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## 3ZLC3K - DAPHNE AMY

If you're an experienced Ruby programmer, Effective Ruby will help you harness Ruby's full power to write more robust, efficient, maintainable, and well-performing code. Drawing on nearly a decade of Ruby experience, Peter J. Jones brings together 48 Ruby best practices, expert tips, and shortcuts—all supported by realistic code examples. Jones offers practical advice for each major area of Ruby development, from modules to memory to metaprogramming. Throughout, he uncovers little-known idioms, quirks, pitfalls, and intricacies that powerfully impact code behavior and performance. Each item contains specific, actionable, clearly organized guidelines; careful advice; detailed technical arguments; and illuminating code examples. When multiple options exist, Jones shows you how to choose the one that will work best in your situation. Effective Ruby will help you systematically improve your code—not by blindly following rules, but by thoroughly understanding Ruby programming techniques. Key features of this concise guide include How to avoid pitfalls associated with Ruby's sometimes surprising idiosyncrasies What you should know about inheritance hierarchies to successfully use Rails (and other large frameworks) How to use misunderstood methods to do amazingly useful things with collections Better ways to use exceptions to improve code reliability Powerful metaprogramming approaches (and techniques to avoid) Practical, efficient testing solutions, including MiniTest Unit and Spec Testing How to reliably manage RubyGem dependencies How to make the most of Ruby's memory management and profiling tools How to improve code efficiency by understanding the Ruby interpreter's internals

More than 150,000 copies in print! Praise for Scott Meyers' first book, Effective C++: "I heartily recommend Effective C++ to anyone who aspires to mastery of C++ at the intermediate level or above." - The C/C++ User's Journal From the author of the indispensable Effective C++, here are 35 new ways to improve your programs and designs. Drawing on years of experience, Meyers explains how to write software that is more effective: more efficient, more robust, more consistent, more portable, and more reusable. In short, how to write C++ software that's just plain better. More Effective C++ includes: Proven methods for improving program efficiency, including incisive examinations of the time/space costs of C++ language features Comprehensive descriptions of advanced techniques used by C++ experts, including placement new, virtual constructors, smart pointers, reference counting, proxy classes, and double-dispatching Examples of the profound impact of exception handling on the structure and behavior of C++ classes and functions Practical treatments of new language features, including bool, mutable, explicit, namespaces, member templates, the Standard Template Library, and more. If your compilers don't yet support these features, Meyers shows you how to get the job done without them. More Effective C++ is filled with pragmatic, down-to-earth advice you'll use every day. Like Effective C++ before it, More Effective C++ is essential reading for anyone working with C++.

Coming to grips with C++11 and C++14 is more than a matter of familiarizing yourself with the features they introduce (e.g., auto type declarations, move semantics, lambda expressions, and concurrency support). The challenge is learning to use those features effectively—so that your software is correct, efficient, maintainable, and portable. That's where this practical book comes in. It describes how to write truly great software using C++11 and C++14—i.e. using modern C++. Topics include: The pros and cons of braced initialization, noexcept specifications, perfect forwarding, and smart pointer make functions The relationships among std::move, std::forward, rvalue references, and universal references Techniques for writing clear, correct, effective lambda expressions How std::atomic differs from volatile, how each should be used, and how they relate to C++'s concurrency API How best practices in "old" C++ programming (i.e., C++98) require revision for software development in modern C++ Effective Modern C++ follows the proven guideline-based, example-driven format of Scott Meyers' earlier books, but covers entirely new material. "After I learned the C++ basics, I then learned how to use C++ in production code from Meyer's series of Effective C++ books. Effective Modern C++ is the most important how-to book for advice on key guidelines, styles, and idioms to use modern C++ effectively and well. Don't own it yet? Buy this one. Now". -- Herb Sutter, Chair of ISO C++ Standards Committee and C++ Software Architect at Microsoft

