

C Standard Library Quick Reference

"Unlike many beginners' books, C++: A Dialog uses industry-standard C++ and the latest standard libraries - giving you skills you can use with any standard C++ toolset, in any programming environment. You even get all the example code and a standard C++ compiler on CD-ROM so you can write and compile your own standard C++ programs on any 32-bit Microsoft Windows platform."--BOOK JACKET.Title Summary field provided by Blackwell North America, Inc. All Rights Reserved

"At Cisco, we have adopted the CERT C Coding Standard as the internal secure coding standard for all C developers. It is a core component of our secure development lifecycle. The coding standard described in this book breaks down complex software security topics into easy-to-follow rules with excellent real-world examples. It is an essential reference for any developer who wishes to write secure and resilient software in C and C++." --Edward D. Paradise, vice president, engineering, threat response, intelligence, and development, Cisco Systems Secure programming in C can be more difficult than even many experienced programmers realize. To help programmers write more secure code, The CERT® C Coding Standard, Second Edition, fully documents the second official release of the CERT standard for secure coding in C. The rules laid forth in this new edition will help ensure that programmers' code fully complies with the new C11 standard; it also addresses earlier versions, including C99. The new standard itemizes those coding errors that are the root causes of current software vulnerabilities in C, prioritizing them by severity, likelihood of exploitation, and remediation costs. Each of the text's 98 guidelines includes examples of insecure code as well as secure, C11-conforming, alternative implementations. If uniformly applied, these guidelines will eliminate critical coding errors that lead to buffer overflows, format-string vulnerabilities, integer overflow, and other common vulnerabilities. This book reflects numerous experts' contributions to the open development and review of the rules and recommendations that comprise this standard. Coverage includes Preprocessor Declarations and Initialization Expressions Integers Floating Point Arrays Characters and Strings Memory Management Input/Output Environment Signals Error Handling Concurrency Miscellaneous Issues First comprehensive treatment of ANSI and ISO standards for the C Library. Includes practical advice on using all 15 headers of the Library and covers the concept design and utilization of libraries. Contains complete codes of C Library and is the companion volume to C Programming Language. An independent consultant, author Plauger is one of the world's leading experts on C and the C Library.

Introducing the Boost libraries: the next breakthrough in C++ programming Boost takes you far beyond the C++ Standard Library, making C++ programming more elegant, robust, and productive. Now, for the first time, a leading Boost expert systematically introduces the broad set of Boost libraries and teaches best practices for their use. Writing for intermediate-to-advanced C++ developers, Björn Karlsson briefly outlines all 58 Boost libraries, and then presents comprehensive coverage of 12 libraries you're likely to find especially useful. Karlsson's topics range from smart pointers and conversions to containers and data structures, explaining exactly how using each library can improve your code. He offers detailed coverage of higher-order function objects that enable you to write code that is more concise, expressive, and readable. He even takes you "behind the scenes" with Boost, revealing tools and techniques for creating your own generic libraries. Coverage includes Smart pointers that provide automatic lifetime management of objects and simplify resource sharing Consistent, best-practice solutions for performing type conversions and lexical conversions Utility classes that make programming simpler and clearer Flexible container libraries that solve common problems not covered by the C++ Standard Library Powerful support for regular expressions with Boost.Regex Function objects defined at the call site with Boost.Bind and Boost.Lambda More flexible callbacks with Boost.Function Managed signals and slots (a.k.a. the Observer pattern) with Boost.Signals The Boost libraries are proving so useful that many of them are planned for inclusion in the next version of the C++ Standard Library. Get your head start now, with Beyond the C++ Standard Library.

An Introduction to Professional C Programming

Make full use of the standard library components in C++17

NET Framework Standard Library Annotated Reference

Large-Scale C++ Volume I

Beyond the C++ Standard Library

A Brain-Friendly Guide

This quick reference is a condensed guide to the essential data structures, algorithms, and functions provided by the C++17 Standard Library. It does not explain the C++ language or syntax, but is accessible to anyone with basic C++ knowledge or programming experience. Even the most experienced C++ programmer will learn a thing or two from it and find it a useful memory-aid. It is hard to remember all the possibilities, details, and intricacies of the vast and growing Standard Library. This handy reference guide is therefore indispensable to any C++ programmer. It offers a condensed, well-structured summary of all essential aspects of the C++ Standard Library. No page-long, repetitive examples or obscure, rarely used features. Instead, everything you need to know and watch out for in practice is outlined in a compact, to-the-point style, interspersed with practical tips and well-chosen, clarifying examples. This new edition is updated to include all Standard Library changes in C++17, including the new vocabulary types std::string_view, any, optional, and variant; parallel algorithms; the file system library; specialized mathematical functions; and more. What You Will Learn Gain the essentials that the C++ Standard Library has to offer Use containers to efficiently store and retrieve your data Inspect and manipulate your data with algorithms See how lambda expressions allow for elegant use of algorithms Discover what the standard string class provides and how to use it Write localized applications Work with file and stream-based I/O Prevent memory leaks with smart pointers Write safe and efficient multi-threaded code using the threading libraries Who This Book Is For All C++ programmers, irrespective of their proficiency with the language or the Standard Library. A secondary audience is developers who are new to C++, but not new to programming, and who want to learn more about the C++ Standard Library in a quick, condensed manner.

