OMB No. 4750485891321

Domain Specific Languages Martin Fowler

Domain-Specific Languages with Martin Fowler Episode 182: Domain-Specific Languages with Martin Fowler and Rebecca Parsons Martin Fowler Discusses the Addison-Wesley Signature Series - Winner of 7 Jolt Awards \"Everything Old is New Again: Quoted Domain Specific Languages\" by Philip Wadler Martin Fowler on DSLs 3 Ideas on Refactoring by Martin Fowler FREE Writing Software For Authors | Writing Apps, Word Processors How to Learn a New Language: A Complete Beginner's Guide When To Use Microservices (And When Not To!) • Sam Newman \u0026 Martin Fowler • GOTO 2020 How to refactor code the right way - Martin Fowler Ranking Functional Programming Languages (Why I'm Biased and Excited) [XConf Brasil 2019] Martin Fowler - Introdução à Refatoração How to Get a Free Domain 2024 (Complete Guide) The Most Famous Computer Programming Book In The World How Senior Programmers ACTUALLY Write Code Domain Specific Languages - Programming Languages 18. Domain Specific

Languages and Autotuning What is a Domain Specific Language (DSL)? Scratching the surface Implementing Martin Fowler's State Machine DSL in textX Martin Fowler Reflects on Refactoring: Improving the Design of Existing Code Marlowe 2: domain-specific languages
A Brief Guide to the Standard Object Modeling Language
Refactoring Test Code
Definitions and Pattern Summaries
Reusable Object Models
Domain Specific Languages in .NET
Essays on Software Technology and Innovation
Fundamentals of Object-oriented Design in UML
xUnit Test Patterns
Pattern Enterpr Applica Arch
Improving the Design of Existing Code
Lambdas, streams, functional and reactive programming
Clean Architecture
Language Implementation Patterns
DSL Engineering
Service Design Patterns
97 Things Every Programmer Should Know
Domain-Specific Languages Made Easy
Refactor Your Wetware
International Summer School, GTTSE 2011, Braga, Portugal, July 3-9, 2011, Revised and Extended Papers
Clean Code
Create Your Own Domain-Specific and General Programming Languages

A Handbook of Agile Software Craftsmanship
A Craftsman's Guide to Software Structure and Design
Refactoring

Domain Specific Languages *OMB No. 4750485891321* *Martin Fowler* *edited by*

ROLLINS BALLARD

A Brief Guide to the Standard Object Modeling Language

Springer Automated testing is a cornerstone of agile development. An effective testing strategy will deliver new functionality more aggressively, accelerate user feedback, and improve quality. However, for many developers, creating effective automated tests is a unique and unfamiliar challenge. xUnit Test Patterns is the definitive guide to writing automated tests using xUnit, the most popular unit testing framework in use today. Agile coach and test automation expert Gerard Meszaros describes 68 proven patterns for making tests easier to write, understand, and maintain. He then shows you how to make them more robust and repeatable--and far more cost-effective. Loaded with information, this book feels like three books in one. The first part is a detailed

tutorial on test automation that covers everything from test strategy to in-depth test coding. The second part, a catalog of 18 frequently encountered "test smells," provides trouble-shooting guidelines to help you determine the root cause of problems and the most applicable patterns. The third part contains detailed descriptions of each pattern, including refactoring instructions illustrated by extensive code samples in multiple programming languages. *Refactoring Test Code* Packt Publishing Ltd Martin Fowler's breakthrough practitioner-oriented book on Domain Specific Languages - will do for DSLs what Fowler did for refactoring! * *Fowler's highly anticipated introduction to DSLs: a category-defining book by one of the software world's most influential authors. *Two books in one: a concise narrative that introduces DSLs, and a larger reference that shows how to plan and develop them. *Helps software professionals reduce the cost and complexity of building DSLs - so they can take full advantage of them. Domain Specific Languages (DSLs) offer immense promise for software engineers who need better, faster ways to

