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A recent survey stated that 52% of embedded projects are late by 4-5 months. This book can help get those projects in on-time with design patterns. The author carefully takes into account the special concerns found in designing and developing embedded applications specifically concurrency, communication, speed, and memory usage. Patterns are given in UML (Unified Modeling Language) with examples including ANSI C for direct and practical application to C code. A basic C knowledge is a prerequisite for the book while UML notation and terminology is included. General C programming books do not include discussion of the contraints found within embedded system design. The practical examples give the reader an understanding of the use of UML and OO (Object Oriented) designs in a resource-limited environment. Also included are two chapters on state machines. The beauty of this book is that it can help you today. . Design Patterns within these pages are immediately applicable to your project Addresses embedded system design concerns such as concurrency, communication, and memory usage Examples contain ANSI C for ease of use with C programming code

The Data Vault was invented by Dan Linstedt at the U.S. Department of Defense, and the standard has been successfully applied to data warehousing projects at organizations of different sizes, from small to large-size corporations. Due to its simplified design, which is adapted from nature, the Data Vault 2.0 standard helps prevent typical data warehousing failures. "Building a Scalable Data Warehouse" covers everything one needs to know to create a scalable data warehouse end to end, including a presentation of the Data Vault modeling technique, which provides the foundations to create a technical data warehouse layer. The book discusses how to build the data warehouse incrementally using the agile Data Vault 2.0 methodology. In addition, readers will learn how to create the input layer (the stage layer) and the presentation layer (data mart) of the Data Vault 2.0 architecture including implementation best practices. Drawing upon years of practical experience and using numerous examples and an easy to understand framework, Dan Linstedt and Michael Olschimke discuss: How to load each layer using SQL Server Integration Services (SSIS), including automation of the Data Vault loading processes. Important data warehouse technologies and practices. Data Quality Services (DQS) and Master Data Services (MDS) in the context of the Data Vault architecture. Provides a complete introduction to data warehousing, applications, and the business context so readers can get-up and running fast Explains theoretical concepts and provides hands-on instruction on how to build and implement a data warehouse Demystifies data vault modeling with beginning, intermediate, and advanced techniques Discusses the advantages of the data vault approach over other techniques, also including the latest updates to Data Vault 2.0 and multiple improvements to Data Vault 1.0

Successfully scrape data from any website with the power of Python 3.x About This Book A hands-on guide to web scraping using Python with solutions to real-world problems Create a number of different web scrapers in Python to extract information This book includes practical examples on using the popular and well-maintained libraries in Python for your web scraping needs Who This Book Is For This book is aimed at developers who want to use web scraping for legitimate purposes. Prior programming experience with Python would be useful but not essential. Anyone with general knowledge of programming languages should be able to pick up the book and understand the principals involved. What You Will Learn Extract data from web pages with simple Python programming Build a concurrent crawler to process web pages in parallel Follow links to crawl a website Extract features from the HTML Cache downloaded HTML for reuse Compare concurrent models to determine the fastest crawler Find out how to parse JavaScript-dependent websites Interact with forms and sessions In Detail The Internet contains the most useful set of data ever assembled, most of which is publicly accessible for free. However, this data is not easily usable. It is embedded within the structure and style of websites and needs to be carefully extracted. Web scraping is becoming increasingly useful as a means to gather and make sense of the wealth of information available online. This book is the ultimate guide to using the latest features of Python 3.x to scrape data from websites. In the early chapters, you'll see how to extract data from static web pages. You'll learn to use caching with databases and files to save time and manage the load on servers. After covering the basics, you'll get hands-on practice building a more sophisticated crawler using browsers, crawlers, and concurrent scrapers. You'll determine when and how to scrape data from a JavaScript-dependent website using PyQt and Selenium. You'll get a better understanding of how to submit forms on complex websites protected by CAPTCHA. You'll find out how to automate these actions with Python packages such as mechanize. You'll also learn how to create class-based scrapers with Scrapy libraries and implement your learning on real websites. By the end of the book, you will have explored testing websites with scrapers, remote scraping, best practices, working with images, and many other relevant topics. Style and approach This hands-on guide is full of real-life examples and solutions starting simple and then progressively becoming more complex. Each chapter in this book introduces a problem and then provides one or more possible solutions.

Explore the foundational components of VMware NSX About This Book Install, manage, monitor and configure your NSX deployment. Understand VMware NSX's components and discover best practices

to help you manage VMware NSX A step by step guide that will help you elevate your skills in deploying NSX to your environment Who This Book Is For The book is intended for network and system administrators that have hands on experience with VMware vSphere suite of products and would like to learn more about software defined networking and implementation of NSX. The readers are also expected to have basic networking knowledge and aware of basic switching and routing fundamentals. What You Will Learn Understand software-defined networks Deploy and configure VXLAN-enabled logical switches Secure your environment using Distributed Firewall and Data Security Configure third-party services in NSX Manage, configure, and deploy edge gateway services Perform various Edge operations including configuring CA certificates Explore the different monitoring options to check their traffic flow In Detail VMware NSX is a platform for the software-defined data center. It allows complex networking topologies to be deployed programmatically in seconds. SDNs allow ease of deployment, management, and automation in deploying and maintaining new networks while reducing and in some cases completely eliminating the need to deploy traditional networks. The book allows you a thorough understanding of implementing Software defined networks using VMware's NSX. You will come across the best practices for installing and configuring NSX to setup your environment. Then you will get a brief overview of the NSX Core Components NSX's basic architecture. Once you are familiar with everything, you will get to know how to deploy various NSX features. Furthermore, you will understand how to manage and monitor NSX and its associated services and features. In addition to this, you will also explore the best practices for NSX deployments. By the end of the book, you will be able to deploy Vmware NSX in your own environment with ease. This book can come handy if you are preparing for VMware NSX certification. Style and approach This is an easy--to-follow guide with tested configuration steps to get you up and running quickly. This book covers the nitty-gritty of installing, configuring, managing, and monitoring VMware NSX.