This book breaks down the C++ STL, teaching you how to extract its gems and apply them to your programming. About This Book Boost your productivity as a C++ developer with the latest features of C++17 Develop high-quality, fast, and portable applications with the varied features of the STL Migrate from older versions (C++11, C++14) to C++17 Who This Book Is For This book is for developers who would like to master the C++ STL and make full use of its components. Prior C++ knowledge is assumed. What You Will Learn Make your own iterator types, allocators, and thread pools. Master every standard container and every standard algorithm. Improve your code by replacing new/delete with smart pointers. Understand the difference between monomorphic algorithms, polymorphic algorithms, and generic algorithms. Learn the meaning and applications of vocabulary type, product type and sum type. In Detail Modern C++ has come a long way since 2011. The latest update, C++17, has just been ratified and several implementations are on the way. This book is your guide to the C++ standard library, including the very latest C++17 features. The book starts by exploring the C++ Standard Template Library in depth. You will learn the key differences between classical polymorphism and generic programming, the foundation of the STL. You will also learn how to use the various algorithms and containers in the STL to suit your programming needs. The next module delves into the tools of modern C++. Here you will learn about algebraic types such as std::optional, vocabulary types such as std::function, smart pointers, and synchronization primitives such as std::atomic and std::mutex. In the final module, you will learn about C++'s support for regular expressions and file I/O. By the end of the book you will be proficient in using the C++17 standard library to implement real programs, and you'll have gained a solid understanding of the library's own internals. Style and approach This book takes a concise but comprehensive approach to explaining and applying the C++ STL, one feature at a time.

UNIX, UNIX LINUX & UNIX TCL/TK. Write software that makes the most effective use of the Linux system, including the kernel and core system libraries. The majority of both Unix and Linux code is still written at the system level, and this book helps you focus on everything above the kernel, where applications such as Apache, bash, cp, vim, Emacs, gcc, gdb, glibc, ls, mv, and X exist. Written primarily for engineers looking to program at the low level, this updated edition of Linux System Programming gives you an understanding of core internals that makes for better code, no matter where it appears in the stack. -- Provided by publisher.

Become a better programmer with performance improvement techniques such as concurrency, lock-free programming, atomic operations, parallelism, and memory management Key Features Learn proven techniques from a heavyweight and recognized expert in C++ and high-performance computing Understand the limitations of modern CPUs and their performance impact Find out how you can avoid writing inefficient code and get the best optimizations from the compiler Learn the tradeoffs and costs of writing high-performance programs Book Description The great free lunch of "performance taking care of itself" is over. Until recently, programs got faster by themselves as CPUs were upgraded, but that doesn't happen anymore. The clock frequency of new processors has almost peaked, and while new architectures provide small improvements to existing programs, this only helps slightly. To write efficient software, you now have to know how to program by making good use of the available computing resources, and this book will teach you how to do that. The Art of Efficient Programming covers all the major aspects of writing efficient programs, such as using CPU resources and memory efficiently, avoiding unnecessary computations, measuring performance, and how to put concurrency and multithreading to good use. You'll also learn about compiler optimizations and how to use the programming language (C++) more efficiently. Finally, you'll understand how design decisions impact performance. By the end of this book, you'll not only have enough knowledge of processors and compilers to write efficient programs, but you'll also be able to understand which techniques to use and what to measure while improving performance. At its core, this book is about learning how to learn. What you will learn Discover how to use the hardware computing resources in your programs effectively Understand the relationship between memory order and memory barriers Familiarize yourself with the performance implications of different data structures and organizations Assess the performance impact of concurrent memory accessed and how to minimize it Discover when to use and when not to use lock-free programming techniques Explore different ways to improve the effectiveness of compiler optimizations Design APIs for concurrent data structures and high-performance data structures to avoid inefficiencies Who this book is for This book is for experienced developers and programmers who work on performance-critical projects and want to learn new techniques to improve the performance of their code. Programmers in algorithmic trading, gaming, bioinformatics, computational genomics, or computational fluid dynamics communities will get the most out of the examples in this book, but the techniques are fairly universal. Although this book uses the C++ language, the concepts demonstrated in the book can be easily transferred or applied to other compiled languages such as C, Java, Rust, Go, and more.

The Practice of Programming

A Modular Structured Approach Using C++

Optimized C++

C++: a Dialogue

An Introduction to Boost

Programming the World's Calendars and Clocks

This quick reference is a condensed guide to the essential data structures, algorithms, and functions provided by the C++ Standard Library. Used by millions of C++ programmers on a daily basis, the C++ Standard Library features core classes for strings, I/O streams, and various generic containers, as well as a comprehensive set of algorithms to manipulate them. In recent years, the C++11 and C++14 standards have added even more efficient container classes, a new powerful regular expression library, and a portable multithreading library featuring threads, mutexes, condition variables, and atomic variables. Needless to say, it is hard to know and remember all the possibilities, details, and intricacies of this vast and growing library. This handy reference guide is therefore indispensable to any C++ programmer. It offers a condensed, well-structured summary of all essential aspects of the C++ Standard Library. No page-long, repetitive examples or obscure, rarely used features. Instead, everything you need to know and watch out for in practice is outlined in a compact, to-the-point style, interspersed with practical tips and well-chosen, clarifying examples. The book does not explain the C++ language or syntax, but is accessible to anyone with basic C++ knowledge or programming experience. Even the most experienced C++ programmer though will learn a thing or two from it and find it a useful memory-aid. Among the topics covered are: What You Will Learn Gain the essentials that the C++ Standard Library has to offer Use containers to efficiently store and retrieve your data Use algorithms to inspect and manipulate your data See how lambda expressions allow for elegant use of algorithms Discover what the standard string class provides and how to use it Write localized applications Work with file and stream-based I/O Discover what smart pointers are and how to use them to prevent memory leaks Write safe and efficient multi-threaded code using the threading libraries Who This Book Is For All C++ programmers: irrespective of their proficiency with the language or the Standard Library, this book offers an indispensable reference and memory-aid. A secondary audience is developers who are new to C++, but not new to programming, and who want to learn more on the C++ Standard Library in a quick, condensed manner.

