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A practical guide for the rapid web application development with Flask KEY FEATURES \_ Expert-led coverage of core capabilities of Flask, key extensions and its implementation. \_ Explore the Werkzeug toolkit and Jinja Template engine and see how Flask interacts with JavaScript and CSS. \_ Detailed modules on building and deploying RESTful applications using Flask. \_ DESCRIPTION \_ This book teaches the reader the complete workflow of developing web applications using Python and its most outperforming microframework, Flask. The book begins with getting you up to speed in developing a strong understanding of the web application development process and how Python is used in developing the applications. You will learn how to write your own first Flask-based web application in Python. You will learn about web gateway interfaces, including CGI and WSGI along with various tools like the Jinja 2 engine, Werkzeug toolkit, and Click toolkit. \_ You will learn and practice the core features of Flask such as URL routing, rendering, handling static assets of a web application, how to handle cookies and sessions, and other HTTP objects. Once you have developed a strong knowledge of Flask, you will now dive deeper into advanced topics that includes Flask extensions for working with relational and NoSQL databases, Flask\_WTF, and Flask-Bootstrap. You will explore design patterns, various blueprints on how to build modular and scalable applications, and finally how to deploy the RESTful APIs successfully on your own. WHAT YOU WILL LEARN \_ Get to know everything about the core capabilities of Flask. \_ Understand the basic building blocks of Flask. \_ Get familiar with advanced features of Flask, including blueprints, Flask extensions, and database connectivity. \_ Get ready to design your own Flask-based web applications and RESTful APIs. \_ Learn to build modular and scalable applications and how to deploy them successfully. WHO THIS BOOK IS FOR \_ This book is ideal for Python enthusiasts, open source contributors, and web app developers who intend to add Python web technologies in their skillsets and startup companies. The understanding of the core Python language with intermediate level expertise is required and experience of working with SQL, HTML, CSS, and JavaScript is an added advantage. TABLE OF CONTENTS 1. Python for CGI 2. WSGI 3. Flask Fundamentals 4. URL Routing 5. Rendering Templates 6. Static Files 7. HTTP Objects 8. Using Databases 9. More Flask Extensions 10. Blueprints and Contexts 11. Web API with Flask 12. Deploying Flask Applications 13. Appendix Kubernetes is the operating system of the cloud native world, providing a reliable and scalable platform for running containerized workloads. In this friendly, pragmatic book, cloud experts John Arundel and Justin Domingus show you what Kubernetes can do—and what you can do with it. You'll learn all about the Kubernetes ecosystem, and use battle-tested solutions to everyday problems. You'll build, step by step, an example cloud native application and its supporting infrastructure, along with a development environment and continuous deployment pipeline that you can use for your own applications. Understand containers and Kubernetes from first principles; no experience necessary Run your own clusters or choose a managed Kubernetes service from Amazon, Google, and others Use Kubernetes to manage resource usage and the container lifecycle Optimize clusters for cost, performance, resilience, capacity, and scalability Learn the best tools for developing, testing, and deploying your applications Apply the latest industry practices for security, observability, and monitoring Adopt DevOps principles to help make your development teams lean, fast, and effective Learn all that's needed to build a fully functional web application from scratch. Key Features Delve deep into the principle behind RESTful API Learn how to build a scalable web application with the RESTful API architecture and Flask framework Know what are the exact tools and methodology to test your applications and how to use them Book Description Python is a flexible language that can be used for much more than just script development. By knowing the Python RESTful APIs work, you can build a powerful backend for web applications and mobile applications using Python. You'll take your first steps by building a simple API and learning how the frontend web interface can communicate with the backend. You'll also learn how to serialize and deserialize objects using the marshmallow library. Then, you'll learn how to authenticate and authorize users using Flask-JWT. You'll also learn how to enhance your APIs by adding useful features, such as email, image upload, searching, and pagination. You'll wrap up the whole book by deploying your APIs to the cloud. By the end of this book, you'll have the confidence and skill to leverage the power of RESTful APIs and Python to build efficient web applications. What you will learn Understand the concept of a RESTful API Build a RESTful API using Flask and the Flask-Restful extension Manipulate a database using Flask-SQLAlchemy and Flask-Migrate Send out plaintext and HTML format emails using the Mailgun API Implement a pagination function using Flask-SQLAlchemy Use caching to improve API performance and efficiently obtain the latest information Deploy an application to Heroku and test it using Postman Who this book is for This book is ideal for aspiring software developers who have a basic-to-intermediate knowledge of Python programming and who want to develop web applications using Python. Knowledge of how web applications work will be beneficial but is not essential. This practical guide shows intermediate and advanced web and mobile app developers how to build highly scalable Java applications in the cloud with Google App Engine. The flagship of Google's Cloud Platform, App Engine hosts your app on infrastructure that grows automatically with your traffic, minimizing up-front costs and accommodating unexpected visitors. You'll learn hands-on how to perform common development tasks with App Engine services and development tools, including deployment and maintenance. For Java applications, App Engine provides a J2EE standard servlet container with a complete Java 7 JVM and standard library. Because App Engine supports common Java API standards, your code stays clean and portable. Get a hands-on introduction to App Engine's tools and features, using an example application Simulate App Engine on your development machine directly from Eclipse Structure your app into individually addressable modules, each with its own scaling configuration Exploit the power of the scalable Cloud Datastore, using queries, transactions, and data modeling with JPA Use Cloud SQL for standard relational databases with App Engine applications Learn how to deploy, manage, and inspect your application on Google infrastructure