Each passing year bears witness to the development of ever more powerful computers, increasingly fast and cheap storage media, and even higher bandwidth data connections. This makes it easy to believe that we can now – at least in principle – solve any problem we are faced with so long as we only have enough data. Yet this is not the case. Although large databases allow us to retrieve many different single pieces of information and to compute simple aggregations, general patterns and regularities often go undetected. Furthermore, it is exactly these patterns, regularities and trends that are often most valuable. To avoid the danger of "drowning in information, but starving for knowledge" the branch of research known as data analysis has emerged, and a considerable number of methods and software tools have been developed. However, it is not these tools alone but the intelligent application of human intuition in combination with computational power, of sound background knowledge with computer-aided modeling, and of critical reflection with convenient automatic model construction, that results in successful intelligent data analysis projects. Guide to Intelligent Data Analysis provides a hands-on instructional approach to many basic data analysis techniques, and explains how these are used to solve data analysis problems. Topics and features: guides the reader through the process of data analysis, following the interdependent steps of project understanding, data understanding, data preparation, modeling, and deployment and monitoring; equips the reader with the necessary information in order to obtain hands-on experience of the topics under discussion; provides a review of the basics of classical statistics that support and justify many data analy-

sis methods, and a glossary of statistical terms; includes numerous examples using R and KNIME, together with appendices introducing the open source software; integrates illustrations and case-study-style examples to support pedagogical exposition. This practical and systematic textbook/reference for graduate and advanced undergraduate students is also essential reading for all professionals who face data analysis problems. Moreover, it is a book to be used following one's exploration of it. Dr. Michael R. Berthold is Nycomed-Professor of Bioinformatics and Information Mining at the University of Konstanz, Germany. Dr. Christian Borgelt is Principal Researcher at the Intelligent Data Analysis and Graphical Models Research Unit of the European Centre for Soft Computing, Spain. Dr. Frank Höppner is Professor of Information Systems at Ostfalia University of Applied Sciences, Germany. Dr. Frank Klawonn is a Professor in the Department of Computer Science and Head of the Data Analysis and Pattern Recognition Laboratory at Ostfalia University of Applied Sciences, Germany. He is also Head of the Bioinformatics and Statistics group at the Helmholtz Centre for Infection Research, Braunschweig, Germany.

This book features a step-by-step approach that shows you how to program, create, and improve the quality of web applications using Django, with the help of Python.This is an ideal book for developers who want to improve the quality and maintenance of their web application, and who already have knowledge of Python and web development.

If you want to learn how best to utilize commonly found patterns and learn best practices in developing applications with Django, this is the book for you. This book, like Django itself, is accessible to amateur and professional developers alike and assumes little in the way of prior experience. Although written for Python 3, the majority of the code in this book works in Python 2 or can be easily translated.

Django is a popular Python-based framework for web application development. Like Python, Django is easy for beginners to learn and enables constant progress. This book will help aspiring web developers gain the skills to use Django to develop robust web apps.

Tackle inefficiencies and errors the Pythonic way Key FeaturesEnhance your coding skills using the new features introduced in Python 3.9Implement the refactoring techniques and SOLID principles in PythonApply microservices to your legacy systems by implementing practical techniquesBook Description Experienced professionals in every field face several instances of disorganization, poor readability, and testability due to unstructured code. With updated code and revised content aligned to the new features of Python 3.9, this second edition of Clean Code in Python will provide you with all the tools you need to overcome these obstacles and manage your projects successfully. The book begins by describing the basic elements of writing clean code and how it plays a key role in Python programming. You will learn about writing efficient and readable code using the Python standard library and best practices for software design. The book discusses object-oriented programming in Python and shows you how to use objects with descriptors and generators. It will also show you the design principles of software testing and how to resolve problems by implementing software design patterns in your code. In the concluding chapter, we break down a monolithic application into a microservices-based one starting from the code as the basis for a solid platform. By the end of this clean code book, you will be proficient in applying industry-approved coding practices to design clean, sustainable, and readable real-world Python code. What you will learnSet up a productive de-

velopment environment by leveraging automatic toolsLeverage the magic methods in Python to write better code, abstracting complexity away and encapsulating detailsCreate advanced object-oriented designs using unique features of Python, such as descriptorsEliminate duplicated code by creating powerful abstractions using software engineering principles of object-oriented designCreate Python-specific solutions using decorators and descriptorsRefactor code effectively with the help of unit testsBuild the foundations for solid architecture with a clean code base as its cornerstoneWho this book is for This book is designed to benefit new as well as experienced programmers. It will appeal to team leads, software architects and senior software engineers who would like to write Pythonic code to save on costs and improve efficiency. The book assumes that you have a strong understanding of programming

Designing iOS mobile apps using simple Swift codes and libraries. KEY FEATURES ● Combines the fundamentals of Swift and power-packed libraries, including SwiftUI. ● Includes graphical illustrations and step-by-step instructions on coding your first iOS application. ● Covers end-to-end iOS app development with code debugging and best practices. DESCRIPTION 'Swift in 30 Days' teaches young graduates and coding applicants to enter the field of rapid development of applications through simplified, pragmatic, and quick programming learning without much theory. The book examines the basics of Swift programming, fundamental Swift building blocks, how to write syntax, constructs, define classes, arrays, model data with interfaces, and several examples of Swift programming. The book will help you to create the environment for app development, including tools and libraries like Xcode and SwiftUI. You will learn to work with Xcode and Swift libraries and finally make an independently developed Swift application. You will have access to design patterns and learn how to handle errors, debug, and work with protocols. By the end of this book, you will become a trusted Swift programmer and a successful iOS developer who will dive deeper into Apple's intelligent app programming challenge. WHAT YOU WILL LEARN ● Create an iOS app from scratch and learn fundamental Swift concepts such as operators and control flow. ● Create intuitive and intelligent user interfaces with an understanding of self-design and constraints. ● Recap OOP concepts and Swift protocol-based programming. ● Work with design patterns, write clean codes, and build expert tables and navigations. ● Work with Xcode and SwiftUI 2.0. WHO THIS BOOK IS FOR This book is for students, graduates, and entry-level coders who want to learn iOS app development without prior Swift or mobile app development experience. TABLE OF CONTENTS Week 1 (Beginner) 1. Building Your First App 2. Swift Programming Basics 3. Auto Layout 4. Types and Control Flow Week 2 (Intermediate) 5. Optional Type and More 6. Code Structuring Week 3 (Advanced) 7. OOP in Swift 8. Protocols and Delegates Week 4 (Bonus) 9. Error handling and Debugging 10. SwiftUI

Functional Programming in Kotlin is a serious tutorial for programmers looking to learn FP and apply it to the everyday business of coding. Based on the bestselling Functional Programming in Scala, this book guides intermediate Java and Kotlin programmers from basic techniques to advanced topics in a logical, concise, and clear progression. In this authoritative guide, you'll take on the challenge of learning functional programming from first principles, and start writing Kotlin code that's easier to read, easier to reuse, better for concurrency, and less prone to bugs and errors. Functional Programming in Kotlin is a serious tutorial for programmers looking to learn FP and apply it to the everyday business of coding. Based on the bestselling Functional Programming in Scala, this book guides inter-

mediate Java and Kotlin programmers from basic techniques to advanced topics in a logical, concise, and clear progression. In it, you'll find concrete examples and exercises that open up the world of functional programming. The book will deliver practical mastery of FP using Kotlin and a valuable perspective on program design that you can apply to other languages. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.