Improve your existing C++ competencies quickly and efficiently with this advanced volume Professional C++, 5th Edition raises the bar for advanced programming manuals. Complete with a comprehensive overview of the new capabilities of C++20, each feature of the newly updated programming language is explained in detail and with examples. Case studies that include extensive, working code round out the already impressive educational material found within. Without a doubt, the new 5th Edition of Professional C++ is the leading resource for dedicated and knowledgeable professionals who desire to advance their skills and improve their abilities. This book contains resources to help readers: Maximize the capabilities of C++ with effective design solutions Master little-known elements of the language and learn what to avoid Adopt new workarounds and testing/debugging best practices Utilize real-world program segments in your own applications Notoriously complex and unforgiving, C++ requires its practitioners to remain abreast of the latest developments and advancements. Professional C++, 5th Edition ensures that its readers will do just that.

Summary Functional Programming in C++ teaches developers the practical side of functional programming and the tools that C++ provides to develop software in the functional style. This in-depth guide is full of useful diagrams that help you understand FP concepts and begin to think functionally. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Well-written code is easier to test and reuse, simpler to parallelize, and less error prone. Mastering the functional style of programming can help you tackle the demands of modern apps and will lead to simpler expression of complex program logic, graceful error handling, and elegant concurrency. C++ supports FP with templates, lambdas, and other core language features, along with many parts of the STL. About the Book Functional Programming in C++ helps you unleash the functional side of your brain, as you gain a powerful new perspective on C++ coding. You'll discover dozens of examples, diagrams, and illustrations that break down the functional concepts you can apply in C++, including lazy evaluation, function objects and invocables, algebraic data types, and more. As you read, you'll match FP techniques with practical scenarios where they offer the most benefit. What's inside Writing safer code with no performance penalties Explicitly handling errors through the type system Extending C++ with new control structures Composing tasks with DSLs About the Reader Written for developers with two or more years of experience coding in C++. About the Author Ivan Čukić is a core developer at KDE and has been coding in C++ since 1998. He teaches modern C++ and functional programming at the Faculty of Mathematics at the University of Belgrade. Table of Contents Introduction to functional programming Getting started with functional programming Function objects Creating new functions from the old ones Purity: Avoiding mutable state Lazy evaluation Ranges Functional data structures Algebraic data types and pattern matching Monads Template metaprogramming Functional design for concurrent systems Testing and debugging Learn key topics such as language basics, pointers and pointer arithmetic, dynamic memory management, multithreading, and network programming. Learn how to use the compiler, the make tool, and the archiver.

Proven Techniques for Heightened Performance

Talking Directly to the Kernel and C Library

The C++ Standard Template Library

The Python 3 Standard Library by Example

Process and Architecture

C++ Standard Library

Defines the template classes and functions of the standard template library (STL) component of the C++ programming language. A chapter is devoted to each of the 13 headers, providing a functional description of the header contents, suggestions for how best to use the facilities defined in the header, and the C++ code itself. Additional chapters introduce STL as a whole and discuss three overarching topics--iterators, algorithms, and containers. c. Book News Inc. Designed for the way many developers work, this practical problem-solving guide balances the need for rapid development with a trusted source of information.

To-the-point, authoritative, no-nonsense solutions have always been a trademark of O'Reilly books. The In a Nutshell books have earned a solid reputation in the field as the well-thumbed references that sit beside the knowledgeable developer's keyboard. C++ in a Nutshell lives up to the In a Nutshell promise. C++ in a Nutshell is a lean, focused reference that offers practical examples for the most important, most often used, aspects of C++. C++ in a Nutshell packs an enormous amount of information on C++ (and the many libraries used with it) in an indispensable quick reference for those who live in a deadline-driven world and need the facts but not the frills. The book's language reference is organized first by topic, followed by an alphabetical reference to the language's keywords, complete with syntax summaries and pointers to the topic references. The library reference is organized by header file, and each library chapter and class declaration presents the classes and types in alphabetical order, for easy lookup. Cross-references link related methods, classes, and other key features. This is an ideal resource for students as well as professional programmers. When you're programming, you need answers to questions about language syntax or parameters required by library routines quickly. What, for example, is the C++ syntax to define an alias for a namespace? Just how do you create and use an iterator to work with the contents of a standard library container? C++ in a Nutshell is a concise desktop reference that answers these questions, putting the full power of this flexible, adaptable (but somewhat difficult to master) language at every C++ programmer's fingertips.

Contains full coverage of the ANSI/ISO C++ standard. The text covers classes, methods, interfaces and objects that make up the standard C++ libraries.

