

Writing Secure Code 2nd Edition Developer Best Practices

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Refactoring - Martin Fowler
1999

Users can dramatically improve the design, performance, and manageability of object-oriented code without altering its interfaces or behavior.

"Refactoring" shows users exactly how to spot the best opportunities for refactoring

and exactly how to do it, step by step.

Hacking- The art Of Exploitation - J. Erickson
2018-03-06

This text introduces the spirit and theory of hacking as well as the science behind it all; it also provides some core techniques and tricks of

hacking so you can think like a hacker, write your own hacks or thwart potential system attacks.

Design Patterns - Erich Gamma 1995

Software -- Software Engineering.

The Pragmatic Programmer - Andrew Hunt 1999-10-20

What others in the trenches say about The Pragmatic Programmer... "The cool thing about this book is that it's great for keeping the programming process fresh.

The book helps you to continue to grow and clearly comes from people who have been there."

—Kent Beck, author of Extreme Programming Explained: Embrace Change "I found this book to be a great mix of solid advice and wonderful analogies!" —Martin Fowler,

author of Refactoring and UML Distilled "I would buy a copy, read it twice, then tell all my colleagues to run out and grab a copy. This is a book I would never loan because I would worry about it being lost."

—Kevin Ruland, Management Science, MSG-Logistics "The

wisdom and practical experience of the authors is obvious. The topics presented are relevant and useful.... By far its greatest strength for me has been the outstanding analogies—tracer bullets, broken windows, and the fabulous helicopter-based explanation of the need for orthogonality, especially in a crisis situation. I have little doubt that this book will eventually become an excellent source of useful information for journeymen programmers and expert mentors alike." —John Lakos, author of Large-Scale C++ Software Design "This is the sort of book I will buy a dozen copies of when it comes out so I can give it to my clients." —Eric Vought, Software Engineer "Most modern books on software development fail to cover the basics of what makes a great software developer, instead spending their time on syntax or technology where in reality the greatest leverage possible for any software team is in having talented developers who really know their craft

well. An excellent book.” —Pete McBreen, Independent Consultant “Since reading this book, I have implemented many of the practical suggestions and tips it contains. Across the board, they have saved my company time and money while helping me get my job done quicker! This should be a desktop reference for everyone who works with code for a living.” —Jared Richardson, Senior Software Developer, iRenaissance, Inc. “I would like to see this issued to every new employee at my company....” —Chris Cleeland, Senior Software Engineer, Object Computing, Inc. “If I’m putting together a project, it’s the authors of this book that I want. . . . And failing that I’d settle for people who’ve read their book.” —Ward Cunningham Straight from the programming trenches, *The Pragmatic Programmer* cuts through the increasing specialization and technicalities of modern software development to examine the core process--

taking a requirement and producing working, maintainable code that delights its users. It covers topics ranging from personal responsibility and career development to architectural techniques for keeping your code flexible and easy to adapt and reuse. Read this book, and you'll learn how to Fight software rot; Avoid the trap of duplicating knowledge; Write flexible, dynamic, and adaptable code; Avoid programming by coincidence; Bullet-proof your code with contracts, assertions, and exceptions; Capture real requirements; Test ruthlessly and effectively; Delight your users; Build teams of pragmatic programmers; and Make your developments more precise with automation. Written as a series of self-contained sections and filled with entertaining anecdotes, thoughtful examples, and interesting analogies, *The Pragmatic Programmer* illustrates the best practices and major pitfalls of many different aspects of software

development. Whether you're a new coder, an experienced programmer, or a manager responsible for software projects, use these lessons daily, and you'll quickly see improvements in personal productivity, accuracy, and job satisfaction. You'll learn skills and develop habits and attitudes that form the foundation for long-term success in your career. You'll become a Pragmatic Programmer.

Mastering Ethereum - Andreas M. Antonopoulos 2018-11-13
Ethereum represents the gateway to a worldwide, decentralized computing paradigm. This platform enables you to run decentralized applications (DApps) and smart contracts that have no central points of failure or control, integrate with a payment network, and operate on an open blockchain. With this practical guide, Andreas M. Antonopoulos and Gavin Wood provide everything you need to know about building smart contracts and DApps on Ethereum and other

virtual-machine blockchains. Discover why IBM, Microsoft, NASDAQ, and hundreds of other organizations are experimenting with Ethereum. This essential guide shows you how to develop the skills necessary to be an innovator in this growing and exciting new industry. Run an Ethereum client, create and transmit basic transactions, and program smart contracts Learn the essentials of public key cryptography, hashes, and digital signatures Understand how "wallets" hold digital keys that control funds and smart contracts Interact with Ethereum clients programmatically using JavaScript libraries and Remote Procedure Call interfaces Learn security best practices, design patterns, and anti-patterns with real-world examples Create tokens that represent assets, shares, votes, or access control rights Build decentralized applications using multiple peer-to-peer (P2P) components

