

Download File Scala For Java Developers A Practical Primer Free Download Pdf

Scala for Java Developers **Practical Machine Learning in JavaScript** *Outside-in Software Development* Sql: Practical Guide For Developers **The Pragmatic Programmer** *Test-driven Development* **Practical Google Analytics and Google Tag Manager for Developers** **The Publishing Challenge for Independent Video game Developers** Web Security for Developers **Practical Quantum Computing for Developers** **Usability Matters** Practical System Programming for Rust Developers **ATDD by Example** *Practical Cassandra* **Practical Shader Development** **Essential Cryptography for JavaScript Developers** *Staff Development* *Practical Azure SQL Database for Modern Developers* **Practical Design Patterns for Java Developers** **Practical Ecology for Planners, Developers, and Citizens** *Deep Learning for Coders with fastai and PyTorch* **A Practical Approach to Large-Scale Agile Development** *SAP ABAP List Viewer (ALV) - A Practical Guide for ABAP Developers* API Development **Augmented Reality for Developers** **Modern Photographic Developers** **Cryptography for Developers** Flexibility and Real Estate Valuation under Uncertainty Research for Development Learning and Development **Fundamentals of Cryptology** *Debugging the Development Process* *Deep Learning with JavaScript* **Practical Vim** *Reusable Firmware Development* **Practical Debugging for .NET Developers** Global Perspectives on Fostering Problem-Based Learning in Chinese Universities **The Blockchain Developer** *OpenShift for Developers* **DevOps Culture and Practice with OpenShift**

A practical guide to making the best use of the OpenShift container platform based on the real-life experiences, practices, and culture within Red Hat Open Innovation Labs Key Features Learn how modern software companies deliver business outcomes that matter by focusing on DevOps culture and practices Adapt Open Innovation Labs culture and foundational practices from the Open Practice Library Implement a metrics-driven approach to application, platform, and product, understanding what to measure and how to learn and pivot Book Description DevOps Culture and Practice with OpenShift features many different real-world practices - some people-related, some process-related, some technology-related - to facilitate successful DevOps, and in

turn OpenShift, adoption within your organization. It introduces many DevOps concepts and tools to connect culture and practice through a continuous loop of discovery, pivots, and delivery underpinned by a foundation of collaboration and software engineering. Containers and container-centric application lifecycle management are now an industry standard, and OpenShift has a leading position in a flourishing market of enterprise Kubernetes-based product offerings. DevOps Culture and Practice with OpenShift provides a roadmap for building empowered product teams within your organization. This guide brings together lean, agile, design thinking, DevOps, culture, facilitation, and hands-on technical enablement all in one book. Through a combination of real-world stories, a practical case study, facilitation guides, and technical implementation details, DevOps Culture and Practice with OpenShift provides tools and techniques to build a DevOps culture within your organization on Red Hat's OpenShift Container Platform. What you will learn

- Implement successful DevOps practices and in turn OpenShift within your organization
- Deal with segregation of duties in a continuous delivery world
- Understand automation and its significance through an application-centric view
- Manage continuous deployment strategies, such as A/B, rolling, canary, and blue-green
- Leverage OpenShift's Jenkins capability to execute continuous integration pipelines
- Manage and separate configuration from static runtime software
- Master communication and collaboration enabling delivery of superior software products at scale through continuous discovery and continuous delivery

Who this book is for This book is for anyone with an interest in DevOps practices with OpenShift or other Kubernetes platforms. This DevOps book gives software architects, developers, and infra-ops engineers a practical understanding of OpenShift, how to use it efficiently for the effective deployment of application architectures, and how to collaborate with users and stakeholders to deliver business-impacting outcomes.

Summary Usability Matters: Mobile-first UX for developers and other accidental designers gives you practical advice and guidance on how to create attractive, elegant, and useful user interfaces for native and web-based mobile apps. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.

About the Technology Just because a mobile app works doesn't mean real people are going to like it. Usability matters! Most mobile developers wind up being part-time designers, and mastering a few core principles of mobile UI can make the difference between app and crap. About the Book Usability Matters is a guide for developers wrestling with the subtle art of mobile design. With each expertly presented example, app developer and designer Matt Lacey provides easy-to-implement techniques that instantly boost your design IQ. Skipping highbrow design theory, he addresses topics like gracefully handling network dropouts and creating intuitive data inputs. Read this book and your apps will look better, your users will be happier, and you might even get some high-fives at the next design review.

What's Inside Understanding your users Optimizing input and output Creating fast, responsive experiences Coping with poor network conditions Managing power and resources About the Reader This book is for mobile developers working on native or web-

based apps. About the Author Matt Lacey is an independent mobile developer and consultant and a Microsoft MVP. He's built, advised on, and contributed to apps for social networks, film and TV broadcasters, travel companies, banks and financial institutions, sports companies, news organizations, music-streaming services, device manufacturers, and electronics retailers. These apps have an installed base of more than 500,000,000 users and are used every day around the world. Matt previously worked at a broad range of companies, doing many types of development. He has worked at startups, small ISVs, national enterprises, and global consultancies, and written software for servers, desktops, devices, and industrial hardware in more languages than he can remember. He lives in the UK with his wife and two children.

Table of Contents Introduction Part 1 - Context Who's using the app? Where and when is the app used? What device is the app running on? Part 2- Input How people interact with the app User-entered data Data not from a user Part 3 - Output Displaying items in the app Non-visible output Part 4 - Responsiveness Understanding the perception of time Making your app start fast Making your app run fast Part 5 - Connectivity Coping with varying network conditions Managing power and resources Write algorithms and program in the new field of quantum computing. This book covers major topics such as the physical components of a quantum computer: qubits, entanglement, logic gates, circuits, and how they differ from a traditional computer. Also, Practical Quantum Computing for Developers discusses quantum computing in the cloud using IBM Q Experience including: the composer, quantum scores, experiments, circuits, simulators, real quantum devices, and more. You'll be able to run experiments in the cloud on a real quantum device. Furthermore, this book shows you how to do quantum programming using the QISKit (Quantum Information Software Kit), Python SDK, and other APIs such as QASM (Quantum Assembly). You'll learn to write code using these languages and execute it against simulators (local or remote) or a real quantum computer provided by IBM's Q Experience. Finally, you'll learn the current quantum algorithms for entanglement, random number generation, linear search, integer factorization, and others. You'll peek inside the inner workings of the Bell states for entanglement, Grover's algorithm for linear search, Shor's algorithm for integer factorization, and other algorithms in the fields of optimization, and more. Along the way you'll also cover game theory with the Magic Square, an example of quantum pseudo-telepathy where parties sharing entangled states can be observed to have some kind of communication between them. In this game Alice and Bob play against a referee. Quantum mechanics allows Alice and Bob to always win! By the end of this book, you will understand how this emerging technology provides massive parallelism and significant computational speedups over classical computers, and will be prepared to program quantum computers which are expected to replace traditional computers in the data center. What You Will Learn Use the Q Experience Composer, the first-of-its-kind web console to create visual programs/experiments and submit them to a quantum simulator or real device on the cloud Run programs remotely using the Q Experience REST API Write algorithms that