Develop, deploy, and scale your applications with Google Cloud Platform Key Features Create and deploy your applications on Google Cloud Platform Store and manage source code and debug Cloud-hosted apps with plugins and IDEs Streamline developer workflows with tools for alerting and managing deployments Book Description Google Cloud Platform (GCP) provides autoscaling compute power and distributed in-memory cache, task queues, and datastores to write, build, and deploy Cloud-hosted applications. With Google Cloud Platform for Developers, you will be able to develop and deploy scalable applications from scratch and make them globally available in almost any language. This book will guide you in designing, deploying, and managing applications running on Google Cloud. You'll start with App Engine and move on to work with Container Engine, compute engine, and cloud functions. You'll learn how to integrate your new applications with the various data solutions on GCP, including Cloud SQL, Bigtable, and Cloud Storage. This book will teach you how to streamline your workflow with tools such as Source Repositories, Container Builder, and StackDriver. Along the way, you'll see how to deploy and debug services with IntelliJ, implement continuous delivery pipelines, and configure robust monitoring and alerting for your production systems. By the end of this book, you'll be well-versed with all the development tools of Google Cloud Platform, and you'll develop, deploy, and manage highly scalable and reliable applications. What you will learn Understand the various service offerings on GCP Deploy and run services on managed platforms such as App Engine and Container Engine Securely maintain application states with Cloud Storage, Datastore, and Bigtable Leverage StackDriver monitoring and debugging to minimize downtime and mitigate issues without impacting users Design and implement complex software solutions utilizing Google Cloud Integrate with best-in-class big data solutions such as Bigquery, Dataflow, and Pub/Sub Who this book is for Google Cloud Platform for Developers is for application developers. This book will enable you to fully leverage the power of Google Cloud Platform to build resilient and intelligent software solutions. Google App Engine is one of the key technologies to emerge in recent years to help you build scalable web applications even if you have limited previous experience. If you are a Java programmer, this book offers you a Java approach to beginning Google App Engine. You will explore the runtime environment, front-end technologies like Google Web Toolkit, Adobe Flex, and the datastore behind App Engine. You'll also explore Java support on App Engine from end to end. The journey begins with a look at the Google Plugin for Eclipse and finishes with a working web application that uses Google Web Toolkit, Google Accounts, and Bigtable. Along the way, you'll dig deeply into the services that are available to access the datastore with a focus on Java Data Objects (JDO), JDOQL, and other aspects of Bigtable. With this solid foundation in place, you'll then be ready to tackle some of the more advanced topics like integration with other cloud platforms such as Salesforce.com and Google Wave. NOTE: The source code files which accompanied this title are no longer available. Neither Apress nor the author is able to supply these files. Get quick hands-on experience with Google Cloud. This cookbook provides a variety of self-contained recipes that show you how to use Google Cloud services for your enterprise application. Whether you're looking for practical ways to apply microservices, AI, analytics, security, or networking solutions, these recipes take you step-by-step through the process and provide discussions that explain how and why the recipes work. Ideal for system engineers and administrators, developers, network and database administrators, and data analysts, this cookbook helps you get started with Google Cloud regardless of your level of experience. Google veterans Rui Costa and Drew Hodun also cover advanced-level Google Cloud services for those who have appreciable experience with the platform. Learn how to get started with Google Cloud Understand the depth of services Google Cloud provides Gain hands-on experience using practical examples and labs Explore topics that include BigQuery, Cloud Run, and Kubernetes Build and run mobile and web applications on Google Cloud Examine ways to build your cloud applications for scale Build a minimum viable product (MVP) app to use in production Learn data platform and pipeline skills Master Powerful Off-the-Shelf Business Solutions for AI and Machine Learning Pragmatic AI will help you solve real-world problems with contemporary machine learning, artificial intelligence, and cloud computing tools. Noah Gift demystifies all the concepts and tools you need to get results—even if you don't have a strong