

Secure Programming Cookbook For C And C

It's an exciting time to get involved with MicroPython, the re-implementation of Python 3 for microcontrollers and embedded systems. This practical guide delivers the knowledge you need to roll up your sleeves and create exceptional embedded projects with this lean and efficient programming language. If you're familiar with Python as a programmer, educator, or maker, you're ready to learn—and have fun along the way. Author Nicholas Tollervey takes you on a journey from first steps to advanced projects. You'll explore the types of devices that run MicroPython, and examine how the language uses and interacts with hardware to process input, connect to the outside world, communicate wirelessly, make sounds and music, and drive robotics projects. Work with MicroPython on four typical devices: PyBoard, the micro:bit, Adafruit's Circuit Playground Express, and ESP8266/ESP32 boards Explore a framework that helps you generate, evaluate, and evolve embedded projects that solve real problems Dive into practical MicroPython examples: visual feedback, input and sensing, GPIO, networking, sound and music, and robotics Learn how idiomatic MicroPython helps you express a lot with the minimum of resources Take the next step by getting involved with the Python community

The free book "Fundamentals of Computer Programming with C#" is a comprehensive computer programming tutorial that teaches programming, logical thinking, data structures and algorithms, problem solving and high quality code with lots of examples in C#. It starts with the first steps in programming and software development like variables, data types, conditional statements, loops and arrays and continues with other basic topics like methods, numeral systems, strings and string processing, exceptions, classes and objects. After the basics this fundamental programming book enters into more advanced programming topics like recursion, data structures (lists, trees, hash-tables and graphs), high-quality code, unit testing and refactoring, object-oriented principles (inheritance, abstraction, encapsulation and polymorphism) and their implementation the C# language. It also covers fundamental topics that each good developer should know like algorithm design, complexity of algorithms and problem solving. The book uses C# language and Visual Studio to illustrate the programming concepts and explains some C# / .NET specific technologies like lambda expressions, extension methods and LINQ. The book is written by a team of developers lead by Svetlin Nakov who has 20+ years practical software development experience. It teaches the major programming concepts and way of thinking needed to become a good software engineer and the C# language in the meantime. It is a great start for anyone who wants to become a skillful software engineer. The books does not teach technologies like databases, mobile and web development, but shows the true way to master the basics of programming regardless of the languages, technologies and tools. It is good for beginners and intermediate developers who want to put a solid base for a successful career in the software

engineering industry. The book is accompanied by free video lessons, presentation slides and mind maps, as well as hundreds of exercises and live examples. Download the free C# programming book, videos, presentations and other resources from <http://introprogramming.info>. Title: Fundamentals of Computer Programming with C# (The Bulgarian C# Programming Book) ISBN: 9789544007737 ISBN-13: 978-954-400-773-7 (9789544007737) ISBN-10: 954-400-773-3 (9544007733) Author: Svetlin Nakov & Co. Pages: 1132 Language: English Published: Sofia, 2013 Publisher: Faber Publishing, Bulgaria Web site: <http://www.introprogramming.info> License: CC-Attribution-Share-Alike Tags: free, programming, book, computer programming, programming fundamentals, ebook, book programming, C#, CSharp, C# book, tutorial, C# tutorial; programming concepts, programming fundamentals, compiler, Visual Studio, .NET, .NET Framework, data types, variables, expressions, statements, console, conditional statements, control-flow logic, loops, arrays, numeral systems, methods, strings, text processing, StringBuilder, exceptions, exception handling, stack trace, streams, files, text files, linear data structures, list, linked list, stack, queue, tree, balanced tree, graph, depth-first search, DFS, breadth-first search, BFS, dictionaries, hash tables, associative arrays, sets, algorithms, sorting algorithm, searching algorithms, recursion, combinatorial algorithms, algorithm complexity, OOP, object-oriented programming, classes, objects, constructors, fields, properties, static members, abstraction, interfaces, encapsulation, inheritance, virtual methods, polymorphism, cohesion, coupling, enumerations, generics, namespaces, UML, design patterns, extension methods, anonymous types, lambda expressions, LINQ, code quality, high-quality code, high-quality classes, high-quality methods, code formatting, self-documenting code, code refactoring, problem solving, problem solving methodology, 9789544007737, 9544007733

Secure Programming Cookbook for C and C++ is an important new resource for developers serious about writing secure code. It contains a wealth of solutions to problems faced by those who care about the security of their applications. It covers a wide range of topics, including safe initialization, access control, input validation, symmetric and public key cryptography, cryptographic hashes and MACs, authentication and key exchange, PKI, random numbers, and anti-tampering. The rich set of code samples provided in the book's more than 200 recipes will help programmers secure the C and C++ programs they write for both Unix® (including Linux®) and Windows® environments. Readers will learn: Cohen's "Unusually Useful Web Book" is just that--full of unusually useful tips and tricks users need to make the best Web site quickly and without expense. She offers common sense tips and tricks that Web site designers and developers can employ to make an immediate difference.

Bulletproof SSL and TLS is a complete guide to using SSL and TLS encryption to deploy secure servers and web applications. Written by Ivan Ristic, the author of the popular SSL Labs web site, this book will teach you everything you need to

know to protect your systems from eavesdropping and impersonation attacks. In this book, you'll find just the right mix of theory, protocol detail, vulnerability and weakness information, and deployment advice to get your job done: - Comprehensive coverage of the ever-changing field of SSL/TLS and Internet PKI, with updates to the digital version - For IT security professionals, help to understand the risks - For system administrators, help to deploy systems securely - For developers, help to design and implement secure web applications - Practical and concise, with added depth when details are relevant - Introduction to cryptography and the latest TLS protocol version - Discussion of weaknesses at every level, covering implementation issues, HTTP and browser problems, and protocol vulnerabilities - Coverage of the latest attacks, such as BEAST, CRIME, BREACH, Lucky 13, RC4 biases, Triple Handshake Attack, and Heartbleed - Thorough deployment advice, including advanced technologies, such as Strict Transport Security, Content Security Policy, and pinning - Guide to using OpenSSL to generate keys and certificates and to create and run a private certification authority - Guide to using OpenSSL to test servers for vulnerabilities - Practical advice for secure server configuration using Apache httpd, IIS, Java, Nginx, Microsoft Windows, and Tomcat This book is available in paperback and a variety of digital formats without DRM.