provide superior performance over their classical counterparts Build a Node.js REST client for authenticating, listing remote devices, querying information about quantum processors, and listing or running experiments remotely in the cloud Create a quantum number generator: The quintessential coin flip with a quantum twist Discover quantum teleportation: This algorithm demonstrates how the exact state of a qubit (quantum information) can be transmitted from one location to another, with the help of classical communication and quantum entanglement between the sender and receiver Peek into single qubit operations with the classic game of Battleships with a quantum twist Handle the counterfeit coin problem: a classic puzzle that consists of finding a counterfeit coin in a beam balance among eight coins in only two turns Who This Book Is For Developers and programmers interested in this new field of computing. `[Research for Development] is well-written and, at every stage, is well-documented with practical examples. The simplicity with which it is written adds to its value in that non-professional persons get well-acquainted with the research process. Every chapter in the book ends with highlighting of the main points made in that chapter... A further strength of the book is the inclusion of an appendix with a list of websites that deal with issues in the area of development research... the simplicity of its organization and message should appeal to people/researchers across disciplines' - Pakistan Development Review `Research for Development achieves the near impossible: it provides vast quantities of useful guidance for almost anyone involved in research for development regardless of the size of your research project or your role within that project' - Arvac Bulletin `Written by professional researchers, this immensely practical book provides development workers with a more research-oriented point of view, so that they can avoid mistakes in the design of programmes. It will also help them to understand people's needs and respond accordingly' - The Asian Age `It is a beautiful and comprehensive compilation giving scores of instances that prove the essentiality if carrying out a survey of a particular locality for bringing about a change there' - Rafique Jalal, DAWN This book provides a comprehensive introduction and handbook for undertaking and managing research in development. It is designed to provide both a quick reference manual and an indispensable learning tool for all students, researchers and practitioners engaged in development work. The text is divided into two parts: Managing research for development, and Doing research for development. Together the two parts review the complete research process from outlining the essential role and purpose of research, highlighting specific issues to development research, to demonstrating how to evaluate and secure the best results from subsequent research projects. The book includes: an overview of different types of research in development work; practical steps to writing a brief and managing research; practical steps to evaluating and promoting research findings; step by step guides to getting started and choosing a research method; detailed guidelines to seven key research techniques; examples, exercises, summaries and checklists; and glossary and guides to additional resources and packages Drawing on considerable hands-on experience, Research for Development will be an essential companion and

invaluable tool for anyone engaged in contemporary development research, development work and development studies. Become a Blockchain developer and design, build, publish, test, maintain and secure scalable decentralized Blockchain projects using Bitcoin, Ethereum, NEO, EOS and Hyperledger. This book helps you understand Blockchain beyond development and crypto to better harness its power and capability. You will learn tips to start your own project, and best practices for testing, security, and even compliance. Immerse yourself in this technology and review key topics such as cryptoeconomics, coding your own Blockchain P2P network, different consensus mechanisms, decentralized ledger, mining, wallets, blocks, and transactions. Additionally, this book provides you with hands-on practical tools and examples for creating smart contracts and dApps for different blockchains such as Ethereum, NEO, EOS, and Hyperledger. Aided by practical, real-world coding examples, you'll see how to build dApps with Angular utilizing typescript from start to finish, connect to the blockchain network locally on a test network, and publish on the production mainnet environment. Don't be left out of the next technology revolution – become a Blockchain developer using The Blockchain Developer today.

What You'll Learn

- Explore the Blockchain ecosystem is and the different consensus mechanisms
- Create miners, wallets, transactions, distributed networks and DApps
- Review the main features of Bitcoin: Ethereum, NEO and EOS, and Hyperledger
- Interact with popular node clients as well as implementing your own Blockchain
- Publish and test your projects for security and scalability

Who This Book Is For

Developers, architects and engineers who are interested in learning about Blockchain or implementing Blockchain into a new greenfield project or integrating Blockchain into a brownfield project. Technical entrepreneurs, technical investors or even executives who want to better understand Blockchain technology and its potential. Master the fundamentals of Scala and understand its emphasis on functional programming that sets it apart from Java. This book will help you translate what you already know in Java to Scala to start your functional programming journey. Learn Scala is split into four parts: a tour of Scala, a comparison between Java and Scala, Scala-specific features and functional programming idioms, and finally a discussion about adopting Scala in existing Java teams and legacy projects. After reading and using this tutorial, you'll come away with the skills in Scala to kick-start your productivity with this growing popular language.

What You'll Learn

- Tour Scala and learn the basic syntax, constructs, and how to use the REPL
- Translate Java syntax that you already know into Scala
- Learn what Scala offers over and above Java
- Become familiar with functional programming concepts and idioms
- Gain tips and advice useful when transitioning existing Java projects to Scala

Who This Book Is For

Java developers looking to transition to Scala. No prior experience necessary in Scala. 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. Discover how to take advantage of common cryptographic operations to build safer apps that respect users' privacy with the help of examples in JavaScript for Node.js and browsers

Key Features: Understand how to implement common cryptographic operations in your code with practical examples
Learn about picking modern safe algorithms, which libraries you should rely on, and how to use them correctly
Build modern and secure applications that respect your users' privacy with cryptography

Book Description: If you're a software developer, this book will give you an introduction to cryptography, helping you understand how to make the most of it for your applications. The book contains extensive code samples in JavaScript, both for Node.js and for frontend apps running in a web browser, although the core concepts can be used by developers working with any programming language and framework. With a purely hands-on approach that is focused on sharing actionable knowledge, you'll learn about the common categories of cryptographic operations that you can leverage in all apps you're developing, including hashing, encryption with symmetric, asymmetric and hybrid ciphers, and digital signatures. You'll learn when to use these operations and how to choose and implement the most popular algorithms to perform them, including SHA-2, Argon2, AES, ChaCha20-Poly1305, RSA, and Elliptic Curve Cryptography. Later, you'll learn how to deal with password and key management. All code in this book is written in JavaScript and designed to run in Node.js or as part of frontend apps for web browsers. By the end of this book, you'll be able to build solutions that leverage cryptography to protect user privacy, offer better security against an expanding and more complex threat landscape, help meet data protection requirements, and unlock new opportunities.

