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KEY=SPARK - KADE ZIMMERMAN

SPARK 2014 User's Guide Release 19.0w SPARK 2014 is a programming language and a set of verification tools designed to meet the needs of high-assurance software development. SPARK 2014 is based on Ada 2012, both subsetting the language to remove features that defy verification, but also extending the system of contracts and aspects to support modular, formal verification. This manual is available online for free at adacore.com. This manual is printed in grayscale. Spark: The Definitive Guide Big Data Processing Made Simple "O'Reilly Media, Inc." Learn how to use, deploy, and maintain Apache Spark with this comprehensive guide, written by the creators of the open-source cluster-computing framework. With an emphasis on improvements and new features in Spark 2.0, authors Bill Chambers and Matei Zaharia break down Spark topics into distinct sections, each with unique goals. Youâ??ll explore the basic operations and common functions of Sparkâ??s structured APIs, as well as Structured Streaming, a new high-level API for building end-to-end streaming applications. Developers and system administrators will learn the fundamentals of monitoring, tuning, and debugging Spark, and explore machine learning techniques and scenarios for employing MLlib, Sparkâ??s scalable machine-learning library. Get a gentle overview of big data and Spark Learn about DataFrames, SQL, and Datasetsâ??Sparkâ??s core APIsâ??through worked examples Dive into Sparkâ??s low-level APIs, RDDs, and execution of SQL and DataFrames Understand how Spark runs on a cluster Debug, monitor, and tune Spark clusters and applications Learn the power of Structured Streaming, Sparkâ??s stream-processing engine Learn how you can apply MLlib to a variety of problems, including classification or recommendation HDPSCD-Hortonworks® Spark Scala Certification Guide Unofficial, Owned & Prepared by HadoopExam.com HadoopExam Learning Resources Apache® Spark is one of the fastest growing technology in BigData computing world. It supports multiple programming languages like Java, Scala, Python and R. Hence, many existing and new framework started to integrate Spark platform as well in their platform e.g. Hadoop, Cassandra, EMR etc. While creating Spark certification material HadoopExam technical team found that there is no proper material and book is available for the Spark (version 2.x) which covers the concepts as well as use of various features and found difficulty in creating the material. Therefore, they decided to create full length book for Spark (HDPSCD Spark Scala Certification) and outcome of that is this book. In this book technical team try to cover both fundamental concepts of Spark 2.x topics which are part of the certification syllabus as well as add as many exercises as possible and in current version we have around 10 hands on exercises added which you can execute on the Hortonworks sandbox, as this book is focused on the Scala version of the certification, hence all the exercises and their solution provided in the Scala. We have divided the entire book in the 7 chapters, as you move ahead chapter by chapter you would be comfortable with the HDPSCD Spark Scala certification. All the exercises given in this book are written using Scala. However, concepts remain same even if you are using different programming language. Apache Spark Quick Start Guide Quickly Learn the Art of Writing Efficient Big Data Applications with Apache Spark Packt Publishing A practical guide for solving complex data processing challenges by applying the best optimizations techniques in Apache Spark. Key Features Learn about the core concepts and the latest developments in Apache Spark Master writing efficient big data applications with Spark's built-in modules for SQL, Streaming, Machine Learning and Graph analysis Get introduced to a variety of optimizations based on the actual experience Book Description Apache Spark is a flexible framework that allows processing of batch and real-time data. Its unified engine has made it quite popular for big data use cases. This book will help you to get started with Apache Spark 2.0 and write big data applications for a variety of use cases. It will also introduce you to Apache Spark - one of the most popular Big Data processing frameworks. Although this book is intended to help you get started with Apache Spark, but it also focuses on explaining the core concepts. This practical guide provides a quick start to the Spark 2.0 architecture and its components. It teaches you how to set up Spark on your local machine. As we move ahead, you will be introduced to resilient distributed datasets (RDDs) and DataFrame APIs, and their corresponding transformations and actions. Then, we move on to the life cycle of a Spark application and learn about the techniques used to debug slow-running applications. You will also go through Spark's built-in modules for SQL, streaming, machine learning, and graph analysis. Finally, the book will lay out the best practices and optimization techniques that are key for writing efficient Spark applications. By the end of this book, you will have a sound fundamental understanding of the Apache Spark framework and you will be able to write and optimize Spark applications. What you will learn Learn core concepts such as RDDs, DataFrames, transformations, and more Set up a Spark development environment Choose the right APIs for your applications Understand Spark's architecture and the execution flow of a Spark application Explore built-in modules for SQL, streaming, ML, and graph analysis Optimize your Spark job for better performance Who this book is for If you are a big data enthusiast and love processing huge amount of data, this book is for you. If you are data engineer and looking for the best optimization techniques for your Spark applications, then you will find this book