Over 25 hands-on recipes to create robust and highly-efficient cross-platform distributed applications with the Boost.Asio library About This Book Build highly efficient distributed applications with ease Enhance your cross-platform network programming skills with one of the most reputable C++ libraries Find solutions to real-world problems related to network programming with ready-to-use recipes using this detailed and practical handbook Who This Book Is For If you want to enhance your C++ network programming skills using the Boost.Asio library and understand the theory behind development of distributed applications, this book is just what you need. The prerequisite for this book is experience with general C++11. To get the most from the book and comprehend advanced topics, you will need some background experience in multithreading. What You Will Learn Boost your working knowledge of one of the most reputable C++ networking libraries—Boost.Asio Familiarize yourself with the basics of TCP and UDP protocols Create scalable and highly-efficient client and server applications Understand the theory behind development of distributed applications Increase the security of your distributed applications by adding SSL support Implement a HTTP client easily Use iostreams, scatter-gather buffers, and timers In Detail Starting with recipes demonstrating the execution of basic Boost.Asio operations, the book goes on to provide ready-to-use implementations of client and server applications from simple synchronous ones to powerful multithreaded scalable solutions. Finally, you are presented with advanced topics such as implementing a chat application, implementing an HTTP client, and adding SSL support. All the samples presented in the book are ready to be used in real projects just out of the box. As well as excellent practical examples, the book also includes extended

supportive theoretical material on distributed application design and construction. Style and approach This book is a set of recipes, each containing the statement and description of a particular practical problem followed by code sample providing the solution to the problem and detailed step-by-step explanation. Recipes are grouped by topic into chapters and ordered by the level of complexity from basic to advanced.

Brimming with over 100 "recipes" for getting down to business and actually doing XP, the Java Extreme Programming Cookbook doesn't try to "sell" you on XP; it succinctly documents the most important features of popular open source tools for XP in Java--including Ant, Junit, Http'nit, Cactus, Tomcat, XDoclet--and then digs right in, providing recipes for implementing the tools in real-world environments.

Masterminds of Programming features exclusive interviews with the creators of several historic and highly influential programming languages. In this unique collection, you'll learn about the processes that led to specific design decisions, including the goals they had in mind, the trade-offs they had to make, and how their experiences have left an impact on programming today. Masterminds of Programming includes individual interviews with: Adin D. Falkoff: APL Thomas E. Kurtz: BASIC Charles H. Moore: FORTH Robin Milner: ML Donald D.

Chamberlin: SQL Alfred Aho, Peter Weinberger, and Brian Kernighan: AWK Charles Geschke and John Warnock: PostScript Bjarne Stroustrup: C++ Bertrand Meyer: Eiffel Brad Cox and Tom Love: Objective-C Larry Wall: Perl Simon Peyton Jones, Paul Hudak, Philip Wadler, and John Hughes: Haskell Guido van Rossum: Python Luiz Henrique de Figueiredo and Roberto Ierusalimschy: Lua James Gosling: Java Grady Booch, Ivar Jacobson, and James Rumbaugh: UML Anders Hejlsberg: Delphi inventor and lead developer of C# If you're interested in the people whose vision and hard work helped shape the computer industry, you'll find Masterminds of Programming fascinating.

An in-depth technical guide on the security technology driving Internet e-commerce expansion. "Planning for PKI" examines the number-one Internet security technology that will be widely adopted in the next two years. Written by two of the architects of the Internet PKI standards, this book provides authoritative technical guidance for network engineers, architects, and managers who need to implement the right PKI architecture for their organization. The authors discuss results and lessons learned from early PKI pilots, helping readers evaluate PKI deployment impact on current network architecture while avoiding the pitfalls of early technical mistakes. Four technical case studies detail the do's and don'ts of PKI implementation, illustrating both successes and failures of different deployments. Readers will also learn how to leverage future PKI-related technologies for additional benefits.

A comprehensive guide to programming with network sockets, implementing Internet protocols, designing IoT devices, and much more with C Key Features Leverage your C or C++ programming skills to build powerful network applications Get to grips with a variety of network protocols that allow you to load web pages, send emails, and do much more Write portable network code for operating systems such as Windows,

Linux, and macOS Book Description Network programming, a challenging topic in C, is made easy to understand with a careful exposition of socket programming APIs. This book gets you started with modern network programming in C and the right use of relevant operating system APIs. This book covers core concepts, such as hostname resolution with DNS, that are crucial to the functioning of the modern web. You'll delve into the fundamental network protocols, TCP and UDP. Essential techniques for networking paradigms such as client-server and peer-to-peer models are explained with the help of practical examples. You'll also study HTTP and HTTPS (the protocols responsible for web pages) from both the client and server perspective. To keep up with current trends, you'll apply the concepts covered in this book to gain insights into web programming for IoT. You'll even get to grips with network monitoring and implementing security best practices. By the end of this book, you'll have experience of working with client-server applications, and be able to implement new network programs in C. The code in this book is compatible with the older C99 version as well as the latest C18 and C++17 standards. Special consideration is given to writing robust, reliable, and secure code that is portable across operating systems, including Winsock sockets for Windows and POSIX sockets for Linux and macOS. What you will learn

- Uncover cross-platform socket programming APIs
- Implement techniques for supporting IPv4 and IPv6
- Understand how TCP and UDP connections work over IP
- Discover how hostname resolution and DNS work
- Interface with web APIs using HTTP and HTTPS
- Acquire hands-on experience with Simple Mail Transfer Protocol (SMTP)
- Apply network programming to the Internet of Things (IoT)

Who this book is for If you're a developer or a system administrator who wants to enter the world of network programming, this book is for you. Basic knowledge of C programming is assumed.