Programming Fundamentals

C++17 Standard Library Quick Reference

Programming with the C++ Standard Library

C in a Nutshell

C++ In a Nutshell

A Tutorial and Reference

Bestselling Programming Tutorial and Reference Completely Rewritten for the New C++11 Standard Fully updated and recast for the newly released C++11 standard, this authoritative and comprehensive introduction to C++ will help you to learn the language fast, and to use it in modern, highly effective ways. Highlighting today's best practices, the authors show how to use both the core language and its standard library to write efficient, readable, and powerful code. C++ Primer, Fifth Edition, introduces the C++ standard library from the outset, drawing on its common functions and facilities to help you write useful programs without first having to master every language detail. The book's many examples have been revised to use the new language features and demonstrate how to make the best use of them. This book is a proven tutorial for those new to C++, an authoritative discussion of core C++ concepts and techniques, and a valuable resource for experienced programmers, especially those eager to see C++11 enhancements illuminated. Start Fast and Achieve More Learn how to use the new C++11 language features and the standard library to build robust programs quickly, and get comfortable with high-level programming Learn through examples that illuminate today's best coding styles and program design techniques Understand the "rationale behind the rules": why C++11 works as it does Use the extensive crossreferences to help you connect related concepts and insights Benefit from up-to-date learning aids and exercises that emphasize key points, help you to avoid pitfalls, promote good practices, and reinforce what you've learned Access the source code for the extended examples from informit.com/title/0321714113 C++ Primer, Fifth Edition, features an enhanced, layflat binding, which allows the book to stay open more easily when placed on a flat surface. This special binding method—notable by a small space inside the spine—also increases durability. Edited by a Lead Program Manager on Microsoft's .NET Framework team, .NET Framework Standard Library Annotated Reference, Volume 1, is the definitive reference for the .NET Framework base class library. This book utilizes extensive annotations and code samples from the creators of the technology to move beyond the online documentation and provide .NET developers with a dictionary-style reference to the most-used parts of the Framework. This volume covers a subset of the ISO CLI Standards, including the Base Class Library and the Extended Numerics Library. In the printed book you will find informative overviews of each namespace covered and an easy-to-follow alphabetic reference of types in the standard, including type-level descriptions, sample code with output, and annotations from the design team and standardization committee. With the ECMA and ISO standards as its core, this book includes: Annotations from key members of the Microsoft design team and the Standardization committee. Comments cover everything from design rationale and history to common problems and shortcomings. An overview of each namespace, describing its functionality and the inheritance hierarchy of types it defines. Type descriptions. Each type is covered in its own chapter, with a detailed description of how the type is to be used and a quick reference of the C# declaration syntax for all members defined on the type. Also noted: which members are only available in the Microsoft implementation of the .NET Framework, which are not available in the .NET Compact Framework, and which are only available in V1.1 of the .NET Framework. Code samples. Types are illustrated by fully compilable code samples with output included. Reference tabs and an exhaustive index, which allow readers to quickly and easily navigate the text. Reusable source code for more than one thousand samples. All code has been tested with versions 1.0, 1.1, and the 2.0 technical preview of the .NET Framework, and, where appropriate, with the .NET Compact Framework.

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 Writing reliable and maintainable C++ software is hard. Designing such software at scale adds a new set of challenges. Creating large-scale systems requires a practical understanding of logical design – beyond the theoretical concepts addressed in most popular texts. To be successful on an enterprise scale, developers must also address physical design, a dimension of software engineering that may be unfamiliar even to expert developers. Drawing on over 30 years of hands-on experience building massive, mission-critical enterprise systems, John Lakos shows how to create and grow Software Capital. This groundbreaking volume lays the foundation for projects of all sizes and demonstrates the processes, methods, techniques, and tools needed for successful real-world, large-scale development. Up to date and with a solid engineering focus, Large-Scale C++, Volume I: Process and Architecture, demonstrates fundamental design concepts with concrete examples. Professional developers of all experience levels will gain insights that transform their approach to design and development by understanding how to Raise productivity by leveraging differences between infrastructure and application development Achieve exponential productivity gains through feedback and hierarchical reuse Embrace the component's role as the fundamental unit of both logical and physical design Analyze how fundamental properties of compiling and linking affect component design Discover effective partitioning of logical content in appropriately sized physical aggregates Internalize the important differences among sufficient, complete, minimal, and primitive software Deliver solutions that simultaneously optimize encapsulation, stability, and performance Exploit the nine established levelization techniques to avoid cyclic physical dependencies Use lateral designs judiciously to avoid the “heaviness” of conventional layered architectures Employ appropriate architectural insulation techniques for eliminating compile-time coupling Master the multidimensional process of designing large systems using component-based methods This is the first of John Lakos's three authoritative volumes on developing large-scale systems using C++. This book, written for fellow software practitioners, uses familiar C++ constructs to solve real-world problems while identifying (and motivating) modern C++ alternatives. Together with the forthcoming Volume II: Design and Implementation and Volume III: Verification and Testing, Large-Scale C++ offers comprehensive guidance for all aspects of large-scale C++ software development. If you are an architect or project leader, this book will empower you to solve critically important problems right now – and serve as your go-to reference for years to come. Register your book for convenient access to downloads, updates, and/or corrections as they become available. See inside book for details.