helpful. This book also helps data scientists who want to implement their machine learning algorithms in Spark. You need to have a basic understanding of any one of the programming languages such as Scala, Python or Java. Guide to High Performance Distributed Computing Case Studies with Hadoop, Scalding and Spark Springer This timely text/reference describes the development and implementation of large-scale distributed processing systems using open source tools and technologies. Comprehensive in scope, the book presents state-of-the-art material on building high performance distributed computing systems, providing practical guidance and best practices as well as describing theoretical software frameworks. Features: describes the fundamentals of building scalable software systems for large-scale data processing in the new paradigm of high performance distributed computing; presents an overview of the Hadoop ecosystem, followed by step-by-step instruction on its installation, programming and execution; Reviews the basics of Spark, including resilient distributed datasets, and examines Hadoop streaming and working with Scalding; Provides detailed case studies on approaches to clustering, data classification and regression analysis; Explains the process of creating a working recommender system using Scalding and Spark. Spark 2014 User's Guide Samurai Media Limited SPARK 2014 is a programming language and a set of verification tools designed to meet the needs of high-assurance software development. SPARK 2014 is based on Ada 2012, both subsetting the language to remove features that defy verification, but also extending the system of contracts and aspects to support modular, formal verification. The new aspects support abstraction and refinement and facilitate deep static analysis to be performed including flow analysis and formal verification of an implementation against a specification. SPARK 2014 is a much larger and more flexible language than its predecessor SPARK 2005. The language can be configured to suit a number of application domains and standards, from server-class high-assurance systems (such as air-traffic management applications), to embedded, hard real-time, critical systems (such as avionic systems complying with DO-178C Level A). A major feature of SPARK 2014 is the support for a mixture of proof and other verification methods such as testing, which facilitates in particular the use of unit proof in place of unit testing; an approach now formalized in DO-178C and the DO-333 formal methods supplement. Certain units may be formally proven and other units validated through testing. Building High Integrity Applications with SPARK Cambridge University Press This is the first introduction to the SPARK 2014 language and the tools to verify programs for safety- and security-critical applications. Guide for Databricks® Spark Python (PySpark) CRT020 Certification Unofficial HadoopExam Learning Resources Apache® Spark is one of the fastest growing technology in BigData computing world. It supports multiple programming languages like Java, Scala, Python and R. Hence, many existing and new framework started to integrate Spark platform as well in their platform for instance Hadoop, Cassandra, EMR etc. While creating Spark certification material HadoopExam Engineering team found that there is no proper material and book is available for the Spark (version 2.x) which covers the concepts as well as use of various features and found difficulty in creating the material. Therefore, they decided to create full length book for Spark (Databricks® CRT020 Spark Scala/Python or PySpark Certification) and outcome of that is this book. In this book technical team try to cover both fundamental concepts of Spark 2.x topics which are part of the certification syllabus as well as add as many exercises as possible and in current version we have around 46 hands on exercises added which you can execute on the Databricks community edition, because each of this exercises tested on that platform as well, as this book is focused on the PySpark version of the certification, hence all the exercises and their solution provided in the Python. This book is divided in 13 chapters, as you move ahead chapter by chapter you would be comfortable with the Databricks Spark Python certification (CRT020). Same exercises you can convert into different programming language like Java, Scala & R as well. Its more about the syntax. Apache Spark Quick Start Guide Quickly learn the art of writing efficient big data applications with Apache Spark Packt Publishing Ltd A practical guide for solving complex data processing challenges by applying the best optimizations techniques in Apache Spark. Key FeaturesLearn about the core concepts and the latest developments in Apache SparkMaster writing efficient big data applications with Spark's built-in modules for SQL, Streaming, Machine Learning and Graph analysisGet introduced to a variety of optimizations based on the actual experienceBook Description Apache Spark is a flexible framework that allows processing of batch and real-time data. Its unified engine has made it quite popular for big data use cases. This book will help you to get started with Apache Spark 2.0 and write big data applications for a variety of use cases. It will also introduce you to Apache Spark – one of the most popular Big Data processing frameworks. Although this book is intended to help you get started with Apache Spark, but it also focuses on explaining the core concepts. This practical guide provides a quick start to the Spark 2.0 architecture and its components. It teaches you how to set up Spark on your local machine. As we move ahead, you will be introduced to resilient distributed datasets (RDDs) and DataFrame APIs, and their corresponding transformations and actions. Then, we move on to the life cycle of a Spark application and learn about the techniques used to debug slow-running applications. You will also go through Spark's built-in modules for SQL, streaming, machine learning, and graph analysis. Finally, the book will lay out the best practices and optimization techniques that are key for writing efficient Spark applications. By the end of this book, you will have a sound fundamental understanding of the Apache Spark framework and you will be able to write and optimize Spark applications. What you will learnLearn core concepts such as RDDs, DataFrames, transformations, and moreSet up a Spark development environmentChoose the right APIs for your applicationsUnderstand Spark's architecture and the execution flow of a Spark applicationExplore built-in modules for SQL, streaming, ML, and graph analysisOptimize your Spark job for better performanceWho this book is for If you are a big data enthusiast and love processing huge amount of data, this book is for you. If you are data engineer and looking for the best optimization techniques for your Spark applications, then you will find this book helpful. This book also helps data scientists who want to implement their machine learning algorithms in Spark. You need to have a basic understanding of any one of the programming languages such as Scala, Python or Java. Learning Spark O'Reilly Media 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 