Clean Architecture

A Craftsman's Guide to Software Structure and Design

Robert C. Martin

With contributions by James Grenning *and* Simon Brown

Foreword by Kevlin Henney
Afterword by Jason Gorman

Clean Architecture A Craftsmans To Software

DP Hallahan

Clean Architecture A Craftsmans To Software:

Clean Architecture Robert C. Martin,2018 Building upon the success of best sellers The Clean Coder and Clean Code legendary software craftsman Robert C Uncle Bob Martin shows how to bring greater professionalism and discipline to application architecture and design As with his other books Martin s Clean Architecture doesn t merely present multiple choices and options and say use your best judgment it tells you what choices to make and why those choices are critical to your success Martin offers direct is essential reading for every software architect systems analyst system designer and software manager and for any programmer who aspires to these roles or is impacted by their work *Clean Architecture* Jessica Walker,2021-09-10 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 Architecturedoesn 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 Architectureis 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 **Clean Architecture** Robert C. Martin,2018-02-20 *Clean Architecture with Python* Sam Keen,2025-06-20 Future proof your Python projects by creating flexible code that adapts to changing requirements with the help of this hands on guide to achieving Clean Architecture Key Features Learn Clean Architecture through a series of real world code centric examples and exercises Optimize system componentization significantly reducing maintenance burden and overall complexity Apply Clean Architecture concepts confidently to new Python projects and legacy code refactoring Purchase of the print or Kindle book includes a free PDF eBook Book DescriptionIn the rapidly evolving tech industry software applications struggle to keep pace with changing business needs leaving developers grappling with complex codebases that resist change ultimately reducing productivity and increasing technical debt Clean Architecture with Python offers a powerful approach to address these challenges Drawing from his extensive experience architecting cloud native systems Sam Keen helps you transform complex architectural challenges into digestible implementable solutions This

book teaches essential principles for effective development emphasizing the Pythonic implementation of Clean Architecture Through practical examples you ll learn how to create modular loosely coupled systems that are easy to understand modify and extend The book covers key concepts such as the Dependency Rule separation of concerns and domain modeling all tailored for Python development By the end of this book you ll be able to apply Clean Architecture principles effectively in your Python projects Whether you re building new systems or managing existing ones you ll have the skills to create more maintainable and adaptable applications This approach will enhance your ability to respond to changing requirements setting you up for long term success in your development career What you will learn Apply Clean Architecture principles idiomatically in Python Implement domain driven design to isolate core business logic Apply SOLID principles in a Pythonic context to improve code quality Structure projects for maintainability and ease of modification Develop testing techniques for cleanly architected Python applications Refactor legacy Python code to adhere to Clean Architecture principles Design scalable APIs and web applications using Clean Architecture Who this book is for If you re a Python developer struggling with maintaining and extending complex codebases this book is for you It s ideal for intermediate developers looking to enhance their architectural skills as well as senior developers seeking to formalize their knowledge of Clean Architecture in Python While beginners can benefit prior experience with Python and object oriented programming is recommended **Software Architecture with Kotlin** Jason (Tsz Shun) Chow,2024-12-31 Develop innovative architectural styles by analyzing and merging various approaches focusing on making trade offs and mitigating risks to solve real world problems Key Features Learn how to analyze and dissect various architectural styles into building blocks Combine existing ideas with your own to create custom solutions Make informed decisions by navigating trade offs and compromises Purchase of the print or Kindle book includes a free PDF eBook Book DescriptionSoftware Architecture with Kotlin explores the various styles of software architecture with a focus on using the Kotlin programming language The author draws on their 20 years of industry experience in developing large scale enterprise distributed systems to help you grasp the principles practices and patterns that shape the architectural landscape of modern software systems The book establishes a strong foundation in software architecture explaining key concepts such as architectural qualities and principles before teaching you how architectural decisions impact the quality of a system such as scalability reliability and extendability The chapters address modern architecture topics such as microservices serverless and event driven architectures providing insights into the challenges and trade offs involved in adopting these architectural styles You ll also discover practical tools that ll help you make informed decisions and mitigate risks All architectural patterns in this book are demonstrated using Kotlin By the end of this book you ll have gained practical expertise by using real world examples along with a solid understanding of Kotlin to become a more proficient and impactful software architect What you will learn Master the fundamental principles of architecture and design Explore common architectural styles and their applicable scenarios Analyze break down compare