background in math or data science. Gift illuminates powerful off-the-shelf cloud offerings from Amazon, Google, and Microsoft, and demonstrates proven techniques using the Python data science ecosystem. His workflows and examples help you streamline and simplify every step, from deployment to production, and build exceptionally scalable solutions. As you learn how machine language (ML) solutions work, you'll gain a more intuitive understanding of what you can achieve with them and how to maximize their value. Building on these fundamentals, you'll walk step-by-step through building cloud-based AI/ML applications to address realistic issues in sports marketing, project management, product pricing, real estate, and beyond. Whether you're a business professional, decision-maker, student, or programmer, Gift's expert guidance and wide-ranging case studies will prepare you to solve data science problems in virtually any environment. Get and configure all the tools you'll need Quickly review all the Python you need to start building machine learning applications Master the AI and ML toolchain and project lifecycle Work with Python data science tools such as IPython, Pandas, Numpy, Jupyter Notebook, and Sklearn Incorporate a pragmatic feedback loop that continually improves the efficiency of your workflows and systems Develop cloud AI solutions with Google Cloud Platform, including TPU, Colaboratory, and Datalab services Define Amazon Web Services cloud AI workflows, including spot instances, code pipelines, boto, and more Work with Microsoft Azure AI APIs Walk through building six real-world AI applications, from start to finish Register your book for convenient access to downloads, updates, and/or corrections as they become available. See inside book for details. Developing with Google App Engine introduces development with Google App Engine, a platform that provides developers and users with infrastructure Google itself uses to develop and deploy massively scalable applications. Introduction to concepts Development with App Engine Deployment into App Engine Using the simple, robust, Python-based Django framework, you can build powerful Web solutions with remarkably few lines of code. In Python Web Development with Django®, three experienced Django and Python developers cover all the techniques, tools, and concepts you need to make the most of Django 1.0, including all the major features of the new release. The authors teach Django through in-depth explanations, plus provide extensive sample code supported with images and line-by-line explanations. You'll discover how Django leverages Python's development speed and flexibility to help you solve a wide spectrum of Web development problems and learn Django best practices covered nowhere else. You'll build your first Django application in just minutes and deepen your real-world skills through start-to-finish application projects including Simple Web log (blog) Online photo gallery Simple content management system Ajax-powered live blogger Online source code sharing/syntax highlighting tool How to run your Django applications on the Google App Engine This complete guide starts by introducing Python, Django, and Web development concepts, then dives into the Django framework, providing a deep understanding of its major components (models, views, templates), and how they come together to form complete Web applications. After a discussion of four independent working Django applications, coverage turns to advanced topics, such as caching, extending the template system, syndication, admin customization, and testing. Valuable reference appendices cover using the command-line, installing and configuring Django, development tools, exploring existing Django applications, the Google App Engine, and how to get more involved with the Django community. Introduction 1 Part I: Getting Started Chapter 1: Practical Python for Django 7 Chapter 2: Django for the Impatient: Building a Blog 57 Chapter 3: Starting Out 77 Part II: Django in Depth Chapter 4: Defining and Using Models 89 Chapter 5: URLs, HTTP Mechanisms, and Views 117 Chapter 6: Templates and Form Processing 135 Part III: Django Applications by Example Chapter 7: Photo Gallery 159 Chapter 8: Content Management System 181 Chapter 9: Liveblog 205 Chapter 10: Pastebin 221 Part IV: Advanced Django Techniques and Features Chapter 11: Advanced Django Programming 235 Chapter 12: Advanced Django Deployment 261 Part V: Appendices Appendix A: Command Line Basics 285 Appendix B: Installing and Running Django 295 Appendix C: Tools for Practical Django Development 313 Appendix D: Finding, Evaluating, and Using Django Applications 321 Appendix E: Django on the Google App Engine 325 Appendix F: Getting Involved in the Django Project 337 Index 339 Colophon 375 As one of today's cloud computing services, Google App Engine does more than provide access to a large system of servers. It also

