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WBL7C9 - CECILIA ASHLEY

Data is bigger, arrives faster, and comes in a variety of formats—and it all needs to be processed at scale for analytics or machine learning. But how can you process such varied workloads efficiently? Enter Apache Spark. Updated to include Spark 3.0, this second edition shows data engineers and data scientists why structure and unification in Spark matters. Specifically, this book explains how to perform simple and complex data analytics and employ machine learning algorithms. Through step-by-step walkthroughs, code snippets, and notebooks, you'll be able to: Learn Python, SQL, Scala, or Java high-level Structured APIs Understand Spark operations and SQL Engine Inspect, tune, and debug Spark operations with Spark configurations and Spark UI Connect to data sources: JSON, Parquet, CSV, Avro, ORC, Hive, S3, or Kafka Perform analytics on batch and streaming data using Structured Streaming Build reliable data pipelines with open source Delta Lake and Spark Develop machine learning pipelines with MLlib and productionize models using MLflow Harness the latest features of MongoDB 3 with this collection of 80 recipes – from managing cloud platforms to app development, this book is a vital resource About This Book Get to grips with the latest features of MongoDB 3 Interact with the MongoDB server and perform a wide range of query operations from the shell From administration to automation, this cookbook keeps you up to date with the world's leading NoSQL database Who This Book Is For This book is engineered for anyone who is interested in managing data in an easy and efficient way using MongoDB. You do not need any prior knowledge of MongoDB, but it would be helpful if you have some programming experience in either Java or Python. What You Will Learn Install, configure, and administer MongoDB sharded clusters and replica sets Begin writing applications using MongoDB in Java and Python languages Initialize the server in three different modes with various configurations Perform cloud deployment and introduce PaaS for Mongo Discover frameworks and products built to improve developer productivity using Mongo Take an in-depth look at the Mongo programming driver APIs in Java and Python Set up enterprise class monitoring and backups of MongoDB In Detail MongoDB is a high-performance and feature-rich NoSQL database that forms the backbone of the systems that power many different organizations – it's easy to see why it's the most popular NoSQL database on the market. Packed with many features that have become essential for many different types of software professionals and incredibly easy to use, this cookbook contains many solutions to the everyday challenges of MongoDB, as well as guidance on effective techniques to extend your skills and capabilities. This book starts with how to initialize the server in three different modes with various configurations. You will then be introduced to programming language drivers in both Java and Python. A new feature in MongoDB 3 is that you can connect to a single node using Python, set to make MongoDB even more popular with anyone working with Python. You will then learn a range of further topics including advanced query operations, monitoring and backup using MMS, as well as some very useful administration recipes including SCRAM-SHA-1 Authentication. Beyond that, you will also find recipes on cloud deployment, including guidance on how to work with Docker containers alongside MongoDB, integrating the database with Hadoop, and tips for improving developer productivity. Created as both an accessible tutorial and an easy to use resource, on hand whenever you need to solve a problem, MongoDB Cookbook will help you handle everything from administration to automation with MongoDB more effectively than ever before. Style and approach Every recipe is explained in a very simple set-by-step manner yet is extremely comprehensive.

Summary MongoDB in Action, Second Edition is a completely revised and updated version. It introduces MongoDB 3.0 and the document-oriented database model. This perfectly paced book gives you both the big picture you'll need as a developer and enough low-level detail to satisfy system engineers. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology This document-oriented database was built for high availability, supports rich, dynamic schemas, and lets you easily distribute data across multiple servers. MongoDB 3.0 is flexible, scalable, and very fast, even with big data loads. About the Book MongoDB in Action, Second Edition is a completely revised and updated version. It introduces MongoDB 3.0 and the document-oriented database model. This perfectly paced book gives you both the big picture you'll need as a developer and enough low-level detail to satisfy system engineers. Lots of examples will help you develop confidence in the crucial area of data modeling. You'll also love the deep explanations of each feature, including replication, auto-sharding, and

deployment. What's Inside Indexes, queries, and standard DB operations Aggregation and text searching Map-reduce for custom aggregations and reporting Deploying for scale and high availability Updated for Mongo 3.0 About the Reader Written for developers. No previous MongoDB or NoSQL experience is assumed. About the Authors After working at MongoDB, Kyle Banker is now at a startup. Peter Bakum is a developer with MongoDB expertise. Shaun Verch has worked on the core server team at MongoDB. A Genentech engineer, Doug Garrett is one of the winners of the MongoDB Innovation Award for Analytics. A software architect, Tim Hawkins has led search engineering at Yahoo Europe. Technical Contributor: Wouter Thielen. Technical Editor: Mihalis Tsoukalos. Table of Contents PART 1 GETTING STARTED A database for the modern web MongoDB through the JavaScript shell Writing programs using MongoDB PART 2 APPLICATION DEVELOPMENT IN MONGODB Document-oriented data Constructing queries Aggregation Updates, atomic operations, and deletes PART 3 MONGODB MASTERY Indexing and query optimization Text search WiredTiger and pluggable storage Replication Scaling your system with sharding Deployment and administration This book is an updated and improved project-based guide to help you extend the capabilities of React into building full-stack projects by exploring the industry-tested MERN stack. Starting from the set up for your full-stack apps, you will learn to create the front end, back end, and everything in between by building fun and engaging projects.