"The security of information systems has not improved at a rate consistent with the growth and sophistication of the attacks being made against them. To address this problem, we must improve the underlying strategies and techniques used to create our systems. Specifically, we must build security in from the start, rather than append it as an afterthought. That's the point of Secure Coding in C and C++. In careful detail, this book shows software developers how to build high-quality systems that are less vulnerable to costly and even catastrophic attack. It's a book that every developer should read before the start of any serious project." --Frank Abagnale, author, lecturer, and leading consultant on fraud prevention and secure documents Learn the Root Causes of Software Vulnerabilities and How to Avoid Them Commonly exploited software vulnerabilities are usually caused by avoidable software defects. Having analyzed nearly 18,000 vulnerability reports over the past ten years, the CERT/Coordination Center (CERT/CC) has determined that a relatively small number of root causes account for most of them. This book identifies and explains these causes and shows the steps that can be taken to prevent exploitation. Moreover, this book encourages programmers to adopt security best practices and develop a security mindset that can help protect software from tomorrow's attacks, not just today's. Drawing on the CERT/CC's reports and conclusions, Robert Seacord systematically identifies the program errors most likely to lead to security breaches, shows how they can be exploited, reviews the potential consequences, and presents secure alternatives. Coverage includes technical detail on how to Improve the overall security of any C/C++ application Thwart buffer overflows and stack-smashing attacks that exploit insecure string manipulation logic Avoid vulnerabilities and security flaws resulting from the incorrect use of dynamic memory management functions Eliminate integer-related problems: integer overflows, sign errors, and truncation errors Correctly use formatted output functions without introducing format-string vulnerabilities Avoid I/O vulnerabilities, including race conditions Secure Coding in C and C++ presents hundreds of examples of secure code, insecure code, and exploits, implemented for Windows and Linux. If you're responsible for creating secure C or C++ software--or for keeping it safe--no other book offers you this much detailed, expert assistance.

"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 straight-forward 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.

Meyers provides 50 short, specific, easy-to-remember guidelines that experienced C++ programmers either almost always do or almost always avoid. These rules are each followed by an explanation of the rule's important advice on how to implement it, and are supported by actual programming examples.

PRACTICAL, EXAMPLE-RICH COVERAGE OF: Classes, Objects, Encapsulation, Inheritance, Polymorphism Integrated OOP Case Studies: Time, GradeBook, Employee Industrial-Strength, 95-Page OOD/UML® 2 ATM Case Study Standard Template Library (STL): Containers, Iterators and Algorithms I/O, Types, Control Statements, Functions Arrays, Vectors, Pointers, References String Class, C-Style Strings Operator Overloading, Templates Exception Handling, Files Bit and Character Manipulation Boost Libraries and the Future of C++ GNU™ and Visual C++® Debuggers And more... VISIT WWW.DEITEL.COM For information on Deitel® Dive-Into® Series corporate training courses offered at customer sites worldwide (or write to deitel@deitel.com) Download code examples Check out the growing list of programming, Web 2.0 and software-related Resource Centers To receive updates for this book, subscribe to the free DEITEL® BUZZ ONLINE e-mail newsletter at www.deitel.com/newsletter/subscribe.html Read archived issues of the DEITEL® BUZZ ONLINE The professional programmer's DEITEL® guide to C++ and object-oriented application development Written for programmers with a background in high-level language programming, this book applies the Deitel signature live-code approach to teaching programming and explores the C++ language and C++ Standard Libraries in depth. The book presents the concepts in the context of fully tested programs, complete with syntax shading, code highlighting, code walkthroughs and program outputs. The book features 240 C++ applications with over 15,000 lines of proven C++ code, and hundreds of tips that will help you build robust applications. Start with an introduction to C++ using an early classes and objects approach, then rapidly move on to more advanced topics, including templates, exception handling, the Standard Template Library (STL) and selected features from the Boost libraries. You'll enjoy the Deitel's classic treatment of object-oriented programming and the OOD/UML® 2 ATM case study, including a complete C++ implementation. When you're finished, you'll have everything you need to build object-oriented C++ applications. The DEITEL® Developer Series is designed for practicing programmers. The series presents focused treatments of emerging technologies, including C++, .NET, Java™, web services, Internet and web development and more. PRE-PUBLICATION REVIEWER TESTIMONIALS "An excellent 'objects first' coverage of C++. The example-driven presentation is enriched by the optional UML case study that contextualizes the material in an ongoing software engineering project." --Gavin Osborne, Saskatchewan Institute of Applied Science and Technology "Introducing the UML early on is a great idea." --Raymond Stephenson, Microsoft "Good use of diagrams, especially of the activation call stack and recursive functions." --Amar Raheja, California State Polytechnic University, Pomona "Terrific discussion of pointers-probably the best I have seen." --Anne B. Horton, Lockheed Martin "Great coverage of polymorphism and how the compiler implements polymorphism 'under the hood.'" --Ed James-Beckham, Borland "The Boost/C++0x chapter will get you up and running quickly with the memory management and regular expression libraries, plus whet your appetite for new C++ features being standardized." --Ed Brey, Kohler Co. "Excellent introduction to the Standard Template Library (STL). The best book on C++ programming!" --Richard Albright, Goldey-Beacom College "Just when you think you are focused on learning one topic, suddenly you discover you've learned more than you expected." --Chad Willwerth, University of Washington, Tacoma "The most thorough C++ treatment I've seen. Replete with real-world case studies covering the full software development lifecycle. Code examples are extraordinary!" --Terrell Hull, Logicalis Integration Solutions/