offers you a simple model for building applications that scale automatically to accommodate millions of users. With Programming Google App Engine, you'll get expert practical guidance that will help you make the best use of this powerful platform. Google engineer Dan Sanderson shows you how to design your applications for scalability, including ways to perform common development tasks using App Engine's APIs and scalable services. You'll learn about App Engine's application server architecture, runtime environments, and scalable datastore for distributing data, as well as techniques for optimizing your application. App Engine offers nearly unlimited computing power, and this book provides clear and concise instructions for getting the most from it right from the source. Discover the differences between traditional web development and development with App Engine Learn the details of App Engine's Python and Java runtime environments Understand how App Engine handles web requests and executes application code Learn how to use App Engine's scalable datastore, including queries and indexes, transactions, and data modeling Use task queues to parallelize and distribute work across the infrastructure Deploy and manage applications with ease Python is a wonderful programming language that allows writing applications quickly. But how do you make those applications scale for thousands of users and requests? It takes years of practice, research, trial and errors to build experience and knowledge along the way. Simple questions such as "How do I make my code faster?" or "How do I make sure there is no bottleneck?" cost hours to find good answers. Without enough background on the topic, you'll never be sure that any answer you'll come up with will be correct. The Hacker's Guide to Scaling Python will help you solve that by providing guidelines, tips and best practice. Adding a few interviews of experts on the subject, you will learn how you can distribute your Python application so it is able to process thousands of requests. Google App Engine makes it easy to create a web application that can serve millions of people as easily as serving hundreds, with minimal up-front investment. With Programming Google App Engine, Google engineer Dan Sanderson provides practical guidance for designing and developing your application on Google's vast infrastructure, using App Engine's scalable services and simple development model. Through clear and concise instructions, you'll learn how to get the most out of App Engine's nearly unlimited computing power. This second edition is fully updated and expanded to cover Python 2.7 and Java 6 support, multithreading, asynchronous service APIs, and the use of frameworks such as Django 1.3 and webapp2. Understand how App Engine handles web requests and executes application code Learn about new datastore features for queries and indexes, transactions, and data modeling Create, manipulate, and serve large data files with the Blobstore Use task queues to parallelize and distribute computation across the infrastructure Employ scalable services for email, instant messaging, and communicating with web services Track resource consumption, and optimize your application for speed and cost effectiveness If you are a Python developer, whether you have experience in web applications development or not, and want to rapidly deploy a scalable backend service or a modern web application on Google App Engine, then this book is for you. Effective Python will help students harness the full power of Python to write exceptionally robust, efficient, maintainable, and well-performing code. Utilizing the concise, scenario-driven style pioneered in Scott Meyers's best-selling Effective C++, Brett Slatkin brings together 53 Python best practices, tips, shortcuts, and realistic code examples from expert programmers. Each section contains specific, actionable guidelines organized into items, each with carefully worded advice supported by detailed technical arguments and illuminating examples. Jython is an open source implementation of the high-level, dynamic, object-oriented scripting language Python seamlessly integrated with the Java platform. The predecessor to Jython, JPython, is certified as 100% Pure Java. Jython is freely available for both commercial and noncommercial use and is distributed with source code. Jython is complementary to Java. The Definitive Guide to Jython, written by the official Jython team leads, covers Jython 2.5 (or 2.5.x)—from the basics to more advanced features. This book begins with a brief introduction to the language and then journeys through Jython's different features and uses. The Definitive Guide to Jython is organized for beginners as well as advanced users of the language. The book provides a general overview of the Jython language itself, but it also includes intermediate and advanced topics regarding database, web, and graphical user interface (GUI) applications; Web