Summary Manning's bestselling Java 8 book has been revised for Java 9! In Modern Java in Action, you'll build on your existing Java language skills with the newest features and techniques. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Modern applications take advantage of innovative designs, including microservices, reactive architectures, and streaming data. Modern Java features like lambdas, streams, and the long-awaited Java Module System make implementing these designs significantly easier. It's time to upgrade your skills and meet these challenges head on! About the Book Modern Java in Action connects new features of the Java language with their practical applications. Using crystal-clear examples and careful attention to detail, this book respects your time. It will help you expand your existing knowledge of core Java as you master modern additions like the Streams API and the Java Module System, explore new approaches to concurrency, and learn how functional concepts can help you write code that's easier to read and maintain. What's inside Thoroughly revised edition of Manning's bestselling Java 8 in Action New features in Java 8, Java 9, and beyond Streaming data and reactive programming The Java Module System About the Reader Written for developers familiar with core Java features. About the Author Raoul-Gabriel Urma is CEO of Cambridge Spark. Mario Fusco is a senior software engineer at Red Hat. Alan Mycroft is a University of Cambridge computer science professor; he cofounded the Raspberry Pi Foundation. Table of Contents PART 1 - FUNDAMENTALS Java 8, 9, 10, and 11: what's happening? Passing code with behavior parameterization Lambda expressions PART 2 - FUNCTIONAL-STYLE DATA PROCESSING WITH STREAMS Introducing streams Working with streams Collecting data with streams Parallel data processing and performance PART 3 - EFFECTIVE PROGRAMMING WITH STREAMS AND LAMBDAS Collection API enhancements Refactoring, testing, and debugging Domain-specific languages using lambdas PART 4 - EVERYDAY JAVA Using Optional as a better alternative to null New Date and Time API Default methods The Java Module System PART 5 - ENHANCED JAVA CONCURRENCY Concepts behind CompletableFuture and reactive programming CompletableFuture: composable asynchronous programming Reactive programming PART 6 - FUNCTIONAL PROGRAMMING AND FUTURE JAVA EVOLUTION Thinking functionally Functional programming techniques Blending OOP and FP: Comparing Java and Scala Conclusions and where next for Java

A step-by-step that will help you build Microservices architecture using Django and Python KEY FEATURES a- Understand in-depth the fundamentals of Microservicesa- Learn how to create and use Django APIs a- Use web technology such as Nginx, Gunicorn, UWSGI, and Postgresql to deploy a Django projectDESCRIPTION Microservices architectures solve the multiple problems of software architecture. Django is a full-stack development framework, written in python. This book includes everything necessary for web application development; from the user views to the information storage: model, persistence, relationships, controllers, forms, validations, rest API and a very useful back office. Furthermore, the book will show how to build production-ready microservices. It will help you create

restful APIs and get familiar with Redis and Celery. Towards the end, the book will show how to secure these services and deploy these microservices using Django. Lastly, it will show how to scale our services. WHAT WILL YOU LEARN a- Understand the basics of Python, Django, and Microservices a- Learn how to deploy Microservices with Djangoa- Get familiar with Microservices Architecture - Designing, Principles, and Requirements a- Implement Asynchronous task, JWT API Authentication and AWS Serverless with Microservice architecture WHO THIS BOOK IS FOR This book is for those beginners who want to make their careers in software development. It starts from the basics of python and Django, takes the reader to the Microservices architecture. Table of Contents1. Basic of Python2. Major Pillars of OOPS with Python3. Getting Started with Django4. API Development with Django5. Database Modeling with Django6. First Django API Deployment on Web7. Django Project Deployment on various web servers8. What are Microservices9. Designing Microservice Systems10. Service Authentication11. Microservices Deployment With Django12. JWT Auth Service13. Asynchronous Tasks14. AWS Serverless15. How to Adopt Microservices in Practice About the Author Shayank Jain is a software developer and data analyst. He is strongly passionate about codingand architectural design. He has more than 6.5 years of professional experience in developingscalable software solutions for various organizations. He has been programming since theage of 16 and has developed software for mobile, web, hardware gaming and standaloneapplications. After getting his hands dirty with programming, he found many new ways to debug and deploy the code successfully with minimal time constraints. After reading and implementing, he found out that many critical concepts can be implemented easily in programming with correct and focused thinking. His research interests include information security, cryptography, analysis, design, and implementation of algorithms. He has extensively worked with python and implemented new ideas on various projects in his free time. He is also active in the computer science and education community. Through this book, he wants to share these methodologies and tricks with the beginners. Outside work, Shayank spends his spare time helping, coaching, and mentoring young people in taking up careers in technology. Your Blog links: https://shayankit.wixsite.com/intro25Your LinkedIn Profile: https://www.linkedin.com/in/shayankjain Implement classic and functional data structures and algorithms using Python About This Book A step by step guide, which will provide you with a thorough discussion on the analysis and design of fundamental Python data structures. Get a better understanding of advanced Python concepts such as big-o notation, dynamic programming, and functional data structures. Explore illustrations to present data structures and algorithms, as well as their analysis, in a clear, visual manner. Who This Book Is For The book will appeal to Python developers. A basic knowledge of Python is expected. What You Will Learn Gain a solid understanding of Python data structures. Build sophisticated data applications. Understand the common programming patterns and algorithms used in Python data science. Write efficient robust code. In Detail Data structures allow you to organize data in a particular way efficiently. They are critical to any problem, provide a complete solution, and act like reusable code. In this book, you will learn the essential Python data structures and the most common algorithms. With this easy-to-read book, you will be able to understand the power of linked lists, double linked lists, and circular linked lists. You will be able to create complex data structures such as graphs, stacks and queues. We will explore the application of binary searches and binary search trees. You will learn the common techniques and structures used in tasks such as preprocessing, modeling, and transforming data. We will also discuss how to organize your code in a manageable, consistent, and extendable way. The book will explore in detail sorting algorithms such as bubble sort, selection sort, insertion sort, and merge sort. By the end of the book, you will learn how to build components that are easy to understand, debug, and use in different applications. Style and Approach The easy-to-read book with its fast-paced nature will improve the productivity of Python programmers and improve the performance of Python applications.