What You Will Learn: Write JavaScript code that uses cryptography running within a Node.js environment for the server-side or in frontend applications for web browsers
Use modern, safe hashing functions for calculating digests and key derivation, including SHA-2 and Argon2
Practice encrypting messages and files with a symmetric key using AES and ChaCha20-Poly1305
Use asymmetric and hybrid encryption, leveraging RSA and Elliptic Curve Cryptography with ECDH and ECIES
Calculate and verify digital signatures using RSA and ECDSA/EdDSA
Manage passwords and encryption keys safely

Who this book is for: This cryptography book is an introductory guide for software developers who don't necessarily have a background in cryptography but are interested in learning how to integrate it in their solutions, correctly and safely. You'll need to have at least intermediate-level knowledge of building apps with JavaScript and familiarity with Node.js to make the most of this book. Today, even the largest development organizations are turning to agile methodologies, seeking major productivity and quality improvements. However, large-scale agile development is difficult, and publicly available case studies have been scarce. Now, three agile pioneers at Hewlett-Packard present a candid, start-to-finish insider's look at how they've succeeded with agile in one of the company's most mission-critical software environments: firmware for HP LaserJet printers. This book tells the story of an extraordinary experiment and journey.

Could agile principles be applied to re-architect an enormous legacy code base? Could agile enable both timely delivery and ongoing innovation? Could it really be applied to 400+ developers distributed across four states, three continents, and four business units? Could it go beyond delivering incremental gains, to meet the stretch goal of 10x developer productivity improvements? It could, and it did—but getting there was not easy. Writing for both managers and technologists, the authors candidly discuss both their successes and failures, presenting actionable lessons for other development organizations, as well as approaches that have proven themselves repeatedly in HP’s challenging environment. They not only illuminate the potential benefits of agile in large-scale development, they also systematically show how these benefits can actually be achieved.

Coverage includes:

- Tightly linking agile methods and enterprise architecture with business objectives
- Focusing agile practices on your worst development pain points to get the most bang for your buck
- Abandoning classic agile methods that don’t work at the largest scale
- Employing agile methods to establish a new architecture
- Using metrics as a “conversation starter” around agile process improvements
- Leveraging continuous integration and quality systems to reduce costs, accelerate schedules, and automate the delivery pipeline
- Taming the planning beast with “light-touch” agile planning and lightweight long-range forecasting
- Implementing effective project management and ensuring accountability in large agile projects
- Managing tradeoffs associated with key decisions about organizational structure
- Overcoming U.S./India cultural differences that can complicate offshore development
- Selecting tools to support quantum leaps in productivity in your organization
- Using change management disciplines to support greater enterprise agility

Implement application programming interface (API) usability, security, availability, reliability, and scalability to extend your company’s market and potentially generate revenue. Businesses know they need to extend their markets into the digital world, and expose internal data to the Internet. This book shows how stakeholders within an organization can make it a successful journey. Stakeholder needs are not identical and departments experience difficulties discussing requirements with each other due to their different fundamental understanding of the process. The goal of this book is to introduce a common language for all business groups—developers, security experts, architects, product managers—around APIs and provide an overview of all aspects that need to be considered when exposing internal data. Most of the content in this book is based on feedback from real-world enterprise customer questions, challenges, and business scenarios. Practical guidance is provided on the business value of APIs, the general requirements to know, and how to undertake an audience-based implementation. You will learn how to protect access to data, as well as API error handling, documentation, management, integration, and more.

What You’ll Learn

- Know the types of APIs and their business and technical requirements
- The main benefits of APIs, including business value, loose coupling, and frequent updates
- Protect access to APIs through role-based access, attribute-based access, and rate limiting
- Distinguish between OAuth and OpenID Connect, and know

how they both work Manage API error handling, including what should and should not be handled Understand the distinction between runtime, dynamic data, and static data Leverage external APIs as part of your own APIs Who This Book Is For API developers, API security experts, software architects, product owners, and business owners "Eric and Russell were early adopters of Cassandra at SimpleReach. In Practical Cassandra, you benefit from their experience in the trenches administering Cassandra, developing against it, and building one of the first CQL drivers. If you are deploying Cassandra soon, or you inherited a Cassandra cluster to tend, spend some time with the deployment, performance tuning, and maintenance chapters... If you are new to Cassandra, I highly recommend the chapters on data modeling and CQL." –From the Foreword by Jonathon Ellis, Apache Cassandra Chair Build and Deploy Massively Scalable, Super-fast Data Management Applications with Apache Cassandra Practical Cassandra is the first hands-on developer's guide to building Cassandra systems and applications that deliver breakthrough speed, scalability, reliability, and performance. Fully up to date, it reflects the latest versions of Cassandra—including Cassandra Query Language (CQL), which dramatically lowers the learning curve for Cassandra developers. Pioneering Cassandra developers and Datastax MVPs Russell Bradberry and Eric Lubow walk you through every step of building a real production application that can store enormous amounts of structured, semi-structured, and unstructured data. Drawing on their exceptional expertise, Bradberry and Lubow share practical insights into issues ranging from querying to deployment, management, maintenance, monitoring, and troubleshooting. The authors cover key issues, from architecture to migration, and guide you through crucial decisions about configuration and data modeling. They provide tested sample code, detailed explanations of how Cassandra works "under the covers," and new case studies from three cutting-edge users: Ooyala, Hailo, and eBay. Coverage includes Understanding Cassandra's approach, architecture, key concepts, and primary use cases—and why it's so blazingly fast Getting Cassandra up and running on single nodes and large clusters Applying the new design patterns, philosophies, and features that make Cassandra such a powerful data store Leveraging CQL to simplify your transition from SQL-based RDBMSes Deploying and provisioning through the cloud or on bare-metal hardware Choosing the right configuration options for each type of workload Tweaking Cassandra to get maximum performance from your hardware, OS, and JVM Mastering Cassandra's essential tools for maintenance and monitoring Efficiently solving the most common problems with Cassandra deployment, operation, and application development Unravel the power of Java design patterns by learning where to apply them effectively to solve specific software design and development problems Key Features Decouple logic across objects with dependency injection by creating various vehicles with features Finalize vehicle construction by chaining handlers using the Chain of Responsibility Pattern Plan and execute an advanced vehicle sensor initiation with the Scheduler Pattern Book Description Design patterns are proven solutions to standard problems in software design and development,