services/SOA; and integration, concurrency, and parallelism, to name a few. Learn how to run large-scale, data-intensive workloads with Compute Engine, Google's cloud platform. Written by Google engineers, this tutorial walks you through the details of this Infrastructure as a Service by showing you how to develop a project with it from beginning to end. You'll learn best practices for using Compute Engine, with a focus on solving practical problems. With programming examples written in Python and JavaScript, you'll also learn how to use Compute Engine with Docker containers and other platforms, frameworks, tools, and services. Discover how this IaaS helps you gain unparalleled performance and scalability with Google's advanced storage and computing technologies. Access and manage Compute Engine resources with a web UI, command-line interface, or RESTful interface Configure, customize, and work with Linux VM instances Explore storage options: persistent disk, Cloud Storage, Cloud SQL (MySQL in the cloud), or Cloud Datastore NoSQL service Use multiple private networks, and multiple instances on each network Build, deploy, and test a simple but comprehensive cloud computing application step-by-step Use Compute Engine with Docker, Node.js, ZeroMQ, Web Starter Kit, AngularJS, WebSocket, and D3.js Updated and Expanded for Python 3 It's easy to start developing programs with Python, which is why the language is so popular. However, Python's unique strengths, charms, and expressiveness can be hard to grasp, and there are hidden pitfalls that can easily trip you up. This second edition of Effective Python will help you master a truly "Pythonic" approach to programming, harnessing Python's full power to write exceptionally robust and well-performing code. Using the concise, scenario-driven style pioneered in Scott Meyers' best-selling Effective C++, Brett Slatkin brings together 90 Python best practices, tips, and shortcuts, and explains them with realistic code examples so that you can embrace Python with confidence. Drawing on years of experience building Python infrastructure at Google, Slatkin uncovers little-known quirks and idioms that powerfully impact code behavior and performance. You'll understand the best way to accomplish key tasks so you can write code that's easier to understand, maintain, and improve. In addition to even more advice, this new edition substantially revises all items from the first edition to reflect how best practices have evolved. Key features include 30 new actionable guidelines for all major areas of Python Detailed explanations and examples of statements, expressions, and built-in types Best practices for writing functions that clarify intention, promote reuse, and avoid bugs Better techniques and idioms for using comprehensions and generator functions Coverage of how to accurately express behaviors with classes and interfaces Guidance on how to avoid pitfalls with metaclasses and dynamic attributes More efficient and clear approaches to concurrency and parallelism Solutions for optimizing and hardening to maximize performance and quality Techniques and built-in modules that aid in debugging and testing Tools and best practices for collaborative development Effective Python will prepare growing programmers to make a big impact using Python. Effectively deploy fully managed workloads using Google Cloud's serverless services Key Features Use real-world use cases to understand the core functionalities of Functions as a Service Explore the potential of Cloud Run, Knative, Cloud Build, Google Kubernetes Engine, and Cloud Storage Get to grips with architectural decisions, seamless deployments, containerization, and serverless solutions Book Description Google Cloud's serverless platform allows organizations to scale fully managed solutions without worrying about the underlying infrastructure. With this book, you will learn how to design, develop, and deploy full stack serverless apps on Google Cloud. The book starts with a quick overview of the Google Cloud console, its features, user interface (UI), and capabilities. After getting to grips with the Google Cloud interface and its features, you will explore the core aspects of serverless products such as Cloud Run, Cloud Functions and App Engine. You will also learn essential features such as version control, containerization, and identity and access management with the help of real-world use cases. Later, you will understand how to incorporate continuous integration and continuous deployment (CI/CD) techniques for serverless applications. Toward the concluding chapters, you will get to grips with how key technologies such as Knative enable Cloud Run to be hosted on multiple platforms including Kubernetes and VMware. By the end of this book, you will have become proficient in confidently developing, managing, and deploying containerized applications on Google Cloud. What you will learn Explore the various