While the REST design philosophy has captured the imagination of web and enterprise developers alike, using this approach to develop real web services is no picnic. This cookbook includes more than 100 recipes to help you take advantage of REST, HTTP, and the infrastructure of the Web. You'll learn ways to design RESTful web services for client and server applications that meet performance, scalability, reliability, and security goals, no matter what programming language and development framework you use. Each recipe includes one or two problem statements, with easy-to-follow, step-by-step instructions for solving them, as well as examples using HTTP requests and responses, and XML, JSON, and Atom snippets. You'll also get implementation guidelines, and a discussion of the pros, cons, and trade-offs that come with each solution. Learn how to design resources to meet various application scenarios

- Successfully design representations and URIs
- Implement the hypertext constraint using links and link headers
- Understand when and how to use Atom and AtomPub
- Know what and what not to do to support caching
- Learn how to implement concurrency control
- Deal with advanced use cases involving copying, merging, transactions, batch processing, and partial updates
- Secure web services and support OAuth

C++ is one of the most widely-used programming languages and has applications in a variety of fields, such as gaming, GUI programming, and operating systems, to name a few. Through the years, C++ has evolved into (and remains) one of the top choices for software developers worldwide. This book will show you some notable C++ features and how to ...

The first stop for your security needs when using Go, covering host, network, and cloud

security for ethical hackers and defense against intrusion Key Features First introduction to Security with Golang Adopting a Blue Team/Red Team approach Take advantage of speed and inherent safety of Golang Works as an introduction to security for Golang developers Works as a guide to Golang security packages for recent Golang beginners Book Description Go is becoming more and more popular as a language for security experts. Its wide use in server and cloud environments, its speed and ease of use, and its evident capabilities for data analysis, have made it a prime choice for developers who need to think about security. Security with Go is the first Golang security book, and it is useful for both blue team and red team applications. With this book, you will learn how to write secure software, monitor your systems, secure your data, attack systems, and extract information. Defensive topics include cryptography, forensics, packet capturing, and building secure web applications. Offensive topics include brute force, port scanning, packet injection, web scraping, social engineering, and post exploitation techniques. What you will learn Learn the basic concepts and principles of secure programming Write secure Golang programs and applications Understand classic patterns of attack Write Golang scripts to defend against network-level attacks Learn how to use Golang security packages Apply and explore cryptographic methods and packages Learn the art of defending against brute force attacks Secure web and cloud applications Who this book is for Security with Go is aimed at developers with basics in Go to the level that they can write their own scripts and small programs without difficulty. Readers should be familiar with security concepts, and familiarity with Python security applications and libraries is an advantage, but not a necessity.

This book gives a good start and complete introduction for C# Programming for Beginner's. While reading this book it is fun and easy to read it. This book is best suitable for first time C# readers, Covers all fast track topics of C# for all Computer Science students and Professionals. This book is targeted toward those who have little or no programming experience or who might be picking up C# as a second language. The book has been structured and written with a purpose: to get you productive as quickly as possible. I've used my experiences in writing applications with C# and teaching C# to create a book that I hope cuts through the fluff and teaches you what you need to know. All too often, authors fall into the trap of focusing on the technology rather than on the practical application of the technology. I've worked hard to keep this book focused on teaching you practical skills that you can apply immediately toward a development project. This book is divided into ten Chapters, each of which focuses on a different aspect of developing applications with C#. These parts generally follow the flow of tasks you'll perform as you begin creating your own programs with C#. I recommend that you read them in the order in which they appear. Using C#, this book develops the concepts and theory of Building the Program Logic and Interfaces analysis, Exceptions, Delegates and Events and other important things in a gradual, step-by-step manner, proceeding from concrete examples to abstract principles. Standish covers a wide range of both traditional and contemporary software engineering topics. This is a handy guide of sorts for any computer science engineering Students, Thinking In C# Programming is a solution bank for various complex problems related to C# and .NET. It can be used as a reference manual by Computer Science Engineering students. This Book also covers all aspects of B.TECH CS, IT, and BCA

and MCA, BSC IT. Preview introduced programmers to a new era called functional programming. C# focused on bridging the gap between programming languages and databases. This book covers all the language features from the first version through C# . It also provides you with the essentials of using Visual Studio 2005 to let you enjoy its capabilities and save you time by using features such as IntelliSense. Learning a new programming language can be intimidating. If you've never programmed before, the act of typing seemingly cryptic text to produce sleek and powerful applications probably seems like a black art, and you might wonder how you'll ever learn everything you need to know. The answer is, of course, one step at a time. The first step to learning a language is the same as that of any other activity: building confidence. Programming is part art and part science. Although it might seem like magic, it's more akin to illusion: After you know how things work a lot of the mysticism goes away, freeing you to focus on the mechanics necessary to produce any given desired result. Chapter 1 (Introduction To C# AND .NET) Chapter 2 (Your First Go at C# Programming) Chapter 3 (C# Data Types)' Chapter 4 (Building the Program Logic) Chapter 5 (Using Classes) Chapter 6 (Function Members) Chapter 7 (Structs, Enums, and Attributes) Chapter 8 (Interfaces) Chapter 9 (Exceptions) Chapter 10 (Delegates and Events)

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."

