

Beginning Rust From Novice To Professional

Beginning Rust From Novice to Professional Apress

Systems programming provides the foundation for the world's computation. Writing performance-sensitive code requires a programming language that puts programmers in control of how memory, processor time, and other system resources are used. The Rust systems programming language combines that control with a modern type system that catches broad classes of common mistakes, from memory management errors to data races between threads. With this practical guide, experienced systems programmers will learn how to successfully bridge the gap between performance and safety using Rust. Jim Blandy, Jason Orendorff, and Leonora Tindall demonstrate how Rust's features put programmers in control over memory consumption and processor use by combining predictable performance with memory safety and trustworthy concurrency. You'll learn: Rust's fundamental data types and the core concepts of ownership and borrowing How to write flexible, efficient code with traits and generics How to write fast, multithreaded code without data races Rust's key power tools: closures, iterators, and asynchronous programming Collections, strings and text, input and output, macros, unsafe code, and foreign function interfaces This revised, updated edition covers the Rust 2021 Edition.

PHP & MySQL: Novice to Ninja, 6th Edition is a hands-on guide to learning all the tools, principles, and techniques needed to build a fully functional application using PHP & MySQL. Comprehensively updated to cover PHP 7 and modern best practice, this practical and fun book covers everything from installing PHP and MySQL through to creating a complete online content management system. You'll learn how to: Install PHP & MySQL on Windows, Mac OS X, or Linux Gain a thorough understanding of PHP syntax Use object oriented programming techniques Master database design principles and SQL Develop robust websites that can handle high levels of traffic Build a working content management system (CMS) And much more!

Based on the bestselling first edition, *Beginning Ruby: From Novice to Professional, Second Edition* is the leading guide for every type of reader who wants to learn Ruby from the ground up. The new edition of this book provides the same excellent introduction to Ruby as the first edition plus updates for the newest version of Ruby, including the addition of the Sinatra and Ramaze web application frameworks and a chapter on GUI development so developers can take advantage of these new trends. *Beginning Ruby* starts by explaining the principles behind object-oriented programming and within a few chapters builds toward creating a full Ruby application. By the end of the book, in addition to in-depth knowledge of Ruby, you'll also have basic understanding of many ancillary technologies such as SQL, XML, web frameworks, and networking. Introduces readers to the Ruby programming language Takes readers from basic programming skills to web development with topics like Ruby-based frameworks and GUI programming Covers many ancillary technologies in order to provide a broader picture (e.g., databases, XML, network daemons)

Idiomatic Programming for Experienced Developers

The Well-Grounded Rubyist

A hands-on guide to developing fast and secure web apps with the Rust programming language

Getting MEAN with Mongo, Express, Angular, and Node

Unified Development for Web, Mobile, and Embedded Applications

Programming Rust

WebAssembly fulfills the long-awaited promise of web technologies: fast code, type-safe at compile time, execution in the browser, on embedded devices, or anywhere else. Rust delivers the power of C in a language that strictly enforces type safety. Combine both languages and you can write for the web like never before! Learn how to integrate with JavaScript, run code on platforms other than the browser, and take a step into IoT. Discover the easy way to build cross-platform applications without sacrificing power, and change the way you write code for the web. WebAssembly is more than just a revolutionary new technology. It's reshaping how we build applications for the web and beyond. Where technologies like ActiveX and Flash have failed, you can now write code in whatever language you prefer and compile to WebAssembly for fast, type-safe code that runs in the browser, on mobile devices, embedded devices, and more. Combining WebAssembly's portable, high-performance modules with Rust's safety and power is a perfect development combination. Learn how WebAssembly's stack machine architecture works, install low-level wasm tools, and discover the dark art of writing raw wasm code. Build on that foundation and learn how to compile WebAssembly modules from Rust by implementing the logic for a checkers game. Create wasm modules in Rust to interoperate with JavaScript in many compelling ways. Apply your new skills to the world of non-web hosts, and create everything from an app running on a Raspberry Pi that controls a lighting system, to a fully-functioning online multiplayer game engine where developers upload their own arena-bound WebAssembly combat modules. Get started with WebAssembly today, and change the way you think about the web. What You Need: You'll need a Linux, Mac, or Windows workstation with an Internet connection. You'll need an up-to-date web browser that supports WebAssembly. To work with the sample code, you can use your favorite text editor or IDE. The book will guide you through installing the Rust and WebAssembly tools needed for each chapter.

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

effective refactoring • Generics, smart pointers, multithreading, trait objects, and advanced pattern matching • Using Cargo, Rust's built-in package manager, to build, test, and document your code and manage dependencies • How best to use Rust's advanced compiler with compiler-led programming techniques You'll find plenty of code examples throughout the book, as well as three chapters dedicated to building complete projects to test your learning: a number guessing game, a Rust implementation of a command line tool, and a multithreaded server. New to this edition: An extended section on Rust macros, an expanded chapter on modules, and appendixes on Rust development tools and editions.

Summary Redis in Action introduces Redis and walks you through examples that demonstrate how to use it effectively. You'll begin by getting Redis set up properly and then exploring the key-value model. Then, you'll dive into real use cases including simple caching, distributed ad targeting, and more. You'll learn how to scale Redis from small jobs to massive datasets. Experienced developers will appreciate chapters on clustering and internal scripting to make Redis easier to use. About the Technology When you need near-real-time access to a fast-moving data stream, key-value stores like Redis are the way to go. Redis expands on the key-value pattern by accepting a wide variety of data types, including hashes, strings, lists, and other structures. It provides lightning-fast operations on in-memory datasets, and also makes it easy to persist to disk on the fly. Plus, it's free and open source. About this book Redis in Action introduces Redis and the key-value model. You'll quickly dive into real use cases including simple caching, distributed ad targeting, and more. You'll learn how to scale Redis from small jobs to massive datasets and discover how to integrate with traditional RDBMS or other NoSQL stores. Experienced developers will appreciate the in-depth chapters on clustering and internal scripting. Written for developers familiar with database concepts. No prior exposure to NoSQL database concepts nor to Redis itself is required. Appropriate for systems administrators comfortable with programming. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. What's Inside Redis from the ground up Preprocessing real-time data Managing in-memory datasets Pub/sub and configuration Persisting to disk About the Author Dr. Josiah L. Carlson is a seasoned database professional and an active contributor to the Redis community. Table of Contents PART 1 GETTING STARTED Getting to know Redis Anatomy of a Redis web application PART 2 CORE CONCEPTS Commands in Redis Keeping data safe and ensuring performance Using Redis for application support Application components in Redis Search-based applications Building a simple social network PART 3 NEXT STEPS Reducing memory use Scaling Redis Scripting Redis with Lua