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

Microsoft Azure Essentials from Microsoft Press is a series of free ebooks designed to help you advance your technical skills with Microsoft Azure. The first ebook in the series, Microsoft Azure Essentials: Fundamentals of Azure, introduces developers and IT professionals to the wide range of capabilities in Azure. The authors – both Microsoft MVPs in Azure – present both conceptual and how-to content for key areas, including: Azure Websites and Azure Cloud Services Azure Virtual Machines Azure Storage Azure Virtual Networks Databases Azure Active Directory Management tools Business scenarios Watch Microsoft Press's blog and Twitter (@MicrosoftPress) to learn about other free ebooks in the "Microsoft Azure Essentials" series.

Develop RESTful web services using the Flask micro-framework and integrate them using MySQL. Use Flask to develop, deploy, and manage REST APIs with easy-to-read and understand Python code. Solve your problem from a choice of libraries. Learn to use MySQL as the web services database for your Flask API using

SQLAlchemy ORM. Building REST APIs with Flask provides a primer on Flask, RESTful services, and working with pip to set up your virtual environment. The key differences between NoSQL and SQL are covered, and you are taught how to connect MySQL and Flask using SQLAlchemy. Author Kunal Relan presents best practices for creating REST APIs and guides you in structuring your app and testing REST endpoints. He teaches you how to set up authentication and render HTML using views. You learn how to write unit tests for your REST APIs, and understand mocks, assertions, and integration testing. You will know how to document your REST APIs, deploy your Flask application on all of the major cloud platforms, and debug and monitor your Flask application. What You'll Learn Use MySQL to create Flask REST APIs Test REST endpoints Create CRUD endpoints with Flask and MySQL Deploy Flask on all of the major cloud platforms Monitor your Flask application Who This Book Is For Python developers interested in REST API development using Flask and web developers with basic programming knowledge who want to learn how Python and REST APIs work together. Readers should be familiar with Python (command line, or at least pip) and MySQL.

R for Cloud Computing looks at some of the tasks performed by business analysts on the desktop (PC era) and helps the user navigate the wealth of information in R and its 4000 packages as well as transition the same analytics using the cloud. With this information the reader can select both cloud vendors and the sometimes confusing cloud ecosystem as well as the R packages that can help process the analytical tasks with minimum effort, cost and maximum usefulness and customization. The use of Graphical User Interfaces (GUI) and Step by Step screenshot tutorials is emphasized in this book to lessen the famous learning curve in learning R and some of the needless confusion created in cloud computing that hinders its widespread adoption. This will help you kick-start analytics on the cloud including chapters on both cloud computing, R, common tasks performed in analytics including the current focus and scrutiny of Big Data Analytics, setting up and navigating cloud providers. Readers are exposed to a breadth of cloud computing choices and analytics topics without being buried in needless depth. The included references and links allow the reader to pursue business analytics on the cloud easily. It is aimed at practical analytics and is easy to transition from existing analytical set up to the cloud on an open source system based primarily on R. This book is aimed at industry practitioners with basic programming skills and students who want to enter analytics as a profession. Note the scope of the book is neither statistical theory nor graduate level research for statistics, but rather it is for business analytics practitioners. It will also help researchers and academics but at a practical rather than conceptual level. The R statistical software is the fastest growing analytics platform in the world, and is established in both academia and corporations for robustness, reliability and accuracy. The cloud computing paradigm is firmly established as the next generation of computing from microprocessors to desktop PCs to cloud.

This open access book is part of the LAMBDA Project (Learning, Applying, Multiplying Big Data Analytics), funded by the European Union, GA No. 809965. Data Analytics involves applying algorithmic processes to derive insights. Nowadays it is used in many industries to allow organizations and companies to make better decisions as well as to verify or disprove existing theories or models. The term data analytics is often used interchangeably with intelligence, statistics, reasoning, data mining, knowledge discovery, and others. The goal of this book is to introduce some of the definitions, methods, tools, frameworks, and solutions for big data processing, starting from the process of information extraction and knowledge representation, via knowledge processing and analytics to visualization, sense-making, and practical applications. Each chapter in this book addresses some pertinent aspect of the data processing chain, with a specific focus on understanding Enterprise Knowledge Graphs, Semantic Big Data Architectures, and Smart Data Analytics solutions. This book is addressed to graduate students from technical disciplines, to professional audiences following continuous education short courses, and to researchers from diverse areas following self-study courses. Basic skills in computer science, mathematics, and statistics are required. Python is an easy to learn, powerful programming language. It has efficient high-level data structures and a simple but effective approach to object-oriented programming. Python's elegant syntax and dynamic typing, together with its interpreted nature, make it an ideal language for scripting and rapid application development in many areas on most platforms. The Python interpreter and the extensive standard library are freely available in source or binary form for all major platforms from the Python Web site, <https://www.python.org/>, and may be freely distributed. The

same site also contains distributions of and pointers to many free third party Python modules, programs and tools, and additional documentation. The Python interpreter is easily extended with new functions and data types implemented in C or C++ (or other languages callable from C). Python is also suitable as an extension language for customizable applications. This tutorial introduces the reader informally to the basic concepts and features of the python language and system. It helps to have a Python interpreter handy for hands-on experience, but all examples are self contained, so the tutorial can be read off-line as well. For a description of standard objects and modules, see library-index. reference-index gives a more formal definition of the language. To write extensions in C or C++, read extending-index and c-api-index. There are also several books covering Python in depth. This tutorial does not attempt to be comprehensive and cover every single feature, or even every commonly used feature. Instead, it introduces many of Python's most noteworthy features, and will give you a good idea of the language's flavor and style. After reading it, you will be able to read and write Python modules and programs, and you will be ready to learn more about the various Python library modules described in library-index. The Glossary is also worth going through.