Linux System Programming

Pyth 3 Stan Libr Exam _2

98 Rules for Developing Safe, Reliable, and Secure Systems

C++ Standard Library Quick Reference

C++17 - The Complete Guide

Standard C Date/Time Library

All the new language and library features of C++17 (for those who know the previous versions of C++). C++17 is the next evolution in modern C++ programming, which is already now supported by the latest version of gcc, clang, and Visual C++. Although it is not as big a step as C++11, it contains a large number of small and valuable language and library features, which will change the way we program in C++. As usual, not everything is self-explanatory, combining new features gives even more power, and there are hidden traps. This book presents all the new language and library features of C++17. It covers the motivation and context of each new feature with examples and background information. The focus is on how these features impact day-to-day programming, what it means to combine them, and how to benefit from this in practice.

The Best-Selling C++ Resource Now Updated for C++11 The C++ standard library provides a set of common classes and interfaces that greatly extend the core C++ language. The library, however, is not self-explanatory. To make full use of its components—and to benefit from their power—you need a resource that does far more than list the classes and their functions. The C++ Standard Library: A Tutorial and Reference, Second Edition, describes this library as now incorporated into the new ANSI/ISO C++ language standard (C++11). The book provides comprehensive documentation of each library component, including an introduction to its purpose and design; clearly written explanations of complex concepts; the practical programming details needed for effective use; traps and pitfalls; the exact signature and definition of the most important classes and functions; and numerous examples of working code. The book focuses in particular on the Standard Template Library (STL), examining containers, iterators, function objects, and STL algorithms. The book covers all the new C++11 library components, including Concurrency Fractional arithmetic Clocks and timers Tuples New STL containers New STL algorithms New smart pointers New locale facets Random numbers and distributions Type traits and utilities Regular expressions The book also examines the new C++ programming style and its effect on the standard library, including lambdas, range-based for loops, move semantics, and variadic templates. An accompanying Web site, including source code, can be found at www.cppstdlib.com.

This quick reference is a condensed guide to the essential data structures, algorithms, and functions provided by the C++17 Standard Library. It does not explain the C++ language or syntax, but is accessible to anyone with basic C++ knowledge or programming experience. Even the most experienced C++ programmer will learn a thing or two from it and find it a useful memory-aid. It is hard to remember all the possibilities, details, and intricacies of the vast and growing Standard Library. This handy reference guide is therefore indispensable to any C++ programmer. It offers a condensed, well-structured summary of all essential aspects of the C++ Standard Library. No page-long, repetitive examples or obscure, rarely used features. Instead, everything you need to know and watch out for in practice is outlined in a compact, to-the-point style, interspersed with practical tips and well-chosen, clarifying examples. This new edition is updated to include all Standard Library changes in C++17, including the new vocabulary types `std::string_view`, `any`, `optional`, and `variant`; parallel algorithms; the file system library; specialized mathematical functions; and more. What You Will Learn Gain the essentials that the C++ Standard Library has to offer Use containers to efficiently store and retrieve your data Inspect and manipulate your data with algorithms See how lambda expressions allow for elegant use of algorithms Discover what the standard string class provides and how to use it Write localized applications Work with file and stream-based I/O Prevent memory leaks with smart pointers Write safe and efficient multi-threaded code using the threading libraries Who This Book Is For All C++ programmers, irrespective of their proficiency with the language or the Standard Library. A secondary audience is developers who are new to C++, but not new to programming, and who want to learn more about the C++ Standard Library in a quick, condensed manner.

With the same insight and authority that made their book The Unix Programming Environment a classic, Brian Kernighan and Rob Pike have written The Practice of Programming to help make individual programmers more effective and productive. The practice of programming is more than just writing code. Programmers must also assess tradeoffs, choose among design alternatives, debug and test, improve performance, and maintain software written by themselves and others. At the same time, they must be concerned with issues like compatibility, robustness, and reliability, while meeting specifications. The Practice of Programming covers all these topics, and more. This book is full of practical advice and real-world examples in C, C++, Java, and a variety of special-purpose languages. It includes chapters on: debugging: finding bugs quickly and methodically testing: guaranteeing that software works correctly and reliably performance: making programs faster and more compact portability: ensuring that programs run everywhere without change design: balancing goals and constraints to decide which algorithms and data structures are best interfaces: using abstraction and information hiding to control the interactions between components style: writing code that works well and is a pleasure to read notation: choosing languages and tools that let the machine do more of the work Kernighan and Pike have distilled years of experience writing programs, teaching, and working with other programmers to create this book. Anyone who writes software will profit from the principles and guidance in The Practice of Programming .