Rust is a new systems programming language that combines the performance and low-level control of C and C++ with memory safety and thread safety. Rust's modern, flexible types ensure your program is free of null pointer dereferences, double frees, dangling pointers, and similar bugs, all at compile time, without runtime overhead. In multi-threaded code, Rust catches data races at compile time, making concurrency much easier to use. Written by two experienced systems programmers, this book explains how Rust manages to bridge the gap between performance and safety, and how you can take advantage of it. Topics include: How Rust represents values in memory (with diagrams) Complete explanations of ownership, moves, borrows, and lifetimes Cargo, rustdoc, unit tests, and how to publish your code on crates.io, Rust's public package repository High-level features like generic code, closures, collections, and iterators that make Rust productive and flexible Concurrency in Rust: threads, mutexes, channels, and atomics, all much safer to use than in C or C++ Unsafe code, and how to preserve the integrity of ordinary code that uses it Extended examples illustrating how pieces of the language fit together

Novice to Master

JavaScript: Novice to Ninja

Build exciting projects on domains such as web apps, WebAssembly, games, and parsing

Explore the latest features of Rust 2018 for building fast and secure apps

Programming WebAssembly with Rust

Rust for Rustaceans

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 FeaturesWork 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 codeBook 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 learnUnderstand how Rust provides unique solutions to solve system programming language problemsGrasp the core concepts of Rust to develop fast and safe applicationsExplore the possibility of integrating Rust units into existing applications for improved efficiencyDiscover how to achieve better parallelism and security with RustWrite Python extensions in RustCompile external assembly files and use the Foreign Function Interface (FFI)Build web applications and services using Rust for high performanceWho 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.

A comprehensive guide in developing and deploying high performance microservices with Rust Key FeaturesStart your microservices journey and get a broader perspective on microservices development using RUST 2018, Build, deploy, and test microservices using AWSExplore advanced techniques for developing microservices such as actor model, Requests Routing, and threadsBook Description Microservice architecture is sweeping the world as the de facto pattern for building web-based applications. Rust is a language particularly well-suited for building microservices. It is a new system programming language that offers a practical and safe alternative to C. This book describes web development using the Rust programming language and will get you up and running with modern web frameworks and crates with examples of RESTful microservices creation. You will deep dive into Reactive programming, and asynchronous programming, and split your web application into a set of concurrent actors. The book provides several HTTP-handling examples with manageable memory allocations. You will walk through stateless high-performance

microservices, which are ideally suitable for computation or caching tasks, and look at stateful microservices, which are filled with persistent data and database interactions. As we move along, you will learn how to use Rust macros to describe business or protocol entities of our application and compile them into native structs, which will be performed at full speed with the help of the server's CPU. Finally, you will be taken through examples of how to test and debug microservices and pack them into a tiny monolithic binary or put them into a container and deploy them to modern cloud platforms such as AWS. What you will learn

Get acquainted with leveraging Rust web programming

Get to grips with various Rust crates, such as hyper, Tokio, and Actix

Explore RESTful microservices with Rust

Understand how to pack Rust code to a container using Docker

Familiarize yourself with Reactive microservices

Deploy your microservices to modern cloud platforms such as AWS

Who this book is for This book is for developers who have basic knowledge of RUST, and want to learn how to build, test, scale, and manage RUST microservices. No prior experience of writing microservices in RUST is assumed.

Adopt the Rust programming language by learning how to build fully functional web applications and services and address challenges relating to safety and performance

Key Features

- Build scalable web applications in Rust using popular frameworks such as Actix, Rocket, and Warp
- Create front-end components that can be injected into multiple views
- Develop data models in Rust to interact with the database

Book Description

Are safety and high performance a big concern for you while developing web applications? While most programming languages have a safety or speed trade-off, Rust provides memory safety without using a garbage collector. This means that with its low memory footprint, you can build high-performance and secure web apps with relative ease. This book will take you through each stage of the web development process, showing you how to combine Rust and modern web development principles to build supercharged web apps. You'll start with an introduction to Rust and understand how to avoid common pitfalls when migrating from traditional dynamic programming languages. The book will show you how to structure Rust code for a project that spans multiple pages and modules. Next, you'll explore the Actix Web framework and get a basic web server up and running. As you advance, you'll learn how to process JSON requests and display data from the web app via HTML, CSS, and JavaScript. You'll also be able to persist data and create RESTful services in Rust. Later, you'll build an automated deployment process for the app on an AWS EC2 instance and Docker Hub. Finally, you'll play around with some popular web frameworks in Rust and compare them. By the end of this Rust book, you'll be able to confidently create scalable and fast web applications with Rust. What you will learn

- Structure scalable web apps in Rust in Rocket, Actix Web, and Warp
- Apply data persistence for your web apps using PostgreSQL
- Build login, JWT, and config modules for your web apps
- Serve HTML, CSS, and JavaScript from the Actix Web server
- Build unit tests and functional API tests in Postman and Newman
- Deploy the Rust app with NGINX and Docker onto an AWS EC2 instance

Who this book is for This book on web programming with Rust is for web developers who have programmed in traditional languages such as Python, Ruby, JavaScript, and Java and are looking to develop high-performance web applications with Rust. Although no prior experience with Rust is necessary, a solid understanding of web development principles and basic knowledge of HTML, CSS, and JavaScript are required if you want to get the most out of this book.

Begin your programming journey with C++ including the C++20 standard. You'll start with the basics and progress through step-by-step examples to become a working C++ programmer. This book will include new features like parallelism, coroutines, modules, networking, ranges, and reflections. All you need are Beginning C++20 and any recent C++ compiler and you'll soon be writing real C++ programs. There is no assumption of prior programming knowledge. All language concepts that are explained in the book are illustrated with working program examples, and all chapters include exercises for you to test and practice your knowledge. Free source code downloads are provided for all examples from the text and solutions to the exercises. This latest edition has been fully updated to the latest version of the language, C++20, and to all conventions and best practices of modern C++. Beginning C++20 also introduces the elements of the C++ Standard Library that provide essential support for the C++20 language. What You Will Learn

- Begin programming with C++20 standard
- Carry out modular programming in C++
- Work with arrays and loops, pointers and references, strings, and more
- Write your own functions, types, and operators
- Discover the essentials of object-oriented programming
- Use overloading, inheritance, virtual functions, and polymorphism
- Write generic function templates and class templates
- Use coroutines, parallelism, ranges, auto type declarations, move semantics, lambda expressions, and much more

Who This Book Is For

Programmers new to C++ and those who may be looking for a refresh primer on C++ in general.

