

## The Standard C Library Plauger

This book is a tutorial on image processing. Each chapter explains basic concepts with words and figures, shows image processing results with photographs, and implements the operations in C. The C code in this book is based on a series of articles published in the C Users Journal from 1990 through 1993, and includes three entirely new chapters and six new appendices. The new chapters are 1) an introduction to the entire system, 2) a set of routines for Boolean operations on images -- such as subtracting or adding one with another, 3) a batch system for performing offline processing (such as overnight for long involved manipulations). The C image processing system (CIPS) works with Tag Image File Format (TIFF) gray scale images. The entire system has been updated from the original publications to comply with the TIFF 6.0 specification from June 1993 (the magazine articles were written for the TIFF 5.0 specification.) The text and accompanying source code provide working edge detectors, filters, and histogram equalizers, I/O routines, display and print procedures that are ready to use, or can be modified for special applications. Print routines are provided for laser printers, graphics printers, and character printers. Display procedures are provided for monochrome, CGA, VGA, and EGA monitors. All of these functions are provided in a system that will run on a garden variety PC, not requiring a math co-processor, frame grabber, or super VGA monitor.

Provides information on the Python 2.7 library offering code and output examples for working with such tasks as text, data types, algorithms, math, file systems, networking, XML, email, and runtime.

This book helps to prevent such problems by showing how C programmers get themselves into trouble. Each of the book's many examples has trapped a professional programmer. Distilled from the author's experience over a decade of programming in C, this book is an ideal resource for anyone, novice or expert, who has ever written a C program.

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

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)

For programmers familiar with the C and C++ programming. This book presents the library portion of the draft ANSI/ISO Standard for the programming language C++, and shows how to use all the library classes and functions. An introductory chapter discusses how the Standard C library changes to meet the needs of C++.

Improve your programming through a solid understanding of C pointers and memory management. With this practical book, you'll learn how pointers provide the mechanism to dynamically manipulate memory, enhance support for data structures, and enable access to hardware. Author Richard Reese shows you how to use pointers with arrays, strings, structures, and functions, using memory models throughout the book. Difficult to master, pointers provide C with much flexibility and power—yet few resources are dedicated to this data type. This comprehensive book has the information you need, whether you're a beginner or an experienced C or C++ programmer or developer. Get an introduction to pointers, including the declaration of different pointer types Learn about dynamic memory allocation, de-allocation, and alternative memory management techniques Use techniques for passing or returning data to and from functions Understand the fundamental aspects of arrays as they relate to pointers Explore the basics of strings and how pointers are used to support them Examine why pointers can be the source of security problems, such as buffer overflow Learn several pointer techniques, such as the use of opaque pointers, bounded pointers and, the restrict keyword "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.

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.

Covers Expression, Structure, Common Blunders, Documentation, & Structured Programming Techniques

C is one of the oldest programming languages and still one of the most widely used. Whether you're an experienced C programmer or you're new to the language, you know how frustrating it can be to hunt through hundreds of pages in your reference books to find that bit of information on a certain function, type or other syntax element. Or even worse, you may not have your books with you. Your answer is the C Pocket Reference. Concise and easy to use, this handy pocket guide to C is a must-have quick reference for any C programmer. It's the only C reference that fits in your pocket and is an excellent companion to O'Reilly's other C books. Ideal as an introduction for beginners and a quick reference for advanced programmers, the C Pocket Reference consists of two parts: a compact description of the C language and a thematically structured reference to the standard library. The representation of the language is based on the ANSI standard and includes extensions introduced in 1999. An index is included to help you quickly find the information you need. This small book covers the following: C language fundamentals Data types Expressions and operators C statements Declarations Functions Preprocessor directives The standard library O'Reilly's Pocket References have become a favorite among programmers everywhere. By providing a wealth of important details in a concise, well-organized format, these handy books deliver just what you need to complete the task at hand. When you've reached a sticking point in your work and need to get to a solution quickly, the new C Pocket Reference is the book you'll want to have.