and design architectural styles to solve practical problems Reason negotiate and make difficult choices in the absence of ideal solutions Mitigate risks when making compromises and trade offs Create scalable sustainable maintainable and extendable software systems Use the Kotlin programming language to achieve your architectural goals Who this book is for This book is for developers with basic Kotlin knowledge seeking a deeper understanding of architecture Kotlin Android developers who are starting to get involved in backend development and Java developers transitioning to Kotlin It s also ideal for software architects who are less experienced in Kotlin and want to enhance their skills as well as those who enjoy discussing and exploring unique architectural concepts **Softwarearchitektur für Dummies** Holger Gast,2023-11-30 Tragf hige Literatur f r Ihre Softwarearchitekturen Besuchen Sie eine Veranstaltung zu Softwarearchitektur oder stehen Sie in einem Projekt vor Architekturentscheidungen und wollen daher die aktuellen Architekturans tze verstehen Dann hilft Ihnen dieses Buch Holger Gast erl utert zun chst die grundlegenden Elemente von Architekturen und f hrt die technischen Hintergr nde aus Er erkl rt Ihnen danach die klassischen Stile und Patterns und geht schlie lich auf Cloud Architekturen ein Durchg ngig legt er den Fokus auf konkrete Softwarestrukturen statt auf Theorie und erm glicht Ihnen so einen verst ndlichen und z gigen Einstieg in das Thema Sie erfahren Wie Sie Entscheidungen zum Aufbau einer Anwendung treffen Wann bestimmte Architekturen oder Frameworks f r Ihr Projekt geeignet sind Welche Herausforderungen Sie bei der Erstellung oder Weiterentwicklung einer Anwendung l sen m ssen Mastering Software Architecture Michael Carducci,2025-03-20 As the pace of evolution in technology continues to accelerate the field of software architecture grapples with ever increasing complexity uncertainty and risk While numerous patterns and practices have emerged as potential approaches to solving the industry s most challenging problems these tools often struggle to consistently deliver on their promises and software projects fail to reach their potential with alarming frequency This meticulously crafted guide presents a deep exploration into the intricacies of crafting systems that precisely and predictably address modern challenges It goes beyond mere comprehension of architecture it encourages mastery Mastery of software architecture requires much more than just technical know how The author drawing upon deep experience and unique perspectives introduces a fresh problem centric approach to the realm of software architecture to address these myriad challenges This book offers a uniquely holistic approach weaving together architectural principles with organizational dynamics environmental subtleties and the necessary tools to execute on architecture more effectively It addresses the broader contexts that are often overlooked You ll be introduced to the transformative Tailor Made model which provides fast design time feedback on total architectural fit and offers more deterministic outcomes without the typical and costly trial and error The Tailor Made model further enables a practical approach to designing evolutionary architectures This book also offers a comprehensive Architect s toolbox with powerful strategies and problem solving tools to design communicate and implement architectural decisions across the enterprise Additionally it imparts invaluable insights into the art of communication as an architect seamlessly