allowing you to create reusable, flexible, and maintainable code. This book enables you to upskill by understanding popular patterns to evolve into a proficient software developer. You'll start by exploring the Java platform to understand and implement design patterns. Then, using various examples, you'll create different types of vehicles or their parts to enable clarity in design pattern thinking, along with developing new vehicle instances using dedicated design patterns to make the process consistent. As you progress, you'll find out how to extend vehicle functionalities and keep the code base structure and behavior clean and shiny. Concurrency plays an important role in application design, and you'll learn how to employ a such design patterns with the visualization of thread interaction. The concluding chapters will help you identify and understand anti-pattern utilization in the early stages of development to address refactoring smoothly. The book covers the use of Java 17+ features such as pattern matching, switch cases, and instances of enhancements to enable productivity. By the end of this book, you'll have gained practical knowledge of design patterns in Java and be able to apply them to address common design problems. What you will learn

- Understand the most common problems that can be solved using Java design patterns
- Uncover Java building elements, their usages, and concurrency possibilities
- Optimize a vehicle memory footprint with the Flyweight Pattern
- Explore one-to-many relations between instances with the observer pattern
- Discover how to route vehicle messages by using the visitor pattern
- Utilize and control vehicle resources with the thread-pool pattern
- Understand the penalties caused by anti-patterns in software design

Who this book is for If you are an intermediate-level Java developer or software architect looking to learn the practical implementation of software design patterns in Java, then this book is for you. No prior knowledge of design patterns is required, but an understanding of Java programming is necessary.

Annotation Introduces key ecological concepts for planners, landscape architects, developers, and others involved in planning and building human habitats. It offers clear guidelines and a wealth of information on how we can protect species and ecosystems while at the same creating healthy, sustainable human communities.

In today's complex, uncertain and ambiguous business environment, it is essential to develop a workforce's capabilities, skills and competencies to ensure continued organizational success. Learning and Development is a practical guide to the fundamental principles of designing and delivering training and L&D programmes effectively in any size of organization. It demonstrates how to link learning to strategic business goals and explores both the benefits and complexities associated with L&D. Using a combination of practical diagnostic tools, scenarios and case studies, this essential introduction builds knowledge in areas including identifying L&D needs, selecting the most appropriate types of intervention and the processes of measurement and evaluation. This updated second edition of Learning and Development covers the latest trends and developments in the field, such as e-learning, gamification and Massive Open Online Courses (MOOCs), as well as new material on learning measurement and additional international case studies. Online resources include extended case studies, an annotated literature review and self-

evaluation tools to support readers in understanding where they are and how to develop their capabilities. The HR Fundamentals are a series of succinct, practical guides for students and those in the early stages of their HR careers. They are endorsed by the Chartered Institute of Personnel and Development (CIPD), the UK professional body for HR and people development, which has over 145,000 members worldwide. With Acceptance Test-Driven Development (ATDD), business customers, testers, and developers can collaborate to produce testable requirements that help them build higher quality software more rapidly. However, ATDD is still widely misunderstood by many practitioners. ATDD by Example is the first practical, entry-level, hands-on guide to implementing and successfully applying it. ATDD pioneer Markus Gärtner walks readers step by step through deriving the right systems from business users, and then implementing fully automated, functional tests that accurately reflect business requirements, are intelligible to stakeholders, and promote more effective development. Through two end-to-end case studies, Gärtner demonstrates how ATDD can be applied using diverse frameworks and languages. Each case study is accompanied by an extensive set of artifacts, including test automation classes, step definitions, and full sample implementations. These realistic examples illuminate ATDD's fundamental principles, show how ATDD fits into the broader development process, highlight tips from Gärtner's extensive experience, and identify crucial pitfalls to avoid. Readers will learn to Master the thought processes associated with successful ATDD implementation Use ATDD with Cucumber to describe software in ways businesspeople can understand Test web pages using ATDD tools Bring ATDD to Java with the FitNesse wiki-based acceptance test framework Use examples more effectively in Behavior-Driven Development (BDD) Specify software collaboratively through innovative workshops Implement more user-friendly and collaborative test automation Test more cleanly, listen to test results, and refactor tests for greater value If you're a tester, analyst, developer, or project manager, this book offers a concrete foundation for achieving real benefits with ATDD now-and it will help you reap even more value as you gain experience. Explore various Rust features, data structures, libraries, and toolchain to build modern systems software with the help of hands-on examples Key FeaturesLearn techniques to design and build system tools and utilities in RustExplore the different features of the Rust standard library for interacting with operating systemsGain an in-depth understanding of the Rust programming language by writing low-level softwareBook Description Modern programming languages such as Python, JavaScript, and Java have become increasingly accepted for application-level programming, but for systems programming, C and C++ are predominantly used due to the need for low-level control of system resources. Rust promises the best of both worlds: the type safety of Java, and the speed and expressiveness of C++, while also including memory safety without a garbage collector. This book is a comprehensive introduction if you're new to Rust and systems programming and are looking to build reliable and efficient systems software without C or C++. The book takes a unique approach by starting each topic with Linux kernel concepts and

APIs relevant to that topic. You'll also explore how system resources can be controlled from Rust. As you progress, you'll delve into advanced topics. You'll cover network programming, focusing on aspects such as working with low-level network primitives and protocols in Rust, before going on to learn how to use and compile Rust with WebAssembly. Later chapters will take you through practical code examples and projects to help you build on your knowledge. By the end of this Rust programming book, you will be equipped with practical skills to write systems software tools, libraries, and utilities in Rust.

