program compiling, linking, and debugging. A quick guide to Eclipse is also presented in the book. The main features for editing, compiling, debugging and application assembling are considered.As examples, wesolve the standard problems of computational mathematics: operations with vectors and matrices, linear algebra problems, solution of nonlinear equations, numerical differentiation and integration, interpolation, initial value problems for ODEs and so on. Finally, basic features ofcomputational technologies are illustrated with model problems. All programs are implemented in C/C++ with using the GSL library. Gnuplot is employed to visualize the results of computations.

"This book provides a working guide to the C++ Open Source Computer Vision Library (OpenCV) version 3.x and gives a general background on the field of computer vision sufficient to help readers use OpenCV effectively."--Preface.

“Look it up in Petzold” remains the decisive last word in answering questions about Windows development. And in PROGRAMMING WINDOWS, FIFTH EDITION, the esteemed Windows Pioneer Award winner revises his classic text with authoritative coverage of the latest versions of the Windows operating system—once again drilling down to the essential API heart of Win32 programming. Topics include: The basics—input, output, dialog boxes An introduction to Unicode Graphics—drawing, text and fonts, bitmaps and metafiles The kernel and the printer Sound and music Dynamic-link libraries Multitasking and multithreading The Multiple-Document Interface Programming for the Internet and intranets Packed as always with definitive examples, this newest Petzold delivers the ultimate sourcebook and tutorial for Windows programmers at all levels working with Microsoft Windows 95, Windows 98, or Microsoft Windows NT. No aspiring or experienced developer can afford to be without it. An electronic version of this book is available on the companion CD. For customers who purchase an ebook version of this title, instructions for downloading the CD files can be found in the ebook.

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 featuresinstructional videos, source code, discussion forums, and more, toensure that you have everything you need. The BeagleBone's small size, high performance, low cost,and extreme adaptability have made it a favorite developmentplatform, and the Linux software base allows for complex yetflexible functionality. The BeagleBone has applications in smartbuildings, robot control, environmental sensing, to name a few;and, expansion boards and peripherals dramatically increase thepossibilities. Exploring BeagleBone provides areader-friendly guide to the device, including a crash coursein computer engineering. While following step by step, you can: Get up to speed on embedded Linux, electronics, andprogramming Master interfacing electronic circuits, buses and modules, withpractical examples Explore the Internet-connected BeagleBone and the BeagleBonewith a display Apply the BeagleBone to sensing applications, including videoand sound Explore the BeagleBone's Programmable Real-TimeControllers Hands-on learning helps ensure that your new skills stay withyou, allowing you to design with electronics, modules, orperipherals even beyond the BeagleBone. Insightful guidance andonline peer support help you transition from beginner to expert asyou master the techniques presented in Exploring BeagleBone,the practical handbook for the popular computing platform.

Pro OGRE 3D Programming offers a detailed guide to the cross-platform Object-Oriented Graphics Rendering Engine (OGRE) 3D engine. OGRE provides an object-oriented interface to render 3D scenes. Commonly used in game creation, it can be utilized to create a variety of 3D based applications, including architectural visualization and simulations. The authors begin with obtaining the source code, move on to using the rendering library, and conclude with the polishing of the final application. Beginning-level knowledge of game design practices, intermediate-level knowledge of the C++ language, and a familiarity with open-source project-management tools such as CVS and Subversion are all recommended.

The C Quick Syntax Reference is a condensed code and syntax reference to the popular C programming language, which has enjoyed some resurgence of late. C's efficiency makes it a popular choice in a wide variety of applications and operating systems with special applicability to, for instance, wearables, game programming, system level programming, embedded device/firmware programming and in Arduino and related electronics hobbies. This book presents the essential C syntax in a well-organized format that can be used as a quick and handy reference. You won’t find any technical jargon, bloated samples, drawn out history lessons, or witty stories in this book. What you will find is a language reference that is concise, to the point and highly accessible. The book is packed with useful information and is a must-have for any C programmer. In the C Quick Syntax Reference, you will find a concise reference to the C language syntax.; short, simple, and focused code examples; and well laid out table of contents and a comprehensive index allowing easy review.