Implementing Domain Driven Design

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Learning Domain-Driven Design - Vlad Khononov 2021-10-08
Building software is harder than ever. As a developer, you not only have to chase ever-changing technological trends but also need to understand the business domains behind the software. This practical book provides you with a set of core patterns, principles, and practices for analyzing business domains, understanding business strategy, and, most importantly, aligning software design with its business needs. Author Vlad Khononov shows you how these practices lead to robust implementation of business logic and help to future-proof software design and architecture. You'll examine the relationship between domain-driven design (DDD) and other methodologies to ensure you make architectural decisions that meet business requirements. You'll also explore the real-life story of implementing DDD in a startup company. With this book, you'll learn how to: Analyze a company's business domain to learn how the system you're building fits its competitive strategy Use DDD's strategic and tactical tools to architect effective software solutions that address business needs Build a shared understanding of the business domains you encounter Decompose a system into bounded contexts Coordinate the work of multiple teams Gradually introduce DDD to brownfield projects
Secure by Design - Daniel Sawano 2019-09-03
As a developer, you need to build software in a secure way. But you can't spend all your time focusing on security. The answer is to use good design principles, tools, and mindsets that make security an implicit result - it's secure by design. Secure by Design teaches developers how to use design to drive security in software development. This book is full of patterns, best practices, and mindsets that you can directly apply to your real world development. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.
A Guide to the Project Management Body of Knowledge (PMBOK® Guide) – Seventh Edition and The Standard for Project Management (BRAZILIAN PORTUGUESE) - Project Management Institute Project Management Institute 2021-08-01
PMBOK&® Guide is the go-to resource for project management practitioners. The project management profession has significantly evolved due to emerging technology, new approaches and rapid market changes. Reflecting this evolution, The Standard for Project Management enumerates 12 principles of project management and the PMBOK&® Guide &– Seventh Edition is structured around eight project performance domains.This edition is designed to address practitioners' current and future needs and to help them be more proactive, innovative and nimble in enabling desired project outcomes.This edition of the PMBOK&® Guide:•Reflects the full range of development approaches (predictive, adaptive, hybrid, etc.);•Provides an entire section devoted to tailoring the development approach and processes;•Includes an expanded list of models, methods, and artifacts;•Focuses on not just delivering project outputs but also enabling outcomes; and• Integrates with PMIstandards+™ for information and standards

application content based on project type, development approach, and industry sector.

Domain-Driven Design Distilled - Vaughn Vernon 2016-06-01

Domain-Driven Design (DDD) software modeling delivers powerful results in practice, not just in theory, which is why developers worldwide are rapidly moving to adopt it. Now, for the first time, there's an accessible guide to the basics of DDD: What it is, what problems it solves, how it works, and how to quickly gain value from it. Concise, readable, and actionable, Domain-Driven Design Distilled never buries you in detail–it focuses on what you need to know to get results. Vaughn Vernon, author of the best-selling Implementing Domain-Driven Design, draws on his twenty years of experience applying DDD principles to real-world situations. He is uniquely well-qualified to demystify its complexities, illuminate its subtleties, and help you solve the problems you might encounter. Vernon guides you through each core DDD technique for building better software. You'll learn how to segregate domain models using the powerful Bounded Contexts pattern, to develop a Ubiquitous Language within an explicitly bounded context, and to help domain experts and developers work together to create that language. Vernon shows how to use Subdomains to handle legacy systems and to integrate multiple Bounded Contexts to define both team relationships and technical mechanisms. Domain-Driven Design Distilled brings DDD to life. Whether you're a developer, architect, analyst, consultant, or customer, Vernon helps you truly understand it so you can benefit from its remarkable power. Coverage includes What DDD can do for you and your organization–and why it's so important The cornerstones of strategic design with DDD: Bounded Contexts and Ubiquitous Language Strategic design with Subdomains Context Mapping: helping teams work together and integrate software more strategically Tactical design with Aggregates and Domain Events Using project acceleration and management tools to establish and maintain team cadence

New Realities in Foreign Affairs - Volker Stanzel 2019-07-08

Moderne Diplomatie wirkt heute in viele Bereiche des modernen Lebens hinein. Sie ist zugleich selbst neuen Einflüssen ausgesetzt. Faktoren, die unsere Gesellschaften verändern, verändern auch unser Regierungshandeln, auch in der Außenpolitik, seien es Digitalisierung, emotionalisierte Sensibilitäten unserer Öffentlichkeiten oder nicht-staatliche internationale Akteure. Derartige Entwicklungen müssen von der Diplomatie aufgenommen werden, damit sie weiter als Instrument einer Regierung funktionieren kann. Regierungen sollten Wege finden, zwischen den neuen Bedürfnissen der Gesellschaft und den Notwendigkeiten legitimen Regierungshandelns zu vermitteln. Das Ziel sollte sein, als souveräner Staat handeln zu können und zugleich das Potential der tiefgreifenden gesellschaftlichen Veränderungen zu nutzen. Mit Beiträgen von Volker Stanzel, Sascha Lohmann, Andrew Cooper, Christer Jönsson, Corneliu Bjola, Emillie V. de Keulenaar, Jan Melissen, Karsten D. Voigt, Kim B. Olsen, Hanns W. Maull und R. S. Zaharna

Technology Transfer and Innovation for Low-Carbon Development - Miria Pigato 2020-04-09

Technological revolutions have increased the world's wealth unevenly and in ways that have accelerated climate change. This report argues that achieving The Paris Agreement's objectives would require a massive transfer of existing and commercially proven low-carbon technologies (LCT) from high-income to developing countries where the bulk of future emissions is expected to occur. This mass deployment is not only a necessity but also an opportunity: Policies to deploy LCT can help countries achieve economic and other development objectives, like improving human health, in addition to reducing greenhouse gases (GHGs). Additionally, LCT deployment offers an opportunity for countries with sufficient capabilities to benefit from participation in global value chains and produce and export LCTs. Finally, the report calls for a greater international involvement in supporting the poorest countries, which have the least access to LCT and finance and the most underdeveloped physical, technological, and institutional capabilities that are essential to benefit from technology.