solve problems of specific types, or in specific areas or industries. DSLs have been around for several years, and have begun to grow in popularity. Now, Martin Fowler - one of the world's most influential software engineering authors - has written the first practitioner-oriented book about them. Fowler's legendary book, Refactoring, made software refactoring a crucial tool for software engineers worldwide; this book will do the same for DSLs. Fowler has designed Domain Specific Languages as two books in one. The first - -a narrative designed to be read from 'cover to cover' - offers a concise introduction to DSLs, how they are implemented, and what are useful for. Next, Fowler thoroughly introduces today's most effective techniques for building DSLs. Fowler covers both 'external' and 'internal' DSLs, a well as alternative computational models, code generation, common parser topics, and much more. He provides extensive Java and C# examples throughout, as well as selected Ruby examples for concepts that can best be explained using a dynamic language. Together, both sections enable readers to

make wellinformed choices about whether to use a DSL in their work, and which techniques to employ in order to build DSLs more quickly and cost-effectively.

Definitions and Pattern Summaries

Addison-Wesley Professional

This book covers several topics related to domain-specific language (DSL) engineering in general and how they can be handled by means of the JetBrains Meta Programming System (MPS), an open source language workbench developed by JetBrains over the last 15 years. The book begins with an overview of the domain of language workbenches, which provides perspectives and motivations underpinning the creation of MPS. Moreover, technical details of the language underneath MPS together with the definition of the tool's main features are discussed. The remaining ten chapters are then organized in three parts, each dedicated to a specific aspect of the topic. Part I "MPS in Industrial Applications" deals with the challenges and inadequacies of general-purpose languages used in companies, as opposed to the reasons why DSLs are essential, together with their benefits and efficiency,

and summarizes lessons learnt by using MPS. Part II about “MPS in Research Projects” covers the benefits of text-based languages, the design and development of gamification applications, and research fields with generally low expertise in language engineering. Eventually, Part III focuses on “Teaching and Learning with MPS” by discussing the organization of both commercial and academic courses on MPS. MPS is used to implement languages for real-world use. Its distinguishing feature is projectional editing, which supports practically unlimited language extension and composition possibilities as well as a flexible mix of a wide range of textual, tabular, mathematical and graphical notations. The number and diversity of the presented use-cases demonstrate the strength and malleability of the DSLs defined using MPS. The selected contributions represent the current state of the art and practice in using JetBrains MPS to implement languages for real-world applications.

Reusable Object Models

Pragmatic Bookshelf

This tutorial volume includes revised and extended lecture notes of six long tutorials, five short tutorials,

and one peer-reviewed participant contribution held at the 4th International Summer School on Generative and Transformational Techniques in Software Engineering, GTTSE 2011. The school presents the state of the art in software language engineering and generative and transformational techniques in software engineering with coverage of foundations, methods, tools, and case studies. Domain Specific Languages in .NET Pearson Education "[The authors] are pioneers. . . . Few in our industry have their breadth of knowledge and experience." —From the Foreword by Dave Thomas, Bedarra Labs Domain-Specific Modeling (DSM) is the latest approach to software development, promising to greatly increase the speed and ease of software creation. Early adopters of DSM have been enjoying productivity increases of 500–1000% in production for over a decade. This book introduces DSM and offers examples from various fields to illustrate to experienced developers how DSM can improve software development in their teams. Two authorities in the field explain what DSM is, why it

works, and how to successfully create and use a DSM solution to improve productivity and quality. Divided into four parts, the book covers: background and motivation; fundamentals; in-depth examples; and creating DSM solutions. There is an emphasis throughout the book on practical guidelines for implementing DSM, including how to identify the necessary language constructs, how to generate full code from models, and how to provide tool support for a new DSM language. The example cases described in the book are available the book's Website, www.dsmbook.com, along with, an evaluation copy of the MetaEdit+ tool (for Windows, Mac OS X, and Linux), which allows readers to examine and try out the modeling languages and code generators. Domain-Specific Modeling is an essential reference for lead developers, software engineers, architects, methodologists, and technical managers who want to learn how to create a DSM solution and successfully put it into practice.