"The second edition is clearer and adds more examples on how to use STL in a practical environment. Moreover, it is more concerned with performance and tools for its measurement. Both changes are very welcome." --Lawrence Rauchwerger, Texas A&M University "So many algorithms, so little time! The generic algorithms chapter with so many more examples than in the previous edition is delightful! The examples work cumulatively to give a sense of comfortable competence with the algorithms, containers, and iterators used." --Max A. Lebow, Software Engineer, Unisys Corporation The STL Tutorial and Reference Guide is highly acclaimed as the most accessible, comprehensive, and practical introduction to the Standard Template Library (STL). Encompassing a set of C++ generic data structures and algorithms, STL provides reusable, interchangeable components adaptable to many different uses without sacrificing efficiency. Written by authors who have been instrumental in the creation and practical application of STL, STL Tutorial and Reference Guide, Second Edition includes a tutorial, a thorough description of each element of the library, numerous sample applications, and a comprehensive reference. You will find in-depth explanations of iterators, generic algorithms, containers, function objects, and much more. Several larger, non-trivial applications de-

monstrate how to put STL's power and flexibility to work. This book will also show you how to integrate STL with object-oriented programming techniques. In addition, the comprehensive and detailed STL reference guide will be a constant and convenient companion as you learn to work with the library. This second edition is fully updated to reflect all of the changes made to STL for the final ANSI/ISO C++ language standard. It has been expanded with new chapters and appendices. Many new code examples throughout the book illustrate individual concepts and techniques, while larger sample programs demonstrate the use of the STL in real-world C++ software development. An accompanying Web site, including source code and examples referenced in the text, can be found at <http://www.cs.rpi.edu/~musser/stl-book/index.html>.

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.

This edition of Data Abstraction and Problem Solving with Java: Walls and Mirrors employs the analogies of Walls (data abstraction) and Mirrors (recursion) to teach Java programming design solutions, in a way that beginning students find accessible. The book has a student-friendly pedagogical approach that carefully accounts for the strengths and weaknesses of the Java language. With this book, students will gain a solid foundation in data abstraction, object-oriented programming, and other problem-solving techniques. The full text downloaded to your computer With eBooks you can: search for key concepts, words and phrases make highlights and notes as you study share your notes with friends eBooks are downloaded to your computer and accessible either offline through the Bookshelf (available as a free download), available online and also via the iPad and Android apps. Upon purchase, you'll gain instant access to this eBook. Time limit The eBooks products do not have an expiry date. You will continue to access your digital ebook products whilst you have your Bookshelf installed.

Write Truly Great iOS and OS X Code with Objective-C 2.0! Effective Objective-C 2.0 will help you harness all of Objective-C's expressive power to write OS X or iOS code that works superbly well in production environments. Using the concise, scenario-driven style pioneered in Scott Meyers' best-selling Effective C++, Matt Galloway brings together 52 Objective-C best practices, tips, shortcuts, and realistic code examples that are available nowhere else. Through real-world examples, Galloway uncovers little-known Objective-C quirks, pitfalls, and intricacies that powerfully impact code behavior and performance. You'll learn how to choose the most efficient and effective way to accomplish key tasks when multiple options exist, and how to write code that's easier to understand, maintain, and improve. Galloway goes far beyond the core language, helping you integrate and leverage key Foundation framework classes and modern system libraries, such as Grand Central Dispatch. Coverage includes Optimizing interactions and relationships between Objective-C objects Mastering interface and API design: writing classes that feel "right at home" Using protocols and categories to write maintainable, bug-resistant code Avoiding memory leaks that can still occur even with Automatic Reference Counting (ARC) Writing modular, powerful code with Blocks and Grand Central Dispatch Leveraging differences between Objective-C protocols and multiple inheritance in other languages Improving code by more effectively using arrays, dictionaries, and sets Uncovering surprising power in the Cocoa and Cocoa Touch frameworks