Hands-on Rust

The easiest way to learn Rust programming

The Rust Programming Language (Covers Rust 2018)

Beginning Groovy and Grails

Get Programming with JavaScript

Beginning C++17

Get familiar with writing programs in the trending new systems programming language that brings together the powerful performance of low-level languages with the advanced features like thread safety in multi-threaded code

Key Features

- Learn the semantics of Rust, which can be significantly different from other programming languages
- Understand clearly how to work with the Rust compiler which strictly enforces rules that may not be obvious
- Examples and insights beyond the Rust documentation

Book Description

Rust is an emerging programming language applicable to areas such as embedded programming, network programming, system programming, and web development. This book will take you from the basics of Rust to a point where your code compiles and does what you intend it to do! This book starts with an introduction to Rust and how to get set for programming, including the rustup and cargo tools for managing a Rust installation and development workflow. Then you'll learn about the fundamentals of structuring a Rust program, such as functions, mutability, data structures, implementing behavior for types, and many more. You will also learn about concepts that Rust handles differently from most other languages. After understanding the Basics of Rust programming, you will learn about the core ideas, such as variable ownership, scope,

lifetime, and borrowing. After these key ideas, you will explore making decisions in Rust based on data types by learning about match and if let expressions. After that, you'll work with different data types in Rust, and learn about memory management and smart pointers. What you will learn
Install Rust and write your first program with it
Understand ownership in Rust
Handle different data types
Make decisions by pattern matching
Use smart pointers
Use generic types and type specialization
Write code that works with many data types
Tap into the standard library
Who this book is for
 This book is for people who are new to Rust, either as their first programming language or coming to it from somewhere else. Familiarity with computer programming in any other language will be helpful in getting the best out of this book.

Master professional-level coding in Rust. For developers who've mastered the basics, this book is the next step on your way to professional-level programming in Rust. It covers everything you need to build and maintain larger code bases, write powerful and flexible applications and libraries, and confidently expand the scope and complexity of your projects. Author Jon Gjengset takes you deep into the Rust programming language, dissecting core topics like ownership, traits, concurrency, and unsafe code. You'll explore key concepts like type layout and trait coherence, delve into the inner workings of concurrent programming and asynchrony with async/await, and take a tour of the world of no_std programming. Gjengset also provides expert guidance on API design, testing strategies, and error handling, and will help develop your understanding of foreign function interfaces, object safety, procedural macros, and much more. You'll Learn:

- How to design reliable, idiomatic, and ergonomic Rust programs based on best principles
- Effective use of declarative and procedural macros, and the difference between them
- How asynchrony works in Rust - all the way from the Pin and Waker types used in manual implementations of Futures, to how async/await saves you from thinking about most of those words
- What it means for code to be unsafe, and best practices for writing and interacting with unsafe functions and traits
- How to organize and configure more complex Rust projects so that they integrate nicely with the rest of the ecosystem
- How to write Rust code that can interoperate with non-Rust libraries and systems, or run in constrained and embedded environments

Brimming with practical, pragmatic insights that you can immediately apply, Rust for Rustaceans helps you do more with Rust, while also teaching you its underlying mechanisms.

Summary
Get Programming with Go introduces you to the powerful Go language without confusing jargon or high-level theory. By working through 32 quick-fire lessons, you'll quickly pick up the basics of the innovative Go programming language! Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Go is a small programming language designed by Google to tackle big problems. Large projects mean large teams with people of varying levels of experience. Go offers a small, yet capable, language that can be understood and used by anyone, no matter their experience. About the Book Hobbyists, newcomers, and professionals alike can benefit from a fast, modern language; all you need is the right resource! **Get Programming with Go** provides a hands-on introduction to Go language fundamentals, serving as a solid foundation for your future programming projects. You'll master Go syntax, work with types and functions, and explore bigger ideas like state and concurrency, with plenty of exercises to lock in what you learn. What's inside Language concepts like slices, interfaces, pointers, and concurrency Seven capstone projects featuring spacefaring gophers, Mars rovers, ciphers, and simulations All examples run in the Go Playground - no installation required! About the Reader This book is for anyone familiar with computer programming, as well as anyone with the desire to learn. About the Author Nathan Youngman organizes the Edmonton Go meetup and is a mentor with Canada Learning Code. Roger Peppé contributes to Go and runs the Newcastle upon Tyne Go meetup. Table of Contents Unit 0 - GETTING STARTED Get ready, get set, Go Unit 1 - IMPERATIVE PROGRAMMING A glorified calculator Loops and branches Variable scope Capstone: Ticket to Mars Unit 2 - TYPES Real numbers Whole numbers Big numbers Multilingual text Converting between types Capstone: The Vigenère cipher Unit 3 - BUILDING BLOCKS Functions Methods First-class functions Capstone: Temperature tables Unit 4 - COLLECTIONS Arrayed in splendor Slices: Windows into arrays A bigger slice The ever-versatile map Capstone: A slice of life Unit 5 - STATE AND BEHAVIOR A little structure Go's got no class Composition and forwarding Interfaces Capstone: Martian animal sanctuary Unit 6 - DOWN THE GOPHER HOLE A few pointers Much ado about nil To err is human Capstone: Sudoku rules Unit 7 - CONCURRENT PROGRAMMING Goroutines and concurrency Concurrent state Capstone: Life on Mars This is an extensive and beginner-friendly Rust tutorial prepared by our system programming team here at Apriorit. Whether you're a Rust aficionado or only starting your Rust journey, this e-book undoubtedly will prove useful to you. Key Highlights

- Discover the main features of the Rust language
- Learn to develop safer and faster software using Rust
- Learn to establish efficient C bindings
- Get detailed explanations of differences between Rust and C++

Book Description Rust is a c-like systems programming language that provides many advantages over its predecessors. This is why this low-level language has already become so popular in the development community. This book covers the main features of Rust, like zero-cost abstractions, move semantics, trait-based generics, pattern matching, type inference, and minimal runtime. It also explains how the Rust programming language can ensure memory safety and avoid data races in threads. In addition, Rust provides a great opportunity to use wide range of libraries and bind with other languages. The author added a detailed chart comparing feature set of Rust to C++, so you can better understand all the advantages and disadvantages of Rust. This tutorial will be useful for developers who only starts learning Rust, as well as for those who want to improve their knowledge on Rust features. What you will learn

- Discover

Rust features that make programming faster and secure □ **Guarantee memory safety using Rust** □ **Benefit from zero-cost abstraction mechanisms** □ **Avoid data races and a garbage collector** □ **Get rid of use-after-free, double-free bugs, dangling pointers** □ **Reduce code duplication** □ **Use existing libraries written in C and other languages** □ **Understand the main difference between Rust and C++** **About the Author Alexey Lozovsky is a Software Designer at Apriorit.Inc. Apriorit Inc. is a software development service provider headquartered in the Dover, DE, US, with several development centers in Eastern Europe. With over 350 professionals, it brings high-quality services on software consulting, research, and development to software vendors and IT companies worldwide. Apriorit's main specialties are cybersecurity and data management projects, where system programming, driver and kernel level development, research and reversing matter. The company has an independent web platform development department focusing on building cloud platforms for business. Table of Contents**

Introduction Summary of Features Rust Language Features Zero-Cost Abstractions Move Semantics Guaranteed Memory Safety Ownership Borrowing Mutability and Aliasing Option Types instead of Null Pointers No Uninitialized Variables Threads without Data Races Passing Messages with Channels Safe State Sharing with Locks Trait-Based Generics Traits Define Type Interfaces Traits Implement Polymorphism Traits May be Implemented Automatically Pattern Matching Type Inference Minimal Runtime Efficient C Bindings Calling C from Rust The Libc Crate and Unsafe Blocks Beyond Primitive Types Calling Rust from C Rust vs. C++ Comparison