The C++ Standard Library Extensions

Mastering the C++17 STL

A Pocket Guide to Data Structures, Algorithms, and Functions

Professional C++

Application Fundamentals for GNU C Libraries Version 2.3.x

Using the C++ Standard Template Libraries

Over 90 recipes that leverage the powerful features of the Standard Library in C++17 About This Book Learn the latest features of C++ and how to write better code by using the Standard Library (STL). Reduce the development time for your applications. Understand the scope and power of STL features to deal with real-world problems. Compose your own algorithms without forfeiting the simplicity and elegance of the STL way. Who This Book Is For This book is for intermediate-to-advanced C++ programmers who want to get the most out of the Standard Template Library of the newest version of C++ C++ 17. What You Will Learn Learn about the new core language features and the problems they were intended to solve Understand the inner workings and requirements of iterators by implementing them Explore algorithms, functional programming style, and lambda expressions Leverage the rich, portable, fast, and well-tested set of well-designed algorithms provided in the STL Work with strings the STL way instead of handcrafting C-style code Understand standard support classes for concurrency and synchronization, and how to put them to work Use the filesystem library addition available with the C++17 STL In Detail C++ has come a long way and is in use in every area of the industry. Fast, efficient, and flexible, it is used to solve many problems. The upcoming version of C++ will see programmers change the way they code. If you want to grasp the practical usefulness of the C++17 STL in order to write smarter, fully portable code, then this book is for you. Beginning with new language features, this book will help you understand the language's mechanics and library features, and offers insight into how they work. Unlike other books, ours takes an implementation-specific, problem-solution approach that will help you quickly overcome hurdles. You will learn the core STL concepts, such as containers, algorithms, utility classes, lambda expressions, iterators, and more, while working on practical real-world recipes. These recipes will help you get the most from the STL and show you how to program in a better way. By the end of the book, you will be up to date with the latest C++17 features and save time and effort while solving tasks elegantly using the STL. Style and approach This recipe-based guide will show you how to make the best use of C++ together with the STL to squeeze more out of the standard language

An innovative reference reveals the many capabilities of the Python Standard Library, which is a compilation of commonly used procedures that can be pasted into a Python script, by providing over 300 real-world example scripts. Original. (Intermediate/Advanced)

"TR1 roughly doubles the size of the C++ standard library, and it introduces many new facilities and even new kinds of library components. TR1 has some classes, for example, where some nested types may or may not exist depending on the template arguments. To programmers whose experience stops with the standard library, this is strange and unfamiliar. This book is complete (it covers all TR1 facilities), it is easier to understand than TR1 itself, and it is technically accurate." --Matthew Austern, software engineer, Google "TR1 will help make the C++ programmer more productive than ever. In this book, Pete Becker has written the ultimate reference guide to these components, what they are, how they work, and what they're used for. This book should be on the bookshelf of anyone who wants to use these standardized components to improve both their productivity as well as their coding quality." --John Maddock, consultant and programmer The current C++ standard library extends the core C++ language with common classes and functions. In recent years, to address limitations in that library, a number of components have been developed to extend the language even further. Compiled in a comprehensive technical report (TR1), the bulk of these extensions have been approved for the next revision of the C++ standard. In this book, Pete Becker describes in detail each component in the TR1 library, explaining new facilities for utilities, containers, call wrappers, type traits, numerics, regular expressions, and C compatibility. He draws on his own experience implementing these components to illustrate their value, clarifying the specifications when necessary and providing complete, tested code examples. Most chapters include exercises of various degrees of difficulty to help programmers get hands-on practice with the new components. Answers to the exercises, along with all code examples, are available on the Web. Appendixes comprise a summary of headers included in or extended by the TR1 library, as well as guidelines on how to use the components safely in multithreaded applications. The C++ Standard Library Extensions is for any programmer who wants to get a jump on the revised standard. It also makes the perfect companion to The C++ Standard Library, by Nicolai Josuttis, both books being tutorials and references essential for using C++ more effectively.

Programming Fundamentals - A Modular Structured Approach using C++ is written by Kenneth Leroy Busbee, a faculty member at Houston Community College in Houston, Texas. The materials used in this textbook/collection were developed by the author and others as independent modules for publication within the Connexions environment. Programming fundamentals are often divided into three college courses: Modular/Structured, Object Oriented and Data Structures. This textbook/collection covers the rest of those three courses.

Effective C

C++ Primer

The C Programming Language

C++ Cookbook

C++17 STL Cookbook

Standard C

Learning a language--any language--involves a process wherein you learn to rely less and less on instruction and more increasingly on the aspects of the language you've mastered. Whether you're learning French, Java, or C, at some point you'll set aside the tutorial and attempt to converse on your own. It's not necessary to know every subtle facet of French in order to speak it well, especially if there's a good dictionary available. Likewise, C programmers don't need to memorize every detail of C in order to write good programs. What they need instead is a reliable, comprehensive reference that they can keep nearby. C in a Nutshell is that reference. This long-awaited book is a complete reference to the C programming language and C runtime library. Its purpose is to serve as a convenient, reliable companion in your day-to-day work as a C programmer. C in a Nutshell covers virtually everything you need to program in C, describing all the elements of the language and illustrating their use with numerous examples. The book is divided into three distinct parts. The first part is a fast-paced description, reminiscent of the classic Kernighan & Ritchie text on which many C programmers cut their teeth. It focuses specifically on the C language and preprocessor directives, including extensions introduced to the ANSI standard in 1999. These topics and others are covered: Numeric constants Implicit and explicit type conversions Expressions and operators Functions Fixed-length and variable-length arrays Pointers Dynamic memory management Input and output The second part of the book is a comprehensive reference to the C runtime library; it includes an overview of the contents of the standard headers and a description of each standard library function. Part III provides the necessary knowledge of the C programmer's basic tools: the compiler, the make utility, and the debugger. The tools described here are those in the GNU software collection. C in a Nutshell is the perfect companion to K&R, and destined to be the most reached-for reference on your desk.