A comprehensive guide with curated recipes to help you gain a deeper understanding of modern C. Key Features Learn how to make your applications swift and robust by leveraging powerful features of C Understand the workings of arrays, strings, functions, and more down to how they operate in memory Master process synchronization during multi-tasking and server-client process communication Book Description C is a high-level language that's popular among developers. It enables you to write drivers for different devices, access machine-level hardware, apply dynamic memory allocation, and much more. With self-contained tutorials, known as recipes, this book will guide you in dealing with C and its idiosyncrasies and help you benefit from its latest features. Beginning with common tasks, each recipe addresses a specific problem followed by explaining the solution to get you acquainted with what goes on under the hood. You will explore core concepts of the programming language, including how to work with strings, pointers, and single and multi-dimensional arrays. You will also learn how to break a large application into small modules by creating functions, handling files, and using a database. Finally, the book will take you through advanced concepts such as concurrency and interprocess communication. By the end of this book, you'll have a clear understanding and deeper knowledge of C programming, which will help you become a better developer. What you will learn Manipulate single and multi-dimensional arrays Perform complex operations on strings Understand how to use

pointers and memory optimally Discover how to use arrays, functions, and strings to make large applications Implement multitasking using threads and process synchronization Establish communication between two or more processes using different techniques Store simple text in files and store data in a database Who this book is for If you're a programmer with basic experience in C and want to leverage its features through modern programming practices, then this book is for you.

Find a Perl programmer, and you'll find a copy of Perl Cookbook nearby. Perl Cookbook is a comprehensive collection of problems, solutions, and practical examples for anyone programming in Perl. The book contains hundreds of rigorously reviewed Perl "recipes" and thousands of examples ranging from brief one-liners to complete applications. The second edition of Perl Cookbook has been fully updated for Perl 5.8, with extensive changes for Unicode support, I/O layers, `mod_perl`, and new technologies that have emerged since the previous edition of the book. Recipes have been updated to include the latest modules. New recipes have been added to every chapter of the book, and some chapters have almost doubled in size. Covered topic areas include: Manipulating strings, numbers, dates, arrays, and hashes Pattern matching and text substitutions References, data structures, objects, and classes Signals and exceptions Screen addressing, menus, and graphical applications Managing other processes Writing secure scripts Client-server programming Internet applications programming with mail, news, ftp, and telnet CGI and `mod_perl` programming Web programming Since its first release in 1998, Perl Cookbook has earned its place in the libraries of serious Perl users of all levels of expertise by providing practical answers, code examples, and mini-tutorials addressing the challenges that programmers face. Now the second edition of this bestselling book is ready to earn its place among the ranks of favorite Perl books as well. Whether you're a novice or veteran Perl programmer, you'll find Perl Cookbook, 2nd Edition to be one of the most useful books on Perl available. Its comfortable discussion style and accurate attention to detail cover just about any topic you'd want to know about. You can get by without having this book in your library, but once you've tried a few of the recipes, you won't want to.

Practical solutions to overcome challenges in creating console and web applications and working with systems-level and embedded code, network programming, deep neural networks, and much more. Key Features Work through recipes featuring advanced concepts such as concurrency, unsafe code, and macros to migrate your codebase to the Rust programming language Learn how to run machine learning models with Rust Explore error handling, macros, and modularization to write maintainable code Book Description Rust 2018, Rust's first major milestone since version 1.0, brings more advancement in the Rust language. The Rust Programming Cookbook is a practical guide to help you overcome challenges when writing Rust code. This Rust book covers recipes for configuring Rust for different environments and architectural designs, and provides solutions to practical problems. It will also take you through Rust's core concepts, enabling you to create efficient, high-performance applications that use features such as zero-cost abstractions and improved memory management. As you progress, you'll delve into more advanced topics, including channels and actors, for building scalable, production-grade applications, and even get to grips with error handling, macros, and modularization to write maintainable code. You will then learn how to overcome common roadblocks when using Rust for systems programming, IoT, web development, and network programming. Finally, you'll discover what Rust 2018 has to offer for embedded programmers. By the end of the book, you'll have learned how to build fast and safe applications and services using Rust. What you will learn Understand how Rust provides unique solutions to solve system programming language problems Grasp the core concepts of Rust to develop fast and safe applications Explore the possibility of integrating Rust units into existing applications for

improved efficiency Discover how to achieve better parallelism and security with Rust Write Python extensions in Rust Compile external assembly files and use the Foreign Function Interface (FFI) Build web applications and services using Rust for high performance Who this book is for The Rust cookbook is for software developers looking to enhance their knowledge of Rust and leverage its features using modern programming practices. Familiarity with Rust language is expected to get the most out of this book.