Domain-Driven Design Quickly - Floyd Marinescu 2007-12-01

Domain Driven Design is a vision and approach for dealing with highly complex domains that is based on making the domain itself the main focus of the project, and maintaining a software model that reflects a deep understanding of the domain. This book is a short, quickly-readable summary and introduction to the fundamentals of DDD; it does not introduce any new concepts; it attempts to concisely summarize the essence of what DDD is, drawing mostly Eric Evans' original book, as well other sources since published such as Jimmy Nilsson's Applying Domain Driven Design, and various DDD discussion forums. The main topics covered in the book include: Building Domain Knowledge, The Ubiquitous Language, Model Driven Design, Refactoring Toward Deeper Insight, and Preserving Model Integrity. Also included is an interview with Eric Evans on Domain Driven Design today.

Architecture Patterns with Python - Harry Percival 2020-03-05

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

Functional and Reactive Domain Modeling - Debasish Ghosh 2016-10-04

Summary Functional and Reactive Domain Modeling teaches you how to think of the domain model in terms of pure functions and how to compose them to build larger abstractions. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Traditional distributed applications won't cut it in the reactive world of microservices, fast data, and sensor networks. To capture their dynamic relationships and dependencies, these systems require a different approach to domain modeling. A domain model composed of pure functions is a more natural way of representing a process in a reactive system, and it maps directly onto technologies and patterns like Akka, CQRS, and event sourcing. About the Book Functional and Reactive Domain Modeling teaches you consistent, repeatable techniques for building domain models in reactive systems. This book reviews the relevant concepts of FP and reactive architectures and then methodically introduces this new approach to domain modeling. As you read, you'll learn where and how to apply it, even if your systems aren't purely reactive or functional. An expert blend of theory and practice, this book presents strong examples you'll return to again and again as you apply these principles to your own projects. What's Inside Real-world libraries and frameworks Establish meaningful reliability guarantees Isolate domain logic from side effects Introduction to reactive design patterns About the Reader Readers should be comfortable with functional programming and traditional domain modeling. Examples use the Scala language. About the Author Software architect Debasish Ghosh was an early adopter of reactive design using Scala and Akka. He's the author of DSLs in Action, published by Manning in 2010. Table of Contents Functional domain modeling: an introduction Scala for functional domain models Designing functional domain models Functional patterns for domain models Modularization of domain models Being reactive Modeling with reactive streams Reactive persistence and event sourcing Testing your domain model Summary - core thoughts and principles

Domain-Driven Design with Java - A Practitioner's Guide - Premanand Chandrasekaran 2022-08-19

Adopt a practical and modern approach to architecting and implementing DDD-inspired solutions to transform abstract business ideas into working software across the entire spectrum of the software development life cycle Key Features Implement DDD principles to build simple, effective, and well-factored solutions Use lightweight modeling techniques to arrive at a common collective understanding of the problem domain Decompose monolithic applications into loosely coupled, distributed components using modern design patterns Book Description Domain-Driven Design (DDD) makes available a set of techniques and patterns that enable domain experts, architects, and developers to work together to decompose complex business problems into a set of well-factored, collaborating, and loosely coupled subsystems. This practical guide will help you as a developer and architect to put your knowledge to work in order to create elegant software designs that are enjoyable to work with and easy to reason about. You'll begin with an introduction to the concepts of domain-driven design and discover various ways to apply them in real-world scenarios. You'll also appreciate how DDD is extremely relevant when creating cloud native solutions that employ modern techniques such as event-driven microservices and fine-grained architectures. As you advance through the chapters, you'll get acquainted with core DDD's strategic design concepts such as the ubiquitous language, context maps, bounded contexts, and tactical design elements like aggregates and domain models and events. You'll understand how to apply modern, lightweight modeling techniques such as business value canvas, Wardley mapping, domain storytelling, and event storming, while also learning how to test-drive the system to create solutions that exhibit high degrees of internal quality. By the end of this software design book, you'll be able to architect, design, and implement robust, resilient, and performant distributed software solutions. What you will learn Discover how to develop a shared understanding of the problem domain Establish a clear demarcation between core and peripheral systems Identify how to evolve and decompose complex systems into well-factored components Apply elaboration techniques like domain storytelling and event storming Implement EDA, CQRS, event sourcing, and much more Design an ecosystem of cohesive, loosely coupled, and distributed microservices Test-drive the implementation of an event-driven system in Java Grasp how non-functional requirements influence bounded context decompositions Who this book is for This book is for intermediate Java programmers looking to upgrade their software engineering skills and adopt a collaborative and structured approach to designing complex software systems. Specifically, the book will assist senior developers and hands-on architects to gain a deeper understanding of domain-driven design and implement it in their organization. Familiarity with DDD techniques is not a prerequisite; however, working knowledge of Java is expected.

Domain-driven Design - Eric Evans 2004
Describes ways to incorporate domain modeling into software development.