Learn how to build a wide range of scalable real-world web applications using a professional development toolkit. If you already know the basics of Node.js, now is the time to discover how to bring it to production level by leveraging its vast ecosystem of packages. With this book, you'll work with a varied collection of standards and frameworks and see how all those pieces fit together. Practical Node.js takes you from installing all the necessary modules to writing full-stack web applications. You'll harness the power of the Express.js and Hapi frameworks, the MongoDB database with Mongoose and Mongoose. You'll also work with Pug and Handlebars template engines, Stylus and LESS CSS languages, OAuth and Everyauth libraries, and the Socket.IO and Derby libraries, and everything in between. This exciting second edition is fully updated for ES6/ES2015 and also covers how to deploy to Heroku and AWS, daemonize apps, and write REST APIs. You'll build full-stack real-world Node.js apps from scratch, and also discover how to write your own Node.js modules and publish them on NPM. You already know what Node.js is; now learn what you can do with it and how far you can take it! What You'll Learn Manipulate data from the mongo console Use the Mongoose and Mongoose MongoDB libraries Build REST API servers with Express and Hapi Deploy apps to Heroku and AWS Test services with Mocha, Expect and TravisCI Utilize sessions for authentication Implement a third-party OAuth strategy with Everyauth Apply Redis, domains, WebSockets, and clusters Write your own Node.js module, and publish it on NPM Who This Book Is For Web developers who have some familiarity with the basics of Node.js and want to learn how to use it to build apps in a professional environment.

A hands-on guide to leveraging NoSQL databases NoSQL databases are an efficient and powerful tool for storing and manipulating vast quantities of data. Most NoSQL databases scale well as data grows. In addition, they are often malleable and flexible enough to accommodate semi-structured and sparse data sets. This comprehensive hands-on guide presents fundamental concepts and practical solutions for getting you ready to use NoSQL databases. Expert author Shashank Tiwari begins with a helpful introduction on the subject of NoSQL, explains its characteristics and typical uses, and looks at where it fits in the application stack. Unique insights help you choose which NoSQL solutions are best for solving your specific data storage needs. Professional NoSQL: Demystifies the concepts that relate to NoSQL databases, including column-family oriented stores, key/value databases, and document databases. Delves into installing and configuring a number of NoSQL products and the Hadoop family of products. Explains ways of storing, accessing, and querying data in NoSQL databases through examples that use MongoDB, HBase, Cassandra, Redis, CouchDB, Google App Engine Datastore and more. Looks at architecture and internals. Provides guidelines for optimal usage, performance tuning, and scalable configurations. Presents a number of tools and utilities relating to NoSQL, distributed platforms, and scalable processing, including Hive, Pig, RRDtool, Nagios, and more.

Design, administer, and deploy high-volume and fault-tolerant database applications using MongoDB 4.x Key Features Build a powerful and scalable MongoDB database using real industry data Understand the process of designing NoSQL schema with the latest release of MongoDB 4.x Explore the ins and outs of MongoDB, including queries, replication, sharding, and vital admin tasks Book Description When it comes to managing a high volume of unstructured and non-relational datasets, MongoDB is the de facto database management system (DBMS) for DBAs and data architects. This updated book includes the latest release and covers every feature in MongoDB 4.x, while helping you get hands-on with building a MongoDB database app. You'll get to grips with MongoDB 4.x concepts such as indexes, database design, data modeling, authentication, and aggregation. As you progress, you'll cover tasks such as performing routine operations when developing a dynamic database-driven website. Using examples, you'll learn how to work with queries and regular database operations. The book will not only guide you through design and implementation,

but also help you monitor operations to achieve optimal performance and secure your MongoDB database systems. You'll also be introduced to advanced techniques such as aggregation, map-reduce, complex queries, and generating ad hoc financial reports on the fly. Later, the book shows you how to work with multiple collections as well as embedded arrays and documents, before finally exploring key topics such as replication, sharding, and security using practical examples. By the end of this book, you'll be well-versed with MongoDB 4.x and be able to perform development and administrative tasks associated with this NoSQL database. What you will learn Understand how to configure and install MongoDB 4.x Build a database-driven website using MongoDB as the backend Perform basic database operations and handle complex MongoDB queries Develop a successful MongoDB database design for large corporate customers with complex requirements Secure MongoDB database systems by establishing role-based access control with X.509 transport-level security Optimize reads and writes directed to a replica set or sharded cluster Perform essential MongoDB administration tasks Maintain database performance through monitoring Who this book is for This book is a MongoDB tutorial for DevOps engineers, database developers, database administrators, system administrators and those who are just getting started with NoSQL and looking to build document-oriented databases and gain real-world experience in managing databases using MongoDB. Basic knowledge of databases and Python is required to get started with this DBMS book.