Grokking Algorithms

Learn programming techniques to build effective, maintainable, and readable code in Rust 2018

Rust Quick Start Guide

Fast, Safe Systems Development

Rust in Action

A Tour of C++

Summary Get Programming with JavaScript is a hands-on introduction to programming for readers who have never programmed. You'll be writing your own web apps, games, and programs in no time! Foreword by Remy Sharp. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Book Are you ready to start writing your own web apps, games, and programs? You're in the right place! Get Programming with JavaScript is a hands-on introduction to programming for readers who have never written a line of code. Since you're just getting started, this friendly book offers you lots of examples backed by careful explanations. As you go along, you'll find exercises to check your understanding and plenty of opportunities to practice your new skills. You don't need anything special to follow the examples—just the text editor and web browser already installed on your computer. We even give you links to working online code so you can see how everything should look live on your screen. What's Inside All the basics—objects, functions, responding to users, and more Think like a coder and design your own programs Create a text-based adventure game Enhance web pages with JavaScript Run your programs in a web browser Four bonus chapters available online About the Reader No experience required! All you need is a web browser and an internet connection. About the Author John Larsen is a mathematics and computing teacher with an interest in educational research. He has an MA in mathematics and an MSc in information technology. He started programming in 1982, writing simple programs for teaching mathematics in 1993, building websites in 2001, and developing data-driven web-based applications for education in 2006. Table of Contents PART 1 CORE CONCEPTS ON THE CONSOLE Programming, JavaScript, and JS Bin Variables: storing data in your program Objects: grouping your data Functions: code on demand Arguments: passing data to functions Return values: getting data from functions Object arguments: functions working with objects Arrays: putting data into lists Constructors: building objects with functions Bracket notation: flexible property names PART 2 ORGANIZING YOUR PROGRAMS Scope: hiding information Conditions: choosing code to run Modules: breaking a program into pieces Models: working with data Views: displaying data Controllers: linking models and views PART 3 JAVASCRIPT IN THE BROWSER HTML: building web pages Controls: getting user input Templates: filling placeholders with data XHR: loading data Conclusion: get programming with JavaScript BONUS ONLINE CHAPTERS Node: running JavaScript outside the browser Express: building an API Polling: repeating requests with XHR Socket.IO: real-time messaging

Summary Grokking Algorithms is a fully illustrated, friendly guide that teaches you how to apply common algorithms to the practical problems you face every day as a programmer. You'll start with sorting and searching and, as you build up your skills in thinking algorithmically, you'll tackle more complex concerns such as data compression and artificial intelligence. Each carefully presented example includes helpful diagrams and fully annotated code samples in Python. Learning about algorithms doesn't have to be boring! Get a sneak peek at the fun, illustrated, and friendly examples you'll find in Grokking Algorithms on Manning Publications' YouTube channel. Continue your journey into the world of algorithms with Algorithms in Motion, a practical, hands-on video course available exclusively at Manning.com (www.manning.com/livevideo/algorithms-in-motion). Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology An algorithm is nothing more than a step-by-step procedure for solving a problem. The algorithms you'll use most often as a programmer have already been discovered, tested, and proven. If you want to understand them but refuse to slog through dense multipage proofs, this is the book for you. This fully illustrated and engaging guide makes it easy to learn how to use the most important algorithms effectively in your own programs. About the Book Grokking Algorithms is a friendly take on this core computer science topic. In it, you'll learn how to apply common algorithms to the practical

programming problems you face every day. You'll start with tasks like sorting and searching. As you build up your skills, you'll tackle more complex problems like data compression and artificial intelligence. Each carefully presented example includes helpful diagrams and fully annotated code samples in Python. By the end of this book, you will have mastered widely applicable algorithms as well as how and when to use them. What's Inside Covers search, sort, and graph algorithms Over 400 pictures with detailed walkthroughs Performance trade-offs between algorithms Python-based code samples About the Reader This easy-to-read, picture-heavy introduction is suitable for self-taught programmers, engineers, or anyone who wants to brush up on algorithms. About the Author Aditya Bhargava is a Software Engineer with a dual background in Computer Science and Fine Arts. He blogs on programming at adit.io. Table of Contents Introduction to algorithms Selection sort Recursion Quicksort Hash tables Breadth-first search Dijkstra's algorithm Greedy algorithms Dynamic programming K-nearest neighbors Summary The Well-Grounded Rubyist, Second Edition addresses both newcomers to Ruby as well as Ruby programmers who want to deepen their understanding of the language. This beautifully written and totally revised second edition includes coverage of features that are new in Ruby 2.1, as well as expanded and updated coverage of aspects of the language that have changed. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology This is a good time for Ruby! It's powerful like Java or C++, and has dynamic features that let your code react gracefully to changes at runtime. And it's elegant, so creating applications, development tools, and administrative scripts is easier and more straightforward. With the long-awaited Ruby 2, an active development community, and countless libraries and productivity tools, Ruby has come into its own. About the Book The Well-Grounded Rubyist, Second Edition is a beautifully written tutorial that begins with your first Ruby program and goes on to explore sophisticated topics like callable objects, reflection, and threading. The book concentrates on the language, preparing you to use Ruby in any way you choose. This second edition includes coverage of new Ruby features such as keyword arguments, lazy enumerators, and `Module#prepend`, along with updated information on new and changed core classes and methods. What's Inside Clear explanations of Ruby concepts Numerous simple examples Updated for Ruby 2.1 Prepares you to use Ruby anywhere for any purpose About the Author David A. Black is an internationally known Ruby developer, author, trainer, speaker, event organizer, and founder of Ruby Central, as well as a Lead Consultant at Cyrus Innovation. Table of Contents PART 1 RUBY FOUNDATIONS Bootstrapping your Ruby literacy Objects, methods, and local variables Organizing objects with classes Modules and program organization The default object (self), scope, and visibility Control-flow techniques PART 2 BUILT-IN CLASSES AND MODULES Built-in essentials Strings, symbols, and other scalar objects Collection and container objects Collections central: Enumerable and Enumerator Regular expressions and regexp-based string operations File and I/O operations PART 3 RUBY DYNAMICS Object individuation Callable and runnable objects Callbacks, hooks, and runtime introspection

This is not your typical programming book! Jump right in with interesting, useful programs, some of which are drawn from classic computer science problems as a way of talking about the programming constructs in the language rather than explaining everything in a dry, theoretical manner that doesn't translate well to implementation. Rust programming has been the "most loved programming language" in the Stack Overflow Developer Survey every year since 2016! Learn why programmers are using Rust due to its performance and efficiency, without the errors and crashes that a programmer would find in common languages such as C and C++. Built around solving real problems, this book will help introduce you to computer science problems that can be built upon to create solutions for other problems. LEARN BY DOING: This book will focus on a practical approach to learning Rust. You will learn all of the language fundamentals through the use of programming examples that do interesting things! All of the programs covered will be based on a computer science problem or other interesting problems that can be used as a foundation for demonstrating language syntax, data types and structures, and other features or techniques for developing programs.