Implementing Domain-driven Design - Vaughn Vernon 2013
Vaughn Vernon presents concrete and realistic domain-driven design (DDD) techniques through examples from familiar domains, such as a Scrum-based project management application that integrates with a collaboration suite and security provider. Each principle is backed up by realistic Java examples, and all content is tied together by a single case study of a company charged with delivering a set of advanced software systems with DDD.

.NET Domain-Driven Design with C# - Tim McCarthy 2008-06-02
As the first technical book of its kind, this unique resource walks you through the process of building a real-world application using Domain-Driven Design implemented in C#. Based on a real application for an existing company, each chapter is broken down into specific modules so that you can identify the problem, decide what solution will provide the best results, and then execute that design to solve the problem. With each chapter, you'll build a complete project from beginning to end.

Domain Modeling Made Functional - Scott Wlaschin 2018-01-25
You want increased customer satisfaction, faster development cycles, and less wasted work. Domain-driven design (DDD) combined with

functional programming is the innovative combo that will get you there. In this pragmatic, down-to-earth guide, you'll see how applying the core principles of functional programming can result in software designs that model real-world requirements both elegantly and concisely - often more so than an object-oriented approach. Practical examples in the open-source F# functional language, and examples from familiar business domains, show you how to apply these techniques to build software that is business-focused, flexible, and high quality. Domain-driven design is a well-established approach to designing software that ensures that domain experts and developers work together effectively to create high-quality software. This book is the first to combine DDD with techniques from statically typed functional programming. This book is perfect for newcomers to DDD or functional programming - all the techniques you need will be introduced and explained. Model a complex domain accurately using the F# type system, creating compilable code that is also readable documentation---ensuring that the code and design never get out of sync. Encode business rules in the design so that you have "compile-time unit tests," and eliminate many potential bugs by making illegal states unrepresentable. Assemble a series of small, testable functions into a complete use case, and compose these individual scenarios into a large-scale design. Discover why the combination of functional programming and DDD leads naturally to service-oriented and hexagonal architectures. Finally, create a functional domain model that works with traditional databases, NoSQL, and event stores, and safely expose your domain via a website or API. Solve real problems by focusing on real-world requirements for your software. What You Need: The code in this book is designed to be run interactively on Windows, Mac and Linux.You will need a recent version of F# (4.0 or greater), and the appropriate .NET runtime for your platform.Full installation instructions for all platforms at fsharp.org.

JavaScript Domain-Driven Design - Philipp Fehre 2015-07-31
JavaScript backs some of the most advanced applications. It is time to adapt modern software development practices from JavaScript to model complex business needs. JavaScript Domain-Driven Design allows you to leverage your JavaScript skills to create advanced applications. You'll start with learning domain-driven concepts and working with UML diagrams. You'll follow this up with how to set up your projects and utilize the TDD tools. Different objects and prototypes will help you create model for your business process and see how DDD develops common language for developers and domain experts. Context map will help you manage interactions in a system. By the end of the book, you will learn to use other design patterns such as DSLs to extend DDD with object-oriented design base, and then get an insight into how to select the right scenarios to implement DDD.

Bitemporal Data - Tom Johnston 2014-08-19
Bitemporal data has always been important. But it was not until 2011 that the ISO released a SQL standard that supported it. Currently, among major DBMS vendors, Oracle, IBM and Teradata now provide at least some bitemporal functionality in their flagship products. But to use these products effectively, someone in your IT organization needs to know more than how to code bitemporal SQL statements. Perhaps, in your organization, that person is you. To correctly interpret business requests for temporal data, to correctly specify requirements to your IT development staff, and to correctly design bitemporal databases and applications, someone in your enterprise needs a deep understanding of both the theory and the practice of managing bitemporal data. Someone also needs to understand what the future may bring in the way of additional temporal functionality, so their enterprise can plan for it. Perhaps, in your organization, that person is you. This is the book that will show the do-it-yourself IT professional how to design and build bitemporal databases and how to write bitemporal transactions and queries, and will show those who will direct the use of vendor-provided bitemporal DBMSs exactly what is going on "under the covers" of that software. Explains the business value of bitemporal data in terms of the information that can be provided by bitemporal tables and not by any other form of temporal data, including history tables, version tables, snapshot tables, or slowly-changing

dimensions. Provides an integrated account of the mathematics, logic, ontology and semantics of relational theory and relational databases, in terms of which current relational theory and practice can be seen as unnecessarily constrained to the management of nontemporal and incompletely temporal data. Explains how bitemporal tables can provide the time-variance and nonvolatility hitherto lacking in Inmon historical data warehouses. Explains how bitemporal dimensions can replace slowly-changing dimensions in Kimball star schemas, and why they should do so. Describes several extensions to the current theory and practice of bitemporal data, including the use of episodes, "whenever" temporal transactions and queries, and future transaction time. Points out a basic error in the ISO's bitemporal SQL standard, and warns practitioners against the use of that faulty functionality. Recommends six extensions to the ISO standard which will increase the business value of bitemporal data. Points towards a tritemporal future for bitemporal data, in which an Aristotelian ontology and a speech-act semantics support the direct management of the statements inscribed in the rows of relational tables, and add the ability to track the provenance of database content to existing bitemporal databases. This book also provides the background needed to become a business ontologist, and explains why an IT data management person, deeply familiar with corporate databases, is best suited to play that role. Perhaps, in your organization, that person is you.