As Python continues to grow in popularity, projects are becoming larger and more complex. Many Python developers are now taking an interest in high-level software design patterns such as hexagonal/clean architecture, event-driven architecture, and the strategic patterns prescribed by domain-driven design (DDD). But translating those patterns into Python isn't always straightforward. With this hands-on guide, Harry Percival and Bob Gregory from MADE.com introduce proven architectural design patterns to help Python developers manage application complexity—and get the most value out of their test suites. Each pattern is illustrated with concrete examples in beautiful, idiomatic Python, avoiding some of the verbosity of Java and C# syntax. Patterns include: Dependency inversion and its links to ports and adapters (hexagonal/clean architecture) Domain-driven design's distinction between entities, value objects, and aggregates Repository and Unit of Work patterns for persistent storage Events, commands, and the message bus Command-query responsibility segregation (CQRS) Event-driven architecture and reactive microservices

Learn algorithms for solving classic computer science problems with this concise guide covering everything from fundamental algorithms, such as sorting and searching, to modern algorithms used in machine learning and cryptography Key FeaturesLearn the techniques you need to know to design algorithms for solving complex problemsBecome familiar with neural networks and deep learning techniquesExplore different types of algorithms and choose the right data structures for their optimal implementationBook Description Algorithms have always played an important role in both the science and practice of computing. Beyond traditional computing, the ability to use algorithms to solve real-world problems is an important skill that any developer or programmer must have. This book will help you not only to develop the skills to select and use an algorithm to solve real-world problems but also to understand how it works. You'll start with an introduction to algorithms and discover various algorithm design techniques, before exploring how to implement different types of algorithms, such as searching and sorting, with the help of practical examples. As you advance to a more complex set of algorithms, you'll learn about linear programming, page ranking, and graphs, and even work with machine learning algorithms, understanding the math and logic behind them. Further on, case studies such as weather prediction, tweet clustering, and movie recommendation engines will show you how to apply these algorithms optimally. Finally, you'll become well versed in techniques that enable parallel processing, giving you the ability to use these algorithms for compute-intensive tasks. By the end of this book, you'll have become adept at solving real-world computational problems by using a wide range of algorithms. What you will learnExplore existing data structures and algorithms found in Python librariesImplement graph algorithms for fraud detection using network analysisWork with machine learning algorithms to cluster similar tweets and process Twitter data in real timePredict the weather using supervised learning algorithmsUse neural networks for object detectionCreate a recommendation engine that suggests relevant movies to subscribersImple-

ment foolproof security using symmetric and asymmetric encryption on Google Cloud Platform (GCP)Who this book is for This book is for programmers or developers who want to understand the use of algorithms for problem-solving and writing efficient code. Whether you are a beginner looking to learn the most commonly used algorithms in a clear and concise way or an experienced programmer looking to explore cutting-edge algorithms in data science, machine learning, and cryptography, you'll find this book useful. Although Python programming experience is a must, knowledge of data science will be helpful but not necessary.

Django for Beginners is a project-based introduction to Django, the popular Python-based web framework. Suitable for total beginners who have never built a website before as well as professional programmers looking for a fast-paced guide to modern web development and Django fundamentals.In the book you'll learn how to:Build 5 websites from scratch, including a Blog and Newspaper websiteDeploy online using security best practicesCustomize the look and feel of your sitesWrite tests and run them for all your codeIntegrate user authentication, email, and custom user modelsAdd permissions and authorizations to make your app more secureIdentify common mistakes and errors so you can build your own websitesIf you're curious about Python-based web development, Django for Beginners is your guide to writing and deploying your own websites quickly.

This textbook is designed for students and industry practitioners for a first course in optimization integrating MATLAB® software.

Have you ever wanted to build your own operating system, but didn't know where to begin? Then this book is for you! In this book, the author explains everything you need to know from getting and installing the necessary tools to writing, compiling, deploying, and testing your very own operating system. By the time you are done you will have an operating system to call your own. And, don't worry about destroying your existing hardware and software environment as everything in this book is written with the intention of running in a virtualized environment. However, should you choose to do so, the author also explains how to deploy and test your new OS on bare-metal hardware as well. The first few chapters give a brief overview of how modern day computers work. In these chapters you will (re)learn everything from memory allocation, stacks, and bootloaders to low-level machine code and programming languages. After that, you will jump into downloading and installing the tools you will use for building your very own operating system. Here you will learn how to develop a bootloader and kernel just like modern day computers rely on for operating. The last few chapters will explain how to deploy and test your operating system as well as how to expand your OS to do more and even how to cross-compile your shiny new operating system for other devices such as the Raspberry Pi. To give an idea of what you can find in this book, below is the Table of Contents. 0x01 OS Basics 0x02 Intro to Machine Code 0x03 Intro to the Assembly Programming Language 0x04 Into to the C Programming Language 0x05 Getting Started - Installing VirtualBox - Installing Linux - Installing GNOME - Preparing CentOS and the VM - Troubleshooting VirtualBox Guest Additions - Preparing the Development Environment 0x06 Bootstrapping with the Bootloader - Creating the Entry Point - GNU GRUB - Compiling the Entry Point 0x07 Welcome to the Kernel 0x08 Putting it all Together 0x09 Testing Your Operating System 0x0A Starting Your Architecture Library - Expanding the Console 0x0B Expanding Your OS 0x0C Cross-Compiling for Other Architectures - Create a Custom Cross-Compiler - Porting for the Raspberry Pi - Testing on Physical Hardware Conclusion Acknowledgements Appendix Index

Build a website with Django 3 is the fourth edition of my popular Django beginners book, fully updated for Django 3 Not only has the book been updated to cover the latest version of Django, but I've added install instructions for macOS users. Your complete introduction to Django 3 Build a website with Django 3 covers all the core concepts of Django to get you up and running fast: - Why Django is the premier Python framework for developing web applications - The big picture - how Django is structured - Django Models - Django Views - Django Templates - The Django admin - Generic views - Simple forms - Complex forms and model forms - Managing Users - Restricted content - File uploads - Sending email - Deploying a Django application Build a real website This book is not about boring theory. You'll be building a fully functioning website as you learn Django. I even show you how to deploy your website to the Internet for free.