Rust for the IoT

Hands-On Data Structures and Algorithms with Rust

Redis in Action

Creative Projects for Rust Programmers

Woodworking for Beginners

Learn to program with Rust in an easy, step-by-step manner on Unix, Linux shell, macOS and the Windows command line. As you read this book, you'll build on the knowledge you gained in previous chapters and see what Rust has to offer. Beginning Rust starts with the basics of Rust, including how to name objects, control execution flow, and handle primitive types. You'll see how to do arithmetic, allocate memory, use iterators, and handle input/output. Once you have mastered these core skills, you'll work on handling errors and using the object-oriented features of Rust to build robust Rust applications in no time. Only a basic knowledge of programming is required, preferably in C or C++. To understand this book, it's enough to know what integers and floating-point numbers are, and to distinguish identifiers from string literals. After reading this book, you'll be ready to build Rust applications. What You'll Learn Get started programming with Rust Understand heterogeneous data structures and data sequences Define functions, generic functions, structs, and more Work with closures, changeable strings, ranges and slices Use traits and learn about lifetimes Who This Book Is For Those who are new to Rust and who have at least some prior experience with programming in general: some C/C++ is recommended particularly. "A staggeringly comprehensive review of the state of modern cryptography. Essential for anyone getting up to speed in information security." - Thomas Doylend, Green Rocket Security An all-practical guide to the cryptography behind common tools and protocols that will help you make excellent security choices for your systems and applications. In Real-World Cryptography, you will find: Best practices for using cryptography Diagrams and explanations of cryptographic algorithms Implementing digital signatures and zero-knowledge proofs Specialized hardware for attacks and highly adversarial environments Identifying and fixing bad practices Choosing the right cryptographic tool for any problem Real-World Cryptography reveals the cryptographic techniques that drive the security of web APIs, registering and logging in users, and even the blockchain. You'll learn how these

techniques power modern security, and how to apply them to your own projects. Alongside modern methods, the book also anticipates the future of cryptography, diving into emerging and cutting-edge advances such as cryptocurrencies, and post-quantum cryptography. All techniques are fully illustrated with diagrams and examples so you can easily see how to put them into practice. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Cryptography is the essential foundation of IT security. To stay ahead of the bad actors attacking your systems, you need to understand the tools, frameworks, and protocols that protect your networks and applications. This book introduces authentication, encryption, signatures, secret-keeping, and other cryptography concepts in plain language and beautiful illustrations. About the book Real-World Cryptography teaches practical techniques for day-to-day work as a developer, sysadmin, or security practitioner. There's no complex math or jargon: Modern cryptography methods are explored through clever graphics and real-world use cases. You'll learn building blocks like hash functions and signatures; cryptographic protocols like HTTPS and secure messaging; and cutting-edge advances like post-quantum cryptography and cryptocurrencies. This book is a joy to read—and it might just save your bacon the next time you're targeted by an adversary after your data. What's inside Implementing digital signatures and zero-knowledge proofs Specialized hardware for attacks and highly adversarial environments Identifying and fixing bad practices Choosing the right cryptographic tool for any problem About the reader For cryptography beginners with no previous experience in the field. About the author David Wong is a cryptography engineer. He is an active contributor to internet standards including Transport Layer Security. Table of Contents PART 1 PRIMITIVES: THE INGREDIENTS OF CRYPTOGRAPHY 1 Introduction 2 Hash functions 3 Message authentication codes 4 Authenticated encryption 5 Key exchanges 6 Asymmetric encryption and hybrid encryption 7 Signatures and zero-knowledge proofs 8 Randomness and secrets PART 2 PROTOCOLS: THE RECIPES OF CRYPTOGRAPHY 9 Secure transport 10 End-to-end encryption 11 User authentication 12 Crypto as in cryptocurrency? 13 Hardware cryptography 14 Post-quantum cryptography 15 Is this it? Next-generation cryptography 16 When and where cryptography fails

Master the programming skills you need to build a solid foundation in Python programming and learn how to build awesome GUI applications with PyQt! Have you always wanted to get into programming, but have difficulty deciding which language to commit to as your first language or don't feel smart enough? Do you want to learn how to design intuitive user interfaces? If you answered yes to any of the questions above, then Python is the programming language you need to adopt. Python is an extremely versatile language and is found everywhere in the tech industry. From web development to data science and machine learning, Python doesn't seem to be going anywhere and will be around for a long time. It is also relatively easier to learn and has more support, making it perfect for beginners. In this guide, you're going to learn how to master the basics of Python, from the essentials of Python to creating your own user interfaces, this guide has everything you need to build basic applications using Python and is the perfect introductory guide. In Python GUI Programming with PyQt, you're going to learn: Everything you need to know about the Python programming language to get started on the right foot Step-by-step instructions to install Python on your machine of choice How to execute Python scripts on Windows, Linux, and macOS How to write and run your very first Python program All you need to know about Python syntax—from keywords and statements to comments A crash guide to Python data types—from numbers and strings to lists and tuples How to accept user inputs from other people using your script in your Python program How to convert Python data from one type to another Controlling program flow with decision-making constructs and control structures and statements How to build your very first GUI application in Python with PyQt ...and tons more! Whether you're a complete programming novice and have never written a line of code before, or you're a seasoned programmer looking to add Python to skillset and take your programming chops to the next level, this book has everything you need to build a solid foundation in Python and start writing useful programs and designing simple user interfaces right out the gate. Scroll to the top of the page and click the "Buy Now" button to get started today!

Learn JavaScript from scratch! Packed with numerous examples, JavaScript: Novice to Ninja is a fun, step-by-step and comprehensive introduction to development in JavaScript. Discover how to use JavaScript to solve real-world problems, build smarter forms, track user events, and design eye-catching animations. Learn JavaScript's built-in functions, methods, and properties. Use JavaScript to validate form entries and interact with your users. Understand how to respond to user events and add interactivity to your applications. Create animations that bring your web site to life. Start programming using the DOM And much more!