Essays on Software Technology and Innovation

Simon and Schuster Learn how to

implement a DSL with Xtext and Xtend using easy-to-understand examples and best practices About This Book Leverage the latest features of Xtext and Xtend to develop a domain-specific language. Integrate Xtext with popular third party IDEs and get the best out of both worlds. Discover how to test a DSL implementation and how to customize runtime and IDE aspects of the DSL Who This Book Is For This book is targeted at programmers and developers who want to create a domain-specific language with Xtext. They should have a basic familiarity with Eclipse and its functionality. Previous experience with compiler implementation can be helpful but is not necessary since this book will explain all the development stages of a DSL. What You Will Learn Write Xtext grammar for a DSL; Use Xtend as an alternative to Java to write cleaner, easier-to-read, and more maintainable code; Build your Xtext DSLs easily with Maven/Tycho and Gradle; Write a code generator and an interpreter for a DSL; Explore the Xtext scoping mechanism for symbol resolution; Test most aspects of the DSL implementation with JUnit; Understand best practices

in DSL implementations with Xtext and Xtend; Develop your Xtext DSLs using Continuous Integration mechanisms; Use an Xtext editor in a web application In Detail Xtext is an open source Eclipse framework for implementing domain-specific languages together with IDE functionalities. It lets you implement languages really quickly; most of all, it covers all aspects of a complete language infrastructure, including the parser, code generator, interpreter, and more. This book will enable you to implement Domain Specific Languages (DSL) efficiently, together with their IDE tooling, with Xtext and Xtend. Opening with brief coverage of Xtext features involved in DSL implementation, including integration in an IDE, the book will then introduce you to Xtend as this language will be used in all the examples throughout the book. You will then explore the typical programming development workflow with Xtext when we modify the grammar of the DSL. Further, the Xtend programming language (a fully-featured Java-like language tightly integrated with Java) will be introduced. We then explain the main concepts

of Xtext, such as validation, code generation, and customizations of runtime and UI aspects. You will have learned how to test a DSL implemented in Xtext with JUnit and will progress to advanced concepts such as type checking and scoping. You will then integrate the typical Continuous Integration systems built in to Xtext DSLs and familiarize yourself with Xbase. By the end of the book, you will manually maintain the EMF model for an Xtext DSL and will see how an Xtext DSL can also be used in IntelliJ. Style and approach A step-by step-tutorial with illustrative examples that will let you master using Xtext and implementing DSLs with its custom language, Xtend.

Fundamentals of Object-oriented Design in UML

Manning Publications

The definitive resource on domain-specific languages: based on years of real-world experience, relying on modern language workbenches and full of examples. Domain-Specific Languages are programming languages specialized for a particular application domain. By incorporating knowledge about that domain, DSLs can lead to more concise and more analyzable programs,

better code quality and increased development speed. This book provides a thorough introduction to DSL, relying on today's state of the art language workbenches. The book has four parts: introduction, DSL design, DSL implementation as well as the role of DSLs in various aspects of software engineering. Part I Introduction: This part introduces DSLs in general and discusses their advantages and drawbacks. It also defines important terms and concepts and introduces the case studies used in the most of the remainder of the book. Part II DSL Design: This part discusses the design of DSLs - independent of implementation techniques. It reviews seven design dimensions, explains a number of reusable language paradigms and points out a number of process-related issues. Part III DSL Implementation: This part provides details about the implementation of DSLs with lots of code. It uses three state-of-the-art but quite different language workbenches: JetBrains MPS, Eclipse Xtext and TU Delft's Spoofax. Part IV DSLs and Software Engineering: This part discusses the use of DSLs for requirements, architecture, implementation and product

line engineering, as well as their roles as a developer utility and for implementing business logic. The book is available as a printed version (the one your are looking at) and as a PDF. For details see the book's companion website at http: //dslbook.org

xUnit Test Patterns

Pragmatic Bookshelf

The need to handle increasingly larger data volumes is one factor driving the adoption of a new class of nonrelational "NoSQL" databases. Advocates of NoSQL databases claim they can be used to build systems that are more performant, scale better, and are easier to program. NoSQL Distilled is a concise but thorough introduction to this rapidly emerging technology. Pramod J. Sadalage and Martin Fowler explain how NoSQL databases work and the ways that they may be a superior alternative to a traditional RDBMS. The authors provide a fast-paced guide to the concepts you need to know in order to evaluate whether NoSQL databases are right for your needs and, if so, which technologies you should explore further. The first part of the book concentrates on core concepts, including schemaless data models, aggregates,