options for deploying serverless workloads on Google Cloud Determine the appropriate serverless product for your application use case Integrate multiple lightweight functions to build scalable and resilient services Increase productivity through build process automation Understand how to secure serverless workloads using service accounts Build a scalable architecture with Google Cloud Functions and Cloud Run Who this book is for If you are a cloud administrator, architect, or developer who wants to build scalable systems and deploy serverless workloads on Google Cloud, then this book is for you. To get the most out of this book, a basic understanding of the serverless ecosystem and cloud computing will be beneficial. While Excel remains ubiquitous in the business world, recent Microsoft feedback forums are full of requests to include Python as an Excel scripting language. In fact, it's the top feature requested. What makes this combination so compelling? In this hands-on guide, Felix Zumstein--creator of xlwings, a popular open source package for automating Excel with Python--shows experienced Excel users how to integrate these two worlds efficiently. Excel has added quite a few new capabilities over the past couple of years, but its automation language, VBA, stopped evolving a long time ago. Many Excel power users have already adopted Python for daily automation tasks. This guide gets you started. Use Python without extensive programming knowledge Get started with modern tools, including Jupyter notebooks and Visual Studio code Use pandas to acquire, clean, and analyze data and replace typical Excel calculations Automate tedious tasks like consolidation of Excel workbooks and production of Excel reports Use xlwings to build interactive Excel tools that use Python as a calculation engine Connect Excel to databases and CSV files and fetch data from the internet using Python code Use Python as a single tool to replace VBA, Power Query, and Power Pivot Python is an ideal language for solving problems, especially in Linux and Unix networks. With this pragmatic book, administrators can review various tasks that often occur in the management of these systems, and learn how Python can provide a more efficient and less painful way to handle them. Each chapter in Python for Unix and Linux System Administration presents a particular administrative issue, such as concurrency or data backup, and presents Python solutions through hands-on examples. Once you finish this book, you'll be able to develop your own set of command-line utilities with Python to tackle a wide range of problems. Discover how this language can help you: Read text files and extract information Run tasks concurrently using the threading and forking options Get information from one process to another using network facilities Create clickable GUIs to handle large and complex utilities Monitor large clusters of machines by interacting with SNMP programmatically Master the IPython Interactive Python shell to replace or augment Bash, Korn, or Z-Shell Integrate Cloud Computing into your infrastructure, and learn to write a Google App Engine Application Solve unique data backup challenges with customized scripts Interact with MySQL, SQLite, Oracle, Postgres, Django ORM, and SQLAlchemy With this book, you'll learn how to package and deploy your Python applications and libraries, and write code that runs equally well on multiple Unix platforms. You'll also learn about several Python-related technologies that will make your life much easier. If you're involved in planning IT infrastructure as a network or system architect, system administrator, or developer, this book will help you adapt your skills to work with these highly scalable, highly redundant infrastructure services. While analysts hotly debate the advantages and risks of cloud computing, IT staff and programmers are left to determine whether and how to put their applications into these virtualized services. Cloud Application Architectures provides answers -- and critical guidance -- on issues of cost, availability, performance, scaling, privacy, and security. With Cloud Application Architectures, you will: Understand the differences between traditional deployment and cloud computing Determine whether moving existing applications to the cloud makes technical and business sense Analyze and compare the long-term costs of cloud services, traditional hosting, and owning dedicated servers Learn how to build a transactional web application for the cloud or migrate one to it Understand how the cloud helps you better prepare for disaster recovery Change your perspective on application scaling To provide realistic examples of the book's principles in action, the author delves into some of the choices and operations available on Amazon Web Services, and includes high-level summaries of several of the other services available on the market today. Cloud Application Architectures provides best practices that apply to every available cloud service. Learn how to make the transition to the cloud and prepare your web applications to succeed. A guide to the programming language describes how to build Python-enabled Web servers and applications, write mobile apps on the Android platform, develop sophisticated games, build GUI-based programs, and write Python scripts to automate tasks. Learn how easy it is to apply sophisticated statistical and machine learning methods to real-world problems when you build on top of the Google Cloud Platform (GCP). This hands-on guide shows developers entering the data science field how to implement an end-to-end data pipeline, using statistical and machine learning methods and tools on GCP. Through the course of the book, you'll work through a sample business decision by employing a variety of data science approaches. Follow along by implementing these statistical and machine learning solutions in your own project on GCP, and discover how this platform provides a transformative and more collaborative way of doing data science. You'll learn how to: Automate and schedule data ingest, using an App Engine application Create and populate a dashboard in Google Data Studio Build a real-time analysis pipeline to carry out streaming analytics Conduct interactive data exploration with Google BigQuery Create a Bayesian model on a Cloud Dataproc cluster Build a logistic regression machine-learning model with Spark Compute time-aggregate features with a Cloud Dataflow pipeline Create a high-performing prediction model with TensorFlow Use your deployed model as a microservice you can access from both batch and real-time pipelines Provides information on building Web applications using Google App Engine. Build robust and highly scalable web applications with Google App Engine About This Book Get an in-depth look at how Google App Engine works under the hood Design and model your application around Google's highly scalable distributed NoSQL datastore to unlock its full potential A comprehensive guide to ensure your mastery of Google App Engine Who This Book Is For If you have been developing web applications in Python or any other dynamic language but have always wondered how to write highly scalable web applications without getting into system administration and other plumbing, then this is the book for you. No experience in writing scalable applications is required. What You Will Learn Scale and develop your applications with Google App Engine's runtime environment Get to grips with request handling mechanism and write request handlers Deep dive into Google's distributed NoSQL and highly scalable datastore and design your application around it Implement powerful search with scalable datastore Perform long-running tasks in the background using task queues Write compartmentalized apps using multi tenancy, memcache, and other Google App Engine runtime services Handle web requests using the CGI, WSGI, and multi-threaded configurations Deploy, tweak, and manage apps in production on Google App Engine In Detail Developing web applications that serve millions of users is no easy task, as it involves a number of configurations and administrative tasks for the underlying software and hardware stack. This whole configuration requires not only expertise, but also a fair amount of time as well. Time that could have been spent on actual application functionality. Google App Engine allows you develop highly scalable web applications or backends for mobile applications without worrying about the system administration plumbing or hardware provisioning issues. Just focus writing on your business logic, the meat of the application, and let Google's powerful infrastructure scale it to thousands of requests per second and millions of users without any effort on your part. This book takes you from explaining how scalable applications work to designing and developing robust scalable web applications of your own, utilizing services available on Google App Engine. Starting with a walkthrough of scalability is and how scalable web applications work, this book introduces you to the environment under which your applications exist on Google App Engine. Next, you will learn about Google's datastore, which is a massively scalable distributed NoSQL solution built on top of BigTable. You will examine the BigTable concepts and operations in detail and reveal how it is used to build Google datastore. Armed with this knowledge, you will then advance towards how to best model your data and query that along with transactions. To augment the powerful distributed dataset, you will deep dive into search functionality offered on Google App Engine. With the search and storage sorted out, you will get a look into performing long running tasks in the background using Google App Engine task queues along with sending and receiving emails. You will also examine the memcache to boost web application performance, image processing for