Hands-On Microservices with Rust

Beginning C++20

JavaScript for Kids

A Beginner's Guide to Python 3 and GUI Application Development

Beginning Rust

PHP & MySQL: Novice to Ninja

Learn how to program using the updated C++17 language. You'll start with the basics and progress through step-by-step examples to become a working C++ programmer. All you need are Beginning C++17 and any recent C++ compiler and you'll soon be writing real C++ programs. There is no assumption of prior programming knowledge. All language concepts that are explained in the book are illustrated with working program examples, and all chapters include exercises for you to test and practice your knowledge. Code downloads are provided for all examples from the text and solutions to the exercises. This latest edition has been fully updated to the latest version of the language, C++17, and to all conventions and best practices of so-called modern C++. Beginning C++17 also introduces the elements of the C++ Standard Library that provide essential support for the C++17 language. What You'll Learn Define variables and make decisions Work with arrays and loops, pointers and references, strings, and more Write your own functions, types, and operators Discover the essentials of object-oriented programming Use overloading, inheritance, virtual functions and polymorphism Write generic function templates and class templates Get up to date with modern C++ features: auto type declarations, move semantics, lambda expressions, and more Examine the new additions to C++17 Who This Book Is For Programmers new to C++ and those who may be looking for a refresh primer on the C++17 programming language in general. Summary Now updated for Swift 5! Swift is more than just a fun language to build iOS applications with. It features a host of powerful tools that, if effectively used, can help you create even better apps with clean, crystal-clear code and awesome features. Swift in Depth is designed to help you unlock these tools and quirks and get developing next-gen apps, web services, and more! Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology It's fun to create your first toy iOS or Mac app in Swift. Writing secure, reliable, professional-grade software is a different animal altogether. The Swift language includes an amazing set of high-powered features, and it supports a wide range of programming styles and techniques. You just have to roll up your sleeves and learn Swift in depth. About the Book Swift in Depth guides you concept by concept through the skills you need to build professional software for Apple platforms, such as iOS and Mac; also on the server with Linux. By following the numerous concrete examples, enlightening explanations, and engaging exercises, you'll finally grok powerful techniques like generics, efficient error handling, protocol-oriented programming, and advanced Swift patterns. Author Tjeerd in 't Veen reveals the

high-value, difficult-to-discover Swift techniques he's learned through his own hard-won experience. What's inside Covers Swift 5 Writing reusable code with generics Iterators, sequences, and collections Protocol-oriented programming Understanding map, flatMap, and compactMap Asynchronous error handling with ResultBest practices in Swift About the Reader Written for advanced-beginner and intermediate-level Swift programmers. About the Author Tjeerd in 't Veen is a senior software engineer and architect in the mobile division of a large international banking firm. Table of Contents Introducing Swift in depth Modeling data with enums Writing cleaner properties Making optionals second nature Demystifying initializers Effortless error handling Generics Putting the pro in protocol-oriented programming Iterators, sequences, and collections Understanding map, flatMap, and compactMap Asynchronous error handling with Result Protocol extensions Swift patterns Delivering quality Swift code Where to Swift from here

JavaScript is the programming language of the Internet, the secret sauce that makes the Web awesome, your favorite sites interactive, and online games fun! JavaScript for Kids is a lighthearted introduction that teaches programming essentials through patient, step-by-step examples paired with funny illustrations. You'll begin with the basics, like working with strings, arrays, and loops, and then move on to more advanced topics, like building interactivity with jQuery and drawing graphics with Canvas. Along the way, you'll write games such as Find the Buried Treasure, Hangman, and Snake. You'll also learn how to: -Create functions to organize and reuse your code -Write and modify HTML to create dynamic web pages -Use the DOM and jQuery to make your web pages react to user input -Use the Canvas element to draw and animate graphics -Program real user-controlled games with collision detection and score keeping With visual examples like bouncing balls, animated bees, and racing cars, you can really see what you're programming. Each chapter builds on the last, and programming challenges at the end of each chapter will stretch your brain and inspire your own amazing programs. Make something cool with JavaScript today! Ages 10+ (and their parents!)

The C++11 standard allows programmers to express ideas more clearly, simply, and directly, and to write faster, more efficient code. Bjarne Stroustrup, the designer and original implementer of C++, thoroughly covers the details of this language and its use in his definitive reference, *The C++ Programming Language, Fourth Edition*. In *A Tour of C++*, Stroustrup excerpts the overview chapters from that complete reference, expanding and enhancing them to give an experienced programmer-in just a few hours-a clear idea of what constitutes modern C++. In this concise, self-contained guide, Stroustrup covers most major language features and the major standard-library components-not, of course, in great depth, but to a level that gives programmers a meaningful overview of the language, some key examples, and practical help in getting started. Stroustrup presents the C++ features in the context of the programming styles they support, such as object-oriented and generic programming. His tour is remarkably comprehensive. Coverage begins with the basics, then ranges widely through more advanced topics, including many that are new in C++11, such as move semantics, uniform initialization, lambda expressions, improved containers, random numbers, and concurrency. The tour ends with a discussion of the design and evolution of C++ and the extensions added for C++11. This guide does not aim to teach you how to program (see Stroustrup's *Programming: Principles and Practice Using C++* for that); nor will it be the only resource you'll need for C++ mastery (see Stroustrup's *The C++ Programming Language, Fourth Edition*, for that). If, however, you are a C or C++ programmer wanting greater familiarity with the current C++ language, or a programmer versed in another language wishing to gain an accurate picture of the nature and benefits of modern C++, you can't find a shorter or simpler introduction than this tour provides.

A Playful Introduction to Programming

Get Programming with Go

An Ongoing Lesson in the Extent of My Own Stupidity

Programming Clojure

Building Internet of Things Apps with Rust and Raspberry Pi

Build, test, and deploy scalable and reactive microservices with Rust 2018

Web frameworks are playing a major role in the creation of today's most compelling web applications, because they automate many of the tedious tasks, allowing developers to instead focus on providing users with creative and powerful features. Java developers have been particularly fortunate in this area, having been able to take advantage of Grails, an open source framework that supercharges productivity when building Java-driven web sites. Grails is based on Groovy, which is a very popular and growing dynamic scripting language for Java developers and was inspired by Python, Ruby, and Smalltalk. *Beginning Groovy and Grails* is the first introductory book on the Groovy language and its primary web framework, Grails. This book gets you started with Groovy and Grails and culminates in the example and possible application of some real-world projects. You follow along with the development of each project, implementing and running each application while learning new features along the way.

An environmental journalist traces the historical war against rust, revealing how rust-related damage costs more than all other natural disasters combined and how it is combated by industrial workers, the government, universities and everyday people.

Any programmer working with a dynamically typed language will tell you how hard it is to scale to more lines of code and more engineers. That's why Facebook, Google, and Microsoft invented gradual static type layers for their dynamically typed JavaScript and Python code. This practical book shows you how one such type layer, TypeScript, is unique among them: it makes programming fun with its powerful static type system. If you're a programmer with intermediate JavaScript experience, author Boris Cherny will teach you how to master the TypeScript language. You'll understand how TypeScript can help you eliminate bugs in your code and enable you to scale your code across more engineers than you could before. In this book, you'll: Start with the basics: Learn about TypeScript's different types and type operators, including what they're for and how they're used Explore advanced topics: Understand TypeScript's sophisticated type system, including how to safely handle errors and build asynchronous programs Dive in hands-on: Use TypeScript with your favorite frontend and backend frameworks, migrate your existing JavaScript project to TypeScript, and run your TypeScript application in production