new distribution models, the CAP theorem, and map-reduce. In the second part, the authors explore architectural and design issues associated with implementing NoSQL. They also present realistic use cases that demonstrate NoSQL databases at work and feature representative examples using Riak, MongoDB, Cassandra, and Neo4j. In addition, by drawing on Pramod Sadalage's pioneering work, NoSQL Distilled shows how to implement evolutionary design with schema migration: an essential technique for applying NoSQL databases. The book concludes by describing how NoSQL is ushering in a new age of Polyglot Persistence, where multiple data-storage worlds coexist, and architects can choose the technology best optimized for each type of data access.
Pattern Enterpr Applica Arch
Pearson Education
A general-purpose language like C# is designed to handle all programming tasks. By contrast, the structure and syntax of a Domain-Specific Language are designed to match a particular applications area. A DSL is designed for readability and easy programming of repeating

problems. Using the innovative Boo language, it's a breeze to create a DSL for your application domain that works on .NET and does not sacrifice performance. DSLs in Boo shows you how to design, extend, and evolve DSLs for .NET by focusing on approaches and patterns. You learn to define an app in terms that match the domain, and to use Boo to build DSLs that generate efficient executables. And you won't deal with the awkward XML-laden syntax many DSLs require. The book concentrates on writing internal (textual) DSLs that allow easy extensibility of the application and framework. And if you don't know Boo, don't worry-you'll learn right here all the techniques you need. Purchase of the print book comes with an offer of a free PDF, ePub, and Kindle eBook from Manning. Also available is all code from the book.

Improving the Design of Existing Code

Addison-Wesley Professional

The Definitive Refactoring Guide, Fully Revamped for Ruby With refactoring, programmers can transform even the most chaotic software into well-designed systems that are far easier to evolve and maintain. What's more, they can do it one step at a time, through

a series of simple, proven steps. Now, there's an authoritative and extensively updated version of Martin Fowler's classic refactoring book that utilizes Ruby examples and idioms throughout-not code adapted from Java or any other environment. The authors introduce a detailed catalog of more than 70 proven Ruby refactorings, with specific guidance on when to apply each of them, step-by-step instructions for using them, and example code illustrating how they work. Many of the authors' refactorings use powerful Ruby-specific features, and all code samples are available for download. Leveraging Fowler's original concepts, the authors show how to perform refactoring in a controlled, efficient, incremental manner, so you methodically improve your code's structure without introducing new bugs. Whatever your role in writing or maintaining Ruby code, this book will be an indispensable resource. This book will help you * Understand the core principles of refactoring and the reasons for doing it * Recognize "bad smells" in your Ruby code * Rework bad designs into well-designed code, one step

at a time * Build tests to make sure your refactorings work properly * Understand the challenges of refactoring and how they can be overcome * Compose methods to package code properly * Move features between objects to place responsibilities where they fit best * Organize data to make it easier to work with * Simplify conditional expressions and make more effective use of polymorphism * Create interfaces that are easier to understand and use * Generalize more effectively * Perform larger refactorings that transform entire software systems and may take months or years * Successfully refactor Ruby on Rails code **Lambdas, streams, functional and reactive programming** Packt Publishing Ltd Domain-Driven Design (DDD) is an approach to software development for complex businesses and other domains. DDD tackles that complexity by focusing the team's attention on knowledge of the domain, picking apart the most tricky, intricate problems with models, and shaping the software around those models. Easier said than done! The techniques of DDD help us approach this systematically. This reference gives a quick

and authoritative summary of the key concepts of DDD. It is not meant as a learning introduction to the subject. Eric Evans' original book and a handful of others explain DDD in depth from different perspectives. On the other hand, we often need to scan a topic quickly or get the gist of a particular pattern. That is the purpose of this reference. It is complementary to the more discursive books. The starting point of this text was a set of excerpts from the original book by Eric Evans, Domain-Driven-Design: Tackling Complexity in the Heart of Software, 2004 - in particular, the pattern summaries, which were placed in the Creative Commons by Evans and the publisher, Pearson Education. In this reference, those original summaries have been updated and expanded with new content. The practice and understanding of DDD has not stood still over the past decade, and Evans has taken this chance to document some important refinements. Some of the patterns and definitions have been edited or rewritten by Evans to clarify the original intent. Three patterns have been added, describing concepts whose usefulness

and importance has emerged in the intervening years. Also, the sequence and grouping of the topics has been changed significantly to better emphasize the core principles. This is an up-to-date, quick reference to DDD.