When Practical Unix Security was first published more than a decade ago, it became an instant classic. Crammed with information about host security, it saved many a Unix system administrator from disaster. The second edition added much-needed Internet security coverage and doubled the size of the original volume. The third edition is a comprehensive update of this very popular book - a companion for the Unix/Linux system administrator who needs to secure his or her organization's system, networks, and web presence in an increasingly hostile world. Focusing on the four most popular Unix variants today--Solaris, Mac OS X, Linux, and FreeBSD--this book contains new information on PAM (Pluggable Authentication Modules), LDAP, SMB/Samba, anti-theft technologies, embedded systems, wireless and laptop issues, forensics, intrusion detection, chroot jails, telephone scanners and firewalls, virtual and cryptographic filesystems, WebNFS, kernel security levels, outsourcing, legal issues, new Internet protocols and cryptographic algorithms, and much more. Practical Unix & Internet Security consists of six parts: Computer security basics: introduction to security problems and solutions, Unix history and lineage, and the importance of security policies as a basic element of system security. Security building blocks: fundamentals of Unix passwords, users, groups, the Unix filesystem, cryptography, physical security, and personnel security. Network security: a detailed look at modem and dialup security, TCP/IP, securing individual network services, Sun's RPC, various host and network authentication systems (e.g., NIS, NIS+, and Kerberos), NFS and other filesystems, and the importance of secure programming. Secure operations: keeping up to date in today's changing security world, backups, defending against attacks, performing integrity management, and auditing. Handling security incidents: discovering a break-in, dealing with programmed threats and denial of service attacks, and legal aspects of computer security. Appendixes: a comprehensive security checklist and a detailed bibliography of paper and electronic references for further reading and research. Packed with 1000 pages of helpful text, scripts, checklists, tips, and warnings, this third edition remains the definitive reference for Unix administrators and anyone who cares about protecting their systems and data from today's threats.

Easy to understand and fun to read, this updated edition of Introducing Python is ideal for beginning programmers as well as those new to the language. Author Bill Lubanovic takes you from the basics to more involved and varied topics, mixing tutorials with cookbook-style code recipes to explain concepts in Python 3. End-of-chapter exercises help you practice what you've learned. You'll gain a strong foundation in the language, including best practices for testing, debugging, code reuse, and other development tips. This book also shows you how to use Python for applications in business, science, and the arts, using various Python tools and open source packages.

Conallen introduces architects and designers and client/server systems to issues and techniques of developing software for the Web. He expects readers to be familiar with object-oriented principles and concepts, particularly with UML (unified modeling language), and at least one Web application architecture or environment. The second edition incorporates both technical developments and his experience since 1999. He does not provide a bibliography.

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Designed for the way many developers work, this practical problem-solving guide balances the need for rapid development with a trusted source of information.

A problem-solution-based guide to help you overcome hurdles effectively while working with

kernel APIs, filesystems, networks, threads, and process communications

Key Features

- Learn to apply the latest C++ features (from C++11, 14, 17, and 20) to facilitate systems programming
- Create robust and concurrent systems that make the most of the available hardware resources
- Delve into C++ inbuilt libraries and frameworks to design robust systems as per your business needs

Book Description C++ is the preferred language for system programming due to its efficient low-level computation, data abstraction, and object-oriented features. System programming is about designing and writing computer programs that interact closely with the underlying operating system and allow computer hardware to interface with the programmer and the user. The C++ System Programming Cookbook will serve as a reference for developers who want to have ready-to-use solutions for the essential aspects of system programming using the latest C++ standards wherever possible. This C++ book starts out by giving you an overview of system programming and refreshing your C++ knowledge. Moving ahead, you will learn how to deal with threads and processes, before going on to discover recipes for how to manage memory. The concluding chapters will then help you understand how processes communicate and how to interact with the console (console I/O). Finally, you will learn how to deal with time interfaces, signals, and CPU scheduling. By the end of the book, you will become adept at developing robust systems applications using C++. What you will learn

- Get up to speed with the fundamentals including makefile, man pages, compilation, and linking and debugging
- Understand how to deal with time interfaces, signals, and CPU scheduling
- Develop your knowledge of memory management
- Use processes and threads for advanced synchronizations (mutexes and condition variables)
- Understand interprocess communications (IPC): pipes, FIFOs, message queues, shared memory, and TCP and UDP
- Discover how to interact with the console (console I/O)

Who this book is for This book is for C++ developers who want to gain practical knowledge of systems programming. Though no experience of Linux system programming is assumed, intermediate knowledge of C++ is necessary.

The world's most infamous hacker offers an insider's view of the low-tech threats to high-tech security

Kevin Mitnick's exploits as a cyber-desperado and fugitive form one of the most exhaustive FBI manhunts in history and have spawned dozens of articles, books, films, and documentaries. Since his release from federal prison, in 1998, Mitnick has turned his life around and established himself as one of the most sought-after computer security experts worldwide. Now, in *The Art of Deception*, the world's most notorious hacker gives new meaning to the old adage, "It takes a thief to catch a thief." Focusing on the human factors involved with information security, Mitnick explains why all the firewalls and encryption protocols in the world will never be enough to stop a savvy grifter intent on rifling a corporate database or an irate employee determined to crash a system. With the help of many fascinating true stories of successful attacks on business and government, he illustrates just how susceptible even the most locked-down information systems are to a slick con artist impersonating an IRS agent. Narrating from the points of view of both the attacker and the victims, he explains why each attack was so successful and how it could have been prevented in an engaging and highly readable style reminiscent of a true-crime novel. And, perhaps most importantly, Mitnick offers advice for preventing these types of social engineering hacks through security protocols, training programs, and manuals that address the human element of security.

SCFM: Secure Coding Field Manual is a must for every programmer assigned to write secure code. SCFM is a desk reference to attacks and programming language mitigations for OWASP Top 10 and CWE/SANS Top 25 security vulnerabilities. Languages covered include Java, C/C++, C#/VB.NET/ASP.NET, COBOL, and PL/SQL & DB2.