The Cathedral & the Bazaar - Eric S. Raymond 2001-02-01

Open source provides the competitive advantage in the Internet Age. According to the August Forrester Report, 56 percent of IT managers interviewed at Global 2,500 companies are already using some type of open source software in their infrastructure and another 6 percent will install it in the next two years. This revolutionary model for collaborative software development is being embraced and studied by many of the biggest players in the high-tech industry, from Sun Microsystems to IBM to Intel. *The Cathedral & the Bazaar* is a must for anyone who cares about the future of the computer industry or the dynamics of the information economy. Already, billions of dollars have been made and lost based on the ideas in this book. Its conclusions will be studied, debated, and implemented for years to come. According to Bob Young, "This is Eric Raymond's great contribution to the success of the open source revolution, to the adoption of Linux-based

operating systems, and to the success of open source users and the companies that supply them." The interest in open source software development has grown enormously in the past year. This revised and expanded paperback edition includes new material on open source developments in 1999 and 2000. Raymond's clear and effective writing style accurately describing the benefits of open source software has been key to its success. With major vendors creating acceptance for open source within companies, independent vendors will become the open source story in 2001.

Writing Secure Code -

Michael Howard 2003

Covers topics such as the importance of secure systems, threat modeling, canonical representation issues, solving database input, denial-of-service attacks, and security code reviews and checklists.

[The Hitchhiker's Guide to Python](#) - Kenneth Reitz

2016-08-30

The Hitchhiker's Guide to

Python takes the journeyman Pythonista to true expertise. More than any other language, Python was created with the philosophy of simplicity and parsimony. Now 25 years old, Python has become the primary or secondary language (after SQL) for many business users. With popularity comes diversity—and possibly dilution. This guide, collaboratively written by over a hundred members of the Python community, describes best practices currently used by package and application developers. Unlike other books for this audience, *The Hitchhiker's Guide* is light on reusable code and heavier on design philosophy, directing the reader to excellent sources that already exist.

Visual Studio 2019 Tricks and Techniques - Paul

Schroeder 2021-01-15

Harness the full power of the Visual Studio IDE to take your coding skills to the next level by learning about IDE productivity practices and exclusive techniques

Key Features

Increase your

productivity by leveraging Visual Studio 2019's improvements and features

Explore powerful editing, code intelligence, and source code control features to increase productivity

Delve into VS's powerful, untapped features such as custom project templates and extensions

Book Description Visual Studio 2019 (VS 2019) and Visual Studio Code (VS Code) are powerful professional development tools that help you to develop applications for any platform with ease. Whether you want to create web, mobile, or desktop applications, Microsoft Visual Studio is your one-stop solution. This book demonstrates some of the most sophisticated capabilities of the tooling and shows you how to use the integrated development environment (IDE) more efficiently to be more productive. You'll begin by gradually building on concepts, starting with the basics. The introductory chapters cover shortcuts, snippets, and numerous optimization tricks, along with debugging

techniques, source control integration, and other important IDE features that will help you make your time more productive. With that groundwork in place, more advanced concepts such as the inner workings of project and item templates are covered. You will also learn how to write quality, secure code more efficiently as well as discover how certain Visual Studio features work 'under the hood'. By the end of this Visual Studio book, you'll have learned how to write more secure code faster than ever using your knowledge of the extensions and processes that make developing successful solutions more enjoyable and repeatable. What you will learn

Understand the similarities and differences between VS 2019 and VS Code

Get to grips with numerous keyboard shortcuts to improve efficiency

Discover IDE tips and tricks that make it easier to write code

Experiment with code snippets that make it easier to write repeating code patterns

Find out how to customize project and item

templates with the help of hands-on exercises

Use Visual Studio extensions for ease and improved productivity

Delve into Visual Studio's behind the scene operations

Who this book is for

This book is for C# and .NET developers who want to become more efficient and take advantage of features they may not be aware of in the IDE.

Those looking to increase their productivity and write quality code more quickly by fully utilizing the power of the Visual Studio IDE will also find this book useful.

Write Better, Faster - Monica Leonelle 2020-12-15

Beautiful Code - Greg Wilson 2007-06-26

How do the experts solve difficult problems in software development? In this unique and insightful book, leading computer scientists offer case studies that reveal how they found unusual, carefully designed solutions to high-profile projects. You will be able to look over the shoulder of major coding and design experts to see problems

through their eyes. This is not simply another design patterns book, or another software engineering treatise on the right and wrong way to do things. The authors think aloud as they work through their project's architecture, the tradeoffs made in its construction, and when it was important to break rules. This book contains 33 chapters contributed by Brian Kernighan, Karl Fogel, Jon Bentley, Tim Bray, Elliotte Rusty Harold, Michael Feathers, Alberto Savoia, Charles Petzold, Douglas Crockford, Henry S. Warren, Jr., Ashish Gulhati, Lincoln Stein, Jim Kent, Jack Dongarra and Piotr Luszczek, Adam Kolawa, Greg Kroah-Hartman, Diomidis Spinellis, Andrew Kuchling, Travis E. Oliphant, Ronald Mak, Rogerio Atem de Carvalho and Rafael Monnerat, Bryan Cantrill, Jeff Dean and Sanjay Ghemawat, Simon Peyton Jones, Kent Dybvig, William Otte and Douglas C. Schmidt, Andrew Patzer, Andreas Zeller, Yukihiro Matsumoto, Arun