MongoDB Tutorial***A basic guide with step-by-step instructions for the complete beginner MongoDB is an open source database management system (DBMS) that uses a document-oriented data model. It is considered a NoSQL database, as it doesn't use the relational model, and therefore doesn't use SQL as its query language. The document-oriented model enables MongoDB to store semi-structured data which doesn't require a fixed schema. It can achieve this through the use of JSON documents. MongoDB is also a cross platform DBMS, currently supporting Windows, Mac, Solaris, and various Linux distributions at the time of writing. A MongoDB database is different to a relational database in that, MongoDB uses a document-oriented model to store data. In the document-oriented model, data is stored within documents of a collection. In the relational model, data is stored within rows of a table. Good lucky !

Learn how to take full advantage of Apache Kafka, the distributed, publish-subscribe queue for handling real-time data feeds. With this comprehensive book, you will understand how Kafka works and how it is designed. Authors Neha Narkhede, Gwen Shapira, and Todd Palino show you how to deploy production Kafka clusters; secure, tune, and monitor them; write rock-solid applications that use Kafka; and build scalable stream-processing applications. Learn how Kafka compares to other queues, and where it fits in the big data ecosystem. Dive into Kafka's internal design Pick up best practices for developing applications that use Kafka. Understand the best way to deploy Kafka in production monitoring, tuning, and maintenance tasks. Learn how to secure a Kafka cluster. Get complete instructions for manipulating, processing, cleaning, and crunching datasets in Python. Updated for Python 3.6, the second edition of this hands-on guide is packed with practical case studies that show you how to solve a broad set of data analysis problems effectively. You'll learn the latest versions of pandas, NumPy, IPython, and Jupyter in the process. Written by Wes McKinney, the creator of the Python pandas project, this book is a practical, modern introduction to data science tools in Python. It's ideal for analysts new to Python and for Python programmers new to data science and scientific computing. Data files and related material are available on GitHub. Use the IPython shell and Jupyter notebook for exploratory computing Learn basic and advanced features in NumPy (Numerical Python) Get started with data analysis tools in the pandas library Use flexible tools to load, clean, transform, merge, and reshape data Create informative visualizations with matplotlib Apply the pandas groupby facility to slice, dice, and summarize datasets Analyze and manipulate regular and irregular time series data Learn how to solve real-world data analysis problems with thorough, detailed examples

Perform fast interactive analytics against different data sources using the Trino high-performance distributed SQL query engine. With this practical guide, you'll learn how to conduct analytics on data where it lives, whether it's Hive, Cassandra, a relational database, or a proprietary data store. Analysts, software engineers, and production engineers will learn how to manage, use, and even develop with Trino. Initially developed by Facebook, open source Trino is now used by Netflix, Airbnb, LinkedIn, Twitter, Uber, and many other companies. Matt Fuller, Manfred Moser, and Martin Traverso show you how a single Trino query can combine data from multiple sources to allow for analytics across your entire organization. Get started: Explore Trino's use cases and learn about tools that will help you connect to Trino and query data Go deeper: Learn Trino's internal workings, including how to connect to and query data sources with support for SQL statements, operators, functions, and more Put Trino in production: Secure Trino, monitor workloads, tune queries, and connect more applications; learn how other organizations apply Trino The "one-size-fits-all" thinking regarding traditional RDBMSs has been challenged in the last few years by the emergence of diver-

sified NoSQL databases. More than 120 NoSQL databases are now available in the market, and the market leader by far is MongoDB. With so many companies opting for MongoDB as their NoSQL database of choice, there's a need for a practical how-to combined with expert advice for getting the most out of the software. Beginning with a short introduction to the basics of NoSQL databases, MongoDB experts Navin Sabharwal and Shankata Gupta Edward introduce readers to MongoDB - the leading document based NoSQL database, acquainting them step by step with all aspects of MongoDB. They cover the data model, underlying architecture, how to code using Mongo Shell, and administration of the MongoDB platform, among other topics. The book also provides clear guidelines and practical examples for architecting and developing applications using the MongoDB platform and deploying them. Database developers, architects, and database administrators will find useful information covering all aspects of the MongoDB platform and how to put it to use practically. Practical Guide to MongoDB provides readers with: A solid understanding of NoSQL databases An understanding of how to get started with MongoDB Methodical coverage of the architecture, development, and administration of MongoDB A plethora of "How to's" enabling you to use the technology most efficiently to solve the problems you face Practical MongoDB is for those just starting to learning to work with NoSQL databases in general and MongoDB in particular. Skills in these areas are in demand, making this book essential reading for those who want to work more productively or break into big data work. It will prove equally useful for entrepreneurs and others who like to work with new technologies.

"MongoDB and Python" is a cookbook-style text to help Python programmers work with MongoDB. It is full of useful, practical recipes for solving real-world problems ranging from how to do fast geo queries for location-based apps to efficiently indexing your user documents for social-graph lookups to how best to integrate MongoDB with the Pyramid Web framework.