Using techniques developed in the classroom at America Online's Programmer's University, Michael Daconta deftly pilots programmers through the intricacies of the two most difficult aspects of C++ programming: pointers and dynamic memory management. Written by a programmer for programmers, this no-nonsense, nuts-and-bolts guide shows you how to fully exploit advanced C++ programming features, such as creating class-specific allocators, understanding references versus pointers, manipulating multidimensional arrays with pointers, and how pointers and dynamic memory are the core of object-oriented constructs like inheritance, name-mangling, and virtual functions. Covers all aspects of pointers including: pointer pointers, function pointers, and even class member pointers Over 350 source code functions—code on every topic OOP constructs dissected and implemented in C Interviews with leading C++ experts Valuable money-saving coupons on developer products Free source code disk Disk includes: Reusable code libraries—over 350 source code functions you can use to protect and enhance your applications Memory debugger Read C++ Pointers and Dynamic Memory Management and learn how to combine the elegance of object-oriented programming with the power of pointers and dynamic memory!

Scott Meyers's seminal C++ books—Effective C++ , More Effective C++ , and Effective STL —have been immensely helpful to hundreds of thousands of C++ programmers. All three are finally available together in this eBook collection. Effective C++ has been embraced by hundreds of thousands of programmers worldwide. The reason is clear: Scott Meyers's practical approach to C++ describes the rules of thumb used by the experts to produce clear, correct, efficient code. The book is organized around 55 specific guidelines, each of which describes a way to write better C++. Each is backed by concrete examples. In More Effective C++, Meyers presents 35 ways to improve your programs and designs. Drawing on years of experience, Meyers explains how to write software that is more effective: more efficient, more robust, more consistent, more portable, and more reusable. In short, how to write C++ software that's just plain better. In Effective STL, Meyers goes beyond describing what's in the STL to show you how to use it. Each of the book's 50 guidelines is backed by Meyers's legendary analysis and incisive examples, so you'll learn not only what to do, but also when to do it—and why. Together in this collection, these books include the following important features: Expert guidance on the design of effective classes, functions, templates, and inheritance hierarchies. Applications of new "TR1" standard library functionality, along with comparisons to existing standard library components. Insights into differences between C++ and other languages (e.g., Java, C#, C) that help developers from those languages assimilate "the C++ way" of doing things. Proven methods for improving program efficiency, including incisive examinations of the time/space costs of C++ language features Comprehensive descriptions of advanced techniques used by C++ experts, including placement new, virtual constructors, smart pointers, rethrowing, proxy

classes, and double-dispatching Examples of the profound impact of exception handling on the structure and behavior of C++ classes and functions Practical treatments of new language features, including bool, mutable, explicit, namespaces, member templates, the Standard Template Library, and more. If your compilers don't yet support these features, Meyers shows you how to get the job done without them. 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.

Effective C++ has been updated to reflect the latest ANSI/ISO standards. The author, a recognised authority on C++, shows readers fifty ways to improve their programs and designs.

"This popular tutorial introduction to standard C++ has been completely updated, reorganized, and rewritten to help programmers learn the language faster and use it in a more modern, effective way. Just as C++ has evolved since the last edition, so has the authors' approach to teaching it. They now introduce C++ standard library from the beginning, giving readers the means to write useful programs without first having to master every language detail. Highlighting today's best practices, they show how to write programs that are safe, can be built quickly, and yet offer outstanding performance. Examples that take advantage of the library, and explain the features of C++, also show how to make the best use of the language. As in its previous editions, the book's authoritative discussion of fundamental C++ concepts and techniques makes it a valuable resource even for more experienced programmers."--BOOK JACKET.