aligning visions with business goals and objectives With its rich blend of theoretical depth practical insights and actionable tools this book promises to redefine the landscape of software architecture Whether you are an established architect or an aspiring one Mastering Software Architecture is poised to enhance your expertise enabling you to confront architectural challenges with unparalleled confidence and competence What You will Learn Discover a comprehensive set of concepts tools models and practices that enhance the fit and reduce uncertainty in software architecture Quantify and measure the impact of architectural decisions providing a clear and actionable approach to architecture Effectively apply the model in diverse situations and environments while overcoming the otherwise limiting organizational realities Communicate architecture effectively to both business and technical teams build consensus engender buy in and lead change across the organization Who This Book Is For Aspiring architects looking to broaden their horizons practicing architects seeking to continue to grow their skills and software engineers looking to gain insights and move up the value chain in an increasingly competitive market Michael Carducci delivers an invaluable guide for aspiring and seasoned software architects alike Mastering Software Architecture blends technical mastery with strategic insights presented in a clear and engaging format This book is destined to shape the future of the field Adam Tornhill author of Your code as a crime scene and founder of Code Scene BRAVO This is the book I wish I had when I started doing architecture migrations This volume makes clear what architectural style best fits the needs of the organization and how you can migrate from one style to another through the judicious selection of constraints I ve already put this book s teachings into practice and consider this my new go to reference for upcoming architecture assessments and migrations Jerome Broekhuijsen Whether you re a seasoned architect or just starting out this book will elevate your practice It s a must read that will take any aspiring architect from zero to hero in a very short time Kevin D Ornellas I m convinced you ll be better prepared for having read this book Brian Sletten

  Software Architecture with C# 10 and .NET 6 Gabriel Baptista,Francesco Abbruzzese,2022-03-15 Design scalable and high performance enterprise applications using the latest features of C 10 and NET 6 Key FeaturesGain comprehensive software architecture knowledge and the skillset to create fully modular appsSolve scalability problems in web apps using enterprise architecture patternsMaster new developments in front end architecture and the application of AI for software architectsBook Description Software architecture is the practice of implementing structures and systems that streamline the software development process and improve the quality of an app This fully revised and expanded third edition featuring the latest features of NET 6 and C 10 enables you to acquire the key skills knowledge and best practices required to become an effective software architect Software Architecture with C 10 and NET 6 Third Edition features new chapters that describe the importance of the software architect microservices with ASP NET Core and analyzing the architectural aspects of the front end in the applications including the new approach of NET MAUI It also includes a new chapter focused on providing a short introduction to artificial intelligence and machine learning using ML NET and updated chapters on Azure Kubernetes

Service EF Core and Blazor You will begin by understanding how to transform user requirements into architectural needs and exploring the differences between functional and non functional requirements Next you will explore how to choose a cloud solution for your infrastructure taking into account the factors that will help you manage a cloud based app successfully Finally you will analyze and implement software design patterns that will allow you to solve common development problems By the end of this book you will be able to build and deliver highly scalable enterprise ready apps that meet your business requirements What you will learnUse proven techniques to overcome real world architectural challengesApply architectural approaches such as layered architectureLeverage tools such as containers to manage microservices effectivelyGet up to speed with Azure features for delivering global solutionsProgram and maintain Azure Functions using C 10Understand when it is best to use test driven development TDD Implement microservices with ASP NET Core in modern architecturesEnrich your application with Artificial IntelligenceGet the best of DevOps principles to enable CI CD environmentsWho this book is for This book is for engineers and senior software developers aspiring to become architects or looking to build enterprise applications with the NET Stack Basic familiarity with C and NET is required to get the most out of this book *Software Engineering for Agile Application Development* Pang, Chung-Yeung,2020-02-14 As the software industry continues to evolve professionals are continually searching for practices that can assist with the various problems and challenges in information technology IT Agile development has become a popular method of research in recent years due to its focus on adapting to change There are many factors that play into this process so success is no guarantee However combining agile development with other software engineering practices could lead to a high rate of success in problems that arise during the maintenance and development of computing technologies Software Engineering for Agile Application Development is a collection of innovative research on the methods and implementation of adaptation practices in software development that improve the quality and performance of IT products The presented materials combine theories from current empirical research results as well as practical experiences from real projects that provide insights into incorporating agile qualities into the architecture of the software so that the product adapts to changes and is easy to maintain While highlighting topics including continuous integration configuration management and business modeling this book is ideally designed for software engineers software developers engineers project managers IT specialists data scientists computer science professionals researchers students and academics   Clean Craftsmanship Robert C. Martin,2022-05-25 Aus der Feder des legend ren Softwareentwicklers Robert C Martin Uncle Bob Autor des Bestsellers Clean Code Standards und ethische Grunds tze f r die Entwicklung von zuverl ssiger und vertrauensw rdiger Software Mit f nf Kerndisziplinen zu besserem und nachhaltigerem Code Test Driven Development TDD Refactoring einfaches Design kollaborative Entwicklung und Akzeptanztests Software Craftsmanship ist kein Beruf sondern eine Berufung Der legend re Softwareentwickler Robert C Martin Uncle Bob gibt Ihnen mit diesem Buch einen pragmatischen und praktischen Leitfaden f r die Praktiken an die Hand