Assemble the complete stack required to build a modern web app using MongoDB, Express, React, and Node. This book also covers many other complementary tools: React Router, GraphQL, React-Bootstrap, Babel, and Webpack. This new edition will use the latest version of React (React 16) and the latest React Router (React Router 4), which has a significantly different approach to routing compared to React Router 2 which was used in the first edition of the book. Though the primary focus of Pro MERN Stack is to equip you with all that is required to build a full-fledged web application, a large portion of the book will be devoted to React 16. The popular MEAN (MongoDB, Express, AngularJS, Node) stack introduced Single Page Apps (SPAs) and front-end Model-View-Controller (MVC) as new and efficient paradigms. Facebook's React is a technology that competes indirectly with AngularJS. It is not a full-fledged MVC framework. It is a JavaScript library for building user interfaces (in some sense the View part). Yet, it is possible to build a web app by replacing AngularJS with React - hence the term MERN stack What You Will Learn Discover the features of React 16 to get the maximum out of this library Gain the basics of MongoDB, Express, and Node to build a web app Work with other libraries complementary to React, including React-Bootstrap, React Router, and GraphQL Use tools such as Babel and Webpack required to build JavaScript-based SPAs Tie all the components together to build a complete web app. Who This Book Is For Developers and architects who have prior experience in any web app stack other than the MERN stack will find the book useful to learn about this modern stack. Prior knowledge of JavaScript, HTML, and CSS is required.

Get to grips with a new technology, understand what it is and what it can do for you, and then get to work with the most important features and tasks. MongoDB Starter is a fast and practical guide designed to help you start developing high-performance and scalable applications using MongoDB. MongoDB Starter is ideal for developers who are new to MongoDB and who need a no-nonsense guide on how to start working with it. No knowledge of MongoDB is required to follow this book, but some knowledge of C++ would be helpful.

Get the most out of the rich development capabilities of SQL Server 2016 to build efficient database applications for your organization About This Book Utilize the new enhancements in Transactional and security features in SQL Server 2016 to build efficient database applications Work with temporal tables to get information about data stored in the table at any point in time A detailed guide to SQL Server 2016, introducing you to multiple new features and enhancements to improve your overall development experience Who This Book Is For This book is for database developers and solution architects who plan to use the new SQL Server 2016 features for developing efficient database applications. It is also ideal for experienced SQL Server developers who want to switch to SQL Server 2016 for its rich development capabilities. Some understanding of the basic database concepts and Transactional-SQL language is assumed. What You Will Learn Explore the new development features introduced in SQL Server 2016 Identify opportunities for In-Memory OLTP technology, significantly enhanced in SQL Server 2016 Use columnstore indexes to get significant storage and performance improvements Extend database design solutions using temporal tables Exchange JSON data between applications and SQL Server in a more efficient way Migrate histor-

ical data transparently and securely to Microsoft Azure by using Stretch Database Use the new security features to encrypt or to have more granular control over access to rows in a table Simplify performance troubleshooting with Query Store Discover the potential of R's integration with SQL Server In Detail Microsoft SQL Server 2016 is considered the biggest leap in the data platform history of the Microsoft, in the ongoing era of Big Data and data science. Compared to its predecessors, SQL Server 2016 offers developers a unique opportunity to leverage the advanced features and build applications that are robust, scalable, and easy to administer. This book introduces you to new features of SQL Server 2016 which will open a completely new set of possibilities for you as a developer. It prepares you for the more advanced topics by starting with a quick introduction to SQL Server 2016's new features and a recapitulation of the possibilities you may have already explored with previous versions of SQL Server. The next part introduces you to small delights in the Transact-SQL language and then switches to a completely new technology inside SQL Server - JSON support. We also take a look at the Stretch database, security enhancements, and temporal tables. The last chapters concentrate on implementing advanced topics, including Query Store, columnstore indexes, and In-Memory OLTP. You will finally be introduced to R and how to use the R language with Transact-SQL for data exploration and analysis. By the end of this book, you will have the required information to design efficient, high-performance database applications without any hassle. Style and approach This book is a detailed guide to mastering the development features offered by SQL Server 2016, with a unique learn-as-you-do approach. All the concepts are explained in a very easy-to-understand manner and are supplemented with examples to ensure that you—the developer—are able to take that next step in building more powerful, robust applications for your organization with ease.

Learn how to build dynamic web applications with Express, a key component of the Node/JavaScript development stack. In this hands-on guide, author Ethan Brown teaches you the fundamentals through the development of a fictional application that exposes a public website and a RESTful API. You'll also learn web architecture best practices to help you build single-page, multi-page, and hybrid web apps with Express. Express strikes a balance between a robust framework and no framework at all, allowing you a free hand in your architecture choices. With this book, frontend and backend engineers familiar with JavaScript will discover new ways of looking at web development. Create webpage templating system for rendering dynamic data Dive into request and response objects, middleware, and URL routing Simulate a production environment for testing and development Focus on persistence with document databases, particularly MongoDB Make your resources available to other programs with RESTful APIs Build secure apps with authentication, authorization, and HTTPS Integrate with social media, geolocation, and other third-party services Implement a plan for launching and maintaining your app Learn critical debugging skills This book covers Express 4.0.