For C Programming Courses Found In Departments Of Computer Science, Engineering, Cis, Mis, It, Business And Continuing Education. This Authoritative Reference Manual Provides A Complete Description Of The C Language, The Run-Time Libraries, And A Style Of C Programming That Emphasizes Correctness, Portability, And Maintainability. The Authors Describe The C Language More Clearly And In More Detail Than In Any Other Book.

The Definitive Guide to Windows API Programming, Fully Updated for Windows 7, Windows Server 2008, and Windows Vista Windows System Programming, Fourth Edition, now contains extensive new coverage of 64-bit programming, parallelism, multicore systems, and many other crucial topics. Johnson Hart's robust code examples have been updated and streamlined throughout. They have been debugged and tested in both 32-bit and 64-bit versions, on single and multiprocessor systems, and under Windows 7, Vista, Server 2008, and Windows XP. To clarify program operation, sample programs are now illustrated with dozens of screenshots. Hart systematically covers Windows externals at the API level, presenting practical coverage of all the services Windows programmers need, and emphasizing how Windows functions actually behave and interact in real-world applications. Hart begins with features used in single-process applications and gradually progresses to more sophisticated functions and multithreaded environments. Topics covered include file systems, memory management, exceptions, processes, threads, synchronization, interprocess communication, Windows services, and security. New coverage in this edition includes Leveraging parallelism and maximizing performance in multicore systems Promoting source code portability and application interoperability across Windows, Linux, and UNIX Using 64-bit address spaces and ensuring 64-bit/32-bit portability Improving performance and scalability using threads, thread pools, and completion ports Techniques to improve program reliability and performance in all systems Windows performance-enhancing API features available starting with Windows Vista, such as slim reader/writer locks and condition variables A companion Web site, [jmhartsoftware.com](http://jmhartsoftware.com), contains all sample code, Visual Studio projects, additional examples, errata, reader comments, and Windows commentary and discussion.

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.

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.

C Unleashed is a very comprehensive book on the ANSI C programming language. The book promotes solid, portable programming using ANSI C, thus benefitting programmers on any platform, including mainframes. Covers the New Standard for C, known as C9X, and includes: Embedded systems, Simulation Processing, Threading and Multiprocessing, Digital Signal Processing, and Natural Language Processing.

Learn how to develop your own applications to monitor or control instrumentation hardware. Whether you need to acquire data from a device or automate its functions, this practical book shows you how to use Python's rapid development capabilities to build interfaces that include everything from software to wiring. You get step-by-step instructions, clear examples, and hands-on tips for interfacing a PC to a variety of devices. Use the book's hardware survey to identify the interface type for your particular device, and then follow detailed examples to develop an interface with Python and C. Organized by interface type, data processing activities, and user interface implementations, this book is for anyone who works with instrumentation, robotics, data acquisition, or process control. Understand how to define the scope of an application and determine the algorithms necessary, and why it's important. Learn how to use industry-standard interfaces such as RS-232, RS-485, and GPIB. Create low-level extension modules in C to interface Python with a variety of hardware and test instruments. Explore the console, curses, TkInter, and wxPython for graphical and text-based user interfaces. Use open source software tools and libraries to reduce costs and avoid implementing functionality from scratch.