Password sniffing, spoofing, buffer overflows, and denial of service: these are only a few of the attacks on today's computer systems and networks. At the root of this epidemic is poorly written, poorly tested, and insecure code that puts everyone at risk. Clearly, today's developers

need help figuring out how to write code that attackers won't be able to exploit. But writing such code is surprisingly difficult. *Secure Programming Cookbook for C and C++* is an important new resource for developers serious about writing secure code. It contains a wealth of solutions to problems faced by those who care about the security of their applications. It covers a wide range of topics, including safe initialization, access control, input validation, symmetric and public key cryptography, cryptographic hashes and MACs, authentication and key exchange, PKI, random numbers, and anti-tampering. The rich set of code samples provided in the book's more than 200 recipes will help programmers secure the C and C++ programs they write for both Unix® (including Linux®) and Windows® environments. Readers will learn: How to avoid common programming errors, such as buffer overflows, race conditions, and format string problems How to properly SSL-enable applications How to create secure channels for client-server communication without SSL How to integrate Public Key Infrastructure (PKI) into applications Best practices for using cryptography properly Techniques and strategies for properly validating input to programs How to launch programs securely How to use file access mechanisms properly Techniques for protecting applications from reverse engineering The book's web site supplements the book by providing a place to post new recipes, including those written in additional languages like Perl, Java, and Python. Monthly prizes will reward the best recipes submitted by readers. *Secure Programming Cookbook for C and C++* is destined to become an essential part of any developer's library, a code companion developers will turn to again and again as they seek to protect their systems from attackers and reduce the risks they face in today's dangerous world.

"I'm an enthusiastic supporter of the CERT Secure Coding Initiative. Programmers have lots of sources of advice on correctness, clarity, maintainability, performance, and even safety. Advice on how specific language features affect security has been missing. The CERT® C Secure Coding Standard fills this need." –Randy Meyers, Chairman of ANSI C "For years we have relied upon the CERT/CC to publish advisories documenting an endless stream of security problems. Now CERT has embodied the advice of leading technical experts to give programmers and managers the practical guidance needed to avoid those problems in new applications and to help secure legacy systems. Well done!" –Dr. Thomas Plum, founder of Plum Hall, Inc. "Connectivity has sharply increased the need for secure, hacker-safe applications. By combining this CERT standard with other safety guidelines, customers gain all-round protection and approach the goal of zero-defect software." –Chris Tapp, Field Applications Engineer, LDRA Ltd. "I've found this standard to be an indispensable collection of expert information on exactly how modern software systems fail in practice. It is the perfect place to start for establishing internal secure coding guidelines. You won't find this information elsewhere, and, when it comes to software security, what you don't know is often exactly what hurts you." –John McDonald, coauthor of *The Art of Software Security Assessment* Software security has major implications for the operations and assets of organizations, as well as for the welfare of individuals. To create secure software, developers must know where the dangers lie. Secure programming in C can be more difficult than even many experienced programmers believe. This book is an essential desktop reference documenting the first official release of *The CERT® C Secure Coding Standard*. The standard itemizes those coding errors that are the root causes of software vulnerabilities in C and prioritizes them by severity, likelihood of exploitation, and remediation costs. Each guideline provides examples of insecure code as well as secure, alternative implementations. If uniformly applied, these guidelines will eliminate the critical coding errors that lead to buffer overflows, format string vulnerabilities, integer overflow, and other common software vulnerabilities.

Despite their myriad manifestations and different targets, nearly all attacks on computer systems have one fundamental cause: the code used to run far too many systems today is not secure. Flaws in its design, implementation, testing, and operations allow attackers all-too-

easy access. "Secure Coding, by Mark G. Graff and Ken vanWyk, looks at the problem of bad code in a new way. Packed with advice based on the authors' decades of experience in the computer security field, this concise and highly readable book explains why so much code today is filled with vulnerabilities, and tells readers what they must do to avoid writing code that can be exploited by attackers. Beyond the technical, "Secure Coding sheds new light on the economic, psychological, and sheer practical reasons why security vulnerabilities are so ubiquitous today. It presents a new way of thinking about these vulnerabilities and ways that developers can compensate for the factors that have produced such unsecured software in the past. It issues a challenge to all those concerned about computer security to finally make a commitment to building code the right way.

Over 100 recipes to help you overcome your difficulties with C++ programming and gain a deeper understanding of the working of modern C++ About This Book Explore the most important language and library features of C++17, including containers, algorithms, regular expressions, threads, and more, Get going with unit testing frameworks Boost.Test, Google Test and Catch, Extend your C++ knowledge and take your development skills to new heights by making your applications fast, robust, and scalable. Who This Book Is For If you want to overcome difficult phases of development with C++ and leverage its features using modern programming practices, then this book is for you. The book is designed for both experienced C++ programmers as well as people with strong knowledge of OOP concepts. What You Will Learn Get to know about the new core language features and the problems they were intended to solve Understand the standard support for threading and concurrency and know how to put them on work for daily basic tasks Leverage C++'s features to get increased robustness and performance Explore the widely-used testing frameworks for C++ and implement various useful patterns and idioms Work with various types of strings and look at the various aspects of compilation Explore functions and callable objects with a focus on modern features Leverage the standard library and work with containers, algorithms, and iterators Use regular expressions for find and replace string operations Take advantage of the new filesystem library to work with files and directories Use the new utility additions to the standard library to solve common problems developers encounter including `string_view`, `any`, `optional` and `variant` types In Detail C++ is one of the most widely used programming languages. Fast, efficient, and flexible, it is used to solve many problems. The latest versions of C++ have seen programmers change the way they code, giving up on the old-fashioned C-style programming and adopting modern C++ instead. Beginning with the modern language features, each recipe addresses a specific problem, with a discussion that explains the solution and offers insight into how it works. You will learn major concepts about the core programming language as well as common tasks faced while building a wide variety of software. You will learn about concepts such as concurrency, performance, meta-programming, lambda expressions, regular expressions, testing, and many more in the form of recipes. These recipes will ensure you can make your applications robust and fast. By the end of the book, you will understand the newer aspects of C++11/14/17 and will be able to overcome tasks that are time-consuming or would break your stride while developing. Style and approach This book follows a recipe-based approach, with examples that will empower you to implement the core programming language features and explore the newer aspects of C++.