Mehta, TV Raman, Laura Wingerd and Christopher Seiwald, and Brian Hayes.

Beautiful Code is an opportunity for master coders to tell their story. All author royalties will be donated to Amnesty International.

Hacking the Code - Mark Burnett 2004-05-10

Hacking the Code has over 400 pages of dedicated exploit, vulnerability, and tool code with corresponding instruction. Unlike other security and programming books that dedicate hundreds of pages to architecture and theory based flaws and exploits, Hacking the Code dives right into deep code analysis. Previously undisclosed security research in combination with superior programming techniques from Foundstone and other respected organizations is included in both the Local and Remote Code sections of the book. The book is accompanied with a FREE COMPANION CD containing both commented and uncommented versions of the source code examples presented throughout the book.

In addition to the book source code, the CD also contains a copy of the author-developed Hacker Code Library v1.0. The Hacker Code Library includes multiple attack classes and functions that can be utilized to quickly create security programs and scripts. These classes and functions simplify exploit and vulnerability tool development to an extent never before possible with publicly available software. Learn to quickly create security tools that ease the burden of software testing and network administration Find out about key security issues regarding vulnerabilities, exploits, programming flaws, and secure code development Discover the differences in numerous types of web-based attacks so that developers can create proper quality assurance testing procedures and tools Learn to automate quality assurance, management, and development tasks and procedures for testing systems and applications Learn to write complex Snort rules based solely upon traffic generated

by network tools and exploits
Write Great Code, Volume 2, 2nd Edition - Randall Hyde
2020-08-11

Thinking Low-Level, Writing High-Level, the second volume in the landmark Write Great Code series by Randall Hyde, covers high-level programming languages (such as Swift and Java) as well as code generation on 64-bit CPUsARM, the Java Virtual Machine, and the Microsoft Common Runtime. Today's programming languages offer productivity and portability, but also make it easy to write sloppy code that isn't optimized for a compiler. Thinking Low-Level, Writing High-Level will teach you to craft source code that results in good machine code once it's run through a compiler. You'll learn: How to analyze the output of a compiler to verify that your code generates good machine code The types of machine code statements that compilers generate for common control structures, so you can choose the best statements when writing HLL code Enough

assembly language to read compiler output How compilers convert various constant and variable objects into machine data With an understanding of how compilers work, you'll be able to write source code that they can translate into elegant machine code. NEW TO THIS EDITION, COVERAGE OF: Programming languages like Swift and Java Code generation on modern 64-bit CPUs ARM processors on mobile phones and tablets Stack-based architectures like the Java Virtual Machine Modern language systems like the Microsoft Common Language Runtime

Good Code, Bad Code - Tom Long 2021-09-07

Good Code, Bad Code is a clear, practical introduction to writing code that's a snap to read, apply, and remember. With dozens of instantly-useful techniques, you'll find coding insights that normally take years of experience to master. In this fast-paced guide, Google software engineer Tom Long teaches you a host of rules to apply, along with advice on

when to break them! *ASP.NET Core Security* - Christian Wenz 2022-08-16 Secure your ASP.NET applications before you get hacked! This practical guide includes secure coding techniques with annotated examples and full coverage of built-in ASP.NET Core security tools. In ASP.NET Core Security, you will learn how to: Understand and recognize common web app attacks Implement attack countermeasures Use testing and scanning tools and libraries Activate built-in browser security features from ASP.NET Take advantage of .NET and ASP.NET Core security APIs Manage passwords to minimize damage from a data leak Securely store application secrets ASP.NET Core Security teaches you the skills and countermeasures you need to keep your ASP.NET Core apps secure from the most common web application attacks. With this collection of practical techniques, you will be able to anticipate risks and introduce practices like testing

as regular security checkups. You'll be fascinated as the author explores real-world security breaches, including rogue Firefox extensions and Adobe password thefts. The examples present universal security best practices with a sharp focus on the unique needs of ASP.NET Core applications. About the technology Your ASP.NET Core applications are under attack now. Are you ready? There are specific countermeasures you can apply to keep your company out of the headlines. This book demonstrates exactly how to secure ASP.NET Core web applications, including safe browser interactions, recognizing common threats, and deploying the framework's unique security APIs. About the book ASP.NET Core Security is a realistic guide to securing your web applications. It starts on the dark side, exploring case studies of cross-site scripting, SQL injection, and other weapons used by hackers. As you go, you'll learn how to implement countermeasures, activate