Modern Fortran teaches you to develop fast, efficient parallel applications using twenty-first-century Fortran. In this guide, you'll dive into Fortran by creating fun apps, including a tsunami simulator and a stock price analyzer. Filled with real-world use cases, insightful illustrations, and hands-on exercises, Modern Fortran helps you see this classic language in a whole new light. Summary: Using Fortran, early and accurate forecasts for hurricanes and other major storms have saved thousands of lives. Better designs for ships, planes, and automobiles have made travel safer, more efficient, and less expensive than ever before. Using Fortran, low-level machine learning and deep learning libraries provide incredibly easy, fast, and insightful analysis of massive data. Fortran is an amazingly powerful and flexible programming language that forms the foundation of high performance computing for research, science, and industry. And it's come a long, long way since starting life on IBM mainframes in 1956. Modern Fortran is natively parallel, so it's uniquely suited for efficiently handling problems like complex simulations, long-range predictions, and ultra-precise designs. If you're working on tasks where speed, accuracy, and efficiency matter, it's time to discover—or re-discover—Fortran. About the technology: For over 60 years Fortran has been powering mission-critical scientific applications, and it isn't slowing down yet! Rock-solid reliability and new support for parallel programming make Fortran an essential language for next-generation high-performance computing. Simply put, the future is in parallel, and Fortran is already there. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the book: Modern Fortran teaches you to develop fast, efficient parallel applications using twenty-first-century Fortran. In this guide, you'll dive into Fortran by creating fun apps, including a tsunami simulator and a stock price analyzer. Filled with real-world use cases, insightful illustrations, and hands-on exercises, Modern Fortran helps you see this classic language in a whole new light. What's inside: Fortran's place in the modern world. Working with variables, arrays, and functions. Module development. Parallelism with coarrays, teams, and events. Interoperating Fortran with C. About the reader: For developers and computational scientists. No experience with Fortran required. About the author: Milan Curcic is a meteorologist, oceanographer, and author of several general-purpose Fortran libraries and applications. Table of Contents: PART 1 - GETTING STARTED WITH MODERN FORTRAN 1 Introducing Fortran 2 Getting started: Minimal working app PART 2 - CORE ELEMENTS OF FORTRAN 3 Writing reusable code with functions and subroutines 4 Organizing your Fortran code using modules 5 Analyzing time series data with arrays 6 Reading, writing, and formatting your data PART 3 - ADVANCED FORTRAN USE 7 Going parallel with Fortran coarrays 8 Working with abstract data using derived types 9 Generic procedures and operators for any data type 10 User-defined operators for derived types PART 4 - THE FINAL STRETCH 11 Interoperability with C: Exposing your app to the web 12 Advanced parallelism with teams, events, and collectives. Less than one quarter of one percent of the code written is used more than once, even when a second program requires the same tool as the first. One of the strengths of the C++ language is its ability to build reusable components and this book is about building reusable components in C++.

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](http://www.cppstdlib.com).

This work offers a comprehensive treatment of ANSI and ISO standards for the C library. The code in the book is compatible with C compilers from Borland, Saber, Sun UNIX and VAX UNIX.

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.

A comprehensive guide to understanding the language of C offers solutions for everyday programming tasks and provides all the necessary information to understand and use common programming techniques. Original. (Intermediate).

Written by the originator of the USENET C FAQ, this book addresses the real-world problems on C programming that are asked, again and again, on the "comp.lang.c" newsgroup. The book is aimed at C programmers who need quick, concise answers to the stubborn questions which invariably arise when programming in C. It provides accurate answers, insightful explanations, and extensive code examples.

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

This book presents an introduction to the C programming language, featuring a structured approach and aimed at professionals and students with some experience of high-level languages. Features \*includes embedded summary material in bulleted form \*highlights common traps and pitfalls in C programming.

The CERT C Coding Standard, Second Edition enumerates the coding errors that are the root causes of current software vulnerabilities in C, prioritizing them by severity, likelihood of exploitation, and remediation costs. "Secure programming in C can be more difficult than even many experienced programmers realize," said Robert C. Seacord, technical manager of the CERT Secure Coding Initiative and author of the CERT C Coding Standard. "Software systems are becoming increasingly complex as our dependency on these systems increases. In our new CERT standard, as with all of our standards, we identify insecure coding practices and present secure alternatives that software developers can implement to reduce or eliminate vulnerabilities before deployment."

Summary: This bestseller has been updated and revised to cover all the latest changes to C++ 14 and 17! C++ Concurrency in Action, Second Edition teaches you everything you need to write robust and elegant multithreaded applications in C++17.

Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology You choose C++ when your applications need to run fast. Well-designed concurrency makes them go even faster. C++ 17 delivers strong support for the multithreaded, multiprocessor programming required for fast graphic processing, machine learning, and other performance-sensitive tasks. This exceptional book unpacks the features, patterns, and best practices of production-grade C++ concurrency. About the Book C++ Concurrency in Action, Second Edition is the definitive guide to writing elegant multithreaded applications in C++. Updated for C++ 17, it carefully addresses every aspect of concurrent development, from starting new threads to designing fully functional multithreaded algorithms and data structures. Concurrency master Anthony Williams presents examples and practical tasks in every chapter, including insights that will delight even the most experienced developer. What's inside Full coverage of new C++ 17 features Starting and managing threads Synchronizing concurrent operations Designing concurrent code Debugging multithreaded applications About the Reader Written for intermediate C and C++ developers. No prior experience with concurrency required. About the Author Anthony Williams has been an active member of the BSI C++ Panel since 2001 and is the developer of the just::thread Pro extensions to the C++ 11 thread library. Table of Contents Hello, world of concurrency in C++! Managing threads Sharing data between threads Synchronizing concurrent operations The C++ memory model and operations on atomic types Designing lock-based concurrent data structures Designing lock-free concurrent data structures Designing concurrent code Advanced thread management Parallel algorithms Testing and debugging multithreaded applications

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

How to build software tools using structured programming. Written using RATFOR (Rational FORTRAN); could be translated into other languages.

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.

Throw out your old ideas of C, and relearn a programming language that's substantially outgrown its origins. With 21st Century C, you'll discover up-to-date techniques that are absent from every other C text available. C isn't just the foundation of modern programming languages, it is a modern language, ideal for writing efficient, state-of-the-art applications. Learn to dump old habits that made sense on mainframes, and pick up the tools you need to use this evolved and aggressively simple language. No matter what programming language you currently champion, you'll agree that C rocks. Set up a C programming environment with shell facilities, makefiles, text editors, debuggers, and memory checkers Use Autotools, C's de facto cross-platform package manager Learn which older C concepts should be downplayed or deprecated Explore problematic C concepts that are too useful to throw out Solve C's string-building problems with C-standard and POSIX-standard functions Use modern syntactic features for functions that take structured inputs Build high-level object-based libraries and programs Apply existing C libraries for doing advanced math, talking to Internet servers, and running databases

The Standard C Library

Designed for a compulsory fundamental course, C: From Theory to Practice uses a hands-on approach to teach the C programming language, using numerous examples and a clear, concise presentation. Easy to use and classroom tested, this textbook includes more than 500 exercises and examples of progressive difficulty to help students in understanding all the aspects and peculiarities of C. The exercises test students on various levels of programming and the examples enhance their concrete understanding of programming know-how. Divided into three parts, this book: Introduces the basic concepts of C, like getting input from a user, C's operators, selection statements, and loops. Emphasizes major features of C such as arrays, pointers, functions and strings. Covers advanced topics such as like searching and sorting arrays' algorithms, structures and unions, memory management, the preprocessor and files. The book tests the skills of beginners and advanced developers by providing an easy-to-read compilation of the C theory enriched with tips and advice as well as difficulty-scaled solved programming exercises. It decodes the secrets of the C language, providing inside information and programming knowledge through practical examples and meaningful advice. The examples are designed to be short, concrete, and substantial, quickly giving students the know-how they need.

Software -- Programming Languages.

Shows how to create reusable APIs using interface-based design, a language-independent methodology that separates interfaces from their implementations. Details 24 interfaces and their implementations and looks at eight sample applications, presenting them as literate programs with explanations interwoven with source code. Focuses on algorithm engineering and how to package data structures and related algorithms into reusable models. For C programmers, and students with a previous undergraduate introductory programming course.

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