Applying Domain-Driven Design and Patterns - Jimmy Nilsson 2006-05-08
Patterns, Domain-Driven Design (DDD), and Test-Driven Development (TDD) enable architects and developers to create systems that are powerful, robust, and maintainable. Now, there's a comprehensive, practical guide to leveraging all these techniques primarily in Microsoft .NET environments, but the discussions are just as useful for Java developers. Drawing on seminal work by Martin Fowler (Patterns of Enterprise Application Architecture) and Eric Evans (Domain-Driven Design), Jimmy Nilsson shows how to create real-world architectures for any .NET application. Nilsson illuminates each principle with clear, well-annotated code examples based on C# 1.1 and 2.0. His examples and discussions will be valuable both to C# developers and those working with other .NET languages and any databases–even with other platforms, such as J2EE. Coverage includes · Quick primers on patterns, TDD, and refactoring · Using architectural techniques to improve software quality · Using domain models to support business rules and validation · Applying enterprise patterns to provide persistence support via NHibernate · Planning effectively for the presentation layer and UI testing · Designing for Dependency Injection, Aspect Orientation, and other new paradigms

Software Architecture with C++ - Adrian Ostrowski 2021-04-23
Apply business requirements to IT infrastructure and deliver a high-quality product by understanding architectures such as microservices, DevOps, and cloud-native using modern C++ standards and features Key FeaturesDesign scalable large-scale applications with the C++ programming languageArchitect software solutions in a cloud-based environment with continuous integration and continuous delivery (CI/CD)Achieve architectural goals by leveraging design patterns, language features, and useful toolsBook Description Software architecture refers to the high-level design of complex applications. It is evolving just like the languages we use, but there are architectural concepts and patterns that you can learn to write high-performance apps in a high-level language without sacrificing readability and maintainability. If you're working with modern C++, this practical guide will help you put your knowledge to work and design distributed, large-scale apps. You'll start by getting up to speed with architectural concepts, including established patterns and rising trends, then move on to understanding what software architecture actually is and start exploring its components. Next, you'll discover the design concepts involved in application architecture and the patterns in software development, before going on to learn how to build, package, integrate, and deploy your components. In the concluding chapters, you'll explore different architectural qualities, such as maintainability, reusability, testability, performance, scalability,

and security. Finally, you will get an overview of distributed systems, such as service-oriented architecture, microservices, and cloud-native, and understand how to apply them in application development. By the end of this book, you'll be able to build distributed services using modern C++ and associated tools to deliver solutions as per your clients' requirements. What you will learnUnderstand how to apply the principles of software architectureApply design patterns and best practices to meet your architectural goalsWrite elegant, safe, and performant code using the latest C++ featuresBuild applications that are easy to maintain and deployExplore the different architectural approaches and learn to apply them as per your requirementSimplify development and operations using application containersDiscover various techniques to solve common problems in software design and developmentWho this book is for This software architecture C++ programming book is for experienced C++ developers looking to become software architects or develop enterprise-grade applications.

Practical Domain-Driven Design in Enterprise Java - Vijay Nair 2019-09-05

See how Domain-Driven Design (DDD) combines with Jakarta EE MicroProfile or Spring Boot to offer a complete suite for building enterprise-grade applications. In this book you will see how these all come together in one of the most efficient ways to develop complex software, with a particular focus on the DDD process. Practical Domain-Driven Design in Enterprise Java starts by building out the Cargo Tracker reference application as a monolithic application using the Jakarta EE platform. By doing so, you will map concepts of DDD (bounded contexts, language, and aggregates) to the corresponding available tools (CDI, JAX-RS, and JPA) within the Jakarta EE platform. Once you have completed the monolithic application, you will walk through the complete conversion of the monolith to a microservices-based architecture, again mapping the concepts of DDD and the corresponding available tools within the MicroProfile platform (config, discovery, and fault tolerance). To finish this section, you will examine the same microservices architecture on the Spring Boot platform. The final set of chapters looks at what the application would be like if you used the CQRS and event sourcing patterns. Here you'll use the Axon framework as the base framework. What You Will Learn Discover the DDD architectural principles and use the DDD design patterns Use the new Eclipse Jakarta EE platform Work with the Spring Boot framework Implement microservices design patterns, including context mapping, logic design, entities, integration, testing, and security Carry out event sourcing Apply CQRS Who This Book Is For Junior developers intending to start working on enterprise Java; senior developers transitioning from monolithic- to microservices-based architectures; and architects transitioning to a DDD philosophy of building applications.

Spring Data - Mark Pollack 2012-10-24

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

Building Event-Driven Microservices - Adam Bellemare 2020-07-02

Organizations today often struggle to balance business requirements with ever-increasing volumes of data. Additionally, the demand for leveraging large-scale, real-time data is growing rapidly among the most competitive digital industries. Conventional system architectures may not be up to the task. With this practical guide, you'll learn how to leverage large-scale data usage across the business units in your organization using the principles of event-driven microservices. Author Adam Bellemare takes you through the process of building an event-driven microservice-powered organization. You'll reconsider how data is produced, accessed, and propagated across your organization. Learn powerful yet simple patterns for unlocking the value of this data. Incorporate event-driven design and architectural principles into your own systems. And completely rethink how your organization delivers value by unlocking near-real-time access to data at scale. You'll learn: How to leverage event-driven architectures to deliver exceptional business value The role of microservices in supporting event-driven designs Architectural patterns to ensure success both within and between teams in your organization Application patterns for developing powerful event-driven microservices Components and tooling required to get your microservice ecosystem off the ground