Learn how to secure your ASP.NET Core web app through robust and secure code Key Features Discover the different types of security weaknesses in ASP.NET Core web applications and learn how to fix them Understand what code makes an ASP.NET Core web app unsafe Build your secure coding knowledge by following straightforward recipes Book Description ASP.NET Core developers are often presented with security test results showing the vulnerabilities found in their web apps. While the report may provide some high-level fix suggestions, it does not specify the exact steps that you need to take to resolve or fix

weaknesses discovered by these tests. In ASP.NET Secure Coding Cookbook, you'll start by learning the fundamental concepts of secure coding and then gradually progress to identifying common web app vulnerabilities in code. As you progress, you'll cover recipes for fixing security misconfigurations in ASP.NET Core web apps. The book further demonstrates how you can resolve different types of Cross-Site Scripting. A dedicated section also takes you through fixing miscellaneous vulnerabilities that are no longer in the OWASP Top 10 list. This book features a recipe-style format, with each recipe containing sample unsecure code that presents the problem and corresponding solutions to eliminate the security bug. You'll be able to follow along with each step of the exercise and use the accompanying sample ASP.NET Core solution to practice writing secure code. By the end of this book, you'll be able to identify unsecure code causing different security flaws in ASP.NET Core web apps and you'll have gained hands-on experience in removing vulnerabilities and security defects from your code. What you will learn Understand techniques for squashing an ASP.NET Core web app security bug Discover different types of injection attacks and understand how you can prevent this vulnerability from being exploited Fix security issues in code relating to broken authentication and authorization Eliminate the risks of sensitive data exposure by getting up to speed with numerous protection techniques Prevent security misconfiguration by enabling ASP.NET Core web application security features Explore other ASP.NET web application vulnerabilities and secure coding best practices Who this book is for This ASP.NET Core book is for intermediate-level ASP.NET Core web developers and software engineers who use the framework to develop web applications and are looking to focus on their security using coding best practices. The book is also for application security engineers, analysts, and specialists who want to know more about securing ASP.NET Core using code and understand how to resolve issues identified by the security tests they perform daily.

In a concise and direct question-and-answer format, C++ FAQs, Second Edition brings you the most efficient solutions to more than four hundred of the practical programming challenges you face every day. Moderators of the on-line C++ FAQ at comp.lang.c++.faq, Marshall Cline, Greg Lomow, and Mike Girou are familiar with C++ programmers' most pressing concerns. In this book, the authors concentrate on those issues most critical to the professional programmer's work, and they present more explanatory material and examples than is possible on-line. This book focuses on the effective use of C++, helping programmers avoid combining seemingly legal C++ constructs in incompatible ways. This second edition is completely up-to-date with the final ANSI/ISO C++ Standard. It covers some of the smaller syntax changes, such as "mutable"; more significant changes, such as RTTI and namespaces; and such major innovations as the C++ Standard Library, including the STL. In addition, this book discusses technologies such as Java, CORBA, COM/COM+, and ActiveX—and the relationship all of these have with C++. These new features and technologies are iconed to help you quickly find what is new and different in this edition. Each question-and-answer section contains an overview of the problem and solution, fuller explanations of concepts, directions for proper use of language features, guidelines for best practices and practices to avoid, and plenty of working, stand-alone examples. This edition is thoroughly cross-referenced and indexed for quick access. Get a value-added service! Try out all the examples from this book at www.codesaw.com. CodeSaw is a free online learning tool that allows you to experiment with live code from your book right in your browser.

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).

"What makes this book so important is that it reflects the experiences of two of the industry's most experienced hands at getting real-world engineers to understand just what they're being asked for when they're asked to write secure code. The book reflects

Michael Howard's and David LeBlanc's experience in the trenches working with developers years after code was long since shipped, informing them of problems." --From the Foreword by Dan Kaminsky, Director of Penetration Testing, IOActive

Eradicate the Most Notorious Insecure Designs and Coding Vulnerabilities Fully updated to cover the latest security issues, 24 Deadly Sins of Software Security reveals the most common design and coding errors and explains how to fix each one-or better yet, avoid them from the start. Michael Howard and David LeBlanc, who teach Microsoft employees and the world how to secure code, have partnered again with John Viega, who uncovered the original 19 deadly programming sins. They have completely revised the book to address the most recent vulnerabilities and have added five brand-new sins. This practical guide covers all platforms, languages, and types of applications. Eliminate these security flaws from your code: SQL injection Web server- and client-related vulnerabilities Use of magic URLs, predictable cookies, and hidden form fields Buffer overruns Format string problems Integer overflows C++ catastrophes Insecure exception handling Command injection Failure to handle errors Information leakage Race conditions Poor usability Not updating easily Executing code with too much privilege Failure to protect stored data Insecure mobile code Use of weak password-based systems Weak random numbers Using cryptography incorrectly Failing to protect network traffic Improper use of PKI Trusting network name resolution

"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. Quick solutions to common programming problems with the latest features of C# 7.0, .NET Core 1.1, and Visual Studio 2017