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.

With this book, Christopher Kormanyos delivers a highly practical guide to programming real-time embedded microcontroller systems in C++. It is divided into three parts plus several appendices. Part I provides a foundation for real-time C++ by covering language technologies, including object-oriented methods, template programming and optimization. Next, part II presents detailed descriptions of a variety of C++ components that are widely used in microcontroller programming. It details some of C++'s most powerful language elements, such as class types, templates and the STL, to develop components for microcontroller register access, low-level drivers, custom memory management, embedded containers, multitasking, etc. Finally, part III describes mathematical methods and generic utilities that can be employed to solve recurring problems in real-time C++. The appendices include a brief C++ language tutorial, information on the real-time C++ development environment and instructions for building GNU GCC cross-compilers and a microcontroller circuit. For this third edition, the most recent specification of C++17 in ISO/IEC 14882:2017 is used throughout the text. Several sections on new C++17 functionality have been added, and various others reworked to reflect changes in the standard. Also several new sample projects are introduced and existing ones extended, and various user suggestions have been incorporated. To facilitate portability, no libraries other than those specified in the language standard itself are used. Efficiency is always in focus and numerous examples are backed up with real-time performance measurements and size analyses that quantify the true costs of the code down to the very last byte and microsecond. The target audience of this book mainly consists of students and professionals interested in real-time C++. Readers should be familiar with C or another programming language and will benefit most if they have had some previous experience with microcontroller electronics and the performance and size issues prevalent in embedded systems programming.

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

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

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.

Learn how to build efficient, secure and robust code in C++ by using data structures and algorithms - the building blocks of C++ Key Features Use data structures such as arrays, stacks, trees, lists, and graphs with real-world examples Learn the functional and reactive implementations of the traditional data structures Explore illustrations to present data structures and algorithms, as well as their analysis, in a clear, visual manner Book Description C++ is a general-purpose programming language which has evolved over the years and is used to develop software for many different sectors. This book will be your companion as it takes you through implementing classic data structures and algorithms to help you get up and running as a confident C++ programmer. We begin with an introduction to C++ data structures and algorithms while also covering essential language constructs. Next, we will see how to store data using linked lists, arrays, stacks, and queues. Then, we will learn how to implement different sorting algorithms, such as quick sort and heap sort. Along with these, we will dive into searching algorithms such as linear search, binary search and more. Our next mission will be to attain high performance by implementing algorithms to string datatypes and implementing hash structures in algorithm design. We'll also analyze Brute Force algorithms, Greedy algorithms, and more. By the end of the book, you'll know how to build components that are easy to understand, debug, and use in different applications. What you will learn Know how to use arrays and lists to get better results in complex scenarios Build enhanced applications by using hashtables, dictionaries, and sets Implement searching algorithms such as linear search, binary search, jump search, exponential search, and more Have a positive impact on the efficiency of applications with tree traversal Explore the design used in sorting algorithms like Heap sort, Quick sort, Merge sort and Radix sort Implement various common algorithms in string data types Find out how to design an algorithm for a specific task using the common algorithm paradigms Who this book is for This book is for developers who would like to learn the Data Structures and Algorithms in C++. Basic C++ programming knowledge is expected.

A recipe-based guide to refining your C++ programming skills with the help of coding best practices, advanced programming concepts, and the latest features of C++17 and C++20 Key Features Learn how to develop and design your own libraries Find solutions to your app development problems and implement them in a highly reusable manner, following library development best practices Explore advanced C++ features such as containers, coroutines, and modules Book Description If you think you've mastered C++ and know everything it takes to write robust applications, you'll be in for a surprise. With this book, you'll gain comprehensive insights into C++, covering exclusive tips and interesting techniques to enhance your app development process. You'll kick off with the basic principles of library design and development, which will help you understand how to write reusable and maintainable code. You'll then discover the importance of exception safety, and how you can avoid unexpected errors or bugs in your code. The book will take you through the modern elements of C++, such as move semantics, type deductions, and coroutines. As you advance, you'll delve into template programming - the standard tool for most library developers looking to achieve high code reusability. You'll explore the STL and learn how to avoid common pitfalls while implementing templates. Later, you'll learn about the problems of multithreaded programming such as data races, deadlocks, and thread starvation. You'll also learn high-performance programming by using benchmarking tools and libraries. Finally, you'll discover advanced techniques for debugging and testing to ensure code reliability. By the end of this book, you'll have become an expert at C++ programming and will have gained the skills to solve complex development problems with ease. What you will learn Solve common C++ development problems by implementing solutions in a more generic and reusable way Achieve different levels of exception safety guarantees by introducing precise declarations Write library-quality code that meets professional standards Practice writing reliable, performant code that exposes consistent behavior in programs Understand why you need to implement design patterns and how it's done Work with complex examples to understand various aspects of good library design Who this book is for This book is for intermediate and expert-level C++ developers who are looking to explore the lesser known functionalities of the language to improve the efficiency of their code and the way they develop applications. Basic knowledge of object-oriented programming concepts and the Standard Template Library (STL) is assumed.