Reactive Messaging Patterns with the Actor Model - Vaughn Vernon 2015-07-13

USE THE ACTOR MODEL TO BUILD SIMPLER SYSTEMS WITH BETTER PERFORMANCE AND SCALABILITY Enterprise software development has been much more difficult and failure-prone than it needs to be. Now, veteran software engineer and author Vaughn Vernon offers an easier and more rewarding method to succeeding with Actor model. Reactive Messaging Patterns with the Actor Model shows how the reactive enterprise approach, Actor model, Scala, and Akka can help you overcome previous limits of performance and scalability, and skillfully address even the most challenging non-functional requirements. Reflecting his own cutting-edge work, Vernon shows architects and developers how to translate the longtime promises of Actor model into practical reality. First, he introduces the tenets of reactive software, and shows how the message-driven Actor model addresses all of them–making it possible to build systems that are more responsive, resilient, and elastic. Next, he presents a practical Scala bootstrap tutorial, a thorough introduction to Akka and Akka Cluster, and a full chapter on maximizing performance and scalability with Scala and Akka. Building on this foundation, you'll learn to apply enterprise application and integration patterns to establish message channels and endpoints; efficiently construct, route, and transform messages; and build robust systems that are simpler and far more successful. Coverage Includes How reactive architecture replaces complexity with simplicity throughout the core, middle, and edges The characteristics of actors and actor systems, and how Akka makes them more powerful Building systems that perform at scale on one or many computing nodes Establishing channel mechanisms, and choosing appropriate channels for each application and integration challenge Constructing messages to clearly convey a sender's intent in communicating with a receiver Implementing a Process Manager for your Domain-Driven Designs Decoupling a message's source and destination, and integrating appropriate business logic into its router Understanding the transformations a message may experience in applications and integrations Implementing persistent actors using Event Sourcing and reactive views using CQRS Find unique online training on Domain-Driven Design, Scala, Akka, and other software craftsmanship topics using the for{comprehension} website at forcomprehension.com.

Microservices Patterns - Chris Richardson 2018-10-27

"A comprehensive overview of the challenges teams face when moving to microservices, with industry-tested solutions to these problems." - Tim Moore, Lightbend 44 reusable patterns to develop and deploy reliable production-quality microservices-based applications, with worked examples in Java Key Features 44 design patterns for building and deploying microservices applications Drawing on decades of unique experience from author and microservice architecture pioneer Chris Richardson A pragmatic approach to the benefits and the drawbacks of microservices architecture Solve service decomposition, transaction management, and inter-service communication Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About The Book Microservices Patterns teaches you 44 reusable patterns to reliably develop and deploy production-quality microservices-based applications. This invaluable set of design patterns builds on decades of distributed system experience, adding new patterns for composing services into systems that scale and perform under real-world conditions. More than just a patterns catalog, this practical guide with worked examples offers industry-tested advice to help you design, implement, test, and deploy your microservices-based application. What You Will Learn How (and why!) to use microservices architecture Service decomposition strategies Transaction management and querying patterns Effective testing strategies Deployment patterns This Book Is Written For Written for enterprise developers familiar with standard enterprise application architecture. Examples are in Java. About The Author Chris Richardson is a Java Champion, a JavaOne rock star, author of Manning's POJOs in Action, and creator of the original CloudFoundry.com. Table of Contents Escaping monolithic hell Decomposition strategies Interprocess communication in a microservice architecture Managing transactions with sagas Designing business logic in a microservice architecture Developing business logic with event sourcing Implementing queries in a microservice architecture External API patterns Testing microservices: part 1 Testing microservices: part 2 Developing production-ready services Deploying microservices Refactoring to microservices

The Military Guide to Financial Independence and Retirement - Doug Nordman 2011-06

"Filled with examples, checklists, websites, and a rich collection of appendices that deal with inflation, multiple income streams, and the value of a military pension, this book is essential reading for anyone contemplating retiring from the military"--From publisher's website.

Clean Architecture - Robert C. Martin 2017-09-12

Practical Software Architecture Solutions from the Legendary Robert C. Martin ("Uncle Bob") By applying universal rules of software architecture, you can dramatically improve developer productivity throughout the life of any software system. Now, building upon the success of his best-selling books Clean Code and The Clean Coder, legendary software craftsman Robert C. Martin ("Uncle Bob") reveals those rules and helps you apply them. Martin's Clean Architecture doesn't merely present options. Drawing on over a half-century of experience in software environments of every imaginable type, Martin tells you what choices to make and why they are critical to your success. As you've come to expect from Uncle Bob, this book is packed with direct, no-nonsense solutions for the real challenges you'll face–the ones that will make or break your projects. Learn what software architects need to achieve–and core disciplines and practices for achieving it Master essential software design principles for addressing function, component separation, and data management See how programming paradigms impose discipline by restricting what developers can do Understand what's critically important and what's merely a "detail" Implement optimal, high-level structures for web, database, thick-client, console, and embedded applications Define appropriate boundaries and layers, and organize components and services See why designs and architectures go wrong, and how to prevent (or fix) these failures Clean Architecture is essential reading for every current or aspiring software architect, systems analyst, system designer, and software manager–and for every programmer who must execute someone else's designs. Register your product for convenient access to downloads, updates, and/or corrections as they become available.