browser security features, minimize attack damage, and securely store application secrets. Detailed ASP.NET Core code samples in C# show you how each technique looks in practice. What's inside Understand and recognize common web app attacks Testing tools, helper libraries, and scanning tools Activate built-in browser security features Take advantage of .NET and ASP.NET Core security APIs Manage passwords to minimize damage from a data leak About the reader For experienced ASP.NET Core web developers. About the author Christian Wenz is a web pioneer, consultant, and entrepreneur. Table of Contents PART 1 FIRST STEPS 1 On web application security PART 2 MITIGATING COMMON ATTACKS 2 Cross-site scripting (XSS) 3 Attacking session management 4 Cross-site request forgery 5 Unvalidated data 6 SQL injection (and other injections) PART 3 SECURE DATA STORAGE 7 Storing secrets 8 Handling passwords

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Core Identity 13 Securing APIs
and single page applications
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Code Complete - Steve
McConnell 2004-06-09
Widely considered one of the
best practical guides to
programming, Steve
McConnell's original CODE
COMPLETE has been helping
developers write better
software for more than a
decade. Now this classic book
has been fully updated and
revised with leading-edge
practices—and hundreds of
new code samples—illustrating
the art and science of software
construction. Capturing the
body of knowledge available
from research, academia, and
everyday commercial practice,
McConnell synthesizes the
most effective techniques and

must-know principles into
clear, pragmatic guidance. No
matter what your experience
level, development
environment, or project size,
this book will inform and
stimulate your thinking—and
help you build the highest
quality code. Discover the
timeless techniques and
strategies that help you:
Design for minimum
complexity and maximum
creativity Reap the benefits of
collaborative development
Apply defensive programming
techniques to reduce and flush
out errors Exploit opportunities
to refactor—or evolve—code,
and do it safely Use
construction practices that are
right-weight for your project
Debug problems quickly and
effectively Resolve critical
construction issues early and
correctly Build quality into the
beginning, middle, and end of
your project
Writing Secure Code - David
LeBlanc 2002-12-04
Keep black-hat hackers at bay
with the tips and techniques in
this entertaining, eye-opening
book! Developers will learn

how to padlock their applications throughout the entire development process—from designing secure applications to writing robust code that can withstand repeated attacks to testing applications for security flaws. Easily digested chapters reveal proven principles, strategies, and coding techniques. The authors—two battle-scarred veterans who have solved some of the industry’s toughest security problems—provide sample code in several languages. This edition includes updated information about threat modeling, designing a security process, international issues, file-system issues, adding privacy to applications, and performing security code reviews. It also includes enhanced coverage of buffer overruns, Microsoft .NET security, and Microsoft ActiveX development, plus practical checklists for developers, testers, and program managers.

Secure Programming Cookbook for C and C++ - John Viega 2003-07-14

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.

Automate the Boring Stuff with Python, 2nd Edition - Al Sweigart 2019-11-12

The second edition of this best-selling Python book (over 500,000 copies sold!) uses Python 3 to teach even the technically uninclined how to write programs that do in minutes what would take hours to do by hand. There is no prior programming experience required and the book is loved by liberal arts majors and geeks alike. If you've ever spent hours renaming files or updating hundreds of spreadsheet cells, you know how tedious tasks like these can be. But what if you could have your computer do them for you? In this fully revised second edition of the best-selling classic Automate the Boring Stuff with Python, you'll

learn how to use Python to write programs that do in minutes what would take you hours to do by hand--no prior programming experience required. You'll learn the basics of Python and explore Python's rich library of modules for performing specific tasks, like scraping data off websites, reading PDF and Word documents, and automating clicking and typing tasks. The second edition of this international fan favorite includes a brand-new chapter on input validation, as well as tutorials on automating Gmail and Google Sheets, plus tips on automatically updating CSV files. You'll learn how to create programs that effortlessly perform useful feats of automation to:

- Search for text in a file or across multiple files
- Create, update, move, and rename files and folders
- Search the Web and download online content
- Update and format data in Excel spreadsheets of any size
- Split, merge, watermark, and encrypt PDFs
- Send email responses and text notifications

- Fill out online forms Step-by-step instructions walk you through each program, and updated practice projects at the end of each chapter challenge you to improve those programs and use your newfound skills to automate similar tasks. Don't spend your time doing work a well-trained monkey could do. Even if you've never written a line of code, you can make your computer do the grunt work. Learn how in *Automate the Boring Stuff with Python, 2nd Edition*.