"The puzzles and problems in Exceptional C++ not only entertain, they will help you hone your skills to become the sharpest C++ programmer you can be. - Many of these problems are culled from the famous Guru of the Week feature of the Internet newsgroup comp.lang.c++. , moderated, expanded and updated to conform to the official ISO/ANSI C++ Standard."--BOOK JACKET. - "Try your skills against the C++ masters and come away with the insight and experience to create more efficient, effective, robust, and portable C++ code."--Jacket.

There is a lot of misinformation and myth about the overhead and costs associated with C++. Now Stan Lippman, the acclaimed author of the C++ Primer, answers the call for a book that gives strategy guidelines for C++ programming. Inside the C++ Object Model explains where overhead costs reside and what they actually consist of. The author explains which parts vary by implementation and which are invariant. He tells how the various implementation models arose, points out areas where

they are likely to evolve, and explains why they are what they are. This book is a must for C++ programmers who want to understand the semantic implications of the C++ object model and how the model affects their programs.

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.

Software -- Programming Languages.

Finally, a great introduction to ANCI C++ for working programmers! Lippmann--who worked under the leadership of Bjarne Stroustrup, wrote the classic "C++ Primer", and now works as a C++ programmer at DreamWorks--teaches programmers exactly what they need to know to get immediate results. From start to finish, each concept and technique is presented through real programs designed to solve the problems C++ programmers are most likely to encounter.

C++'s Standard Template Library is revolutionary, but learning to use it well has always been a challenge for students. In Effective STL, best-selling author Scott Meyers (Effective C++, 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. This book offers clear, concise, and concrete guidelines to C++ programmers. While other books describe what's in the STL, Effective STL shows the student how to use it. Each of the book's 50 guidelines is backed by Meyers' legendary analysis and incisive examples, so the student will learn not only what to do, but also when to do it - and why.

In The Software Craftsman, Sandro Mancuso explains what craftsmanship means to the developer and his or her organization, and shows how to live it every day in your real-world development environment. Mancuso shows how software craftsmanship fits with and helps students improve upon best-practice technical disciplines such as agile and lean, taking all development projects to the next level. Readers will learn how to change the disastrous perception that software developers are the same as factory workers, and that software projects can be run like factories.