What you will learn

- Gain a solid understanding of how system resources are managed
- Use Rust confidently to control and operate a Linux or Unix system
- Understand how to write a host of practical systems software tools and utilities
- Delve into memory management with the memory layout of Rust programs
- Discover the capabilities and features of the Rust Standard Library
- Explore external crates to improve productivity for future Rust programming projects

Who this book is for

This book is for developers with basic knowledge of Rust but little to no knowledge or experience of systems programming. System programmers who want to consider Rust as an alternative to C or C++ will also find this book useful. Vim is a fast and efficient text editor that will make you a faster and more efficient developer. It's available on almost every OS, and if you master the techniques in this book, you'll never need another text editor. In more than 120 Vim tips, you'll quickly learn the editor's core functionality and tackle your trickiest editing and writing tasks. This beloved bestseller has been revised and updated to Vim 7.4 and includes three brand-new tips and five fully revised tips. A highly configurable, cross-platform text editor, Vim is a serious tool for programmers, web developers, and sysadmins who want to raise their game. No other text editor comes close to Vim for speed and efficiency; it runs on almost every system imaginable and supports most coding and markup languages. Learn how to edit text the "Vim way": complete a series of repetitive changes with The Dot Formula using one keystroke to strike the target, followed by one keystroke to execute the change. Automate complex tasks by recording your keystrokes as a macro. Discover the "very magic" switch that makes Vim's regular expression syntax more like Perl's. Build complex patterns by iterating on your search history. Search inside multiple files, then run Vim's substitute command on the result set for a project-wide search and replace. All without installing a single plugin! Three new tips explain how to run multiple ex commands as a batch, autocomplete sequences of words, and operate on a complete search match. Practical Vim, Second Edition will show you new ways to work with Vim 7.4 more efficiently, whether you're a beginner or an intermediate Vim user. All this, without having to touch the mouse.

What You Need: Vim version 7.4

Website security made easy. This book covers the most common ways websites get hacked and how web developers can defend themselves. The world has changed. Today, every time you make a site live, you're opening it up to attack. A first-time developer can easily be discouraged by the difficulties involved with properly securing a website. But have hope: an army of security researchers is out there discovering, documenting, and fixing security

flaws. Thankfully, the tools you'll need to secure your site are freely available and generally easy to use. Web Security for Developers will teach you how your websites are vulnerable to attack and how to protect them. Each chapter breaks down a major security vulnerability and explores a real-world attack, coupled with plenty of code to show you both the vulnerability and the fix. You'll learn how to: Protect against SQL injection attacks, malicious JavaScript, and cross-site request forgery Add authentication and shape access control to protect accounts Lock down user accounts to prevent attacks that rely on guessing passwords, stealing sessions, or escalating privileges Implement encryption Manage vulnerabilities in legacy code Prevent information leaks that disclose vulnerabilities Mitigate advanced attacks like malvertising and denial-of-service As you get stronger at identifying and fixing vulnerabilities, you'll learn to deploy disciplined, secure code and become a better programmer along the way. This new edition offers unique, state-of-the-art perspectives on library staff development and training. This book is geared towards ABAP developers and offers detailed information on how to use SAP List Viewer (ALV) to display business data with an interface that lets users rearrange, sort, total, and download data. Obtain comprehensive information on how to write a basic ALV program. Walk through a detailed training scenario and get tips on how to adapt the scenario for your company. Readers will master two ALV types: control framework and function modules. Identify when to use object-oriented techniques and when it may make more sense to quickly adjust existing ALV programs. By using practical examples, tips, and screenshots, the author brings ABAP developers up to speed on SAP ALV. - Learn how to write a basic SAP ALV program - Walk through the object-oriented control framework and function modules - Get tips on adding sorting and grouping features - Dive into how to add editable fields, events, and layout variants Here is the expert-level, insider guidance you need on using Azure SQL Database as your back-end data store. This book highlights best practices in everything ranging from full-stack projects to mobile applications to critical, back-end APIs. The book provides instruction on accessing your data from any language and platform. And you learn how to push processing-intensive work into the database engine to be near the data and avoid undue networking traffic. Azure SQL is explained from a developer's point of view, helping you master its feature set and create applications that perform well and delight users. Core to the book is showing you how Azure SQL Database provides relational and post-relational support so that any workload can be managed with easy accessibility from any platform and any language. You will learn about features ranging from lock-free tables to columnstore indexes, and about support for data formats ranging from JSON and key-values to the nodes and edges in the graph database paradigm. Reading this book prepares you to deal with almost all data management challenges, allowing you to create lean and specialized solutions having the elasticity and scalability that are needed in the modern world. What You Will Learn Master Azure SQL Database in your development projects from design to the CI/CD pipeline Access your data from any programming language and platform Combine key-value,

JSON, and relational data in the same database Push data-intensive compute work into the database for improved efficiency Delight your customers by detecting and improving poorly performing queries Enhance performance through features such as columnstore indexes and lock-free tables Build confidence in your mastery of Azure SQL Database's feature set Who This Book Is For Developers of applications and APIs that benefit from cloud database support, developers who wish to master their tools (including Azure SQL Database, and those who want their applications to be known for speedy performance and the elegance of their code Summary Deep learning has transformed the fields of computer vision, image processing, and natural language applications. Thanks to TensorFlow.js, now JavaScript developers can build deep learning apps without relying on Python or R. Deep Learning with JavaScript shows developers how they can bring DL technology to the web. Written by the main authors of the TensorFlow library, this new book provides fascinating use cases and in-depth instruction for deep learning apps in JavaScript in your browser or on Node. Foreword by Nikhil Thorat and Daniel Smilkov. About the technology Running deep learning applications in the browser or on Node-based backends opens up exciting possibilities for smart web applications. With the TensorFlow.js library, you build and train deep learning models with JavaScript. Offering uncompromising production-quality scalability, modularity, and responsiveness, TensorFlow.js really shines for its portability. Its models run anywhere JavaScript runs, pushing ML farther up the application stack. About the book In Deep Learning with JavaScript, you'll learn to use TensorFlow.js to build deep learning models that run directly in the browser. This fast-paced book, written by Google engineers, is practical, engaging, and easy to follow. Through diverse examples featuring text analysis, speech processing, image recognition, and self-learning game AI, you'll master all the basics of deep learning and explore advanced concepts, like retraining existing models for transfer learning and image generation. What's inside - Image and language processing in the browser - Tuning ML models with client-side data - Text and image creation with generative deep learning - Source code samples to test and modify About the reader For JavaScript programmers interested in deep learning. About the author Shanging Cai, Stanley Bileschi and Eric D. Nielsen are software engineers with experience on the Google Brain team, and were crucial to the development of the high-level API of TensorFlow.js. This book is based in part on the classic, Deep Learning with Python by François Chollet. TOC: PART 1 - MOTIVATION AND BASIC CONCEPTS 1 • Deep learning and JavaScript PART 2 - A GENTLE INTRODUCTION TO TENSORFLOW.JS 2 • Getting started: Simple linear regression in TensorFlow.js 3 • Adding nonlinearity: Beyond weighted sums 4 • Recognizing images and sounds using convnets 5 • Transfer learning: Reusing pretrained neural networks PART 3 - ADVANCED DEEP LEARNING WITH TENSORFLOW.JS 6 • Working with data 7 • Visualizing data and models 8 • Underfitting, overfitting, and the universal workflow of machine learning 9 • Deep learning for sequences and text 10 • Generative deep learning 11 • Basics of deep reinforcement learning PART 4 - SUMMARY AND