Delivers absolutely everything you will ever need to know to become a master Django programmer About This Book Gain a complete understanding of Django—the most popular, Python-based web framework in the world Gain the skills to successfully designing, developing, and deploying your app This book is packaged with fully described code so you can learn the fundamentals and the advanced topics to get a complete understanding of all of Django's core functions Who This Book Is For This book assumes you have a basic understanding of the Internet and programming. Experience with Python or Django would be an advantage, but is not necessary. It is ideal for beginner to intermediate programmers looking for a fast, secure, scalable, and maintainable alternative web development platform to those based on PHP, Java, and dotNET. What You Will Learn Use Django to access user-submitted form data, validate it, and work with it Get to know advanced URLconf tips and tricks Extend Django's template system with custom code Define models and use the database API to create, retrieve, update, and delete records Fully extend and customize the default implementation as per your project's needs Test and deploy your Django application Get to know more about Django's session, cache Framework, and middleware In Detail Mastering Django: Core is a completely revised and updated version of the original Django Book, written by Adrian Holovaty and Jacob Kaplan-Moss - the creators of Django. The main goal of this book is to make you a Django expert. By reading this book, you'll learn the skills needed to develop powerful websites quickly, with code that is clean and easy to maintain. This book is also a programmer's manual that provides complete coverage of the current Long Term Support (LTS) version of Django. For developers creating applications for commercial and business critical deployments, Mastering Django: Core provides a complete, up-to-date resource for Django 1.8LTS with a stable code-base, security fixes and support out to 2018. Style and approach This comprehensive step-by-step practical guide offers a thorough understanding of all the web development concepts related to Django. In addition to explaining the features of Django, this book provides real-world experience on how these features fit together to build extraordinary apps. A beginner's guide that will help you get familiar with Django for web development. KEY FEATURES ● Learn to build websites with a strong blend of concepts and practical learning. ● Set up your public website with advanced functionalities from scratch. ● Explore Django architecture, components, navigation panel and templates. DESCRIPTION 'Building Websites with Django' book teaches readers to develop their high-quality, feature-rich website by learning Django and its various tools. You will learn the best techniques to develop a dynamic website, right from scratch. This book focus-

es not only on just creating a particular application but rather develops a strong understanding of theoretical concepts with rich examples. You will learn to troubleshoot errors, develop navigation panels and add advanced functionalities like deploying on heroku server. You will read about models, templates, different types of views. You will learn to create apps and learn how to integrate different apps. By the end of this book, You will create a project from scratch and will deploy it as a public website by yourself. WHAT YOU WILL LEARN ● Create a Django project from scratch and deploy them as a public website. ● Work with Django components such as Model, View, and Template. ● Interact with the database using Query Sets. ● Deploy your Django application for free on Heroku. ● Learn how to use Django's built-in authentication and authorization module effectively. WHO THIS BOOK IS FOR This book is for early entrepreneurs, beginners, software professionals, bloggers and hobbyists who want to create their online presence on their own without having any prior technical knowledge about web tools. TABLE OF CONTENTS 1. Introduction to Django 2. An Overview of the MTV Architecture 3. Understanding Django Settings 4. Django Admin Utility 5. Interacting with the Database using Query Sets 6. Enhancing your Project 7. Understanding Models 8. Django Views 9. Django Templates 10. URL and Regex 11. Forms in Django 12. Setting up a Project 13. The Account app 14. The Genre app 15. The Post app 16. Deploying the Website

Completely updated for Django 4.0 & Django REST Framework 3.13! Django for APIs is a project-based guide to building modern web APIs with Django & Django REST Framework. It is suitable for beginners who have never built an API before as well as professional programmers looking for a fast-paced introduction to Django fundamentals and best practices. Over the course of 200+ pages you'll learn how to set up a new project properly, how web APIs work under the hood, and advanced testing and deployment techniques. Three separate projects are built from scratch with progressively more advanced features including a Library API, Todo API, and Blog API. User authentication, permissions, documentation, viewsets, and routers are all covered thoroughly. Django for APIs is a best-practices guide to building powerful Python-based web APIs with a minimal amount of code.

This comprehensive resource provides on-the-job training for statistical programmers who use SAS in the pharmaceutical industry This one-stop resource offers a complete review of what entry- to intermediate-level statistical programmers need to know in order to help with the analysis and reporting of clinical trial data in the pharmaceutical industry. SAS Programming in the Pharmaceutical Industry, Second Edition begins with an introduction to the pharmaceutical industry and the work environment of a statistical programmer. Then it gives a chronological explanation of what you need to know to do the job. It includes information on importing and massaging data into analysis data sets, producing clinical trial output, and exporting data. This edition has been updated for SAS 9.4, and it features new graphics as well as all new examples using CDISC SDTM or ADaM model data structures. Whether you're a novice seeking an introduction to SAS programming in the pharmaceutical industry or a junior-level programmer exploring new approaches to problem solving, this real-world reference guide offers a wealth of practical suggestions to help you sharpen your skills. This book is part of the SAS Press program.

Este libro se dirige principalmente a los desarrolladores y jefes de proyecto pero también a los profesionales llamados a modificar código fuente (Diseñadores gráficos, Webdesigner, etc.). El libro comienza por presentar la historia de las soluciones de gestión de versiones y su interés. Luego permite al lector instalar y configurar Git y utilizarlo a través de cinco capítulos de forma progresiva (funcionamiento de las ramas, compartición de un repositorio, herramientas internas ...) Un capítulo permite aprender a utilizar git-flow, un método para gestionar eficazmente las diferentes versiones de un proyecto empresarial. Los dos últimos capítulos presentan la gestión de versiones de forma práctica utilizando dos escenarios implementados por desarrolladores. El primer escenario toma las bases de uso de Git y muestra el uso de sus principales comandos en un entorno casi real. El segundo escenario presenta un equipo de desarrolladores : con la instalación de GitLab, hasta un uso del método git-flow por el equipo, este capítulo detalla las principales etapas por las que el equipo debe pasar para versionar un proyecto existente. En el anexo, una guía rápida permite visualizar rápidamente los principales comandos y sus opciones.

Become a Linux Superstar! What if you could learn about Linux in a simple, easy to follow format? Can you imagine the doors that will be open to you once you gain that knowledge? Tracing its roots back to the mid 90's, Linux came to life and has become existent in almost every gadget you see around your home. Linux has unique technical aspects, which makes it distinct from other operating systems out there. To take advantage of its specialties, one must know how to operate it, and this book is made just for that purpose! In fact, all Quick Start Guide books are aimed to get you the knowledge you need in an easy to learn and easy to apply method. Our philosophy is we work hard so you don't have to! Linux Beginner's Crash Course is your user manual to understanding how it works, and how you can perfectly manipulate the command line with ease and confidence. So...Why Be Interested in Linux? -Cost: It's free and readily available -Freedom: Take full control of your desktop and kernel -Flexibility: Strong structural components that allows you to customize your computer however you want it. What Will You Learn in this Book? 1. Linux Overview 2. Components of Linux 3. The Linux Kernel 4. Linux Processes 5. Linux File Systems 6. Linux Processes 7. Linux Processes This tutorial is going to help you master the use of LINUX and make you even more computer literate. Everything takes time and learning, and with this book, you are one step away to becoming a pro! Read this book now to quickly learn Linux and open yourself up to a whole new world of possibilities! Pick up your copy today. See you on the inside so we can get to work!