die f r die Softwareentwicklung essenziell sind Uncle Bob erl utert die Methoden Standards und ethischen Grunds tze die es Ihnen erm glichen robusten und effektiven Code zu schreiben auf den Sie stolz sein k nnen Er er rtert wichtige Standards f r die Softwareentwicklung zeigt auf wie sich die Erwartungen die andere an Entwickler stellen von ihren eigenen unterscheiden und hilft Ihnen dabei beide Vorstellungen in Einklang zu bringen Zum Abschluss geht er auf die Berufsethik f r die professionelle Programmierung ein und erl utert die Prinzipien denen alle Entwickler folgen sollten um sicheren nachhaltigen und wartbaren Code zu gew hrleisten Mit den Methoden und Konzepten aus diesem Buch k nnen sowohl Programmierer als auch ihre Manager konsequent Code liefern der Vertrauen schafft statt es zu untergraben bei Usern und gleicherma en der gesamten Gesellschaft die auf Software angewiesen ist **We, Programmers** Robert C. Martin,2024-12-05 The Journey of Programming and Its Pioneers From the Birth of Code to the Rise of AI In We Programmers software legend Robert C Martin Uncle Bob dives deep into the world of programming exploring the lives of the groundbreaking pioneers who built the foundation of modern computing From Charles Babbage and Ada Lovelace to Alan Turing Grace Hopper and Dennis Ritchie Martin shines a light on the figures whose brilliance and perseverance changed the world This memoir infused narrative provides a rich human history filled with technical insights for developers examining the coding breakthroughs that shaped computing at the bit and byte level By connecting these technical achievements with the human stories behind them Martin gives readers a rare glimpse into the struggles and triumphs of the people who made modern technology possible Depression failure and ridicule these pioneers faced it all and their stories intertwine with the evolution of computing itself as the field evolved from its humble beginnings to the cloud based AIs of today With the rise of AI Martin also explores how this technology is transforming the future of programming and the ethical challenges that come with it Notable topics include Understanding programming s roots and how they shaped today s tech landscape The human side of coding pioneers what drove them and what they overcame Key programming breakthroughs from the early days of assembly to the rise of object oriented languages The pivotal role World War II played in advancing computer science Insights and predictions regarding the ethical considerations surrounding AI and the future of programming For programmers coders and anyone fascinated by the intersection of people and machines this guide to the history humanity and technology behind the code that powers our world today is a fascinating and essential read Register your book for convenient access to downloads updates and or corrections as they become available See inside book for details **Software Architecture with C# 12 and .NET 8** Gabriel Baptista,Francesco Abbruzzese,2024-02-28 A book for the aspiring NET software architect design scalable and high performance enterprise solutions using the latest features of C 12 and NET 8 Purchase of the print or Kindle book includes a free PDF eBook Key Features Get introduced to software architecture fundamentals and begin applying them in NET Explore the main technologies used by software architects and choose the best ones for your needs Master new developments in NET with the help of a practical case study that looks at