Become a Node.js craftsman. About This Book This book will help readers to dive deeper into software development with Node.js and JavaScript Takes a craftsman approach to Node.js and object-orientation and test-driven development Crafts many of the small details of Node.js and through to fully-fledged web applications with REST Who This Book Is For This book is written to help you if you're working with Node.js already, but you want to move your craft to the next level with Node.js, so some working knowledge of Node.js is of course already assumed, so that we can look at the work of crafting applications with Node. What You Will Learn How to connect to databases like MongoDB and MySQL from your Node.js application How to unit tests and end-to-end tests for your code When and how to leverage migrations for setting up a continuous deployment workflow Detailed insight into how the Node Package Manager, NPM works How object-orientation actually works in JavaScript Ways to keep your code fast and efficient using asynchronous and non-blocking operations How to use and create event emitters How to use REST frameworks to write full-fledged web applications How to integrate Node.js with Angular In Detail The Node Craftsman Book helps JavaScript programmers with basic Node.js knowledge to now thoroughly master Node.js and JavaScript. This book dives you deeper into the craft of software development with Node.js and JavaScript, including object-orientation, test-driven development, database handling, web frameworks, and much more. The Node Craftsman Book shows you how to work with Node.js and how to think deeply about how you build your Node projects. You'll master how to build a complete Node.js application across six crafting milestones, and you'll learn many specific skills to achieve that mastery. These skills include how to work with the Node Package Manager in depth, how to connect your Node applications to databases, and how to write unit tests and end-to-end tests for your code. You'll experience the full Node.js development picture, and learn how to craft and control your Node.js applications - right through to fully-fledged web applications using REST, and integration with Angular applications. Style and approach This book builds on your early knowledge and experience of Node.js and takes a craftsman approach to understanding the whole picture more deeply and shaping your Node applications to perform the way a craftsman

would want. So, we take a thoughtful and broad thinking and coding approach to work with Node.js in this book.

You can choose several data access frameworks when building Java enterprise applications that work with relational databases. But what about big data? This hands-on introduction shows you how Spring Data makes it relatively easy to build applications across a wide range of new data access technologies such as NoSQL and Hadoop. Through several sample projects, you'll learn how Spring Data provides a consistent programming model that retains NoSQL-specific features and capabilities, and helps you develop Hadoop applications across a wide range of use-cases such as data analysis, event stream processing, and workflow. You'll also discover the features Spring Data adds to Spring's existing JPA and JDBC support for writing RDBMS-based data access layers. Learn about Spring's template helper classes to simplify the use of database-specific functionality Explore Spring Data's repository abstraction and advanced query functionality Use Spring Data with Redis (key/value store), HBase (column-family), MongoDB (document database), and Neo4j (graph database) Discover the GemFire distributed data grid solution Export Spring Data JPA-managed entities to the Web as RESTful web services Simplify the development of HBase applications, using a lightweight object-mapping framework Build example big-data pipelines with Spring Batch and Spring Integration

Learn how to build web applications efficiently using ASP.NET Core 5 with the C# programming language and related frameworks Key FeaturesBuild web apps and services and cross-platform applications using .NET and C#Understand different web programming concepts with the help of real-world examplesExplore the new features and APIs in ASP.NET Core 5, EF Core, Visual Studio, and BlazorBook Description ASP.NET Core 5 for Beginners is a comprehensive introduction for those who are new to the framework. This condensed guide takes a practical and engaging approach to cover everything that you need to know to start using ASP.NET Core for building cloud-ready, modern web applications. The book starts with a brief introduction to the ASP.NET Core framework and highlights the new features in its latest release, ASP.NET Core 5. It then covers the improvements in cross-platform support, the view engines that will help you to understand web development, and the new frontend technologies available with Blazor for building interactive web UIs. As you advance, you'll learn the fundamentals of the different frameworks and capabilities that ship with ASP.NET Core. You'll also get to grips with securing web apps with identity implementation, unit testing, and the latest in containers and cloud-native to deploy them to AWS and Microsoft Azure. Throughout the book, you'll find clear and concise code samples that illustrate each concept along with the strategies and techniques that will help to develop scalable and robust web apps. By the end of this book, you'll have learned how to leverage ASP.NET Core 5 to build and deploy dynamic websites and services in a variety of real-world scenarios. What you will learnExplore the new features and APIs introduced in ASP.NET Core 5 and BlazorPut basic ASP.NET Core 5 concepts into practice with the help of clear and simple samplesWork with Entity Framework Core and its different workflows to implement your application's data accessDiscover the different web frameworks that ASP.NET Core 5 offers for building web appsGet to grips with the basics of building RESTful web APIs to work with real dataDeploy your web apps in AWS, Azure, and Docker containersWork with SignalR to add real-time notifications to your appWho this book is for This book is for developers who want to learn how to develop web-based applications using the ASP.NET Core framework. Familiarity with the C# language and a basic understanding of HTML and CSS is required to get the most out of this book.

With modern tools, it is possible to create a production grade, full-stack application using HTML, CSS, and JavaScript alone. The combination of MongoDB, Express, AngularJS, and Node.js has become so popular that it has earned the title MEAN stack -- the subject of this book. This book explores the MEAN stack in detail. We will begin by covering Node.js, as it will lay the groundwork for all of our server-side work. You will learn how to get Node running on your local machine as well as download modules using npm. The key aspects of the Node.js programming model will also be covered. From there, we will move on to MongoDB, where you'll learn how to interact with Mongo from a Node application. You will also learn how to create, retrieve, update, and delete data from a Mongo store. After you have a solid grasp on Node and Mongo, the book will move on to the Express web server. We'll cover the basics of Express applications via topics like routes and middleware. Building on previous chapters, we will cover the integration of Node, Mongo, and Express. Our coverage of the MEAN stack will wrap up with several chapters on AngularJS. These chapters will cover Angular fundamentals like data binding, directives, controllers, routing, and services. In an effort to explore competing technologies, a slight introduction to Ember.js will also be provided. Full stack JavaScript is not fully encompassed by the MEAN stack. There is an entire ecosystem of JavaScript tools to learn about, and this book will introduce a few of them. We will cover task runners Gulp.js and Grunt.js which are extremely useful for automating mundane, repetitive tasks. We'll also cover JSHint, a linting tool used to improve code quality. Linting tools analyze source code and report potentials issues - a feature that is espe-

cially useful in non-compiled languages like JavaScript.