Clean Architecture

Pearson Education

Model-Driven Software Development (MDSD) is currently a highlyregarded development paradigm among developers and researchers.With the advent of OMG's MDA and Microsoft's Software Factories,the MDSD approach has moved to the centre of the programmer's attention, becoming the focus of conferences such as OOPSLA, JAOOand OOP. MDSD is about using domain-specific languages to create models thatexpress application structure or behaviour in an efficient anddomain-specific way. These models are subsequently transformed intoexecutable code by a sequence of model transformations. This practical guide for software architects and developers ispeppered with practical examples and extensive case studies.International experts deliver: * A comprehensive overview of MDSD and how it relates to industrystand

ards such as MDA and Software Factories. * Technical details on meta modeling, DSL construction, model-to-model and model-to-code transformations, and softwarearchitecture. * Invaluable insight into the software development process, plusengineering issues such as versioning, testing and product lineengineering. * Essential management knowledge covering economic andorganizational topics, from a global perspective. Get started and benefit from some practical support along the way!

Language Implementation Patterns
John Wiley & Sons
This classic book is the definitive real-world style guide for better Smalltalk programming. This author presents a set of patterns that organize all the informal experience successful Smalltalk programmers have learned the hard way. When programmers understand these patterns, they can write much more effective code. The concept of Smalltalk patterns is introduced, and the book explains why they work. Next, the book introduces proven patterns for working with methods, messages, state, collections, classes and formatting. Finally, the book walks through a

development example utilizing patterns. For programmers, project managers, teachers and students -- both new and experienced. This book presents a set of patterns that organize all the informal experience of successful Smalltalk programmers. This book will help you understand these patterns, and empower you to write more effective code.

DSL Engineering

O'Reilly Media ThoughtWorks is a well-known global consulting firm; ThoughtWorkers are leaders in areas of design, architecture, SOA, testing, and agile methodologies. This collection of essays brings together contributions from well-known ThoughtWorkers such as Martin Fowler, along with other authors you may not know yet. While ThoughtWorks is perhaps best known for their work in the Agile community, this anthology confronts issues throughout the software development life cycle. From technology issues that transcend methodology, to issues of realizing business value from applications, you'll find it here.

Service Design Patterns

Domain-Specific Languages Written for developers who need to create user-facing DSLs,

Domain-Specific Languages Made Easy unlocks clear and practical methods to create DSLs with easy-to-use interfaces. Imagine if your non-technical clients could safely produce software without the need for anyone to manually write code. Domain-specific languages are purpose-built programming interfaces that make that possible—no programming experience required. Written for developers who need to create user-facing DSLs, Domain-Specific Languages Made Easy unlocks clear and practical methods to create DSLs with easy-to-use interfaces. Author Meinte Boersma lays out an iterative process for creating languages accessible to domain experts such as operations specialists, data analysts, and financial experts. You'll start with an overview of software language engineering before diving into the unique projectional editing paradigm that makes it easy to produce DSLs for business. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.

97 Things Every Programmer Should Know Addison-Wesley Professional This book identifies, defines and illustrates the fundamental

concepts and engineering techniques relevant to applications of software languages in software development. It presents software languages primarily from a software engineering perspective, i.e., it addresses how to parse, analyze, transform, generate, format, and otherwise process software artifacts in different software languages, as they appear in software development. To this end, it covers a wide range of software languages – most notably programming languages, domain-specific languages, modeling languages, exchange formats, and specifically also language definition languages. Further, different languages are leveraged to illustrate software language engineering concepts and techniques. The functional programming language Haskell dominates the book, while the mainstream programming languages Python and Java are additionally used for illustration. By doing this, the book collects and organizes scattered knowledge from software language engineering, focusing on application areas such as software analysis (software reverse engineering), software transformation (software re-

engineering), software composition (modularity), and domain-specific languages. It is designed as a textbook for independent study as well as for bachelor's (advanced level) or master's university courses in Computer Science. An additional website provides complementary material, for example, lecture slides and videos. This book is a valuable resource for anyone wanting to understand the fundamental concepts and important engineering principles underlying software languages, allowing them to acquire much of the operational intelligence needed for dealing with software languages in software development practice. This is an important skill set for software engineers, as languages are increasingly permeating software development.