CLOSING WORDS 12 • Testing, optimizing, and deploying models 13 • Summary, conclusions, and beyond

The protection of sensitive information against unauthorized access or fraudulent changes has been of prime concern throughout the centuries. Modern communication techniques, using computers connected through networks, make all data even more vulnerable for these threats. Also, new issues have come up that were not relevant before, e. g. how to add a (digital) signature to an electronic document in such a way that the signer can not deny later on that the document was signed by him/her. Cryptology addresses the above issues. It is at the foundation of all information security. The techniques employed to this end have become increasingly mathematical of nature. This book serves as an introduction to modern cryptographic methods. After a brief survey of classical cryptosystems, it concentrates on three main areas. First of all, stream ciphers and block ciphers are discussed. These systems have extremely fast implementations, but sender and receiver have to share a secret key. Public key cryptosystems (the second main area) make it possible to protect data without a prearranged key. Their security is based on intractable mathematical problems, like the factorization of large numbers. The remaining chapters cover a variety of topics, such as zero-knowledge proofs, secret sharing schemes and authentication codes. Two appendices explain all mathematical prerequisites in great detail. One is on elementary number theory (Euclid's Algorithm, the Chinese Remainder Theorem, quadratic residues, inversion formulas, and continued fractions). The other appendix gives a thorough introduction to finite fields and their algebraic structure.

Ready to build cloud native applications? Get a hands-on introduction to daily life as a developer crafting code on OpenShift, the open source container application platform from Red Hat. Creating and packaging your apps for deployment on modern distributed systems can be daunting. Too often, adding infrastructure value can complicate development. With this practical guide, you'll learn how to build, deploy, and manage a multitiered application on OpenShift. Authors Joshua Wood and Brian Tannous, principal developer advocates at Red Hat, demonstrate how OpenShift speeds application development. With the Kubernetes container orchestrator at its core, OpenShift simplifies and automates the way you build, ship, and run code. You'll learn how to use OpenShift and the Quarkus Java framework to develop and deploy apps using proven enterprise technologies and practices that you can apply to code in any language. Learn the development cycles for building and deploying on OpenShift, and the tools that drive them Use OpenShift to build, deploy, and manage the ongoing lifecycle of an n-tier application Create a continuous integration and deployment pipeline to build and deploy application source code on OpenShift Automate scaling decisions with metrics and trigger lifecycle events with webhooks "Outside-in thinking complements any approach your teams may be taking to the actual implementation of software, but it changes how you measure success. A successful outside-in team does a lot of learning and not much speculation." —Tom Poppendieck Build Software That Delivers Maximum Business Value to Every Key Stakeholder Imagine your ideal development project. It will deliver exactly what your

clients need. It will achieve broad, rapid, enthusiastic adoption. And it will be designed and built by a productive, high-morale team of expert software professionals. Using this book's breakthrough "outside-in" approach to software development, your next project can be that ideal project. In *Outside-in Software Development*, two of IBM's most respected software leaders, Carl Kessler and John Sweitzer, show you how to identify the stakeholders who'll determine your project's real value, shape every decision around their real needs, and deliver software that achieves broad, rapid, enthusiastic adoption. The authors present an end-to-end framework and practical implementation techniques any development team can quickly benefit from, regardless of project type or scope. Using their proven approach, you can improve the effectiveness of every client conversation, define priorities with greater visibility and clarity, and make sure all your code delivers maximum business value. Coverage includes Understanding your stakeholders and the organizational and business context they operate in Clarifying the short- and long-term stakeholder goals your project will satisfy More effectively mapping project expectations to outcomes Building more "consumable" software: systems that are easier to deploy, use, and support Continuously enhancing alignment with stakeholder goals Helping stakeholders manage ongoing change long after you've delivered your product Mastering the leadership techniques needed to drive outside-in development Provides a revolutionary conceptual framework and practical tools to quantify uncertainty and recognize the value of flexibility in real estate development This book takes a practical "engineering" approach to the valuation of options and flexibility in real estate. It presents simple simulation models built in universal spreadsheet software such as Microsoft Excel®. These realistically reflect the varying and erratic sources of uncertainty and price dynamics that uniquely characterize real estate. The text covers new analytic procedures that are valuable for existing properties and enable a new, more profitable perspective on the planning, design, operation, and evaluation of large-scale, multi-phase development projects. The book thereby aims to significantly improve valuation and investment decision making.

Flexibility and Real Estate Valuation under Uncertainty: A Practical Guide for Developers is presented at 3 levels. First, it introduces and explains the concepts underlying the approach at a basic level accessible to non-technical and non-specialized readers. Its introductory and concluding chapters present the important "big picture" implications of the analysis for economics and valuation and for project design and investment decision making. At a second level, the book presents a framework, a roadmap for the prospective analyst. It describes the practical tools in detail, taking care to go through the elements of the approach step-by-step for clarity and easy reference. The third level includes more technical details and specific models. An Appendix discusses the technical details of real estate price dynamics. Associated web pages provide electronic spreadsheet templates for the models used as examples in the book. Some features of the book include:

- Concepts and tools that are simple and accessible to a broad audience of practitioners;
- An approach relevant for all development projects;
- Complementarity with

the author's *Commercial Real Estate Analysis & Investments*—the most-cited real estate investments textbook on the market. *Flexibility and Real Estate Valuation under Uncertainty: A Practical Guide for Developers* is for everyone studying or concerned with the implementation of large-scale or multi-phase real estate development projects, as well as property investment and valuation more generally. Deep learning is often viewed as the exclusive domain of math PhDs and big tech companies. But as this hands-on guide demonstrates, programmers comfortable with Python can achieve impressive results in deep learning with little math background, small amounts of data, and minimal code. How? With *fastai*, the first library to provide a consistent interface to the most frequently used deep learning applications. Authors Jeremy Howard and Sylvain Gugger, the creators of *fastai*, show you how to train a model on a wide range of tasks using *fastai* and PyTorch. You'll also dive progressively further into deep learning theory to gain a complete understanding of the algorithms behind the scenes. Train models in computer vision, natural language processing, tabular data, and collaborative filtering Learn the latest deep learning techniques that matter most in practice Improve accuracy, speed, and reliability by understanding how deep learning models work Discover how to turn your models into web applications Implement deep learning algorithms from scratch Consider the ethical implications of your work Gain insight from the foreword by PyTorch cofounder, Soumith Chintala Laying the groundwork; The systematic approach; Of strategic importance; Unbridled enthusiasm; Scheduling madness; Constant, unceasing improvement; It's all about attitude; That sinking feeling; References; Index. Future generations are being faced with the potential challenge of having to solve professional problems in a hybrid world in which there is no clear boundary between autonomous, non-human nature, and human-generated processes. This requires young students to effectively prepare themselves for managing issues of complexity, uncertainty, and ambiguity in their professional practice. *Global Perspectives on Fostering Problem-Based Learning in Chinese Universities* is a comprehensive reference source that provides insight into the growing need for problem-based learning within higher education environments. Featuring a wide range of topics such as curriculum design, STEM education, and cross-cultural communication, this reference source is ideal for educators, instructional designers, academicians, administrators, and researchers. The only guide for software developers who must learn and implement cryptography safely and cost effectively. *Cryptography for Developers* begins with a chapter that introduces the subject of cryptography to the reader. The second chapter discusses how to implement large integer arithmetic as required by RSA and ECC public key algorithms The subsequent chapters discuss the implementation of symmetric ciphers, one-way hashes, message authentication codes, combined authentication and encryption modes, public key cryptography and finally portable coding practices. Each chapter includes in-depth discussion on memory/size/speed performance trade-offs as well as what cryptographic problems are solved with the specific topics at hand. The author is the developer of the industry standard

cryptographic suite of tools called LibTom A regular expert speaker at industry conferences and events on this development Professor Odile Limpach gives independent developers everything they need to succeed in the world of video game publishing. The Publishing Challenge for Independent Video Game Developers: A Practical Guide defines what game publishing means for the indie developer and offers a concise framework to tackle the decision of whether to self-publish or not. Furthermore, the text establishes a catalogue of current known publishers with some salient characteristics and offers a list of useful publishing tools. Along with showcasing testimonials from several young and seasoned developers on their experiences with publishing and partners and recommendations from renown experts of the industry, this book offers tools, platforms, and guides to game publishing. Key features: Provides a broad overview of the game publishing market Explores criteria for choosing between a publishing partner or self-publishing Offers case studies and testimonials from indie game developers and publishers about the process. Professor Odile Limpach teaches economics and entrepreneurship at the Cologne Game Lab, TH Köln (Technical University of Cologne). She is also co-founder of the Acceleration Program SpielFabrique 360° and works as a Strategic Consultant for games and serious game projects. Between 2007 and 2014, she was the managing director of the German entertainment software studio Ubisoft Blue Byte. Before, she was the managing director of Ubisoft GmbH. She graduated from business school Institut Commercial de Nancy in France and completed her MBA in the United States. Odile Limpach is also involved as a volunteer in the areas of vocational training and acts as a German partner for Games for Change Europe. Furthermore, she acts as an advisor (Conseiller du Commerce Extérieur) for the French Ministry for International Business Development. Gain the knowledge and skills necessary to improve your embedded software and benefit from author Jacob Beningo's more than 15 years developing reusable and portable software for resource-constrained microcontroller-based systems. You will explore APIs, HALs, and driver development among other topics to acquire a solid foundation for improving your own software. Reusable Firmware Development: A Practical Approach to APIs, HALs and Drivers not only explains critical concepts, but also provides a plethora of examples, exercises, and case studies on how to use and implement the concepts. What You'll Learn Develop portable firmware using the C programming language Discover APIs and HALs, explore their differences, and see why they are important to developers of resource-constrained software Master microcontroller driver development concepts, strategies, and examples Write drivers that are reusable across multiple MCU families and vendors Improve the way software documented Design APIs and HALs for microcontroller-based systems Who This Book Is For Those with some prior experience with embedded programming. Whether you're a marketer with development skills or a full-on web developer/analyst, Practical Google Analytics and Google Tag Manager for Developers shows you how to implement Google Analytics using Google Tag Manager to jumpstart your web analytics measurement. There's a reason that so many

organizations use Google Analytics. Effective collection of data with Google Analytics can reduce customer acquisition costs, provide priceless feedback on new product initiatives, and offer insights that will grow a customer or client base. So where does Google Tag Manager fit in? Google Tag Manager allows for unprecedented collaboration between marketing and technical teams, lightning fast updates to your site, and standardization of the most common tags for on-site tracking and marketing efforts. To achieve the rich data you're really after to better serve your users' needs, you'll need the tools Google Tag Manager provides for a best-in-class implementation of Google Analytics measurement on your site. Written by data evangelist and Google Analytics expert Jonathan Weber and the team at LunaMetrics, this book offers foundational knowledge, a collection of practical Google Tag Manager recipes, well-tested best practices, and troubleshooting tips to get your implementation in tip-top condition. It covers topics including:

- Google Analytics implementation via Google Tag Manager
- How to customize Google Analytics for your unique situation
- Using Google Tag Manager to track and analyze interactions across multiple devices and touch points
- How to extract data from Google Analytics and use Google BigQuery to analyze Big Data questions

What You'll Learn Implementation approaches for Google Analytics, including common pitfalls and troubleshooting strategies. How to use tools like Google Tag Manager and jQuery to jumpstart your Google Analytics implementation. How to track metrics beyond page views to other critical user interactions, such as clicks on outbound links or downloads, scrolling and page engagement, usage of AJAX forms, and much more. How to incorporate additional, customized data into Google Analytics to track individual users or enrich data about their behavior. Who This Book Is For Web developers, data analysts, and marketers with a basic familiarity with Google Analytics from an end-user perspective, as well as some knowledge of HTML and JavaScript.