Do you need to learn computer programming skills for your job or want to start it as a hobby? Is this something that is alien to you and leaves you scratching your head in confusion? Do you need something simple, like Linux, to get started? This book will provide the answers you need. Millions of us own computers for a variety of reasons. Some use them for gaming and fun while others are engaged in the serious business of making money. But many simply do not get true value from their computer as they struggle to understand programming and fail to grasp how it could improve their usage in many ways. Inside this book, Linux: The Ultimate Beginner's Guide to Learn Linux Operating System, Command Line and Linux Programming Step by Step, you will learn a valuable skill that will improve your computing expertise, leading you to discover the basics of Linux through chapters that cover: • How to get started with Linux • Installation and troubleshooting tips and advice • Installing new and exciting software • System administration tasks • Keeping your system secure and building firewalls • An introduction to Cloud computing and technology • And lots more... Learning a computer language need not be a confusing and lengthy process. The basics of it can be learned quickly and with minimal effort and Linux is the book that will lay the foundations for you to become

a skilled and proficient programmer, faster than you could have imagined. Get a copy now and start learning Linux today!

Design, build and test RESTful web services with the Django framework and Python Key Features Create efficient real-world RESTful web services with the latest Django framework Authenticate, secure, and integrate third-party packages efficiently in your Web Services Leverage the power of Python for faster Web Service development Book Description Django is a Python web framework that makes the web development process very easy. It reduces the amount of trivial code, which simplifies the creation of web applications and results in faster development. It is very powerful and a great choice for creating RESTful web services. If you are a Python developer and want to efficiently create RESTful web services with Django for your apps, then this is the right book for you. The book starts off by showing you how to install and configure the environment, required software, and tools to create RESTful web services with Django and the Django REST framework. We then move on to working with advanced serialization and migrations to interact with SQLite and non-SQL data sources. We will use the features included in the Django REST framework to improve our simple web service. Further, we will create API views to process diverse HTTP requests on objects, go through relationships and hyperlinked API management, and then discover the necessary steps to include security and permissions related to data models and APIs. We will also apply throttling rules and run tests to check that versioning works as expected. Next we will run automated tests to improve code coverage. By the end of the book, you will be able to build RESTful web services with Django. What you will learn The best way to build a RESTful Web Service or API with Django and the Django REST Framework Develop complex RESTful APIs from scratch with Django and the Django REST Framework Work with either SQL or NoSQL data sources Design RESTful Web Services based on application requirements Use third-party packages and extensions to perform common tasks Create automated tests for RESTful web services Debug, test, and profile RESTful web services with Django and the Django REST Framework Who this book is for This book is for Python developers who want to create RESTful web services with Django; you need to have a basic working knowledge of Django but no previous experience with RESTful web services is required.

Get more out of your legacy systems: more performance, functionality, reliability, and manageability Is your code easy to change? Can you get nearly instantaneous feedback when you do change it? Do you understand it? If the answer to any of these questions is no, you have legacy code, and it is draining time and money away from your development efforts. In this book, Michael Feathers offers start-to-finish strategies for working more effectively with large, untested legacy code bases. This book draws on material Michael created for his renowned Object Mentor seminars: techniques Michael has used in mentoring to help hundreds of developers, technical managers, and testers bring their legacy systems under control. The topics covered include Understanding the mechanics of software change: adding features, fixing bugs, improving design, optimizing performance Getting legacy code into a test harness Writing tests that protect you against introducing new problems Techniques that can be used with any language or platform—with examples in Java, C++, C, and C# Accurately identifying where code changes need to be made Coping with legacy systems that aren't object-oriented Handling applications that don't seem to have any structure This book also includes a catalog of twenty-four dependency-breaking techniques that help you work with program elements

in isolation and make safer changes.

Become a professional .NET developer by learning expert techniques for building enterprise-grade applications Key FeaturesExplore the advanced features of C# and .NET 5 to enhance your code and productivityFollow clear and easy instructions for building an end-to-end enterprise applicationLearn how to build scalable web applications and host them on the cloudBook Description .NET Core is one of the most popular programming platforms in the world for an increasingly large community of developers thanks to its excellent cross-platform support. This book will show you how to confidently use the features of .NET 5 with C# 9 to build robust enterprise applications. Throughout the book, you'll work on creating an enterprise app and adding a key component to the app with each chapter, before ?nally getting it ready for testing and deployment. You'll learn concepts relating to advanced data structures, the Entity Framework Core, parallel programming, and dependency injection. As you progress, you'll cover various authentication and authorization schemes provided by .NET Core to make your apps and APIs secure. Next, you'll build web apps using ASP.NET Core 5 and deploy them on the cloud while working with various cloud components using Azure. The book then shows you how to use the latest Microsoft Visual Studio 2019 and C# 9 to simplify developer tasks, and also explores tips and tricks in Visual Studio 2019 to improve your productivity. Later, you'll discover various testing techniques such as unit testing and performance testing as well as di?erent methods to deploy enterprise apps. By the end of this book, you'll be able to create enterprise apps using the powerful features of .NET 5 and deploy them on the cloud. What you will learnDesign enterprise apps by making the most of the latest features of .NET 5Discover di?erent layers of an app, such as the data layer, API layer, and web layerExplore end-to-end architecture, implement an enterprise web app using .NET and C# 9, and deploy the app on AzureFocus on the core concepts of web application development such as dependency injection, caching, logging, con?guration, and authentication, and implement them in .NET 5Integrate the new .NET 5 health and performance check APIs with your appUnderstand how .NET 5 works and contribute to the .NET 5 platformWho this book is for If you are a developer, architect, or senior programmer who wants to leverage the features of .NET 5 and the C# language, as well as grasp essential techniques to build your skills, then this C# .NET 5 book is for you. Beginner to intermediate-level knowledge of the .NET framework and C# programming is required to understand the concepts covered in this book more effectively.