walk-throughs, 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 Aircooled VW Engine Interchange Manual : The User's Guide to Original and Aftermarket Parts... Big Data Analytics with Spark A Practitioner's Guide to Using Spark for Large Scale Data Analysis Apress Big Data Analytics with Spark is a step-by-step guide for learning Spark, which is an open-source fast and general-purpose cluster computing framework for large-scale data analysis. You will learn how to use Spark for different types of big data analytics projects, including batch, interactive, graph, and stream data analysis as well as machine learning. In addition, this book will help you become a much sought-after Spark expert. Spark is one of the hottest Big Data technologies. The amount of data generated today by devices, applications and users is exploding. Therefore, there is a critical need for tools that can analyze large-scale data and unlock value from it. Spark is a powerful technology that meets that need. You can, for example, use Spark to perform low latency computations through the use of efficient caching and iterative algorithms; leverage the features of its shell for easy and interactive Data analysis; employ its fast batch processing and low latency features to process your real time data streams and so on. As a result, adoption of Spark is rapidly growing and is replacing Hadoop MapReduce as the technology of choice for big data analytics. This book provides an introduction to Spark and related big-data technologies. It covers Spark core and its add-on libraries, including Spark SQL, Spark Streaming, GraphX, and MLlib. Big Data Analytics with Spark is therefore written for busy professionals who prefer learning a new technology from a consolidated source instead of spending countless hours on the Internet trying to pick bits and pieces from different sources. The book also provides a chapter on Scala, the hottest functional programming language, and the program that underlies Spark. You'll learn the basics of functional programming in Scala, so that you can write Spark applications in it. What's more, Big Data Analytics with Spark provides an introduction to other big data technologies that are commonly used along with Spark, like Hive, Avro, Kafka and so on. So the book is self-sufficient; all the technologies that you need to know to use Spark are covered. The only thing that you are expected to know is programming in any language. There is a critical shortage of people with big data expertise, so companies are willing to pay top dollar for people with skills in areas like Spark and Scala. So reading this book and absorbing its principles will provide a boost—possibly a big boost—to your career. Donny's Unauthorized Technical Guide to Harley Davidson 1936 to Present Volume Ii: Performancing the Twin Cam iUniverse Donny is the Winner of the 2012 International Book Awards. Donny Petersen offers the real deal in performancing your Harley-Davidson Twin Cam. Graphics, pictures, and charts guide the reader on a sure-footed journey to a thorough H-D Twin Cam performance understanding. Petersen's insight makes technical issues understandable even for the novice. Donny simply explains what unfailingly works in performancing the Twin Cam. This is the second volume of Petersen's long-awaited Donny's Unauthorized Technical Guide to Harley Davidson 1936 to Present. This twelve-volume series by the dean of motorcycle technology examines the theory, design, and practical aspects of Twin Cam performance. Donny studied privately with Harley-Davidson engineers, having worked on Harleys for over 35 years. He founded Toronto's Heavy Duty Cycles in 1974, North America's premier motorcycle shop. Donny has ridden hundreds of performanced Shovels, Evos, and Twin Cams across four continents doing all of his own roadside repairs. He has acquired his practical knowledge the hard way. Donny has the privilege of sharing his performance secrets the easy way. Donny will walk you through detailed performancing procedures like headwork, turbo-supercharging, nitrous, big-inch Harleys and completing simple hop-up procedures like air breathers, exhausts, and ignition modifications. Donny Petersen feels honored to share the wealth of his motorcycle knowledge and technical expertise. Spark Big Data Cluster Computing in Production John Wiley & Sons Production-targeted Spark guidance with real-world use cases Spark: Big Data Cluster Computing in Production goes beyond general Spark overviews to provide targeted guidance toward using lightning-fast big-data clustering in production. Written by an expert team well-known in the big data community, this book walks you through the challenges in moving from proof-of-concept or demo Spark applications to live Spark in production. Real use cases provide deep insight into common problems, limitations, challenges, and opportunities, while expert tips and tricks help you get the most out of Spark performance. Coverage includes Spark SQL, Tachyon, Kerberos, ML Lib, YARN, and Mesos, with clear, actionable guidance on resource scheduling, db connectors, streaming, security, and much more. Spark has become the tool of choice for many Big Data problems, with more active contributors than any other Apache Software project. General introductory books abound, but this book is the first to provide deep insight and real-world advice on using Spark in production. Specific guidance, expert tips, and invaluable foresight make this guide an incredibly useful resource for real production settings. Review Spark hardware requirements and estimate cluster size Gain insight from real-world production use cases Tighten security, schedule resources, and fine-tune performance Overcome common problems encountered using Spark in production Spark works with other big data tools including MapReduce and Hadoop, and uses languages you already know like Java, Scala, Python, and R. Lightning speed makes Spark too good to pass up, but understanding limitations and challenges in advance goes a long way toward easing actual production implementation. Spark: Big Data Cluster Computing in Production tells you everything you need to know, with real-world production insight and expert guidance, tips, and tricks. Mastering Spark with R The Complete Guide to Large-Scale Analysis and Modeling "O'Reilly Media, Inc." If you're like most R users, you have deep knowledge and love for statistics. But as your organization continues to collect huge amounts of data, adding tools such as Apache Spark makes a lot of sense. With this practical book, data scientists and professionals working with large-scale data