About This Book Easy-to-follow recipes to get you up-and-running with the new features of C# 7 and .NET Core 1.1 Practical solutions to assist you with microservices and serverless computing in C# Explore the new Visual Studio environment and write more secure code in it Who This Book Is For The book will appeal to C# and .NET developers who have a basic familiarity with C# and the Visual Studio 2015 environment What You Will Learn Writing better and less code to achieve the same result as in previous versions of C# Working with analyzers in Visual Studio Working with files, streams, and serialization Writing high-performant code in C# and understanding multi-threading Demystifying the Rx library using Reactive extensions Exploring .Net Core 1.1 and ASP.NET MVC Securing your applications and learning new debugging techniques Designing and building a microservice architecture Using Azure and AWS for serverless computing with C# In Detail C# has recently been open-sourced and C# 7 comes with a host of new features for building powerful, cross-platform applications. This book will be your solution to some common programming problems that you come across with C# and will also help you get started with .NET Core 1.1. Through a recipe-based approach, this book will help you overcome common programming challenges and get your applications ready to face the modern world. We start by running you through new features in C# 7, such as tuples, pattern matching, and so on, giving you hands-on experience with them. Moving forward, you will work with generics and the OOP features in C#. You will then move on to more advanced topics, such as reactive extensions, Regex, code analyzers, and asynchronous programming. This book will also cover new, cross-platform .NET Core 1.1 features and teach you how to utilize .NET Core on macOS. Then, we will explore microservices as well as serverless computing and how these benefit modern developers. Finally, you will learn what you can do with Visual Studio 2017 to put mobile application development across multiple platforms within the reach of any developer. Style and approach A unique recipe-based guide that will help you gain a solid understanding of the new concepts in C# 7.0 and Visual Studio 2017 Completely updated for C# 6.0, the new edition of this bestseller offers more than 150 code recipes to common and not-so-common problems that C# programmers face every day. More than a third of the recipes have been rewritten to take advantage of new C# 6.0 features. If you prefer solutions to general C# language instruction and quick answers to theory, this is your book.C# 6.0 Cookbook offers new recipes for asynchronous methods, dynamic objects, enhanced error handling, the Roslyn compiler, and more. Here are some of topics covered: Classes and generics Collections, enumerators, and iterators Data types LINQ and Lambda expressions Exception handling Reflection and dynamic programming Regular expressions Filesystem interactions Networking and the Web XML usage Threading, Synchronization, and Concurrency Each recipe in the book includes tested code that you can download from oreilly.com and reuse in your own applications, and each one includes a detailed discussion of how and why the underlying technology works. You don't have to be an experienced C# or .NET developer to use C# 6.0 Cookbook. You

just have to be someone who wants to solve a problem now, without having to learn all the related theory first.

Secure Programming Cookbook for C and C++

Discover the new features and widely used packages in Julia to solve complex computational problems in your statistical applications. Key Features Address the core problems of programming in Julia with the most popular packages for common tasks Tackle issues while working with Databases and Parallel data processing with Julia Explore advanced features such as metaprogramming, functional programming, and user defined types Book Description Julia, with its dynamic nature and high-performance, provides comparatively minimal time for the development of computational models with easy-to-maintain computational code. This book will be your solution-based guide as it will take you through different programming aspects with Julia. Starting with the new features of Julia 1.0, each recipe addresses a specific problem, providing a solution and explaining how it works. You will work with the powerful Julia tools and data structures along with the most popular Julia packages. You will learn to create vectors, handle variables, and work with functions. You will be introduced to various recipes for numerical computing, distributed computing, and achieving high performance. You will see how to optimize data science programs with parallel computing and memory allocation. We will look into more advanced concepts such as metaprogramming and functional programming. Finally, you will learn how to tackle issues while working with databases and data processing, and will learn about on data science problems, data modeling, data analysis, data manipulation, parallel processing, and cloud computing with Julia. By the end of the book, you will have acquired the skills to work more effectively with your data What you will learn Boost your code's performance using Julia's unique features Organize data in to fundamental types of collections: arrays and dictionaries Organize data science processes within Julia and solve related problems Scale Julia computations with cloud computing Write data to IO streams with Julia and handle web transfer Define your own immutable and mutable types Speed up the development process using metaprogramming Who this book is for This book is for developers who would like to enhance their Julia programming skills and would like to get some quick solutions to their common programming problems. Basic Julia programming knowledge is assumed. Android Security Cookbook' breaks down and enumerates the processes used to exploit and remediate Android app security vulnerabilities in the form of detailed recipes and walkthroughs. Android Security Cookbook is aimed at anyone who is curious about Android app security and wants to be able to take the necessary practical measures to protect themselves; this means that Android application developers, security researchers and analysts, penetration testers, and generally any CIO, CTO, or IT managers facing the impending onslaught of mobile devices in the business environment will benefit from reading this book.

Most applications these days are at least somewhat network aware, but how do you protect those applications against common network security threats? Many developers are turning to OpenSSL, an open source version of SSL/TLS, which is the most widely used protocol for secure network communications. The OpenSSL library is seeing widespread adoption for web sites that require cryptographic functions to protect a broad range of sensitive information, such as credit card numbers and other financial

transactions. The library is the only free, full-featured SSL implementation for C and C++, and it can be used programmatically or from the command line to secure most TCP-based network protocols. Network Security with OpenSSL enables developers to use this protocol much more effectively. Traditionally, getting something simple done in OpenSSL could easily take weeks. This concise book gives you the guidance you need to avoid pitfalls, while allowing you to take advantage of the library's advanced features. And, instead of bogging you down in the technical details of how SSL works under the hood, this book provides only the information that is necessary to use OpenSSL safely and effectively. In step-by-step fashion, the book details the challenges in securing network communications, and shows you how to use OpenSSL tools to best meet those challenges. As a system or network administrator, you will benefit from the thorough treatment of the OpenSSL command-line interface, as well as from step-by-step directions for obtaining certificates and setting up your own certification authority. As a developer, you will further benefit from the in-depth discussions and examples of how to use OpenSSL in your own programs. Although OpenSSL is written in C, information on how to use OpenSSL with Perl, Python and PHP is also included. OpenSSL may well answer your need to protect sensitive data. If that's the case, Network Security with OpenSSL is the only guide available on the subject.

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