Red Hat RHCE(TM) 8 Cert Guide is designed to help you pass the newest version of the Hat Certified Engineer exam for Red Hat Enterprise Linux 8, and master the skills you need to automate Linux and execute common system administration tasks with Red Hat(R) Ansible(R) Engine. The most comprehensive and time-efficient RHCE 8 prep guide available, it's also an extraordinarily cost-effective complement to other training, including the author's own RHCE Complete Video Course. Authored by a leading Red Hat trainer, consultant, and speaker, it presents focused, straight-to-the-point coverage of every exam topic, including: Performing Core Red Hat system administration tasks Understanding Ansible core components Installing and configuring Ansible control nodes Configuring Ansible managed nodes Administering scripts Performing system administration tasks with Ansible modules Working with roles Using advanced Ansible features such as templates and Ansible Vault From start to finish, this guide is organized to help you focus your study time where you need the most help, so you can retain more, and earn higher scores. It offers: Step-by-step chapter labs to help you

practice what you've just learned Pre-exam theoretical exam to help you decide if you're ready for the real exam Two realistic RHCE sample exams delivered through Pearson's state-of-the-art test engine Pre-chapter "Do I Know This Already" (DIKTA) quizzes to assess your knowledge of each chapter's content, so you can decide how much time to spend on each section Foundation Topics sections thoroughly explaining concepts and theory, and linking them to real-world configurations and commands Key Topics icons flagging every figure, table, or list you absolutely must understand and remember End of chapter Glossary terms Chapter-ending Exam Preparation sections delivering even more exercises and troubleshooting scenarios

Build maintainable websites with elegant Django design patterns and modern best practices Key Features Explore aspects of Django from Models and Views to testing and deployment Understand the nuances of web development such as browser attack and data design Walk through various asynchronous tools such as Celery and Channels Book Description Building secure and maintainable web applications requires comprehensive knowledge. The second edition of this book not only sheds light on Django, but also encapsulates years of experience in the form of design patterns and best practices. Rather than sticking to GoF design patterns, the book looks at higher-level patterns. Using the latest version of Django and Python, you'll learn about Channels and asyncio while building a solid conceptual background. The book compares design choices to help you make everyday decisions faster in a rapidly changing environment. You'll first learn about various architectural patterns, many of which are used to build Django. You'll start with building a fun superhero project by gathering the requirements, creating mockups, and setting up the project. Through project-guided examples, you'll explore the Model, View, templates, workflows, and code reusability techniques. In addition to this, you'll learn practical Python coding techniques in Django that'll enable you to tackle problems related to complex topics such as legacy coding, data modeling, and code reusability. You'll discover API design principles and best practices, and understand the need for asynchronous workflows. During this journey, you'll study popular Python code testing techniques in Django, various web security threats and their countermeasures, and the monitoring and performance of your application. What you will learn Make use of common design patterns to help you write better code Implement best practices and idioms in this rapidly evolving framework Deal with legacy code and debugging Use asynchronous tools such as Celery, Channels, and asyncio Use patterns while designing API interfaces with the Django REST Framework Reduce the maintenance burden with well-tested, cleaner code Host, deploy, and secure your Django projects Who this book is for This book is for you whether you're new to Django or just want to learn its best practices. You do not have to be an expert in Django or Python. No prior knowledge of patterns is expected for reading this book but it would be helpful.

A comprehensive guide to Python programming for web development using the most popular Python web framework - Django Key FeaturesLearn the fundamentals of programming with Python and building web appsBuild web applications from scratch with DjangoCreate real-world RESTful web services with the latest Django frameworkBook Description If you want to develop complete Python web apps with Django, this Learning Path is for you. It will walk you through Python programming techniques and guide you in implementing them when creating 4 professional Django projects, teaching you how to solve common problems and develop RESTful web services with Django and Python. You will learn how to build a blog application, a social image bookmarking website, an online shop, and an e-learning platform. Learn Web Development with Python will get you started with Python programming techniques, show you how to enhance your applications with AJAX, create RESTful APIs, and set up a production environment for your Django projects. Last but not least, you'll learn the best practices for creating real-world applications. By the end of this Learning Path, you will have a full understanding of how Django works and how to use it to build web applications from scratch. This Learning Path includes content from the following Packt products: Learn Python Programming by Fabrizio RomanoDjango RESTful Web Services by Gastón C. HillarDjango Design Patterns and Best Practices by Arun RavindranWhat you will learnExplore the fundamentals of Python programming with interactive projectsGrasp essential coding concepts along with the basics of data structures and control flowDevelop RESTful APIs from scratch with Django and the Django REST FrameworkCreate automated tests for RESTful web servicesDebug, test, and profile RESTful web services with Django and the Django REST FrameworkUse Django with other technologies such as Redis and CeleryWho this book is for If you have little experience in coding or Python and want to learn how to build full-fledged web apps, this Learning Path is for you. No prior experience with RESTful web services, Python, or Django is required, but basic Python programming experience is needed to understand the concepts covered.

The book in its tenth edition has been thoroughly restructured and revised. All the chapters of the present edition have been re-written not only to incorporate the latest developments in management but also to make presentation of subject-matter more lucid and crisp. Chapter 3 of the previous edition (Managers and Environment) has been named as Management Challenges and Opportunities in the present edition so that proper focus is put on these issues. Thus, the present edition is ideally suited to management students as well as management practitioners, particularly those who have not gone through formal management education.

Completely updated for Django 4.0! Django for Professionals takes your web development skills to the next level, teaching you how to build production-ready websites with Python and Django. Once you have learned the basics of Django there is a massive gap between building simple "toy apps" and what it takes to build a "production-ready" web application suitable for deployment to thousands or even millions of users. In the book you'll learn how to: * Build a Bookstore website from scratch * Use Docker and PostgreSQL locally to mimic production settings * Implement advanced user registration with email * Customize permissions to control user access * Write comprehensive tests * Adopt advanced security and performance improvements * Add search and file/image uploads * Deploy with confidence If you want to take advantage of all that Django has to offer, Django for Professionals is a comprehensive best practices guide to building and deploying modern websites.