Manage the huMONGOus amount of data collected through your web application with MongoDB. This authoritative introduction—written by a core contributor to the project—shows you the many advantages of using document-oriented databases, and demonstrates how this reliable, high-performance system allows for almost infinite horizontal scalability. This updated second edition provides guidance for database developers, advanced configuration for system administrators, and an overview of the concepts and use cases for other people on your project. Ideal for NoSQL newcomers and experienced MongoDB users alike, this guide provides numerous real-world schema design examples. Get started with MongoDB core concepts and vocabulary Perform basic write operations at different levels of safety and speed Create complex queries, with options for limiting, skipping, and sorting results Design an application that works well with MongoDB Aggregate data, including counting, finding distinct values, grouping documents, and using MapReduce Gather and interpret statistics about your collections and databases Set up replica sets and automatic failover in MongoDB Use sharding to scale horizontally, and learn how it impacts applications Delve into monitoring, security and authentication, backup/restore, and other administrative tasks

MongoDB, a cross-platform NoSQL database, is the fastest-growing new database in the world. MongoDB provides a rich document-oriented structure with dynamic queries that you'll recognize from RDBMS offerings such as MySQL. In other words, this is a book about a NoSQL database that does not require the SQL crowd to re-learn how the database world works! MongoDB has reached 1.0 and boasts 50,000+ users. The community is strong and vibrant and MongoDB is improving at a fast rate. With scalable and fast databases becoming critical for today's applications, this book shows you how to install, administer and program MongoDB without pretending SQL never existed.

Take your distributed applications to the next level and see what the reference architectures associated with microservices can do for you. This book begins by showing you the distributed computing architecture landscape and provides an in-depth view of microservices architecture. Following this, you will work with CQRS, an essential pattern for microservices, and get a view of how distributed messaging works. Moving on, you will take a deep dive into Spring Boot and Spring Cloud. Coming back to CQRS, you will learn how event-driven microservices work with this pattern, using the Axon 2 framework. This takes you on to how transactions work with microservices followed by advanced architectures to address non-functional aspects such as high availability and scalability. In the concluding part of the book you develop your own enterprise-grade microservices application using the Axon framework and true BASE transactions, while making it as secure as possible. What You Will Learn Shift from monolith architecture to microservices Work with distributed and ACID transactionsBuild solid architectures without two-phase commit transactions Discover the high availability principles in microservices Who This Book Is For Java developers with basic knowledge of distributed and multi-threaded application architecture, and no knowledge of Spring Boot or Spring Cloud. Knowledge of CQRS and event-driven architecture is not mandatory as this book will cover these in depth.

This is a hands-on book which introduces you to agile JavaScript web and mobile software development using the latest cutting-edge front-end and back-end technologies including: Node.js, MongoDB, Backbone.js, Parse.com, Heroku and Windows Azure. Practical examples include building multiple versions of the Chat app: •jQuery + Parse.com JS REST API•Backbone and Parse.com JS SDK•Backbone and Node.js•Backbone and Node.js + MongoDB The Chat application has all the foundation of a typical web/mobile application: fetching data, displaying it, submitting new data. Other examples in the book are as follows:•jQuery + Twitter RESP API "Tweet Analyzer"•Parse.com "Save John"•MongoDB "Print Collections"•Backbone.js "Apple Database"•Monk + Express.js "REST API Server" This book will save you many hours by providing a hand-picked and tested collection of quick start guides. RPJS has practical examples that allow to spend less time learning and more time building your own applications. Prototype fast and ship code that matters! What You will Learn: You should expect a basic understanding from a collection of quick start guides, tutorials and suggestions for the development apps discussed in this book. In addition to coding examples, the book covers virtually all setup and deployment step-by-step. You'll learn from the examples of Chat web/mobile applications starting with front-end components and by the end we'll put front-end and back-end together and deploy to the production environment. Who This Book is For: The typical programmer who wants to learn more about effective JavaScript coding.