Programming F# 3.0 - Chris Smith 2012-10-09

Why learn F#? With this guide, you'll learn how this multi-paradigm language not only offers you an enormous productivity boost through functional programming, but also lets you develop applications using your existing object-oriented and imperative programming skills. You'll quickly discover the many advantages of the language, including access to all the great tools and libraries of the .NET platform. Reap the

benefits of functional programming for your next project, whether you're writing concurrent code, or building data- or math-intensive applications. With this comprehensive book, former F# team member Chris Smith gives you a head start on the fundamentals and walks you through advanced concepts of the F# language. Learn F#'s unique characteristics for building applications Gain a solid understanding of F#'s core syntax, including object-oriented and imperative styles Make your object-oriented code better by applying functional programming patterns Use advanced functional techniques, such as tail-recursion and computation expressions Take advantage of multi-core processors with asynchronous workflows and parallel programming Use new type providers for interacting with web services and information-rich environments Learn how well F# works as a scripting language
Building Secure and Reliable Systems - Heather Adkins

2020-03-16

Can a system be considered truly reliable if it isn't fundamentally secure? Or can it be considered secure if it's unreliable? Security is crucial to the design and operation of scalable systems in production, as it plays an important part in product quality, performance, and availability. In this book, experts from Google share best practices to help your organization design scalable and reliable systems that are fundamentally secure. Two previous O'Reilly books from Google—*Site Reliability Engineering* and *The Site Reliability Workbook*—demonstrated how and why a commitment to the entire service lifecycle enables organizations to successfully build, deploy, monitor, and maintain software systems. In this latest guide, the authors offer insights into system design, implementation, and maintenance from practitioners who specialize in security and reliability. They also discuss how building and adopting their recommended best

practices requires a culture that's supportive of such change. You'll learn about secure and reliable systems through: Design strategies Recommendations for coding, testing, and debugging practices Strategies to prepare for, respond to, and recover from incidents Cultural best practices that help teams across your organization collaborate effectively

The Pragmatic Programmer

- David Thomas 2019-07-30

"One of the most significant books in my life." -Obie Fernandez, Author, The Rails Way "Twenty years ago, the first edition of The Pragmatic Programmer completely changed the trajectory of my career. This new edition could do the same for yours." -Mike Cohn, Author of Succeeding with Agile, Agile Estimating and Planning, and User Stories Applied ". . . filled with practical advice, both technical and professional, that will serve you and your projects well for years to come."

-Andrea Goulet, CEO, Corgibytes, Founder,

LegacyCode.Rocks ". . . lightning does strike twice, and this book is proof." -VM (Vicky) Brasseur, Director of Open Source Strategy, Juniper Networks The Pragmatic Programmer is one of those rare tech books you'll read, re-read, and read again over the years. Whether you're new to the field or an experienced practitioner, you'll come away with fresh insights each and every time. Dave Thomas and Andy Hunt wrote the first edition of this influential book in 1999 to help their clients create better software and rediscover the joy of coding. These lessons have helped a generation of programmers examine the very essence of software development, independent of any particular language, framework, or methodology, and the Pragmatic philosophy has spawned hundreds of books, screencasts, and audio books, as well as thousands of careers and success stories. Now, twenty years later, this new edition re-examines what it means to be a modern

programmer. Topics range from personal responsibility and career development to architectural techniques for keeping your code flexible and easy to adapt and reuse. Read this book, and you'll learn how to: Fight software rot Learn continuously Avoid the trap of duplicating knowledge Write flexible, dynamic, and adaptable code Harness the power of basic tools Avoid programming by coincidence Learn real requirements Solve the underlying problems of concurrent code Guard against security vulnerabilities Build teams of Pragmatic Programmers Take responsibility for your work and career Test ruthlessly and effectively, including property-based testing Implement the Pragmatic Starter Kit Delight your users Written as a series of self-contained sections and filled with classic and fresh anecdotes, thoughtful examples, and interesting analogies, *The Pragmatic Programmer* illustrates the best approaches and major pitfalls of many different

aspects of software development. Whether you're a new coder, an experienced programmer, or a manager responsible for software projects, use these lessons daily, and you'll quickly see improvements in personal productivity, accuracy, and job satisfaction. You'll learn skills and develop habits and attitudes that form the foundation for long-term success in your career. You'll become a Pragmatic Programmer. Register your book for convenient access to downloads, updates, and/or corrections as they become available. See inside book for details.

Code Craft - Pete Goodliffe
2007

A guide to writing computer code covers such topics as variable naming, presentation style, error handling, and security.