Send and receive messages with the MQTT protocol for your IoT solutions. About This Book Make your connected devices less prone to attackers by understanding practical security mechanisms Dive deep into one of IoT's extremely lightweight machines to enable connectivity protocol with some real-world examples Learn to take advantage of the features included in MQTT for IoT and Machine-to-Machine communications with complete real-life examples Who This Book Is For This book is a great resource for developers who want to learn more about the MQTT protocol to apply it

to their individual IoT projects. Prior knowledge of working with IoT devices is essential. What You Will Learn Understand how MQTTv3.1 and v3.1.1 works in detail Install and secure a Mosquitto MQTT broker by following best practices Design and develop IoT solutions combined with mobile and web apps that use MQTT messages to communicate Explore the features included in MQTT for IoT and Machine-to-Machine communications Publish and receive MQTT messages with Python, Java, Swift, JavaScript, and Node.js Implement the security best practices while setting up the MQTT Mosquitto broker In Detail This step-by-step guide will help you gain a deep understanding of the lightweight MQTT protocol. We'll begin with the specific vocabulary of MQTT and its working modes, followed by installing a Mosquitto MQTT broker. Then, you will use best practices to secure the MQTT Mosquitto broker to ensure that only authorized clients are able to publish and receive messages. Once you have secured the broker with the appropriate configuration, you will develop a solution that controls a drone with Python. Further on, you will use Python on a Raspberry Pi 3 board to process commands and Python on Intel Boards (Joule, Edison and Galileo). You will then connect to the MQTT broker, subscribe to topics, send messages, and receive messages in Python. You will also develop a solution that interacts with sensors in Java by working with MQTT messages. Moving forward, you will work with an asynchronous API with callbacks to make the sensors interact with MQTT messages. Following the same process, you will develop an iOS app with Swift 3, build a website that uses Web-Sockets to connect to the MQTT broker, and control home automation devices with HTML5, JavaScript code, Node.js and MQTT messages Style and approach This step-by-step guide describes the MQTT protocol for your IoT projects

If you are a Dart developer looking to sharpen your skills, and get insight and tips on how to put that knowledge into practice, then this book is for you. You should also have a basic knowledge of HTML, and how web applications with browser clients and servers work, in order to build dynamic Dart applications.

From an idea to a prototype – a complete guide for web development with the Django framework About This Book Explore the best practices to develop applications of a superior quality with Django framework Unravel the common problems of web development in Django This course teaches you major Django functions and will help you improve your skills by developing models, forms, views, and templates Experience the challenges of working on an end-to-end social network project Who This Book Is For Web developers who want to use modern Python-based web frameworks like Django to build powerful web applications. The course is mostly self-contained and introduces web development with Python to a reader who is familiar with web development concepts and can help him become an expert in this trade. It's intended for all levels of web developers, both students and practitioners from novice to experts. What You Will Learn Use Django models to store information in the database and generate queries to access a database across models Quickly develop web pages to create, read, update, and delete data from the model using class-based views Generate very maintainable forms with Django Import data from local sources and external web services as well as exporting your data to third parties Deep dive into various aspects of Django from models and views to testing and deployment Familiarize yourself with the various nuances of web development such as browser attacks and databases In Detail Data science is hot right now, and the need for multitalented developers is greater than ever before. A basic grounding in building apps with a framework as

minimalistic, powerful, and easy-to-learn as Django will be a useful skill to launch your career as an entrepreneur or web developer. Django is a web framework that was designed to strike a balance between rapid web development and high performance. This course will take you on a journey to become an efficient web developer thoroughly understanding the key concepts of Django framework. This learning path is divided into three modules. The course begins with basic concepts of the Django framework. The first module, Django Essentials, is like a practical guide, filled with many real-world examples to build highly effective Django web application. After getting familiar with core concepts of Django, it's time to practice your learning from the first module with the help of over 90 recipes available in this module. In the second module, Web Development with Django Cookbook, you'll learn varying complexities to help you create multilingual, responsive, and scalable websites with Django. By the end of this module, you will have a good understanding of the new features added to Django 1.8 and be an expert at web development processes.The next step is to discover the latest best practices and idioms in this rapidly evolving Django framework. This is what you'll be learning in our third module, Django Design Patterns and Best Practices. This module will teach you common design patterns to develop better Django code. By the end of the module, you will be able to leverage the Django framework to develop a fully functional web application with minimal effort. Style and approach This course includes all the resources that will help you jump into the web development field with Django and learn how to make scalable and robust web applications. The aim is to create a smooth learning path that will teach you how to get started with the powerful Django framework and perform various web development techniques in depth. Through this comprehensive course, you'll learn web development with Django from scratch to finish!

Engineering Analysis with SOLIDWORKS Simulation 2016 goes beyond the standard software manual. Its unique approach concurrently introduces you to the SOLIDWORKS Simulation 2016 software and the fundamentals of Finite Element Analysis (FEA) through hands-on exercises. A number of projects are presented using commonly used parts to illustrate the analysis features of SOLIDWORKS Simulation. Each chapter is designed to build on the skills, experiences and understanding gained from the previous chapters.

Deploy, manage, and scale virtual instances using Kernel-based Virtual Machines About This Book Build, manage and scale virtual machines with practical step-by-step examples Leverage the libvirt user-space tools and libraries to manage the life-cycle of KVM instances Deploy and scale applications inside KVM virtual machines with OpenStack Who This Book Is For If you are a system administrator working KVM virtualization, this book will help you grow on your expertise of working with the infrastructure to manage things in a better way. You should have a knowledge of working with Linux based systems. What You Will Learn Deploy different workloads in isolation with KVM virtualization and better utilize the available compute resources Explore the benefits of running applications with KVM and learn to prevent the "bad-neighbor" effect Leveraging various networking technologies in the context of virtualization with Open vSwitch and the Linux bridge. Create KVM instances using Python and inspect running KVM instances Understand Kernel Tuning for enhanced KVM performance and better memory utilization In Detail Virtualization technologies such as KVM allow for better control over the available server resources, by deploying multiple virtual instances on the same physical host, or clusters of compute resources. With KVM it is possible to run various workloads in

isolation with the hypervisor layer providing better tenant isolation and higher degree of security. This book will provide a deep dive into deploying KVM virtual machines using qemu and libvirt and will demonstrate practical examples on how to run, scale, monitor, migrate and backup such instances. You will also discover real production ready recipes on deploying KVM instances with OpenStack and how to programatically manage the life cycle of KVM virtual machines using Python. You will learn numerous tips and techniques which will help you deploy & plan the KVM infrastructure. Next, you will be introduced to the working of libvirt libraries and the iPython development environment. Finally, you will be able to tune your Linux kernel for high throughput and better performance. By the end of this book, you will gain all the knowledge needed to be an expert in working with the KVM virtualization infrastructure. Style and approach This book takes a complete practical approach with many step-by-step example recipes on how to use KVM in production. The book assumes certain level of expertise with Linux systems and virtualization in general. Some knowledge of Python programming is encouraged, to fully take advantage of the code recipes.