Finding the power of MEAN (MongoDB, Express, Angular, and Node) stack to build modern web application. This book helps you how to develop web application based MEAN stack with hands-on-lab approach. The book volume 1 explores how to get started with MEAN stack with several code samples. The following is highlight topics in this book: * Preparing Development Environment * Basic Routing * Input and Form Handling * Data Binding and Templates * MongoDB Data Modeling * Express Routes and Middleware * Cookie and Session * Error handling * Building RESTful Application * Data paging

JavaScript is the little scripting language that could. Once used chiefly to add interactivity to web browser windows, JavaScript is now a primary building block of powerful and robust applications. In this practical book, new and experienced JavaScript developers will learn how to use this language to create APIs as well as web, mobile, and desktop applications. Author and engineering leader Adam D. Scott covers technologies such as Node.js, GraphQL, React, React Native, and Electron. Ideal for developers who want to build full stack applications and ambitious web development beginners looking to bootstrap a startup, this book shows you how to create a single CRUD-style application that will work across several platforms. Explore GraphQL's simple process for querying data. Learn about shared authentication for APIs, web apps, and native applications. Build performant web applications with React and Styled Components. Use React Native to write cross-platform applications for iOS and Android that compile to native code. Learn how to write desktop applications with Electron. Learn how to deploy and monitor databases in the cloud, manipulate documents, visualize data, and build applications running on MongoDB using Node.js. Key Features: Learn the fundamentals of NoSQL databases with MongoDB. Create, manage, and optimize a MongoDB database in the cloud using Atlas. Use a real-world dataset to gain practical experience of handling big data. Book Description: MongoDB is one of the most popular database technologies for handling large collections of data. This book will help MongoDB beginners develop the knowledge and skills to create databases and process data efficiently. Unlike other MongoDB books, MongoDB Fundamentals dives into cloud computing from the very start - showing you how to get started with Atlas in the first chapter. You will discover how to modify existing data, add new data into a database, and handle complex queries by creating aggregation pipelines. As you progress, you'll learn about the MongoDB replication architecture and configure a simple cluster. You will also get to grips with user authentication, as well as techniques for backing up and restoring data. Finally, you'll perform data visualization using MongoDB Charts. You will work on realistic projects that are presented as bitesize exercises and activities, allowing you to challenge yourself in an enjoyable and attainable

way. Many of these mini-projects are based around a movie database case study, while the last chapter acts as a final project where you will use MongoDB to solve a real-world problem based on a bike-sharing app. By the end of this book, you'll have the skills and confidence to process large volumes of data and tackle your own projects using MongoDB. What you will learn: Set up and use MongoDB Atlas on the cloud. Insert, update, delete, and retrieve data from MongoDB. Build aggregation pipelines to perform complex queries. Optimize queries using indexes. Monitor databases and manage user authorization. Improve scalability and performance with sharding clusters. Replicate clusters, back up your database, and restore data. Create data-driven charts and reports from real-time data. Who this book is for: This book is designed for people who are new to MongoDB. It is suitable for developers, database administrators, system administrators, and cloud architects who are looking to use MongoDB for smooth data processing in the cloud. Although not necessary, basic knowledge of a general programming language and experience with other databases will help you grasp the topics covered more easily. Harness the power of SQL Server 2017 Integration Services to build your data integration solutions with ease. About This Book: Acquaint yourself with all the newly introduced features in SQL Server 2017 Integration Services Program and extend your packages to enhance their functionality. This detailed, step-by-step guide covers everything you need to develop efficient data integration and data transformation solutions for your organization. Who This Book Is For: This book is ideal for software engineers, DW/ETL architects, and ETL developers who need to create a new, or enhance an existing, ETL implementation with SQL Server 2017 Integration Services. This book would also be good for individuals who develop ETL solutions that use SSIS and are keen to learn the new features and capabilities in SSIS 2017. What You Will Learn: Understand the key components of an ETL solution using SQL Server 2016-2017 Integration Services. Design the architecture of a modern ETL solution. Have a good knowledge of the new capabilities and features added to Integration Services. Implement ETL solutions using Integration Services for both on-premises and Azure data. Improve the performance and scalability of an ETL solution. Enhance the ETL solution using a custom framework. Be able to

work on the ETL solution with many other developers and have common design paradigms or techniques. Effectively use scripting to solve complex data issues. In Detail: SQL Server Integration Services is a tool that facilitates data extraction, consolidation, and loading options (ETL), SQL Server coding enhancements, data warehousing, and customizations. With the help of the recipes in this book, you'll gain complete hands-on experience of SSIS 2017 as well as the 2016 new features, design and development improvements including SCD, Tuning, and Customizations. At the start, you'll learn to install and set up SSIS as well other SQL Server resources to make optimal use of this Business Intelligence tools. We'll begin by taking you through the new features in SSIS 2016/2017 and implementing the necessary features to get a modern scalable ETL solution that fits the modern data warehouse. Through the course of chapters, you will learn how to design and build SSIS data warehouses packages using SQL Server Data Tools. Additionally, you'll learn to develop SSIS packages designed to maintain a data warehouse using the Data Flow and other control flow tasks. You'll also be demonstrated many recipes on cleansing data and how to get the end result after applying different transformations. Some real-world scenarios that you might face are also covered and how to handle various issues that you might face when designing your packages. At the end of this book, you'll get to know all the key concepts to perform data integration and transformation. You'll have explored on-premises Big Data integration processes to create a classic data warehouse, and will know how to extend the toolbox with custom tasks and transforms. Style and approach: This cookbook follows a problem-solution approach and tackles all kinds of data integration scenarios by using the capabilities of SQL Server 2016 Integration Services. This book is well supplemented with screenshots, tips, and tricks. Each recipe focuses on a particular task and is written in a very easy-to-follow manner. This book is designed to introduce you to using containers and Kubernetes for full-stack development. You'll learn how to develop a full-stack application using Node.js and MongoDB and how to and manage them using Docker, then Docker Compose, and finally Kubernetes.