Beyond the Basic Stuff with Python - Al Sweigart
2020-12-16

BRIDGE THE GAP BETWEEN NOVICE AND PROFESSIONAL
You've completed a basic

Python programming tutorial or finished Al Sweigart's bestseller, Automate the Boring Stuff with Python. What's the next step toward becoming a capable, confident software developer? Welcome to Beyond the Basic Stuff with Python. More than a mere collection of advanced syntax and masterful tips for writing clean code, you'll learn how to advance your Python programming skills by using the command line and other professional tools like code formatters, type checkers, linters, and version control. Sweigart takes you through best practices for setting up your development environment, naming variables, and improving readability, then tackles documentation, organization and performance measurement, as well as object-oriented design and the Big-O algorithm analysis commonly used in coding interviews. The skills you learn will boost your ability to program--not just in Python but in any language. You'll learn: Coding style, and how to use

Python's Black auto-formatting tool for cleaner code Common sources of bugs, and how to detect them with static analyzers How to structure the files in your code projects with the Cookiecutter template tool Functional programming techniques like lambda and higher-order functions How to profile the speed of your code with Python's built-in timeit and cProfile modules The computer science behind Big-O algorithm analysis How to make your comments and docstrings informative, and how often to write them How to create classes in object-oriented programming, and why they're used to organize code Toward the end of the book you'll read a detailed source-code breakdown of two classic command-line games, the Tower of Hanoi (a logic puzzle) and Four-in-a-Row (a two-player tile-dropping game), and a breakdown of how their code follows the book's best practices. You'll test your skills by implementing the program yourself. Of course, no single book can make you a

professional software developer. But *Beyond the Basic Stuff with Python* will get you further down that path and make you a better programmer, as you learn to write readable code that's easy to debug and perfectly Pythonic. **Requirements: Covers Python 3.6 and higher**
Assessing Network Security - Kevin Lam 2004

Provides information on advanced network testing strategies, covering such topics as detecting vulnerabilities; finding hidden hosts using DNS, WINS, and Net BIOS; war dialing and war driving; and spam and e-mail abuses.

Designing Secure Software - Loren Kohnfelder 2021-12-21

What every software professional should know about security. *Designing Secure Software* consolidates Loren Kohnfelder's more than twenty years of experience into a concise, elegant guide to improving the security of technology products. Written for a wide range of software professionals, it emphasizes building security into software

design early and involving the entire team in the process. The book begins with a discussion of core concepts like trust, threats, mitigation, secure design patterns, and cryptography. The second part, perhaps this book's most unique and important contribution to the field, covers the process of designing and reviewing a software design with security considerations in mind. The final section details the most common coding flaws that create vulnerabilities, making copious use of code snippets written in C and Python to illustrate implementation vulnerabilities. You'll learn how to:

- Identify important assets, the attack surface, and the trust boundaries in a system
- Evaluate the effectiveness of various threat mitigation candidates
- Work with well-known secure coding patterns and libraries
- Understand and prevent vulnerabilities like XSS and CSRF, memory flaws, and more
- Use security testing to proactively identify vulnerabilities introduced into

code • Review a software design for security flaws effectively and without judgment Kohnfelder's career, spanning decades at Microsoft and Google, introduced numerous software security initiatives, including the co-creation of the STRIDE threat modeling framework used widely today. This book is a modern, pragmatic consolidation of his best practices, insights, and ideas about the future of software.

The CERT C Secure Coding Standard - Robert C. Seacord
2008-10-14

"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.

[Writing Secure Code for Windows Vista](#) - Michael Howard 2007

Provides information on writing more secure code for Microsoft Windows Vista, covering such topics as application compatibility, buffer overrun defenses, network security, Windows CardSpace, parental controls, and Windows Defender APIs.

[Secure Coding in C and C++](#) - Robert C. Seacord 2005-09-09

"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.

Hands-On Network

Programming with C - Lewis Van Winkle 2019-05-13

A comprehensive guide to programming with network sockets, implementing Internet protocols, designing IoT devices, and much more with C

Key FeaturesLeverage your C or C++ programming skills to build powerful network applicationsGet to grips with a variety of network protocols that allow you to load web pages, send emails, and do much moreWrite portable network code for operating systems such as Windows, Linux, and macOSBook 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.

Secure Coding - Mark G. Graff 2003-06

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.

Effective C - Robert C. Seacord
2020-08-11

A detailed introduction to the C programming language for experienced programmers. The world runs on code written in the C programming language, yet most schools begin the curriculum with Python or Java. *Effective C* bridges this gap and brings C into the modern era--covering the modern C17 Standard as well as potential C2x features. With the aid of this instant classic, you'll soon be writing professional, portable, and secure C programs to power robust systems and solve real-world problems. Robert C. Seacord introduces C and the C Standard Library while addressing best practices, common errors, and open debates in the C community. Developed together with other C Standards committee experts, *Effective C* will teach you how to debug, test, and analyze C programs. You'll benefit from Seacord's concise explanations of C language constructs and behaviors, and from his 40 years of coding

experience. You'll learn:

- How to identify and handle undefined behavior in a C program
- The range and representations of integers and floating-point values
- How dynamic memory allocation works and how to use nonstandard functions
- How to use character encodings and types
- How to perform I/O with terminals and filesystems using C Standard streams and POSIX file descriptors
- How to understand the C compiler's translation phases and the role of the preprocessor
- How to test, debug, and analyze C programs

Effective C will teach you how to write professional, secure, and portable C code that will stand the test of time and help strengthen the foundation of the computing world.