applications will learn how to use Spark from R to tackle big data and big compute problems. Authors Javier Luraschi, Kevin Kuo, and Edgar Ruiz show you how to use R with Spark to solve different data analysis problems. This book covers relevant data science topics, cluster computing, and issues that should interest even the most advanced users. Analyze, explore, transform, and visualize data in Apache Spark with R Create statistical models to extract information and predict outcomes; automate the process in production-ready workflows Perform analysis and modeling across many machines using distributed computing techniques Use large-scale data from multiple sources and different formats with ease from within Spark Learn about alternative modeling frameworks for graph processing, geospatial analysis, and genomics at scale Dive into advanced topics including custom transformations, real-time data processing, and creating custom Spark extensions Ingramspark & Lightning Source User Guide An Easy-To-Follow Seven Step Process For You: Difference Between Ingram Spark And Lightning Source Self-publishing is the publication of media by its author without the involvement of an established publisher. The term usually refers to written media, such as books and magazines, either as an ebook or as a physical copy using POD technology. What if you had a step-by-step mentor with years of experience? Someone who could show you the pathway to publication while avoiding the brambles that are blocking your way. What if this guide could allay your publishing fears and cut through the overwhelm? What if you had a map to follow that explained the steps in simple terms you understood? Whether you are doing it all yourself or hiring design help, you will find the answers you need to move forward quickly, efficiently, and affordably, all while creating a quality product you can sell profitably. Are you willing to travel this path alone and hope your noobie mistakes don't cause your bestseller to flop? Or are you ready to reach for a knowledgeable guide? Mastering Spark with R The Complete Guide to Large-Scale Analysis and Modeling O'Reilly Media If you're like most R users, you have deep knowledge and love for statistics. But as your organization continues to collect huge amounts of data, adding tools such as Apache Spark makes a lot of sense. With this practical book, data scientists and professionals working with large-scale data applications will learn how to use Spark from R to tackle big data and big compute problems. Authors Javier Luraschi, Kevin Kuo, and Edgar Ruiz show you how to use R with Spark to solve different data analysis problems. This book covers relevant data science topics, cluster computing, and issues that should interest even the most advanced users. Analyze, explore, transform, and visualize data in Apache Spark with R Create statistical models to extract information and predict outcomes; automate the process in production-ready workflows Perform analysis and modeling across many machines using distributed computing techniques Use large-scale data from multiple sources and different formats with ease from within Spark Learn about alternative modeling frameworks for graph processing, geospatial analysis, and genomics at scale Dive into advanced topics including custom transformations, real-time data processing, and creating custom Spark extensions Spark: The Definitive Guide Big Data Processing Made Simple "O'Reilly Media, Inc." Learn how to use, deploy, and maintain Apache Spark with this comprehensive guide, written by the creators of the open-source cluster-computing framework. With an emphasis on improvements and new features in Spark 2.0, authors Bill Chambers and Matei Zaharia break down Spark topics into distinct sections, each with unique goals. You'll explore the basic operations and common functions of Spark's structured APIs, as well as Structured Streaming, a new high-level API for building end-to-end streaming applications. Developers and system administrators will learn the fundamentals of monitoring, tuning, and debugging Spark, and explore machine learning techniques and scenarios for employing MLlib, Spark's scalable machine-learning library. Get a gentle overview of big data and Spark Learn about DataFrames, SQL, and Datasets—Spark's core APIs—through worked examples Dive into Spark's low-level APIs, RDDs, and execution of SQL and DataFrames Understand how Spark runs on a cluster Debug, monitor, and tune Spark clusters and applications Learn the power of Structured Streaming, Spark's stream-processing engine Learn how you can apply MLlib to a variety of problems, including classification or recommendation Learning Apache Spark 2 Packt Publishing Ltd Learn about the fastest-growing open source project in the world, and find out how it revolutionizes big data analytics About This Book Exclusive guide that covers how to get up and running with fast data processing using Apache Spark Explore and exploit various possibilities with Apache Spark using real-world use cases in this book Want to perform efficient data processing at real time? This book will be your one-stop solution. Who This Book Is For This guide appeals to big data engineers, analysts, architects, software engineers, even technical managers who need to perform efficient data processing on Hadoop at real time. Basic familiarity with Java or Scala will be helpful. The assumption is that readers will be from a mixed background, but would be typically people with background in engineering/data science with no prior Spark experience and want to understand how Spark can help them on their analytics journey. What You Will Learn Get an overview of big data analytics and its importance for organizations and data professionals Delve into Spark to see how it is different from existing processing platforms Understand the intricacies of various file formats, and how to process them with Apache Spark. Realize how to deploy Spark with YARN, MESOS or a Stand-alone cluster manager. Learn the concepts of Spark SQL, SchemaRDD, Caching and working with Hive and Parquet file formats Understand the architecture of Spark MLLib while discussing some of the off-the-shelf algorithms that come with Spark. Introduce yourself to the deployment and usage of SparkR. Walk through the importance of Graph computation and the graph processing systems available in the market Check the real world example of Spark by building a recommendation engine with Spark using ALS. Use a Telco data set, to predict customer churn using Random Forests. In Detail Spark juggernaut keeps on rolling and getting more and more momentum each day. Spark provides key capabilities in the form of Spark SQL, Spark Streaming, Spark ML and Graph X all accessible via Java, Scala, Python and R. Deploying the key capabilities is crucial whether it is on a Standalone framework or as a part of existing Hadoop installation and configuring with Yarn and Mesos. The next part of the journey after installation is using key components, APIs, Clustering, machine learning APIs, data pipelines, parallel programming. It is important to understand why each framework component is key, how widely it is being used, its stability and pertinent use cases. Once we understand the individual components, we will take a couple of real life advanced analytics examples such as 'Building a Recommendation system', 'Predicting customer churn' and so on. The