Domain-Specific Languages Made Easy

Springer

More than 300,000 developers have benefited from past editions of UML Distilled . This third edition is the best resource for quick, no-nonsense insights into understanding and using UML 2.0 and prior versions of the UML. Some readers will want to quickly get up to speed with the UML 2.0 and learn the essentials of

the UML. Others will use this book as a handy, quick reference to the most common parts of the UML. The author delivers on both of these promises in a short, concise, and focused presentation. This book describes all the major UML diagram types, what they're used for, and the basic notation involved in creating and deciphering them. These diagrams include class, sequence, object, package, deployment, use case, state machine, activity, communicatio n, composite structure, component, interaction overview, and timing diagrams. The examples are clear and the explanations cut to the fundamental design logic. Includes a quick reference to the most useful parts of the UML notation and a useful summary of diagram types that were added to the UML 2.0. If you are like most developers, you don't have time to keep up with all the new innovations in software engineering. This new edition of Fowler's classic work gets you acquainted with some of the best thinking about efficient object-oriented software design using the UML--in a convenient format that will be essential to anyone who designs software

professionally.

Refactor Your Wetware

Addison-Wesley Professional Your success—and sanity—are closer at hand when you work at a higher level of abstraction, allowing your attention to be on the business problem rather than the details of the programming platform. Domain Specific Languages—"little languages" implemented on top of conventional programming languages—give you a way to do this because they model the domain of your business problem. DSLs in Action introduces the concepts and definitions a developer needs to build high-quality domain specific languages. It provides a solid foundation to the usage as well as implementation aspects of a DSL, focusing on the necessity of applications speaking the language of the domain. After reading this book, a programmer will be able to design APIs that make better domain models. For experienced developers, the book addresses the intricacies of domain language design without the pain of writing parsers by hand. The book discusses DSL usage and implementations in the real world based on a suite of JVM languages like Java,

Ruby, Scala, and Groovy. It contains code snippets that implement real world DSL designs and discusses the pros and cons of each implementation. Purchase of the print book comes with an offer of a free PDF, ePub, and Kindle eBook from Manning. Also available is all code from the book. What's Inside Tested, real-world examples How to find the right level of abstraction Using language features to build internal DSLs Designing parser/combinator-based little languages

International Summer School, GTTSE 2011, Braga, Portugal, July 3-9, 2011, Revised and Extended Papers

Packt Publishing Looks at the principles and clean code, includes case studies showcasing the practices of writing clean code, and contains a list of heuristics and "smells" accumulated from the process of writing clean code.

Clean Code

Dog Ear Publishing Take advantage of Sinatra, the Ruby-based web application library and domain-specific language used by Heroku, GitHub, Apple, Engine Yard, and other prominent organizations. With this

concise book, you will quickly gain working knowledge of Sinatra and its minimalist approach to building both standalone and modular web applications. Sinatra serves as a lightweight wrapper around Rack middleware, with syntax that maps closely to functions exposed by HTTP verbs, which makes it ideal for web services and APIs. If you have experience building applications with Ruby, you'll quickly learn language fundamentals and see under-the-hood techniques, with the help of several practical examples. Then you'll get hands-on experience with Sinatra by building your own blog engine. Learn Sinatra's core concepts, and get started by building a simple application Create views, manage sessions, and work with Sinatra route definitions Become familiar with the language's internals, and take a closer look at Rack Use different subclass methods for building flexible and robust architectures Put Sinatra to work: build a blog that takes advantage of service hooks provided by the GitHub API

Related with Domain Specific Languages Martin Fowler:

© Domain Specific Languages Martin Fowler Servsafe Manager Study Guide Free
© Domain Specific Languages Martin Fowler Series 7 Suitability Practice Questions
© Domain Specific Languages Martin Fowler Series 65 Practice Exam