Drowning in unnecessary complexity, unmanaged state, and tangles of spaghetti code? In the best tradition of Lisp, Clojure gets out of your way so you can focus on expressing simple solutions to hard problems. Clojure cuts through complexity by providing a set of

composable tools--immutable data, functions, macros, and the interactive REPL. Written by members of the Clojure core team, this book is the essential, definitive guide to Clojure. This new edition includes information on all the newest features of Clojure, such as transducers and specs. Clojure joins the flexibility and agility of Lisp with the reach, stability, and performance of Java. Combine Clojure's tools for maximum effectiveness as you work with immutable data, functional programming, and safe concurrency to write programs that solve real-world problems. Start by reading and understanding Clojure syntax and see how Clojure is evaluated. From there, find out about the sequence abstraction, which combines immutable collections with functional programming to create truly reusable data transformation code. Clojure is a functional language; learn how to write programs in a functional style, and when and how to use recursion to your advantage. Discover Clojure's unique approach to state and identity, techniques for polymorphism and open systems using multimethods and protocols, and how to leverage Clojure's metaprogramming capabilities via macros. Finally, put all the pieces together in a real program. New to this edition is coverage of Clojure's spec library, one of the most interesting new features of Clojure for describing both data and functions. You can use Clojure spec to validate data, destructure data, explain invalid data, and generate large numbers of tests to verify the correctness of your code. With this book, you'll learn how to think in Clojure, and how to take advantage of its combined strengths to build powerful programs quickly. What You Need: Java 6 or higher Clojure 1.9

Python GUI Programming with PyQt

A Manual for Amateurs

An illustrated guide for programmers and other curious people

From Novice to Professional

The Longest War

Programming TypeScript

Design and implement professional level programs by exploring modern data structures and algorithms in Rust. Key Features Use data structures such as arrays, stacks, trees, lists and graphs with real-world examples Learn the functional and reactive implementations of the traditional data structures Explore illustrations to present data structures and algorithms, as well as their analysis, in a clear, visual manner. Book Description Rust has come a long way and is now utilized in several contexts. Its key strengths are its software infrastructure and resource-constrained applications, including desktop applications, servers, and performance-critical applications, not forgetting its importance in systems' programming. This book will be your guide as it takes you through implementing classic data structures and algorithms in Rust, helping you to get up and running as a confident Rust programmer. The book begins with an introduction to Rust data structures and algorithms, while also covering essential language constructs. You will learn how to store data using linked lists, arrays, stacks, and queues. You will also learn how to implement sorting and searching algorithms. You will learn how to attain high performance by implementing algorithms to string data types and implement hash structures in algorithm design. The book will examine algorithm analysis, including Brute Force algorithms, Greedy algorithms, Divide and Conquer algorithms, Dynamic Programming, and Backtracking. By the end of the book, you will have learned how to build components that are easy to understand, debug, and use in different applications. What you will learn Design and implement complex data structures in Rust Analyze, implement, and improve searching and sorting algorithms in Rust Create and use well-tested and reusable components with Rust Understand the basics of multithreaded programming and advanced algorithm design Become familiar with application profiling based on benchmarking and testing Explore the borrowing complexity of implementing algorithms Who this book is for This book is for developers seeking to use Rust solutions in a practical/professional setting; who wants to learn essential Data Structures and Algorithms in Rust. It is for developers with basic Rust language knowledge, some experience in other programming languages is required.

Everybody loves Novice to Master! As you'll see in the glowing endorsements and reviews included below, this modern spiritual classic has been embraced by readers of all types. In his singularly humorous and biting direct way, Zen abbot Soko Morinaga tells the story of his rigorous training at a Japanese Zen temple, his spiritual growth and his interactions with his students and others. Morinaga's voice is uniquely tuned to the truth of the condition of the human mind and spirit and his reflections and interpretations are unvarnished and succinct. His great gift is the ability to lift the spirit of the reader all the while exposing the humility and weakness in the lives of people, none more so than his own. Read on to see what everyone from Publishers Weekly to well-known Buddhist figures and even New York Times bestselling author Anthony Swofford have to say about this one of a kind book!

Design and implement professional-level programs by leveraging modern data structures and algorithms in Rust Key Features Improve your productivity by writing more simple and easy code in Rust Discover the functional and reactive implementations of traditional data structures Delve into new domains of Rust, including WebAssembly, networking, and command-line tools Book Description Rust is a powerful language with a rare combination of safety, speed, and zero-cost abstractions. This Learning Path is filled with clear and simple explanations of its features along with real-world examples, demonstrating how you can build robust, scalable, and reliable programs. You'll get started with an introduction to Rust data structures, algorithms, and essential language constructs. Next, you will understand how to store data using linked lists, arrays, stacks, and queues. You'll also learn to implement sorting and searching algorithms, such as Brute Force algorithms, Greedy algorithms, Dynamic Programming, and Backtracking. As you progress, you'll pick up on using Rust for systems programming, network programming, and the web. You'll then move on to discover a variety of techniques, right from writing memory-safe code, to building idiomatic Rust libraries, and even advanced macros. By the end of this Learning Path, you'll be able to implement Rust for enterprise projects, writing better

tests and documentation, designing for performance, and creating idiomatic Rust code. This Learning Path includes content from the following Packt products: Mastering Rust - Second Edition by Rahul Sharma and Vesa Kaihvirta Hands-On Data Structures and Algorithms with Rust by Claus Matzinger What you will learn Design and implement complex data structures in Rust Create and use well-tested and reusable components with Rust Understand the basics of multithreaded programming and advanced algorithm design Explore application profiling based on benchmarking and testing Study and apply best practices and strategies in error handling Create efficient web applications with the Actix-web framework Use Diesel for type-safe database interactions in your web application Who this book is for If you are already familiar with an imperative language and now want to progress from being a beginner to an intermediate-level Rust programmer, this Learning Path is for you. Developers who are already familiar with Rust and want to delve deeper into the essential data structures and algorithms in Rust will also find this Learning Path useful.

Rust is an exciting new programming language combining the power of C with memory safety, fearless concurrency, and productivity boosters - and what better way to learn than by making games. Each chapter in this book presents hands-on, practical projects ranging from "Hello, World" to building a full dungeon crawler game. With this book, you'll learn game development skills applicable to other engines, including Unity and Unreal. Rust is an exciting programming language combining the power of C with memory safety, fearless concurrency, and productivity boosters. With Rust, you have a shiny new playground where your game ideas can flourish. Each chapter in this book presents hands-on, practical projects that take you on a journey from "Hello, World" to building a full dungeon crawler game. Start by setting up Rust and getting comfortable with your development environment. Learn the language basics with practical examples as you make your own version of Flappy Bird. Discover what it takes to randomly generate dungeons and populate them with monsters as you build a complete dungeon crawl game. Run game systems concurrently for high-performance and fast game-play, while retaining the ability to debug your program. Unleash your creativity with magical items, tougher monsters, and intricate dungeon design. Add layered graphics and polish your game with style. What You Need: A computer running Windows 10, Linux, or Mac OS X. A text editor, such as Visual Studio Code. A video card and drivers capable of running OpenGL 3.2.