software architecture for a travel agency Book DescriptionSoftware Architecture with C 12 and NET 8 puts high level design theory to work in a NET context teaching you the key skills technologies and best practices required to become an effective NET software architect This fourth edition puts emphasis on a case study that will bring your skills to life You ll learn how to choose between different architectures and technologies at each level of the stack You ll take an even closer look at Blazor and explore OpenTelemetry for observability as well as a more practical dive into preparing NET microservices for Kubernetes integration Divided into three parts this book starts with the fundamentals of software architecture covering C best practices software domains design patterns DevOps principles for CI CD and more The second part focuses on the technologies from choosing data storage in the cloud to implementing frontend microservices and working with Serverless You ll learn about the main communication technologies used in microservices such as REST API gRPC Azure Service Bus and RabbitMQ The final part takes you through a real world case study where you ll create software architecture for a travel agency By the end of this book you will be able to transform user requirements into technical needs and deliver highly scalable enterprise software architectures What you will learn Program and maintain Azure DevOps and explore GitHub Projects Manage software requirements to design functional and non functional needs Apply architectural approaches such as layered architecture and domain driven design Make effective choices between cloud based and data storage solutions Implement resilient frontend microservices worker microservices and distributed transactions Understand when to use test driven development TDD and alternative approaches Choose the best option for cloud development from IaaS to Serverless Who this book is for This book is for engineers and senior software developers aspiring to become architects or looking to build enterprise applications with the NET stack Basic familiarity with C and NET is required to get the most out of this software architecture book **The Handbook of Banking Technology** Tim Walker,Lucian Morris,2021-05-24 Competitive advantage in banking comes from effective use of technology The Handbook of Banking Technology provides a blueprint for the future of banking with deep insight into the technologies at the heart of the industry The rapid evolution of IT brings continual change and demand for investment yet keeping pace with these changes has become an essential part of doing business This book describes how banks can harness the power of current and upcoming technology to add business value and gain a competitive advantage you ll learn how banks are using technology to drive business today and which emerging trends are likely to drive the evolution of banking over the next decade Regulation is playing an ever increasing role in banking and the impact of regulatory change on technology and the management of it are discussed while mandatory changes put pressure on many of our high street banking brands their ability to adapt and utilise technology will have a fundamental impact on their success in the rapidly changing marketplace Technology costs can amount to 15 per cent or more of operational costs and bank leaders need to be able to make informed decisions about technology investments in light of the potential benefits This book explores the depth and breadth of banking technology to help decision makers stay up to

date and drive better business Assess your current technology against the new banking paradigms Procure the systems needed to protect the bottom line Implement newer technology more efficiently and effectively Ensure compliance and drive value with appropriate technology management Technological change is driven by mass adoption of new channels innovation from new entrants and by banks themselves as a means of increasing revenue and reducing costs The Handbook of Banking Technology offers a comprehensive look at the role of technology in banking and the impact it will have in the coming years

   Security Issues in Communication Devices, Networks and Computing Models Budati Anil Kumar,Akella Ramakrishna,Goutham Makkena,Gheorghita Ghinea,2025-05-08 The importance of addressing security issues in communication devices networks and computing models in Industry 5 0 cannot be overstated Industry 5 0 represents the next phase in the evolution of manufacturing and industrial processes characterized by increased connectivity automation and the integration of smart technologies Here are several reasons why security is crucial in this context Industry 5 0 involves the convergence of information technology IT and operational technology OT making industrial control systems susceptible to cyber threats A breach in security could compromise critical infrastructure such as power grids transportation systems and water treatment plants Securing computing models and networks is vital for protecting critical infrastructure and ensuring the safety and stability of essential services Industry 5 0 encourages the use of advanced technologies such as the Industrial Internet of Things IIoT and edge computing leading to increased data exchange and collaboration Security issues could result in the theft or manipulation of intellectual property proprietary designs and sensitive business information Robust security measures are necessary to safeguard intellectual property maintain a competitive edge and foster innovation within Industry 5 0 ecosystems Communication devices and networks in Industry 5 0 transmit vast amounts of sensitive data including production data supply chain information and operational metrics Ensuring the integrity and confidentiality of this data is crucial for informed decision making and maintaining a competitive advantage Security breaches could lead to data manipulation unauthorized access and exposure of sensitive information jeopardizing the trust of stakeholders and partners Industry 5 0 involves interconnected supply chains where multiple entities collaborate and share data Weaknesses in communication devices and networks can be exploited to compromise the integrity of the entire supply chain impacting product quality and safety Securing communication channels and computing models is vital for maintaining the trustworthiness of the supply chain ensuring product quality and minimizing the risk of counterfeit components In summary addressing security issues in communication devices networks and computing models is fundamental to the successful implementation of Industry 5 0 It not only protects the assets and operations of organizations but also contributes to the overall safety reliability and sustainability of advanced industrial systems   Reuse in the Big Data Era Xin Peng,Apostolos Ampatzoglou,Tanmay Bhowmik,2019-06-18 This book constitutes the proceedings of the 18th International Conference on Software and Systems Reuse ICSR 2019 held in Cincinnati Ohio USA in June 2019 The 13 research papers included in this