common image manipulation tasks. You will then explore uploading, storing, and serving large files using Blobstore and Cloud storage. Finally, you will be presented with the deployment and monitoring of your applications in production along with a detailed look at dividing applications into different working modules.

**Style and approach** This book is an in-depth guide where you will examine the problems in the context of highly scalable web applications. This book will take you through the libraries, services, and required configuration and finally puts everything together into a small web application that showcases all the capabilities of Google App Engine.

**Build cloud native applications in Python** About This Book This is the only reliable resource that showcases the tools and techniques you need build robust and resilient cloud native applications in Python

**Learn how to architect your application on both, the AWS and Azure clouds for high availability** Assess, monitor, and troubleshoot your applications in the cloud

**Who This Book Is For** This book is ideal for developers with a basic knowledge of Python who want to learn to build, test, and scale their Python-based applications. No prior experience of writing microservices in Python is required.

**What You Will Learn** Get to know “the way of the cloud”, including why developing good cloud software is fundamentally about mindset and discipline Know what microservices are and how to design them Create reactive applications in the cloud with third-party messaging providers Build massive-scale, user-friendly GUIs with React and Flux Secure cloud-based web applications: the do's, don'ts, and options Plan cloud apps that support continuous delivery and deployment

**In Detail** Businesses today are evolving so rapidly that having their own infrastructure to support their expansion is not feasible. As a result, they have been resorting to the elasticity of the cloud to provide a platform to build and deploy their highly scalable applications. This book will be the one stop for you to learn all about building cloud-native architectures in Python. It will begin by introducing you to cloud-native architecture and will help break it down for you. Then you'll learn how to build microservices in Python using REST APIs in an event driven approach and you will build the web layer. Next, you'll learn about Interacting data services and building Web views with React, after which we will take a detailed look at application security and performance. Then, you'll also learn how to Dockerize your services. And finally, you'll learn how to deploy the application on the AWS and Azure platforms. We will end the book by discussing some concepts and techniques around troubleshooting problems that might occur with your applications after you've deployed them. This book will teach you how to craft applications that are built as small standard units, using all the proven best practices and avoiding the usual traps. It's a practical book: we're going to build everything using Python 3 and its amazing tooling ecosystem. The book will take you on a journey, the destination of which, is the creation of a complete Python application based on microservices over the cloud platform

**Style and approach** Filled with examples, this book takes a step-by-step approach to teach you each and every configuration you need to make your application highly available and fault tolerant. This practical guide shows intermediate and advanced web and mobile app developers how to build highly scalable Python applications in the cloud with Google App Engine. The flagship of Google's Cloud Platform, App Engine hosts your app on infrastructure that grows automatically with your traffic, minimizing up-front costs and accommodating unexpected visitors. You'll learn hands-on how to perform common development tasks with App Engine services and development tools, including deployment and maintenance. App Engine's Python support includes a fast Python 2.7 interpreter, the standard library, and a WSGI-based runtime environment. Choose from many popular web application frameworks, including Django and Flask. Get a hands-on introduction to App Engine's tools and features, using an example application

**Simulate App Engine** on your development machine with tools from Google Cloud SDK Structure your app into individually addressable modules, each with its own scaling configuration Exploit the power of the scalable Cloud Datastore, using queries, transactions, and data modeling with the `ndb` library Use Cloud SQL for standard relational databases with App Engine applications

**Learn how to deploy, manage, and inspect your application on Google infrastructure** Practical recipes to implement cost-effective and scalable cloud solutions for your organization

**Key Features** Implement Google Cloud services in your organization Leverage Google Cloud components to secure your organization's data A recipe-based guide that promises hands-on experience in deploying a highly scalable and available environment

**Book Description** Google Cloud Platform is a cloud computing platform that offers products and services to host applications using state-of-the-art infrastructure and technology. You can build and host applications and websites, store data, and analyze data on Google's scalable infrastructure. This book follows a recipe-based approach, giving you hands-on experience to make the most of Google Cloud services. This book starts with practical recipes that explain how to utilize Google Cloud's common services. Then, you'll see how to make full use of Google Cloud components such as networking, security, management, and developer tools. Next, we'll deep dive into implementing core Google Cloud services into your organization, with practical recipes on App Engine, Compute Engine microservices with Cloud Functions, virtual networks, and Cloud Storage. Later, we'll provide recipes on implementing authentication and security, Cloud APIs, command-line management, deployment management, and the Cloud SDK. Finally, we'll cover administration troubleshooting tasks with the Compute and Container Engines and we'll show how to monitor your organization's efficiency with best practices. By the end of this book, you'll have a complete understanding of how to implement Google Cloud services in your organization with ease. What you will learn

**Host a Python application on Google Compute Engine** Host an application using Google Cloud Functions Migrate a MySQL DB to Cloud Spanner Configure a network for a highly available application on GCP

**Learn simple image processing using Storage and Cloud Functions** Automate security checks using Policy Scanner Understand tools for monitoring a production environment in GCP