Working Effectively with Legacy Code - Michael Feathers 2004-09-22

Get more out of your legacy systems: more performance, functionality, reliability, and manageability Is your code easy to change? Can you get nearly instantaneous feedback when you do change it? Do you understand it? If the answer to any of these questions is no, you have legacy code, and it is draining time and money away from your development efforts. In this book, Michael Feathers offers start-to-finish strategies for working more effectively with large, untested legacy code bases. This book

draws on material Michael created for his renowned Object Mentor seminars: techniques Michael has used in mentoring to help hundreds of developers, technical managers, and testers bring their legacy systems under control. The topics covered include Understanding the mechanics of software change: adding features, fixing bugs, improving design, optimizing performance Getting legacy code into a test harness Writing tests that protect you against introducing new problems Techniques that can be used with any language or platform—with examples in Java, C++, C, and C# Accurately identifying where code changes need to be made Coping with legacy systems that aren't object-oriented Handling applications that don't seem to have any structure This book also includes a catalog of twenty-four dependency-breaking techniques that help you work with program elements in isolation and make safer changes.
Strategic Monoliths and Microservices - Tomasz Jaskula 2021
Make Architecture Choices That Free You to Maximize Value and Innovation "The heart of this book is a large set of thinking tools that will help you design a new architecture . . . and the organization needed to support that architecture. The book then offers ways to gradually move from your existing architecture toward the new one. . . . There is no formula for success other than the one offered [here]: highly skilled people, deep thinking, and constant experimentation." --From the Foreword by Mary Poppendieck, coauthor, Lean Software Development Strategic Microservices and Monoliths helps business decision-makers and technical team members collaborate to clearly understand their strategic problems and identify their optimal architectural approaches, whether these prove to be distributed microservices, well-modularized monoliths, or coarser-grade services partway between the two. Leading software architecture experts Vaughn Vernon and Tomasz Jaskua show how to make balanced architecture decisions based on need and purpose, not hype so you can promote value and innovation, deliver more evolvable systems, and avoid costly mistakes. Using realistic examples, they show how to construct well-designed monoliths that are maintainable and extensible, and how to gradually tease out even the most tangled legacy systems into truly effective microservices. Link software architecture planning to business innovation and digital transformation Overcome communication problems to promote experimentation and discovery-based innovation Master practices that support your value-generating goals and help you invest more strategically Compare architectural styles that can lead to versatile, adaptable applications and services Recognize when monoliths are your best option and how best to architect, design, and implement them Learn when to move monoliths to microservices and how to do it, whether they're modularized or a "Big Ball of Mud"
Sri Lanka Education Sector Assessment - Halil Dundar 2017-06-16
A country’s education system plays a pivotal role in promoting economic growth and shared prosperity. Sri Lanka has enjoyed high school-attainment and enrollment rates for several decades. However, it still faces major challenges in the education sector, and these challenges undermine the country’s inclusivegrowth goal and its ambition to become a competitive upper-middle-income country. The authors of Sri Lanka Education Sector Assessment: Achievements, Challenges, and Policy Options offer a thorough review of Sri Lanka’s education sector—from early childhood education through higher education. With this book, they attempt to answer three questions: • How is Sri Lanka’s education system performing, especially with respect to participation rates, learning outcomes, and labor market outcomes? • How can the country address the challenges at each stage of the education process, taking into account both country and international experience and also best practices? • Which policy actions should Sri Lanka make a priority for the short and medium term? The authors identify the most critical constraints on performance and present strategic priorities and policy options to address them. To attain inclusive growth and become globally competitive, Sri Lanka needs to embark on integrated reforms across all levels of education. These reforms must address both short-term skill shortages and long-term productivity. As Sri Lanka moves up the development ladder, the priorities of primary, secondary, and

postsecondary education must be aligned to meet the increasingly complex education and skill requirements.

Patterns, Principles, and Practices of Domain-Driven Design - Scott Millett 2015-04-20

Methods for managing complex software construction following the practices, principles and patterns of Domain-Driven Design with code examples in C# This book presents the philosophy of Domain-Driven Design (DDD) in a down-to-earth and practical manner for experienced developers building applications for complex domains. A focus is placed on the principles and practices of decomposing a complex problem space as well as the implementation patterns and best practices for shaping a maintainable solution space. You will learn how to build effective domain models through the use of tactical patterns and how to retain their integrity by applying the strategic patterns of DDD. Full end-to-end coding examples demonstrate techniques for integrating a decomposed and distributed solution space while coding best practices and patterns advise you on how to architect applications for maintenance and scale. Offers a thorough introduction to the philosophy of DDD for professional developers Includes masses of code and examples of concept in action that other books have only covered theoretically Covers the patterns of CQRS, Messaging, REST, Event Sourcing and Event-Driven Architectures Also ideal for Java developers who want to better understand the implementation of DDD

Domain Storytelling - Stefan Hofer 2021-09-27

Storytelling is at the heart of human communication--why not use it to overcome costly misunderstandings when designing software? By telling and visualising stories, domain experts and team members make business processes and domain knowledge tangible. Domain Storytelling enables everyone to understand the relevant people, activities, and work items. With this guide, the method's inventors explain how domain experts and teams can work together to capture insights with simple pictographs, show their work, solicit feedback, and get everyone on the same page. Stefan Hofer and Henning Schwentner introduce the methods easy pictographic language, scenario-based modeling techniques, workshop format, and relationship to other modeling methods. Using step-by-step case studies, they guide you through solving many common problems: Fully align all project participants and stakeholders, both technical and business-focused Master a simple set of symbols and rules for modeling any process or workflow Use workshop-based collaborative modeling to find better solutions faster Draw clear boundaries to organise your domain, software, and teams Transform domain knowledge into requirements, embedded naturally into an agile process Move your models from diagrams and sticky notes to code Gain better visibility into your IT landscape so you can consolidate or optimise it This guide is for everyone who wants more effective software--from developers, architects, and team leads to the domain experts, product owners, and executives who rely on it every day.