objective of these real life examples is to give the reader confidence of using Spark for real-world problems. Style and approach With the help of practical examples and real-world use cases, this guide will take you from scratch to building efficient data applications using Apache Spark. You will learn all about this excellent data processing engine in a step-by-step manner, taking one aspect of it at a time. This highly practical guide will include how to work with data pipelines, dataframes, clustering, SparkSQL, parallel programming, and such insightful topics with the help of real-world use cases. Machine Learning with Apache Spark Quick Start Guide Uncover patterns, derive actionable insights, and learn from big data using MLlib Packt Publishing Ltd Combine advanced analytics including Machine Learning, Deep Learning Neural Networks and Natural Language Processing with modern scalable technologies including Apache Spark to derive actionable insights from Big Data in real-time Key FeaturesMake a hands-on start in the fields of Big Data, Distributed Technologies and Machine LearningLearn how to design, develop and interpret the results of common Machine Learning algorithmsUncover hidden patterns in your data in order to derive real actionable insights and business valueBook Description Every person and every organization in the world manages data, whether they realize it or not. Data is used to describe the world around us and can be used for almost any purpose, from analyzing consumer habits to fighting disease and serious organized crime. Ultimately, we manage data in order to derive value from it, and many organizations around the world have traditionally invested in technology to help process their data faster and more efficiently. But we now live in an interconnected world driven by mass data creation and consumption where data is no longer rows and columns restricted to a spreadsheet, but an organic and evolving asset in its own right. With this realization comes major challenges for organizations: how do we manage the sheer size of data being created every second (think not only spreadsheets and databases, but also social media posts, images, videos, music, blogs and so on)? And once we can manage all of this data, how do we derive real value from it? The focus of Machine Learning with Apache Spark is to help us answer these questions in a hands-on manner. We introduce the latest scalable technologies to help us manage and process big data. We then introduce advanced analytical algorithms applied to real-world use cases in order to uncover patterns, derive actionable insights, and learn from this big data. What you will learnUnderstand how Spark fits in the context of the big data ecosystemUnderstand how to deploy and configure a local development environment using Apache SparkUnderstand how to design supervised and unsupervised learning modelsBuild models to perform NLP, deep learning, and cognitive services using Spark ML librariesDesign real-time machine learning pipelines in Apache SparkBecome familiar with advanced techniques for processing a large volume of data by applying machine learning algorithmsWho this book is for This book is aimed at Business Analysts, Data Analysts and Data Scientists who wish to make a hands-on start in order to take advantage of modern Big Data technologies combined with Advanced Analytics. Apache Spark Implementation on IBM z/OS IBM Redbooks The term big data refers to extremely large sets of data that are analyzed to reveal insights, such as patterns, trends, and associations. The algorithms that analyze this data to provide these insights must extract value from a wide range of data sources, including business data and live, streaming, social media data. However, the real value of these insights comes from their timeliness. Rapid delivery of insights enables anyone (not only data scientists) to make effective decisions, applying deep intelligence to every enterprise application. Apache Spark is an integrated analytics framework and runtime to accelerate and simplify algorithm development, depoyment, and realization of business insight from analytics. Apache Spark on IBM® z/OS® puts the open source engine, augmented with unique differentiated features, built specifically for data science, where big data resides. This IBM Redbooks® publication describes the installation and configuration of IBM z/OS Platform for Apache Spark for field teams and clients. Additionally, it includes examples of business analytics scenarios. Guidance Notebooks for the Environmental Assessment of Airport Development Projects: Users' guide High Performance Spark Best Practices for Scaling and Optimizing Apache Spark "O'Reilly Media, Inc." Apache Spark is amazing when everything clicks. But if you haven't seen the performance improvements you expected, or still don't feel confident enough to use Spark in production, this practical book is for you. Authors Holden Karau and Rachel Warren demonstrate performance optimizations to help your Spark queries run faster and handle larger data sizes, while using fewer resources. Ideal for software engineers, data engineers, developers, and system administrators working with large-scale data applications, this book describes techniques that can reduce data infrastructure costs and developer hours. Not only will you gain a more comprehensive understanding of Spark, you'll also learn how to make it sing. With this book, you'll explore: How Spark SQL's new interfaces improve performance over SQL's RDD data structure The choice between data joins in Core Spark and Spark SQL Techniques for getting the most out of standard RDD transformations How to work around performance issues in Spark's key/value pair paradigm Writing high-performance Spark code without Scala or the JVM How to test for functionality and performance when applying suggested improvements Using Spark MLlib and Spark ML machine learning libraries Spark's Streaming components and external community packages Spark in Action, Second Edition Covers Apache Spark 3 with Examples in Java, Python, and Scala Manning Publications Summary The Spark distributed data processing platform provides an easy-to-implement tool for ingesting, streaming, and processing data from any source. In Spark in Action, Second Edition, you'll learn to take advantage of Spark's core features and incredible processing speed, with applications including real-time computation, delayed evaluation, and machine learning. Spark skills are a hot commodity in enterprises worldwide, and with Spark's powerful and flexible Java APIs, you can reap all the benefits without first learning Scala or Hadoop. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Analyzing enterprise data starts by reading, filtering, and merging files and streams from many sources. The Spark data processing engine handles this varied volume like a champ, delivering speeds 100 times faster than Hadoop systems. Thanks to SQL support, an intuitive interface, and a straightforward multilanguage API, you can use Spark without learning a complex new ecosystem. About the book Spark in Action, Second Edition, teaches you to create end-to-end analytics applications. In this entirely new book, you'll learn from interesting Java-based examples, including a complete data pipeline for processing

NASA satellite data. And you'll discover Java, Python, and Scala code samples hosted on GitHub that you can explore and adapt, plus appendixes that give you a cheat sheet for installing tools and understanding Spark-specific terms. What's inside Writing Spark applications in Java Spark application architecture Ingestion through files, databases, streaming, and Elasticsearch Querying distributed datasets with Spark SQL About the reader This book does not assume previous experience with Spark, Scala, or Hadoop. About the author Jean-Georges Perrin is an experienced data and software architect. He is France's first IBM Champion and has been honored for 12 consecutive years. Table of Contents PART 1 - THE THEORY CRIPPLED BY AWESOME EXAMPLES 1 So, what is Spark, anyway? 2 Architecture and flow 3 The majestic role of the dataframe 4 Fundamentally lazy 5 Building a simple app for deployment 6 Deploying your simple app PART 2 - INGESTION 7 Ingestion from files 8 Ingestion from databases 9 Advanced ingestion: finding data sources and building your own 10 Ingestion through structured streaming PART 3 - TRANSFORMING YOUR DATA 11 Working with SQL 12 Transforming your data 13 Transforming entire documents 14 Extending transformations with user-defined functions 15 Aggregating your data PART 4 - GOING FURTHER 16 Cache and checkpoint: Enhancing Spark's performances 17 Exporting data and building full data pipelines 18 Exploring deployment Chevy Small-Block V-8 Interchange Manual, 2nd Edition Motorbooks The small-block Chevrolet engine is the most popular engine in the world among performance enthusiasts and racers. But with its popularity come certain problems, and this book is your step-by-step go-to manual. Apache Spark the Ultimate Step-By-Step Guide 5starcooks Will new equipment/products be required to facilitate Apache Spark delivery for example is new software needed? What sources do you use to gather information for a Apache Spark study? Has the Apache Spark work been fairly and/or equitably divided and delegated among team members who are qualified and capable to perform the work? Has everyone contributed? Why are Apache Spark skills important? Risk factors: what are the characteristics of Apache Spark that make it risky? Defining, designing, creating, and implementing a process to solve a challenge or meet an objective is the most valuable role... In EVERY group, company, organization and department. Unless you are talking a one-time, single-use project, there should be a process. Whether that process is managed and implemented by humans, AI, or a combination of the two, it needs to be designed by someone with a complex enough perspective to ask the right questions. Someone capable of asking the right questions and step back and say, 'What are we really trying to accomplish here? And is there a different way to look at it?' This Self-Assessment empowers people to do just that - whether their title is entrepreneur, manager, consultant, (Vice-)President, CxO etc... - they are the people who rule the future. They are the person who asks the right questions to make Apache Spark investments work better. This Apache Spark All-Inclusive Self-Assessment enables You to be that person. All the tools you need to an in-depth Apache Spark Self-Assessment. Featuring 695 new and updated case-based questions, organized into seven core areas of process design, this Self-Assessment will help you identify areas in which Apache Spark improvements can be made. In using the questions you will be better able to: - diagnose Apache Spark projects, initiatives, organizations, businesses and processes using accepted diagnostic standards and practices - implement evidence-based best practice strategies aligned with overall goals - integrate recent advances in Apache Spark and process design strategies into practice according to best practice guidelines Using a Self-Assessment tool known as the Apache Spark Scorecard, you will develop a clear picture of which Apache Spark areas need attention. Your purchase includes access details to the Apache Spark self-assessment dashboard download which gives you your dynamically prioritized projects-ready tool and shows your organization exactly what to do next. Your exclusive instant access details can be found in your book. The Automobile User's Guide With 196 Practical Suggestions on how to Get the Most Out of Your Car and Make it Last Longer Learning Spark Lightning-Fast Big Data Analysis "O'Reilly Media, Inc." This book introduces Apache Spark, the open source cluster computing system that makes data analytics fast to write and fast to run. You'll learn how to express parallel jobs with just a few lines of code, and cover applications from simple batch jobs to stream processing and machine learning.