This is the eBook of the printed book and may not include any media, website access codes, or print supplements that may come packaged with the bound book. Master the Powerful Python 3 Standard Library through Real Code Examples “The genius of Doug’s approach is that with 15 minutes per week, any motivated programmer can learn the Python Standard Library. Doug’s guided tour will help you flip the switch to fully power-up Python’s batteries.” –Raymond Hettinger, Distinguished Python Core Developer The Python 3 Standard Library contains hundreds of modules for interacting with the operating system, interpreter, and Internet—all extensively tested and ready to jump-start application development. Now, Python expert Doug Hellmann introduces every major area of the Python 3.x library through concise source code and output examples. Hellmann’s examples fully demonstrate each feature and are designed for easy learning and reuse. You’ll find practical code for working with text, data structures, algorithms, dates/times, math, the file system, persistence, data exchange, compression, archiving, crypto, processes/threads, networking, Internet capabilities, email, developer and language tools, the runtime, packages, and more. Each section fully covers one module, with links to additional resources, making this book an ideal tutorial and reference. The Python 3 Standard Library by Example introduces Python 3.x’s new libraries, significant functionality changes, and new layout and naming conventions. Hellmann also provides expert porting guidance for moving code from 2.x Python standard library modules to their Python 3.x equivalents. Manipulate text with string, textwrap, re (regular expressions), and difflib Use data structures: enum, collections, array, heapq, queue, struct, copy, and more Implement algorithms elegantly and concisely with functools, itertools, and contextlib Handle dates/times and advanced mathematical tasks Archive and data compression Understand data exchange and persistence, including json, dbm, and sqlite Sign and verify messages cryptographically Manage concurrent operations with processes and threads Test, debug, compile, profile, language, import, and package tools Control interaction at runtime with interpreters or the environment

An extremely handy programmer's standard library reference that is as durable as it is portable. This 6 page laminated guide includes a collection of function and class declarations defined as part of the C++ Standard. The declarations are contained in header files that can be categorized according to the functionality they provide. These essential declarations are used by developers of all skill levels to simplify the process of programming in C++. This guide is all script and is organized to find needed script quickly without using screen space or extra clicks - it's already here at your fingertips. As with QuickStudy reference on any subject, with continued reference, the format lends itself to memorization. Beginning students or seasoned programmers will find this tool a perfect go-to for the at-a-glance script answer and memory jog you might need. At this price and for the bank of script included it's an easy add to your programmer's toolbox. 6 page laminated guide includes: Standard Containers Library Algorithm Library Exception Library Numeric Library Memory Library Iterator Library Stream-Based I/O Template Classes Legacy C-Style I/O in cstdio & wchar Strings Library ctype & ctype Library cstdlib Library cstring Library string Library thread Library type_traits Library Support for the C Standard Library

Identifies and explains the syntax, functions, and expressions of the C programming language, and describes how to use its library of utility programs

The CERT® C Coding Standard, Second Edition

The GNU C Library

Modern C for Absolute Beginners

Functional Programming in C++

The Rust Programming Language (Covers Rust 2018)

The C++ Standard Library

Learn the C programming language easily and in a straightforward way. This book teaches the basics of C, the C Standard Library, and modern C standards. No previous programming experience is required. C is a language that is as popular today as it was decades ago. C covers a wide variety of domains. It can be used to program a microcontroller, or to develop an entire operating system. This book is an effort to introduce the reader to the C programming language in a concise and easy to follow manner. The author takes you through the C programming language, the Standard Library, and the C standards basics. Each chapter is the right balance of theory and code examples. After reading and using this book, you'll have the essentials to start programming in modern C. What You Will Learn The C programming language fundamentals The C Standard Library fundamentals New C Standards features The basics of types, operators, statements, arrays, functions, and structs The basics of pointers, memory allocation, and memory manipulation Take advantage of best practices in C Who This Book Is For Beginner or novice programmers who wish to learn the C programming language. No prior programming experience is required.

This book breaks down the C++ STL, teaching you how to extract its gems and apply them to your programming.About This Book* Boost your productivity as a C++ developer with the latest features of C++17* Develop high-quality, fast, and portable applications with the varied features of the STL* Migrate from older versions (C++11, C++14) to C++17Who This Book Is ForThis book is for developers who would like to master the C++ STL and make full use of its components. Prior C++ knowledge is assumed.What You Will Learn* Make your own iterator types, allocators, and thread pools.* Master every standard container and every standard algorithm.* Improve your code by replacing new/delete with smart pointers.* Understand the difference between monomorphic algorithms, polymorphic algorithms, and generic algorithms.* Learn the meaning and applications of vocabulary type, product type and sum type.In DetailModern C++ has come a long way since 2011. The latest update, C++17, has just been ratified and several implementations are on the way.This book is your guide to the C++ standard library, including the very latest C++17 features.The book starts by exploring the C++ Standard Template Library in depth. You will learn the key differences between classical polymorphism and generic programming, the foundation of the STL. You will also learn how to use the various algorithms and containers in the STL to suit your programming needs. The next module delves into the tools of modern C++. Here you will learn about algebraic types such as std:optional, vocabulary types such as std:function, smart pointers, and synchronization primitives such as std:atomic and std:mutex. In the final module, you will learn about C++'s support for regular expressions and file I/O.By the end of the book you will be proficient in using the C++17 standard library to implement real programs, and you'll have gained a solid understanding of the library's own internals.Style and approachThis book takes a concise but comprehensive approach to explaining and applying the C++ STL, one feature at a time.