Mastering Microservices with Java - Sourabh Sharma 2019-02-26

Master the art of implementing scalable and reactive microservices in your production environment with Java 11 Key FeaturesUse domain-driven designs to build microservicesExplore various microservices design patterns such as service discovery, registration, and API GatewayUse Kafka, Avro, and Spring Streams to implement event-based microservicesBook Description Microservices are key to designing scalable, easy-to-maintain applications. This latest edition of Mastering Microservices with Java, works on Java 11. It covers a wide range of exciting new developments in the world of microservices, including microservices patterns, interprocess communication with gRPC, and service orchestration. This book will help you understand how to implement microservice-based systems from scratch. You'll start off by understanding the core concepts and framework, before focusing on the high-level design of large software projects. You'll then use Spring Security to secure microservices and test them effectively using REST Java clients and other tools. You will also gain experience of using the Netflix OSS suite, comprising the API Gateway, service discovery and registration, and Circuit Breaker. Additionally, you'll be introduced to the best patterns, practices, and common principles of microservice design that will help you to understand how to troubleshoot and debug the issues faced during development. By the end of this book, you'll have learned how to build smaller, lighter, and faster services that can be implemented easily in a production environment. What you will learnUse domain-driven designs to develop and implement microservicesUnderstand how to implement microservices using Spring BootExplore service orchestration and distributed transactions using the SagasDiscover interprocess communication using REpresentational State Transfer (REST) and eventsGain knowledge of how to implement and design reactive microservicesDeploy and test various microservicesWho this book is for This book is designed for Java developers who are familiar with microservices architecture and now want to effectively implement microservices at an enterprise level. Basic knowledge and understanding of core microservice elements and applications is necessary.

Patterns, Principles, and Practices of Domain-Driven Design - Scott Millett 2015-05-04
Methods for managing complex software construction following the practices, principles and patterns of Domain-Driven Design with code examples in C# This book presents the philosophy of Domain-Driven Design (DDD) in a down-to-earth and practical manner for experienced developers building applications for complex domains. A focus is placed on the principles and practices of decomposing a complex problem space as well as the implementation patterns and best practices for shaping a maintainable solution space. You will learn how to build effective domain models through the use of tactical patterns and how to retain their integrity by applying the strategic patterns of DDD. Full end-to-end coding examples demonstrate techniques for integrating a decomposed and distributed solution space while coding best practices and patterns advise you on how to architect applications for maintenance and scale. Offers a thorough introduction to the philosophy of DDD for professional developers Includes masses of code and examples of concept in action that other books have only covered theoretically Covers the patterns of CQRS, Messaging, REST, Event Sourcing and Event-Driven Architectures Also ideal for Java developers who want to better understand the implementation of DDD

Domain Driven Design : How to Easily Implement Domain Driven Design - A Quick & Simple Guide - Jason Scotts 2014-03-08
I want to thank you for checking out the book, "Domain Driven Design: How to Easily Implement Domain Driven Design - A Quick & Simple Guide". This book contains proven steps and strategies on how you can implement the domain-driven design approach in your projects to bring out better results. Through the domain-driven design approach, you and your project team will better understand the domain that you aim to serve and communicate in a common language that can ensure harmony and team work with your group. You will be able to finish the whole design and development process focused on what is truly essential. Thanks again and I hope you enjoy it!

Behavior-Driven Development with Cucumber - Richard Lawrence 2019-05-20
Master BDD to deliver higher-value software more quickly To develop high-value products quickly, software development teams need better ways to collaborate. Agile methods like Scrum and Kanban are helpful, but they’re not enough. Teams need better ways to work inside each sprint or work item. Behavior-driven development (BDD) adds just enough structure for product experts, testers, and developers to collaborate more effectively. Drawing on extensive experience helping teams adopt BDD, Richard Lawrence and Paul Rayner show how to explore changes in system behavior with examples through conversations, how to capture your examples in expressive language, and how to flow the results into effective automated testing with Cucumber. Where most BDD resources focus on test automation, this guide goes deep into how BDD changes team collaboration and what that collaboration looks like day to day. Concrete examples and practical advice will prepare you to succeed with BDD, whatever your context or role. · Learn how to collaborate better by using concrete examples of system behavior · Identify your project’s meaningful increment of value so you’re always working on something important · Begin experimenting with BDD slowly and at low risk · Move smoothly from informal examples to

automated tests in Cucumber · Use BDD to deliver more frequently with greater visibility · Make Cucumber scenarios more expressive to ensure you're building the right thing · Grow a Cucumber suite that acts as high-value living documentation · Sustainably work with complex scenario data · Get beyond the "mini-waterfalls" that often arise on Scrum teams

Domain-Driven Design in PHP - Carlos Buenosvinos 2017-06-14

Real examples written in PHP showcasing DDD Architectural Styles, Tactical Design, and Bounded Context Integration About This Book Focuses on practical code rather than theory Full of real-world examples that you can apply to your own projects Shows how to build PHP apps using DDD principles Who This Book Is For This book is for PHP developers who want to apply a DDD mindset to their code. You should have a good understanding of PHP and some knowledge of DDD. This book doesn't dwell on the theory, but instead gives you the code that you need. What You Will Learn Correctly design all design elements of Domain-Driven Design with PHP Learn all tactical patterns to achieve a fully worked-out Domain-Driven Design Apply hexagonal architecture within your application Integrate bounded contexts in your applications Use REST and Messaging approaches In Detail Domain-Driven Design (DDD) has arrived in the PHP community, but for all the talk, there is very little real code. Without being in a training session and with no PHP real examples, learning DDD can be challenging. This book changes all that. It details how to implement tactical DDD patterns and gives full examples of topics such as integrating Bounded Contexts with REST, and DDD messaging strategies. In this book, the authors show you, with tons of details and examples, how to properly design Entities, Value Objects, Services, Domain Events, Aggregates, Factories, Repositories, Services, and Application Services with PHP. They show how to apply Hexagonal Architecture within your application whether you use an open source framework or your own. Style and approach This highly practical book shows developers how to apply domain-driven design principles to PHP. It is full of solid code examples to work through.