24 Deadly Sins of Software Security: Programming Flaws and How to Fix Them - Michael Howard
2009-09-22

"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

Seriously Good Software - Marco Faella 2020-03-24

Summary Serious developers know that code can always be improved. With each iteration, you make optimizations—small and large—that can have a

huge impact on your application's speed, size, resilience, and maintainability. In *Seriously Good Software: Code that Works, Survives, and Wins*, author, teacher, and Java expert Marco Faella teaches you techniques for writing better code. You'll start with a simple application and follow it through seven careful refactorings, each designed to explore another dimension of quality. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Great code blends the skill of a programmer with the time-tested techniques and best practices embraced by the entire development community. Although each application has its own context and character, some dimensions of quality are always important. This book concentrates on eight pillars of seriously good software: speed, memory usage, reliability, readability, thread safety, generality, and elegance. The Java-based examples demonstrate techniques that

apply to any OO language. About the book *Seriously Good Software* is a handbook for any professional developer serious about improving application quality. It explores fundamental dimensions of code quality by enhancing a simple implementation into a robust, professional-quality application. Questions, exercises, and Java-based examples ensure you'll get a firm grasp of the concepts as you go. When you finish the last version of the book's central project, you'll be able to confidently choose the right optimizations for your code. What's inside Evaluating software qualities Assessing trade-offs and interactions Fulfilling different objectives in a single task Java-based exercises you can apply in any OO language About the reader For web developers comfortable with JavaScript and HTML. About the author Marco Faella teaches advanced programming at a major Italian university. His published work includes peer-reviewed research articles, a Java

certification manual, and a video course. Table of Contents

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Security for Web Developers

- John Paul Mueller 2015-11-10

As a web developer, you may not want to spend time making your web app secure, but it definitely comes with the territory. This practical guide provides you with the latest information on how to thwart security threats at several levels, including new areas such as microservices. You'll learn how to help protect your app no matter where it runs, from the latest smartphone to an older desktop, and everything in between. Author

John Paul Mueller delivers specific advice as well as several security programming examples for developers with a good knowledge of CSS3, HTML5, and JavaScript. In five separate sections, this book shows you how to protect against viruses, DDoS attacks, security breaches, and other nasty intrusions. Create a security plan for your organization that takes the latest devices and user needs into account Develop secure interfaces, and safely incorporate third-party code from libraries, APIs, and microservices Use sandboxing techniques, in-house and third-party testing techniques, and learn to think like a hacker Implement a maintenance cycle by determining when and how to update your application software Learn techniques for efficiently tracking security threats as well as training requirements that your organization can use

Bayesian Methods for

Hackers - Cameron Davidson-Pilon 2015-09-30

Master Bayesian Inference

through Practical Examples and Computation-Without Advanced Mathematical Analysis Bayesian methods of inference are deeply natural and extremely powerful. However, most discussions of Bayesian inference rely on intensely complex mathematical analyses and artificial examples, making it inaccessible to anyone without a strong mathematical background. Now, though, Cameron Davidson-Pilon introduces Bayesian inference from a computational perspective, bridging theory to practice-freing you to get results using computing power. Bayesian Methods for Hackers illuminates Bayesian inference through probabilistic programming with the powerful PyMC language and the closely related Python tools NumPy, SciPy, and Matplotlib. Using this approach, you can reach effective solutions in small increments, without extensive mathematical intervention. Davidson-Pilon begins by introducing the concepts underlying Bayesian

inference, comparing it with other techniques and guiding you through building and training your first Bayesian model. Next, he introduces PyMC through a series of detailed examples and intuitive explanations that have been refined after extensive user feedback. You'll learn how to use the Markov Chain Monte Carlo algorithm, choose appropriate sample sizes and priors, work with loss functions, and apply Bayesian inference in domains ranging from finance to marketing. Once you've mastered these techniques, you'll constantly turn to this guide for the working PyMC code you need to jumpstart future projects. Coverage includes • Learning the Bayesian "state of mind" and its practical implications • Understanding how computers perform Bayesian inference • Using the PyMC Python library to program Bayesian analyses • Building and debugging models with PyMC • Testing your model's "goodness of fit" • Opening the "black box" of the Markov Chain Monte Carlo

algorithm to see how and why it works • Leveraging the power of the “Law of Large Numbers” • Mastering key concepts, such as clustering, convergence, autocorrelation, and thinning • Using loss functions to measure an estimate’s weaknesses based on your goals and desired outcomes • Selecting appropriate priors and understanding how their influence changes with dataset size • Overcoming the “exploration versus exploitation” dilemma: deciding when “pretty good” is good enough • Using Bayesian inference to improve A/B testing • Solving data science problems when only small amounts of data are available

Cameron Davidson-Pilon has worked in many areas of applied mathematics, from the evolutionary dynamics of genes and diseases to stochastic modeling of financial prices. His contributions to the open source community include lifelines, an implementation of survival analysis in Python. Educated at the University of

Waterloo and at the Independent University of Moscow, he currently works with the online commerce leader Shopify.