Build machine learning web applications without having to learn a new language. This book will help you develop basic knowledge of machine learning concepts and applications. You'll learn not only theory, but also dive into code samples and example projects with TensorFlow.js. Using these skills and your knowledge as a web developer, you'll add a whole new field of development to your tool set. This will give you a more concrete understanding of the possibilities offered by machine learning. Discover how ML will impact the future of not just programming in general, but web development specifically. Machine learning is currently one of the most exciting technology fields with the potential to impact industries from health to home automation to retail, and even art. Google has now introduced TensorFlow.js—an iteration of TensorFlow aimed directly at web developers. Practical Machine Learning in JavaScript will help you stay relevant in the tech industry with new tools, trends, and best practices. What You'll Learn Use the JavaScript framework for ML Build machine learning applications for the web Develop dynamic and intelligent web content Who This Book Is For Web developers and who want a hands-on introduction to machine learning in JavaScript. A working knowledge of the JavaScript language is recommended. The ability to

solve difficult problems is what makes a good engineer great. This book teaches techniques and tools for developers to tackle even the most persistent bugs. You'll find that tough issues can be made simple with the right knowledge, tools, and practices. Practical Debugging for .NET Developers will transform you into the guy or gal who everyone turns to for help. Issues covered include .NET Core, C#, Memory Leaks, Performance Problems, ASP.NET, Performance Counters, ETW Events, Production Debugging, Memory Pressure, Visual Studio, Hangs, Profiling, Deadlocks, Crashes, Memory Dumps, and Azure. * Discover the best tools in the industry to diagnose and fix problems * Learn advanced debugging techniques with Visual Studio * Fix memory leaks and memory pressure issues * Detect, profile, and fix performance problems * Find the root cause of crashes and hangs * Debug production code and third-party code * Analyze ASP.NET applications for slow performance, failed requests, and hangs * Use dump files, Performance Counters, and ETW events to investigate what happens under the hood * Troubleshoot cloud environments, including Azure VMs and App Services * Code samples in C# * Covering .NET Core, .NET Framework, Windows, and Linux Build exciting AR applications on mobile and wearable devices with Unity 3D, Vuforia, ARToolKit, Microsoft Mixed Reality HoloLens, Apple ARKit, and Google ARCore About This Book Create unique AR applications from scratch, from beginning to end, with step-by-step tutorials Use Unity 3D to efficiently create AR apps for Android, iOS, and Windows platforms Use Vuforia, ARToolKit, Windows Mixed Reality, and Apple ARKit to build AR projects for a variety of markets Learn best practices in AR user experience, software design patterns, and 3D graphics Who This Book Is For The ideal target audience for this book is developers who have some experience in mobile development, either Android or iOS. Some broad web development experience would also be beneficial. What You Will Learn Build Augmented Reality applications through a step-by-step, tutorial-style project approach Use the Unity 3D game engine with the Vuforia AR platform, open source ARToolKit, Microsoft's Mixed Reality Toolkit, Apple ARKit, and Google ARCore, via the C# programming language Implement practical demo applications of AR including education, games, business marketing, and industrial training Employ a variety of AR recognition modes, including target images, markers, objects, and spatial mapping Target a variety of AR devices including phones, tablets, and wearable smartglasses, for Android, iOS, and Windows HoloLens Develop expertise with Unity 3D graphics, UIs, physics, and event systems Explore and utilize AR best practices and software design patterns In Detail Augmented Reality brings with it a set of challenges that are unseen and unheard of for traditional web and mobile developers. This book is your gateway to Augmented Reality development—not a theoretical showpiece for your bookshelf, but a handbook you will keep by your desk while coding and architecting your first AR app and for years to come. The book opens with an introduction to Augmented Reality, including markets, technologies, and development tools. You will begin by setting up your development machine for Android, iOS, and Windows development, learning the basics of using Unity

and the Vuforia AR platform as well as the open source ARToolKit and Microsoft Mixed Reality Toolkit. You will also receive an introduction to Apple's ARKit and Google's ARCore! You will then focus on building AR applications, exploring a variety of recognition targeting methods. You will go through multiple complete projects illustrating key market sectors including business marketing, education, industrial training, and gaming. By the end of the book, you will have gained the necessary knowledge to make quality content appropriate for a range of AR devices, platforms, and intended uses.

Style and approach This book adopts a practical, step-by-step, tutorial-style approach. The design principles and methodology will be explained by creating different modules of the AR app. This guide for programmers teaches how to practice Test Driven Development (TDD), also called Test First Development. Contrary to the accepted approach to testing, when you practice TDD you write tests for code before you write the code being tested. This text provides examples in Java. It's time to stop thinking that shaders are magical. You can use shaders to turn data into stunning visual effects, and get your hands dirty by building your own shader with this step-by-step introduction to shader development for game and graphics developers. Learn how to make shaders that move, tint, light up, and look awesome, all without cracking open a math textbook. Practical Shader Development teaches the theory behind how shaders work. The book also shows you how to apply that theory to create eye-popping visual effects. You'll learn to profile and optimize those effects to make sure your projects keep running quickly with all their new visuals. You'll learn good theory, good practices, and without getting bogged down in the math. Author Kyle Halladay explains the fundamentals of shader development through simple examples and hands-on experiments. He teaches you how to find performance issues in shaders you are using and then how to fix them. Kyle explains (and contrasts) how to use the knowledge learned from this book in three of the most popular game engines today.

What You'll Learn Understand what shaders are and how they work Get up to speed on the nuts and bolts of writing vertex and fragment shaders Utilize color blending and know how blend equations work Know the coordinate spaces used when rendering real-time computer graphics Use simple math to animate characters, simulate lights, and create a wide variety of visual effects Find and fix performance problems in shaders See how three popular game engines (Unity, UE4, Godot) handle shaders

Who This Book Is For Programmers who are interested in writing their own shaders but do not know where to start, anyone who has ever seen shader code on a forum and wished they knew how to modify it just a little bit to fit into their own projects, and game developers who are tired of using the default shaders found in the game engines they are using. The book is especially useful for those who have been put off by existing shader tutorials which introduce complex math and graphics theory before ever getting something on the screen.

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