-- Guide to Spark Partitioning Spark Partitioning Explained in Depth Partitioning is one of the basic building blocks on which the Spark framework has been built. Partitioning at various stages of your program plays a very important role in ensuring the reliability, scalability and efficiency of the programs. In fact, just setting the right partitioning across various stages, lot of spark programs can be optimized right away.This book would assist you to understand the various aspects of Spark Partitioning in depth. Armed with the knowledge gained from the book, you would be able to set right partitioning in your Spark Jobs for large Datasets. Mustang 1964 1/2-1973 Restoration Guide MotorBooks International Next-Generation Machine Learning with Spark Covers XGBoost, LightGBM, Spark NLP, Distributed Deep Learning with Keras, and More Apress Access real-world documentation and examples for the Spark platform for building large-scale, enterprise-grade machine learning applications. The past decade has seen an astonishing series of advances in machine learning. These breakthroughs are disrupting our everyday life and making an impact across every industry. Next-Generation Machine Learning with Spark provides a gentle introduction to Spark and Spark MLlib and advances to more powerful, third-party machine learning algorithms and libraries beyond what is available in the standard Spark MLlib library. By the end of this book, you will be able to apply your knowledge to real-world use cases through dozens of practical examples and insightful explanations. What You Will Learn Be introduced to machine learning, Spark, and Spark MLlib 2.4.xAchieve lightning-fast gradient boosting on Spark with the XGBoost4J-Spark and LightGBM librariesDetect anomalies with the Isolation Forest algorithm for SparkUse the Spark NLP and Stanford CoreNLP libraries that support multiple languagesOptimize your ML workload with the Alluxio in-memory data accelerator for SparkUse GraphX and GraphFrames for Graph AnalysisPerform image recognition using convolutional neural networksUtilize the Keras framework and distributed deep learning libraries with Spark Who This Book Is For Data scientists and machine learning engineers who want to take their knowledge to the next level and use Spark and more powerful, next-generation algorithms and libraries beyond what is available in the standard Spark MLlib library; also serves as a primer for aspiring data scientists and engineers who need an introduction to machine learning, Spark, and Spark MLlib. A Practical Guide to Drug Development in Academia The SPARK Approach Springer

Science & Business Media "A lot of hard-won knowledge is laid out here in a brief but informative way. Every topic is well referenced, with citations from both the primary literature and relevant resources from the internet." Review from Nature Chemical Biology Written by the founders of the SPARK program at Stanford University, this book is a practical guide designed for professors, students and clinicians at academic research institutions who are interested in learning more about the drug development process and how to help their discoveries become the novel drugs of the future. Often many potentially transformative basic science discoveries are not pursued because they are deemed 'too early' to attract industry interest. There are simple, relatively cost-effective things that academic researchers can do to advance their findings to the point that they can be tested in the clinic or attract more industry interest. Each chapter broadly discusses an important topic in drug development, from preclinical work in assay design through clinical trial design, regulatory issues and marketing assessments. After the practical overview provided here, the reader is encouraged to consult more detailed texts on specific topics of interest. "I would actually welcome it if this book's intended audience were broadened even more. Younger scientists starting out in the drug industry would benefit from reading it and getting some early exposure to parts of the process that they'll eventually have to understand. Journalists covering the industry (especially the small startup companies) will find this book a good reality check for many an over-hopeful press release. Even advanced investors who might want to know what really happens in the labs will find information here that might otherwise be difficult to track down in such a concentrated form." University of Michigan Official Publication UM Libraries A Beginner's Guide to Learning Analytics Springer Nature This book A Beginner's Guide to Learning Analytics is designed to meet modern educational trends' needs. It is addressed to readers who have no prior knowledge of learning analytics and functions as an introductory text to learning analytics for those who want to do more with evaluation/assessment in their organizations. The book is useful to all who need to evaluate their learning and teaching strategies. It aims to bring greater efficiency and deeper engagement to individual students, learning communities, and educators. Covered here are the key concepts linked to learning analytics for researchers and practitioners interested in learning analytics. This book helps those who want to apply analytics to learning and development programs and helps educational institutions to identify learners who require support and provide a more personalized learning experience. Like chapters show diverse uses of learning analytics to enhance student and faculty performance. It presents a coherent framework for the effective translation of learning analytics research for educational practice to its practical application in different educational domains. This book provides educators and researchers with the tools and frameworks to effectively make sense of and use data and analytics in their everyday practice. This book will be a valuable addition to researchers' bookshelves. Big Data Analytics with Spark A Practitioner's Guide to Using Spark for Large-Scale Data Processing, Machine Learning, and Graph Analytics, and High-Velocity Data Stream Processing This book is a step-by-step guide for learning how to use Spark for different types of big-data analytics projects, including batch, interactive, graph, and stream data analysis as well as machine learning. It covers Spark core and its add-on libraries, including Spark SQL, Spark Streaming, GraphX, MLlib, and Spark ML. Big Data Analytics with Spark shows you how to use Spark and leverage its easy-to-use features to increase your productivity. You learn to perform fast data analysis using its in-memory caching and advanced execution engine, employ in-memory computing capabilities for building high-performance machine learning and low-latency interactive analytics applications, and