The Complete Rust Programming Reference Guide

Beginning Ruby

Rust Web Programming

Rust

Rust Programming Cookbook

Real-World Cryptography

Get started programming Rust applications for the Internet of Things (IoT). This book is a programming skills migration book that teaches you the Rust programming techniques most useful for IoT applications. You'll step through from server to board development in creating a set of IoT applications. In Rust for the IoT, you'll learn how to build a modern server side application using Rust on the backend. Then you'll use docker and Kubernetes to deploy these to a managed cloud. Finally you will use a Raspberry Pi with a SenseHat and Camera to capture the world around you and send that information to the cloud. While you will be able to follow along without any cloud or hardware, to make the most of it we recommend a few cloud pieces and hardware that is designed to integrate with the software in this book. After reading and using this book, you'll see how to apply Rust to the Internet of Things. What You Will Learn Create a modern Rust backend complete with handling eventual consistency and interacting via a GraphQL interface Use the Raspberry Pi to serve as a cheap IoT device that one can easily deploy around the house Capture temperature, video, and use the interactive joystick to interact with the software you've created Use OpenCV to perform facial detection from the Pi's camera and save that information to the cloud. Create deployable helm charts for the cloud, and for the device create complete ISOs that allow you to easily deploy the Pi's OS + custom software Who This Book Is For You will need to have a basic understanding of cloud application development at a minimum and the basics of Rust coding. This book is for those interested in or working with the IoT and the Raspberry Pi who want to learn how Rust can work for them.

Summary Getting MEAN, Second Edition teaches you how to develop full-stack web applications using the MEAN stack. This edition was completely revised and updated to cover MongoDB 4, Express 4, Angular 7, Node 11, and the latest mainstream release of JavaScript ES2015. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Juggling languages mid-application can radically slow down a full-stack web project. The MEAN stack—MongoDB, Express, Angular, and Node—uses JavaScript end to end, maximizing developer productivity and minimizing context switching. And you'll love the results! MEAN apps are fast, powerful, and beautiful. About the Book Getting MEAN, Second Edition teaches you how to develop full-stack web applications using the MEAN stack. Practical from the very beginning, the book helps you create a static site in Express and Node. Expanding on that solid foundation, you'll integrate a MongoDB database, build an API, and add an authentication system. Along the way, you'll get countless pro tips for building dynamic and responsive data-driven web applications! What's inside MongoDB 4, Express 4, Angular 7, and Node.js 11 MEAN stack architecture Mobile-ready web apps Best practices for efficiency and reusability About the Reader Readers should be comfortable with standard web application designs and ES2015-style JavaScript. About the Author Simon Holmes and Clive Harber are full-stack developers with decades of experience in JavaScript and other leading-edge web technologies. Table of Contents PART 1 - SETTING THE BASELINE Introducing full-stack development Designing a MEAN stack architecture PART 2 - BUILDING A NODE WEB APPLICATION Creating and setting up a MEAN project Building a static site with Node and Express Building a data model with MongoDB and Mongoose Writing a REST API: Exposing the MongoDB database to the application Consuming a REST API: Using an API from inside Express PART 3 - ADDING A DYNAMIC FRONT END WITH ANGULAR Creating an Angular application with TypeScript Building a single-page application with Angular: Foundations Building a single-page application with Angular: The next level PART 4 - MANAGING AUTHENTICATION AND USER SESSIONS Authenticating

users, managing sessions, and securing APIs Using an authentication API in Angular applications

A practical guide to understanding the latest features of the Rust programming language, useful libraries, and frameworks that will help you design and develop interesting projects Key FeaturesWork through projects that will help you build high-performance applications with RustDelve into concepts such as error handling, memory management, concurrency, generics, and macros with RustImprove business productivity by choosing the right libraries and frameworks for your applicationsBook Description Rust is a community-built language that solves pain points present in many other languages, thus improving performance and safety. In this book, you will explore the latest features of Rust by building robust applications across different domains and platforms. The book gets you up and running with high-quality open source libraries and frameworks available in the Rust ecosystem that can help you to develop efficient applications with Rust. You'll learn how to build projects in domains such as data access, RESTful web services, web applications, 2D games for web and desktop, interpreters and compilers, emulators, and Linux Kernel modules. For each of these application types, you'll use frameworks such as Actix, Tera, Yew, Quicksilver, ggez, and nom. This book will not only help you to build on your knowledge of Rust but also help you to choose an appropriate framework for building your project. By the end of this Rust book, you will have learned how to build fast and safe applications with Rust and have the real-world experience you need to advance in your career. What you will learnAccess TOML, JSON, and XML files and SQLite, PostgreSQL, and Redis databasesDevelop a RESTful web service using JSON payloadsCreate a web application using HTML templates and JavaScript and a frontend web application or web game using WebAssemblyBuild desktop 2D gamesDevelop an interpreter and a compiler for a programming languageCreate a machine language emulatorExtend the Linux Kernel with loadable modulesWho this book is for This Rust programming book is for developers who want to get hands-on experience with implementing their knowledge of Rust programming, and are looking for expert advice on which libraries and frameworks they can adopt to develop software that typically uses the Rust language.

Rust in Action is a hands-on guide to systems programming with Rust. Written for inquisitive programmers, it presents real-world use cases that go far beyond syntax and structure. Summary Rust in Action introduces the Rust programming language by exploring numerous systems programming concepts and techniques. You'll be learning Rust by delving into how computers work under the hood. You'll find yourself playing with persistent storage, memory, networking and even tinkering with CPU instructions. The book takes you through using Rust to extend other applications and teaches you tricks to write blindingly fast code. You'll also discover parallel and concurrent programming. Filled to the brim with real-life use cases and scenarios, you'll go beyond the Rust syntax and see what Rust has to offer in real-world use cases. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Rust is the perfect language for systems programming. It delivers the low-level power of C along with rock-solid safety features that let you code fearlessly. Ideal for applications requiring concurrency, Rust programs are compact, readable, and blazingly fast. Best of all, Rust's famously smart compiler helps you avoid even subtle coding errors. About the book Rust in Action is a hands-on guide to systems programming with Rust. Written for inquisitive programmers, it presents real-world use cases that go far beyond syntax and structure. You'll explore Rust implementations for file manipulation, networking, and kernel-level programming and discover awesome techniques for parallelism and concurrency. Along the way, you'll master Rust's unique borrow checker model for memory management without a garbage collector. What's inside Elementary to advanced Rust programming Practical examples from systems programming Command-line, graphical and networked applications About the reader For intermediate programmers. No previous experience with Rust required. About the author Tim McNamara uses Rust to build data processing pipelines and generative art. He is an expert in natural language processing and data engineering. Table of Contents 1 Introducing Rust PART 1 RUST LANGUAGE DISTINCTIVES 2 Language foundations 3 Compound data types 4 Lifetimes, ownership, and borrowing PART 2 DEMYSTIFYING SYSTEMS PROGRAMMING 5 Data in depth 6 Memory 7 Files and storage 8 Networking 9 Time and timekeeping 10 Processes, threads, and containers 11 Kernel 12 Signals, interrupts, and exceptions

Design, develop, and deploy effective software systems using the advanced constructs of Rust

Beginning Rust Programming

Rust Programming Language Tutorial

Making Your JavaScript Applications Scale

Swift in Depth

Get Up to Speed With PHP the Easy Way