A detailed introduction to the C programming language for experienced programmers. The world runs on code written in the C programming language, yet most schools begin the curriculum with Python or Java. Effective C bridges this gap and brings C into the modern era--covering the modern C17 Standard as well as potential C2x features. With the aid of this instant classic, you'll soon be writing professional, portable, and secure C programs to power robust systems and solve real-world problems. Robert C. Seacord introduces C and the C Standard Library while addressing best practices, common errors, and open debates in the C community. Developed together with other C Standards committee experts, Effective C will teach you how to debug, test, and analyze C programs. You'll benefit from Seacord's concise explanations of C language constructs and behaviors, and from his 40 years of coding experience. You'll learn: • How to identify and handle undefined behavior in a C program • The range and representations of integers and floating-point values • How dynamic memory allocation works and how to use nonstandard functions • How to use character encodings and types • How to perform I/O with terminals and filesystems using C Standard streams and POSIX file descriptors • How to understand the C compiler's translation phases and the role of the preprocessor • How to test, debug, and analyze C programs Effective C will teach you how to write professional, secure, and portable C code that will stand the test of time and help strengthen the foundation of the computing world. In today's fast and competitive world, a program's performance is just as important to customers as the features it provides. This practical guide teaches developers performance-tuning principles that enable optimization in C++. You'll learn how to make code that already embodies best practices of C++ design run faster and consume fewer resources on any computer--whether it's a watch, phone, workstation, supercomputer, or globe-spanning network of servers. Author Kurt Guntheroth provides several running examples that demonstrate how to apply these principles incrementally to improve existing code so it meets customer requirements for responsiveness and throughput. The advice in this book will prove itself the first time you hear a colleague exclaim, "Wow, that was fast. Who fixed something?"Locate performance hot spots using the profiler and software timersLearn to perform repeatable experiments to measure performance of code changesOptimize use of dynamically allocated variablesImprove performance of hot loops and functionsSpeed up

string handling functionsRecognize efficient algorithms and optimization patternsLearn the strengths--and weaknesses--of C++ container classesView searching and sorting through an optimizer's eyeMake efficient use of C++ streaming I/O functionsUse C++ thread-based concurrency features effectively

A Friendly Introduction to the C Programming Language

The Art of Writing Efficient Programs

A Desktop Quick Reference

An advanced programmer's guide to efficient hardware utilization and compiler optimizations using C++ examples

Python Standard Library

Head First C

The official book on the Rust programming language, written by the Rust development team at the Mozilla Foundation, fully updated for Rust 2018. The Rust Programming Language is the official book on Rust: an open source systems programming language that helps you write faster, more reliable software. Rust offers control over low-level details (such as memory usage) in combination with high-level ergonomics, eliminating the hassle traditionally associated with low-level languages. The authors of The Rust Programming Language, members of the Rust Core Team, share their knowledge and experience to show you how to take full advantage of Rust's features--from installation to creating robust and scalable programs. You'll begin with basics like creating functions, choosing data types, and binding variables and then move on to more advanced concepts, such as:

- Ownership and borrowing, lifetimes, and traits
- Using Rust's memory safety guarantees to build fast, safe programs
- Testing, error handling, and effective refactoring
- Generics, smart pointers, multithreading, trait objects, and advanced pattern matching
- Using Cargo, Rust's built-in package manager, to build, test, and document your code and manage dependencies
- How best to use Rust's advanced compiler with compiler-led programming techniques

You'll find plenty of code examples throughout the book, as well as three chapters dedicated to building complete projects to test your learning: a number guessing game, a Rust implementation of a command line tool, and a multithreaded server. New to this edition: An extended section on Rust macros, an expanded chapter on modules, and appendixes on Rust development tools and editions.

Using the C++ Standard Template Libraries is a contemporary treatment that teaches the generic programming capabilities that the C++ 14 Standard Library provides. In this book, author Ivor Horton explains what the class and function templates available with C++ 14 do, and how to use them in a practical context. You'll learn how to create containers, and how iterators are used with them to access, modify, and extend the data elements they contain. You'll also learn about stream iterators that can transfer data between containers and streams, including file streams. The function templates that define algorithms are explained in detail, and you'll learn how to pass function objects or lambda expressions to them to customize their behavior. Many working examples are included to demonstrate how to apply the algorithms with different types of containers. After reading this book, you will understand the scope and power of the templates that the C++ 14 Standard Library includes and how these can greatly reduce the coding and development time for many applications. You'll be able to combine the class and function templates to great effect in dealing with real-world problems. The templates in the Standard Library provide you as a C++ programmer with a comprehensive set of efficiently implemented generic programming tools that you can use for most types of application. How to use Standard Library templates with your C++ applications. Understand the different types of containers that are available and what they are used for. How to define your own class types to meet the requirements of use with containers. What iterators are, the characteristics of the various types of iterators, and how they allow algorithms to be applied to the data in different types of container. How you can define your own iterator types. What the templates that define algorithms do, and how you apply them to data stored in containers and arrays. How to access hardware clocks and use them for timing execution. How to use the templates available for compute-intensive numerical data processing. How to create and use pseudo-random number generators with distribution objects.

Does the year 2000 have you sweating late-night code? Use our complete library of C programming functions to master Y2K, time on the Net, ISO 8601, time stamp compression, or any other time/date application you encounter. Using the astronomers Julian Day'

The Standard C Library

A QuickStudy Laminated Reference Guide