much more. Moreover, the book shows you how to use Spark as a single integrated platform for a variety of data processing tasks, including ETL pipelines, BI, live data stream processing, graph analytics, and machine learning. The book also includes a chapter on Scala, the hottest functional programming language, and the language that underlies Spark. You'll learn the basics of functional programming in Scala, so that you can write Spark applications in it. What's more, Big Data Analytics with Spark provides an introduction to other big data technologies that are commonly used along with Spark, such as HDFS, Avro, Parquet, Kafka, Cassandra, HBase, Mesos, and so on. It also provides an introduction to machine learning and graph concepts. So the book is self-sufficient; all the technologies that you need to know to use Spark are covered. The only thing that you are expected to have is some programming knowledge in any language. Fast Data Processing with Spark 2 Packt Publishing Ltd Learn how to use Spark to process big data at speed and scale for sharper analytics. Put the principles into practice for faster, slicker big data projects. About This Book A quick way to get started with Spark – and reap the rewards From analytics to engineering your big data architecture, we've got it covered Bring your Scala and Java knowledge – and put it to work on new and exciting problems Who This Book Is For This book is for developers with little to no knowledge of Spark, but with a background in Scala/Java programming. It's recommended that you have experience in dealing and working with big data and a strong interest in data science. What You Will Learn Install and set up Spark in your cluster Prototype distributed applications with Spark's interactive shell Perform data wrangling using the new DataFrame APIs Get to know the different ways to interact with Spark's distributed representation of data (RDDs) Query Spark with a SQL-like query syntax See how Spark works with big data Implement machine learning systems with highly scalable algorithms Use R, the popular statistical language, to work with Spark Apply interesting graph algorithms and graph processing with GraphX In Detail When people want a way to process big data at speed, Spark is invariably the solution. With its ease of development (in comparison to the relative complexity of Hadoop), it's unsurprising that it's becoming popular with data analysts and engineers everywhere. Beginning with the fundamentals, we'll show you how to get set up with Spark with minimum fuss. You'll then get to grips with some simple APIs before investigating machine learning and graph processing – throughout we'll make sure you know exactly how to apply your knowledge. You will also learn how to use the Spark shell, how to load data before finding out how to build and run your own Spark applications. Discover how to manipulate your RDD and get stuck into a range of DataFrame APIs. As if that's not enough, you'll also learn some useful Machine Learning algorithms with the help of Spark MLlib and integrating Spark with R. We'll also make sure you're confident and prepared for graph processing, as you learn more about the GraphX API. Style and approach This book is a basic, step-by-step tutorial that will help you

take advantage of all that Spark has to offer. Lesson Guide for Captioned Films, XX A Training and Utilization Guide 1275cc A-Series High-Performance Manual Veloce Publishing Ltd A completely reworked and much enlarged (by over 60 pages) book based on Des Hammill's much respected earlier work on how to get more power from the A-Series engine. The complete practical guide to modifying the 1275cc A-Series engine for high-performance with reliability, and without wasting money on parts or modifications that don't work. Explains how many original components - sometimes modified - can be used in high-performance applications. Complete Idiot's Guide to Trouble-Free Car Repair A do-it-yourselfer's guide to car repair reveals a host mechanic's tips and tricks on everything from changing fluids, handling emergency situations, replacing parts, transmission trouble, steering and brake problems, and much more. Original. Machine Learning with Spark Packt Publishing Ltd Create scalable machine learning applications to power a modern data-driven business using Spark 2.x About This Book Get to the grips with the latest version of Apache Spark Utilize Spark's machine learning library to implement predictive analytics Leverage Spark's powerful tools to load, analyze, clean, and transform your data Who This Book Is For If you have a basic knowledge of machine learning and want to implement various machine-learning concepts in the context of Spark ML, this book is for you. You should be well versed with the Scala and Python languages. What You Will Learn Get hands-on with the latest version of Spark ML Create your first Spark program with Scala and Python Set up and configure a development environment for Spark on your own computer, as well as on Amazon EC2 Access public machine learning datasets and use Spark to load, process, clean, and transform data Use Spark's machine learning library to implement programs by utilizing well-known machine learning models Deal with large-scale text data, including feature extraction and using text data as input to your machine learning models Write Spark functions to evaluate the performance of your machine learning models In Detail This book will teach you about popular machine learning algorithms and their implementation. You will learn how various machine learning concepts are implemented in the context of Spark ML. You will start by installing Spark in a single and multinode cluster. Next you'll see how to execute Scala and Python based programs for Spark ML. Then we will take a few datasets and go deeper into clustering, classification, and regression. Toward the end, we will also cover text processing using Spark ML. Once you have learned the concepts, they can be applied to implement algorithms in either green-field implementations or to migrate existing systems to this new platform. You can migrate from Mahout or Scikit to use Spark ML. By the end of this book, you will acquire the skills to leverage Spark's features to create your own scalable machine learning applications and power a modern data-driven business. Style and approach This practical tutorial with real-world use cases enables you to develop your own machine learning systems with Spark. The examples will help you combine various techniques and models into an intelligent machine learning system.