Business Made Simple - Donald Miller 2021-01-19

Is this blue book more valuable than a business degree? Most people enter their professional careers not understanding how to grow a business. At times, this makes them feel lost, or worse, like a fraud pretending to know what they're doing. It's hard to be successful without a clear understanding of how business works. These 60 daily readings are crucial for any professional or business owner who wants to take their career to the next level. New York Times and Wall Street Journal bestselling author, Donald Miller knows that business is more than just a good idea made profitable – it's a system of unspoken rules, rarely taught by MBA schools. If you are attempting to profitably grow your business or career, you need elite business knowledge—knowledge that creates tangible value. Even if you had the time, access, or money to attend a Top 20 business school, you would still be missing the practical knowledge that propels the best and brightest forward. However, there is another way to achieve this insider skill development, which can both drastically improve your career earnings and the satisfaction of achieving your goals. Donald Miller learned how to rise to the top using the principles he shares in this book. He wrote Business Made Simple to teach others what it takes to grow your career and create a company that is healthy and profitable. These short, daily entries and accompanying videos will add enormous value to your business and the organization you work for. In this sixty-day guide, readers will be introduced to the nine areas where truly successful leaders and their businesses excel: Character: What kind of person succeeds in business? Leadership: How do you unite a team around a mission? Personal Productivity: How can you get more done in less time? Messaging: Why aren't customers paying more attention? Marketing: How do I build a sales funnel? Business Strategy: How does a business really work? Execution: How can we get things done? Sales: How do I close more sales? Management: What does a good manager do? Business Made Simple is the must-have guide for anyone who feels lost or overwhelmed by the modern business climate, even if they attended business school. Learn what the most successful business leaders have known for years through the simple but effective secrets shared in these pages. Take things further: If you want to be worth more as a business professional, read each daily entry and follow along with the free videos that will be sent to you after you buy the book.

RESTful Web Services - Leonard Richardson 2008-12-17

"Every developer working with the Web needs to read this book." -- David Heinemeier Hansson, creator of the Rails framework "RESTful Web Services finally provides a practical roadmap for constructing services that embrace the Web, instead of trying to route around it." -- Adam Trachtenberg, PHP author and EBay Web Services Evangelist You've built web sites that can be used by humans. But can you also build web sites that are usable by machines? That's where the future lies, and that's what RESTful Web Services shows you how to do. The World Wide Web is the most popular distributed application in history, and Web services and mashups have turned it into a powerful distributed computing platform. But today's web service technologies have lost sight of the simplicity that made the Web successful. They don't work like the Web, and they're missing out on its advantages. This book puts the "Web" back into web services. It shows how you can connect to the programmable web with the technologies you already use every day. The key is REST, the architectural style that drives the Web. This book: Emphasizes the power of basic Web technologies -- the HTTP application protocol, the URI naming standard, and the XML markup language Introduces the Resource-Oriented Architecture (ROA), a common-sense set of rules for designing RESTful web services Shows how a RESTful design is simpler, more versatile, and more scalable than a design based on Remote Procedure Calls (RPC) Includes real-world examples of RESTful web services, like Amazon's Simple Storage Service and the Atom Publishing Protocol Discusses web service clients for popular programming languages Shows how to implement RESTful services in three popular frameworks -- Ruby on Rails, Restlet (for Java), and Django (for Python) Focuses on practical issues: how to design and implement RESTful web services and clients This is the first book that applies the REST design philosophy to real web services. It sets down the best practices you need to make your design a success, and the techniques you need to turn your design into working code. You can harness the power of the Web for programmable applications: you just have to work with the Web instead of against it. This book shows you how.

Software Engineering at Google - Titus Winters 2020-02-28

Today, software engineers need to know not only how to program effectively but also how to develop proper engineering practices to make their codebase sustainable and healthy. This book emphasizes this difference between programming and software engineering. How can software engineers manage a living codebase that evolves and responds to changing requirements and demands over the length of its life? Based on their experience at Google, software engineers Titus Winters and Hyrum Wright, along with technical writer Tom Manshreck, present a candid and insightful look at how some of the world’s leading practitioners construct and maintain software. This book covers Google’s unique engineering culture, processes, and tools and how these aspects contribute to the effectiveness of an engineering organization. You’ll explore three fundamental principles that software organizations should keep in mind when designing, architecting, writing, and maintaining code: How time affects the sustainability of software and how to make your code resilient over time How scale affects the viability of software practices within an engineering organization What trade-offs a typical engineer needs to make when evaluating design and development decisions

Head First Design Patterns - Eric Freeman 2004-10-25

Using research in neurobiology, cognitive science and learning theory, this text loads patterns into your brain in a way that lets you put them to work immediately, makes you better at solving software design problems, and improves your ability to speak the language of patterns with others on your team.

National Educational Technology Standards for Students - International Society for Technology in Education 2007

This booklet includes the full text of the ISTE Standards for Students, along with the Essential Conditions, profiles and scenarios.