book were carefully reviewed and selected from 32 submissions In addition 3 industry innovation papers are included The papers were organized in topical sections named software reuse practice software product line and requirements reuse reuse and design and evolution intelligent software reuse and domain specific software development **Modellbasierte Softwareentwicklung für eingebettete Systeme verstehen und anwenden** Tim Weilkiens,Alexander Huwaldt,Jürgen Mottok,Stephan Roth,Andreas Willert,2018-07-20 Die Beherrschung von Komplexit t ist eine der gr ten Engineering Herausforderungen des 21 Jahrhunderts Themen wie das Internet der Dinge IoT und Industrie 4 0 beschleunigen diesen Trend Die modellgetriebene Entwicklung leistet einen entscheidenden Beitrag um diesen Herausforderungen erfolgreich begegnen zu k nnen Die Autoren geben einen fundierten Einstieg und praxisorientierten berblick ber die Modellierung von Software f r eingebettete Systeme von den Anforderungen ber die Architektur bis zum Design der Codegenerierung und dem Testen F r jede Phase werden Paradigmen Methoden Techniken und Werkzeuge beschrieben und ihre praktische Anwendung in den Vordergrund gestellt Dar ber hinaus wird auf die Integration von Werkzeugen funktionale Sicherheit und Metamodellierung eingegangen sowie die Einf hrung eines modellbasierten Ansatzes in einer Organisation und die Notwendigkeit zum lebenslangen Lernen erl utert Der Leser erf hrt in diesem Buch wie ein modellbasiertes Vorgehen nutzbringend in der Praxis f r die Softwareentwicklung eingesetzt wird Das Vorgehen wird unabh ngig von Modellierungswerkzeugen vorgestellt Zahlreiche Beispiele exemplarisch auch auf Basis konkreter Werkzeuge helfen bei der praktischen Umsetzung Der Anhang bietet ausgehend von den Thesen des Manifests Modeling of Embedded Systems eine Skizze eines Reifegradmodells f r modellbasierte Softwareentwicklung eine Kurzreferenz zu UML und SysML sowie ein Glossar Auf der Buch Website mdese de finden sich Werkzeuge Beispiele Tutorials sowie weitere vertiefende Informationen zum Thema *Anyone Can Code* Ali Arya,2020-11-23 Anyone Can Code The Art and Science of Logical Creativity introduces computer programming as a way of problem solving through logical thinking It uses the notion of modularization as a central lens through which we can make sense of many software concepts This book takes the reader through fundamental concepts in programming by illustrating them in three different and distinct languages C C Python and Javascript Key features Focuses on problem solving and algorithmic thinking instead of programming functions syntax and libraries Includes engaging examples including video games and visual effects Provides exercises and reflective questions This book gives beginner and intermediate learners a strong understanding of what they are doing so that they can do it better and with any other tool or language that they may end up using later *Test-Driven Development in Go* Adelina Simion,2023-04-28 Explore Go testing techniques and leverage TDD to deliver and maintain microservices architecture including contract end to end and unit testing Purchase of the print or Kindle book includes a free PDF eBook Key Features Write Go test suites using popular mocking and testing frameworks Leverage TDD to implement testing at all levels of web applications and microservices architecture Master the art of writing tests that cover edge cases and concurrent code Book Description