**Learn to manage multiple projects using service accounts** Who this book is for This book is for IT professionals, engineers, and developers looking at implementing Google Cloud in their organizations. Administrators and architects planning to make their organization more efficient with Google Cloud will also find this book useful. Basic understanding of Cloud services and the Google Cloud platform is necessary. "Code in the Cloud" will teach users what a cloud service is, and how it differs from traditional applications. It will show readers how to build a cloud service, taking advantage of the services that AppEngine makes available to them. This practical guide shows intermediate and advanced web and mobile app developers how to build highly scalable Python applications in the cloud with Google App Engine. The flagship of Google's Cloud Platform, App Engine hosts your app on infrastructure that grows automatically with your traffic, minimizing up-front costs and accommodating unexpected visitors. You'll learn hands-on how to perform common development tasks with App Engine services and development tools, including deployment and maintenance. App Engine's Python support includes a fast Python 2.7 interpreter, the standard library, and a WSGI-based runtime environment. Choose from many popular web application frameworks, including Django and Flask. Get a hands-on introduction to App Engine's tools and features, using an example application

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**Learn how to deploy, manage, and inspect your application on Google infrastructure** This practical guide shows intermediate and advanced web and mobile app developers how to build highly scalable Java applications in the cloud with Google App Engine. The flagship of Google's Cloud Platform, App Engine hosts your app on infrastructure that grows automatically with your traffic, minimizing up-front costs and accommodating unexpected visitors. You'll learn hands-on how to perform common development tasks with App Engine services and development tools, including deployment and maintenance. For Java applications, App Engine provides a J2EE standard servlet container with a complete Java 7 JVM and standard library. Because App Engine supports common Java API standards, your code stays clean and portable. Get a hands-on introduction to App Engine's tools and features, using an example application

**Simulate App Engine** on your development machine directly from Eclipse Structure your app into individually addressable modules, each with its own scaling configuration Exploit the power of the scalable Cloud Datastore, using queries, transactions, and data modeling with JPA Use Cloud SQL for standard relational databases with App Engine applications

**Learn how to deploy, manage, and inspect your application on Google**

infrastructure Build exciting, scalable web applications quickly and confidently using Google App Engine and this book, even if you have little or no experience in programming or web development. App Engine is perhaps the most appealing web technology to appear in the last year, providing an easy-to-use application framework with basic web tools. While Google's own tutorial assumes significant experience, Using Google App Engine will help anyone get started with this platform. By the end of this book, you'll know how to build complete, interactive applications and deploy them to the cloud using the same servers that power Google applications. With this book, you will: Get an overview of the technologies necessary to use Google App Engine Learn how to use Python, HTML, Cascading Style Sheets (CSS), HTTP, and DataStore, App Engine's database Grasp the technical aspects necessary to create sophisticated, dynamic web applications Understand what's required to deploy your applications Using Google App Engine is also an excellent resource for experienced programmers who want to acquire working knowledge of web technologies. Building web applications used to be for experts only, but with Google App Engine-and this book-anyone can create a dynamic web presence. ??????Web?????????Google App Engine????????Python???? Learn how to code while you write programs that effortlessly perform useful feats of automation! The second edition of this international fan favorite includes a brand-new chapter on input validation, Gmail and Google Sheets automations, tips for updating CSV files, and more. If you've ever spent hours renaming files or updating spreadsheet cells, you know how tedious tasks like these can be. But what if you could have your computer do them for you? Automate the Boring Stuff with Python, 2nd Edition teaches even the technically uninclined how to write programs that do in minutes what would take hours to do by hand—no prior coding experience required! This new, fully revised edition of Al Sweigart's bestselling Pythonic classic, Automate the Boring Stuff with Python, covers all the basics of Python 3 while exploring its rich library of modules for performing specific tasks, like scraping data off the Web, filling out forms, renaming files, organizing folders, sending email responses, and merging, splitting, or encrypting PDFs. There's also a brand-new chapter on input validation, tutorials on automating Gmail and Google Sheets, tips on automatically updating CSV files, and other recent feats of automations that improve your efficiency. Detailed, step-by-step instructions walk you through each program, allowing you to create useful tools as you build out your programming skills, and updated practice projects at the end of each chapter challenge you to improve those programs and use your newfound skills to automate similar tasks. Boring tasks no longer have to take to get through—and neither does learning Python! Want to learn the Python language without slogging your way through how-to manuals? With Head First Python, you'll quickly grasp Python's fundamentals, working with the built-in data structures and functions. Then you'll move on to building your very own webapp, exploring database management, exception handling, and data wrangling. If you're intrigued by what you can do with context managers, decorators, comprehensions, and generators, it's all here. This second edition is a complete learning experience that will help you become a bonafide Python programmer in no time. Why does this book look so different? Based on the latest research in cognitive science and learning theory, Head First Python uses a visually rich format to engage your mind, rather than a text-heavy approach that puts you to sleep. Why waste your time struggling with new concepts? This multi-sensory learning experience is designed for the way your brain really works.

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