Templates are among the most powerful features of C++, but they are too often neglected, misunderstood, and misused. C++ Templates: The Complete Guide provides software architects and engineers with a clear understanding of why, when, and how to use templates to build and maintain cleaner, faster, and smarter software more efficiently. C++ Templates begins with an insightful tutorial on basic concepts and language features. The remainder of the book serves as a comprehensive reference, focusing first on language details, then on a wide range of coding techniques, and finally on advanced applications for templates. Examples used throughout the book illustrate abstract concepts and demonstrate best practices. Readers learn The exact behaviors of templates How to avoid the pitfalls associated with templates Idioms and techniques, from the basic to the previously undocumented How to reuse source code without threatening performance or safety How to increase the efficiency of C++ programs How to produce more flexible and maintainable software This practical guide shows programmers how to exploit the full power of the template features in C++. The companion Web site at <http://www.josuttis.com/tmplbook/> contains sample code and additional updates. "Every C++ professional needs a copy of Effective C++. It is an absolute must-read for anyone thinking of doing serious C++ development. If you've never read Effective C++ and you think you know everything about C++, think again." -- Steve Schirripa, Software Engineer, Google "C++ and the C++ community have grown up in the last fifteen years, and the third edition of Effective C++ reflects this. The clear and precise style of the book is evidence of Scott's deep insight and distinctive ability to impart knowledge." -- Gerhard Kreuzer, Research and Development Engineer, Siemens AG The first two editions of Effective C++ were embraced by hundreds of thousands of programmers worldwide. The reason is clear: Scott Meyers' practical approach to C++ describes the rules of thumb used by the experts -- the things they almost always do or almost always avoid doing -- to produce clear, correct, efficient code. The book is organized around 55 specific guidelines, each of which describes a way to write better C++. Each is backed by concrete examples. For this third edition, more than half the content is new, including added chapters on managing resources and using templates. Topics from the second edition have been extensively revised to reflect modern design considerations, including exceptions, design patterns, and multithreading. Important features of Effective C++ include: Expert guidance on the design of effective classes, functions, templates, and inheritance hierarchies. Applications of new "TR1" standard library functionality, along with comparisons to existing standard library components. Insights into differences between C++ and other languages (e.g., Java, C#, C) that help developers from those languages assimilate "the C++ way" of doing things.

"It's uncommon to have a programming language wonk who can speak in such comfortable and friendly language as David does. His walk through the syntax and semantics of JavaScript is both charming and hugely insightful; reminders of gotchas complement realistic use cases, paced at a comfortable curve. You'll find when you finish the book that you've gained a strong and comprehensive sense of mastery." --Paul Irish, developer advocate, Google Chrome "This is not a book for those looking for shortcuts; rather it is hard-won experience distilled into a guided tour. It's one of the few books on JS that I'll recommend without hesitation." --Alex Russell, TC39 member, software engineer, Google In order to truly master JavaScript, you need to learn how to work effectively with the language's flexible, expressive features and how to avoid its pitfalls. No matter how long you've been writing JavaScript code, Effective JavaScript will help deepen your understanding of this powerful language, so you can build more predictable, reliable, and maintainable programs. Author David Herman, with his years of experience on Ecma's JavaScript standardization committee, illuminates the language's inner workings as never before--helping you take full advantage of JavaScript's expressiveness. Reflecting the latest versions of the JavaScript standard, the book offers well-proven

techniques and best practices you'll rely on for years to come. *Effective JavaScript* is organized around 68 proven approaches for writing better JavaScript, backed by concrete examples. You'll learn how to choose the right programming style for each project, manage unanticipated problems, and work more successfully with every facet of JavaScript programming from data structures to concurrency. Key features include Better ways to use prototype-based object-oriented programming Subtleties and solutions for working with arrays and dictionary objects Precise and practical explanations of JavaScript's functions and variable scoping semantics Useful JavaScript programming patterns and idioms, such as options objects and method chaining In-depth guidance on using JavaScript's unique "run-to-completion" approach to concurrency

Apply modern C++17 to the implementations of classic design patterns. As well as covering traditional design patterns, this book fleshes out new patterns and approaches that will be useful to C++ developers. The author presents concepts as a fun investigation of how problems can be solved in different ways, along the way using varying degrees of technical sophistication and explaining different sorts of trade-offs. *Design Patterns in Modern C++* also provides a technology demo for modern

C++, showcasing how some of its latest features (e.g., coroutines) make difficult problems a lot easier to solve. The examples in this book are all suitable for putting into production, with only a few simplifications made in order to aid readability. **What You Will Learn** Apply design patterns to modern C++ programming Use creational patterns of builder, factories, prototype and singleton Implement structural patterns such as adapter, bridge, decorator, facade and more Work with the behavioral patterns such as chain of responsibility, command, iterator, mediator and more Apply functional design patterns such as Monad and more **Who This Book Is For** Those with at least some prior programming experience, especially in C++.

*Effective Python* will help students harness the full power of Python to write exceptionally robust, efficient, maintainable, and well-performing code. Utilizing the concise, scenario-driven style pioneered in Scott Meyers's best-selling *Effective C++*, Brett Slatkin brings together 53 Python best practices, tips, shortcuts, and realistic code examples from expert programmers. Each section contains specific, actionable guidelines organized into items, each with carefully worded advice supported by detailed technical arguments and illuminating examples.