Experienced developers understand the importance of designing a comprehensive testing strategy to ensure efficient shipping and maintaining services in production This book shows you how to utilize test driven development TDD a widely adopted industry practice for testing your Go apps at different levels You ll also explore challenges faced in testing concurrent code and learn how to leverage generics and write fuzz tests The book begins by teaching you how to use TDD to tackle various problems from simple mathematical functions to web apps You ll then learn how to structure and run your unit tests using Go s standard testing library and explore two popular testing frameworks Testify and Ginkgo You ll also implement test suites using table driven testing a popular Go technique As you advance you ll write and run behavior driven development BDD tests using Ginkgo and Godog Finally you ll explore the tricky aspects of implementing and testing TDD in production such as refactoring your code and testing microservices architecture with contract testing implemented with Pact All these techniques will be demonstrated using an example REST API as well as smaller bespoke code examples By the end of this book you ll have learned how to design and implement a comprehensive testing strategy for your Go applications and microservices architecture What you will learn Create practical Go unit tests using mocks and assertions with Testify Build table driven test suites for HTTP web applications Write BDD style tests using the Ginkgo testing framework Use the Godog testing framework to reliably test web applications Verify microservices architecture using Pact contract testing Develop tests that cover edge cases using property testing and fuzzing Who this book is for If you are an intermediate level developer or software testing professional who knows Go fundamentals and is looking to deliver projects with Go then this book is for you Knowledge of Go syntax structs functions and interfaces will help you get the most out of this book **Quality of Information and Communications Technology** Martin Shepperd,Fernando Brito e Abreu,Alberto Rodrigues da Silva,Ricardo Pérez-Castillo,2020-08-31 This book constitutes the refereed proceedings of the 13th International Conference on the Quality of Information and Communications Technology QUATIC 2020 held in Faro Portugal in September 2020 The 27 full papers and 12 short papers were carefully reviewed and selected from 81 submissions The papers are organized in topical sections quality aspects in machine learning AI and data analytics evidence based software quality engineering human and artificial intelligences for software evolution process modeling improvement and assessment software quality education and training quality aspects in quantum computing safety security and privacy ICT verification and validation RE MDD and agile The conference was held virtually due to the COVID 19 pandemic *The Lean Approach to Digital Transformation* Yves Caseau,2022-05-01 The Lean Approach to Digital Transformation From Customer to Code and From Code to Customer is organized into three parts that expose and develop the three capabilities that are essential for a successful digital transformation 1 Understanding how to co create digital services with users whether they are customers or future customers This ability combines observation dialogue and iterative experimentation The approach proposed in this book is based on the Lean Startup approach according to an extended vision that combines Design Thinking and Growth

Hacking Companies must become truly customer centric from observation and listening to co development The revolution of the digital age of the 21st century is that customer orientation is more imperative the era of abundance usages rate of change complexity of experiences and shift of power towards communities are easier using digital tools and digital communities 2 Developing an information system IS that is the backbone of the digital transformation called exponential information system to designate an open IS in particular on its borders capable of interfacing and combining with external services positioned as a player in software ecosystems and built for processing scalable and dynamic data flows The exponential information system is constantly changing and it continuously absorbs the best of information processing technology such as Artificial Intelligence and Machine Learning 3 Building software micro factories that produce service platforms which are called Lean software factories This software factory concept covers the integration of agile methods tooling and continuous integration and deployment practices a customer oriented product approach and a platform approach based on modularity as well as API based architecture and openness to external stakeholders This software micro factory is the foundation that continuously produces and provides constantly evolving services These three capabilities are not unique or specific to this book they are linked to other concepts such as agile methods product development according to lean principles software production approaches such as CICD continuous integration and deployment or DevOps This book weaves a common frame of reference for all these approaches to derive more value from the digital transformation and to facilitate its implementation The title of the book refers to the lean approach to digital transformation because the two underlying frameworks Lean Startup and Lean Software Factory are directly inspired by Lean in the sense of the Toyota Way The Lean approach is present from the beginning to the end of this book it provides the framework for customer orientation and the love of a job well done which are the conditions for the success of a digital transformation

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Clean Architecture A Craftsmans To Software Introduction

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