Clean Code in Python - Mariano Anaya 2021-01-06

Tackle inefficiencies and errors the Pythonic way

Key Features Enhance your coding skills using the new features introduced in Python 3.9

Implement the refactoring techniques and SOLID principles in Python

Apply microservices to your legacy systems by implementing practical techniques

Book Description Experienced professionals in every field face several instances of disorganization, poor readability, and testability due to unstructured code. With updated code and revised content aligned to the new features of Python 3.9, this second edition of *Clean Code in Python* will provide you with all the tools you need to overcome these obstacles and manage your projects successfully. The book begins by describing the basic elements of writing clean

code and how it plays a key role in Python programming. You will learn about writing efficient and readable code using the Python standard library and best practices for software design. The book discusses object-oriented programming in Python and shows you how to use objects with descriptors and generators. It will also show you the design principles of software testing and how to resolve problems by implementing software design patterns in your code. In the concluding chapter, we break down a monolithic application into a microservices-based one starting from the code as the basis for a solid platform. By the end of this clean code book, you will be proficient in applying industry-approved coding practices to design clean, sustainable, and readable real-world Python code. What you will learn Set up a productive development environment by leveraging automatic tools Leverage the magic methods in Python to write better code, abstracting

complexity away and encapsulating details Create advanced object-oriented designs using unique features of Python, such as descriptors Eliminate duplicated code by creating powerful abstractions using software engineering principles of object-oriented design Create Python-specific solutions using decorators and descriptors Refactor code effectively with the help of unit tests Build the foundations for solid architecture with a clean code base as its cornerstone Who this book is for This book is designed to benefit new as well as experienced programmers. It will appeal to team leads, software architects and senior software engineers who would like to write Pythonic code to save on costs and improve efficiency. The book assumes that you have a strong understanding of programming

Write Great Code, Volume 1, 2nd Edition - Randall Hyde
2020-07-31
Understanding the Machine, the first volume in the

landmark Write Great Code series by Randall Hyde, explains the underlying mechanics of how a computer works. This, the first volume in Randall Hyde's Write Great Code series, dives into machine organization without the extra overhead of learning assembly language programming. Written for high-level language programmers, Understanding the Machine fills in the low-level details of machine organization that are often left out of computer science and engineering courses. Learn: How the machine represents numbers, strings, and high-level data structures, so you'll know the inherent cost of using them. How to organize your data, so the machine can access it efficiently. How the CPU operates, so you can write code that works the way the machine does. How I/O devices operate, so you can maximize your application's performance when accessing those devices. How to best use the memory hierarchy to produce the fastest possible programs. Great code is efficient code.

But before you can write truly efficient code, you must understand how computer systems execute programs and how abstractions in programming languages map to the machine's low-level hardware. After all, compilers don't write the best machine code; programmers do. This book gives you the foundation upon which all great software is built. NEW IN THIS EDITION, COVERAGE OF: Programming languages like Swift and Java Code generation on modern 64-bit CPUs ARM processors on mobile phones and tablets Newer peripheral devices Larger memory systems and large-scale SSDs **PROC SQL** - Kirk Paul Lafler 2019-03-20 PROC SQL: Beyond the Basics Using SAS®, Third Edition, is a step-by-step, example-driven guide that helps readers master the language of PROC SQL. Packed with analysis and examples illustrating an assortment of PROC SQL options, statements, and clauses, this book not only covers all the basics, but it also

offers extensive guidance on complex topics such as set operators and correlated subqueries. Programmers at all levels will appreciate Kirk Lafler's easy-to-follow examples, clear explanations, and handy tips to extend their knowledge of PROC SQL. This third edition explores new and powerful features in SAS® 9.4, including topics such as: IFC and IFN functions nearest neighbor processing the HAVING clause indexes It also features two completely new chapters on fuzzy matching

and data-driven programming. Delving into the workings of PROC SQL with greater analysis and discussion, PROC SQL: Beyond the Basics Using SAS®, Third Edition, explores this powerful database language using discussion and numerous real-world examples. *The Security Development Lifecycle* - Michael Howard 2006

Describes how to put software security into practice, covering such topics as risk analysis, coding policies, Agile Methods, cryptographic standards, and threat tree patterns.