

Model Driven Architecture With Executable Uml

This book constitutes the refereed proceedings of the Third European Conference on Model Driven Architecture: Foundations and Applications, ECMDA-FA 2007, held in Haifa, Israel in June 2007. The papers address all current issues of model-driven architecture, including foundational topics and application-oriented issues.

MDA Distilled is an accessible introduction to the MDA standard and its tools and technologies. The book describes the fundamental features of MDA, how they fit together, and how you can use them in your organization today. You will also learn how to define a model-driven process for a project involving multiple platforms, implement that process, and then test the resulting system.

The Model Driven Architecture defines an approach where the specification of the functionality of a system can be separated from its implementation on a particular technology platform. The idea being that the architecture will be able to easily be adapted for different situations, whether they be legacy systems, different languages or yet to be invented platforms. MDA is therefore, a significant evolution of the object-oriented approach to system development. Advanced System Design with Java, UML and MDA describes the factors involved in designing and constructing large systems, illustrating the design process through a series of examples, including a Scrabble player, a jukebox using web streaming, a security system, and others. The book first considers the challenges of software design, before introducing the Unified Modelling Language and Object Constraint Language. The book then moves on to discuss systems design as a whole, covering internet systems design, web services, Flash, XML, XSLT, SOAP, Servlets, Javascript and JSP. In the final section of the book, the concepts and terminology of the Model Driven Architecture are discussed. To get the most from this book, readers will need introductory knowledge of software engineering, programming in Java and basic knowledge of HTML. * Examines issues raised by the Model-Driven Architecture approach to development * Uses easy to grasp case studies to illustrate complex concepts * Focused on the internet applications and technologies that are essential for students in the online age

This book introduces all the relevant information required to understand and put Model Driven Architecture (MDA) into industrial practice. It clearly explains which conceptual primitives should be present in a system specification, how to use UML to properly represent this subset of basic conceptual constructs, how to identify just those diagrams and modeling constructs that are actually required to create a meaningful conceptual schema, and how to accomplish the transformation process between the problem space and the solution space. The approach is fully supported by commercially available tools.

Enterprise Patterns and MDA teaches you how to customize any archetype pattern—such as Customer, Product, and Order—to reflect the idiosyncrasies of your own business environment. Because all the patterns work harmoniously together and have clearly documented relationships to each other, you'll come away with a host of reusable solutions to common problems in business-software design. This book shows you how using a pattern or a fragment of a pattern can save you months of work and help you avoid costly errors. You'll also discover how—when used in literate modeling—patterns can solve the difficult challenge of communicating UML models to broad audiences. The configurable patterns can be used manually to create executable code. However, the authors draw on their extensive experience to show you how to tap the significant power of MDA and UML for maximum automation. Not surprisingly, the patterns included in this book are highly valuable; a blue-chip company recently valued a similar, but less mature, set of patterns at hundreds of thousands of dollars. Use this practical guide to increase the efficiency of your designs and to create robust business applications that can be applied immediately in a business setting.

Covers important concepts, issues, trends, methodologies, and technologies in quality assurance for model-driven software development.

The fourth edition of the European Conference on Model-Driven Architecture – Foundations and Applications (ECMDA-FA 2008) was dedicated to furthering the state of knowledge and fostering the industrialization of the model-driven architecture (MDA) methodology. MDA is an initiative proposed by the Object Management Group (OMG) for platform-generic software development. It promotes the use of models in the specification, design, analysis, synthesis, deployment, and evolution of complex software systems. ECMDA-FA 2008 focused on engaging key European and international researchers and practitioners in a dialogue which will result in a stronger, more efficient industry, producing more reliable software on the basis of state-of-the-art research results. ECMDA-FA is a forum for exchanging information, discussing the latest results and arguing about future developments of MDA. It is a pleasure to be able to introduce the proceedings of ECMDA-FA 2008. ECMDA-FA addresses various MDA areas including model management, executable models, concrete syntaxes, aspects and concerns, validation and testing, model-based systems engineering, model-driven development and service-oriented architectures, and the application of model-driven development. There are so many people who deserve warm thanks and gratitude. The fruitful collaboration of the Organization, Steering and Program Committee members and the vibrant community led to a successful conference: ECMDA-FA 2008 obtained excellent results in terms of submissions, program size, and attendance. The Program Committee accepted, with the help of additional reviewers, research papers and industry papers for ECMDA-FA 2008: We received 87 submissions. Of these, a total of 31 were accepted including 21 research papers and 10 industry papers. We thank them for the thorough

and high-quality selection process.

Users increasingly demand more from their software than ever before—more features, fewer errors, faster runtimes. To deliver the best quality products possible, software engineers are constantly in the process of employing novel tools in developing the latest software applications. Progressions and Innovations in Model-Driven Software Engineering investigates the most recent and relevant research on model-driven engineering. Within its pages, researchers and professionals in the field of software development, as well as academics and students of computer science, will find an up-to-date discussion of scientific literature on the topic, identifying opportunities and advantages, and complexities and challenges, inherent in the future of software engineering.

Overviews the process of building and compiling executable UML models for software development. The book focuses on the BridgePoint tool suite and object action language developed by Project Technology. The authors discuss identifying system requirements, diagramming classes and attributes, constraints on the class diagram, ways of building sets of communicating statechart diagrams, and model verification. Annotation copyrighted by Book News, Inc., Portland, OR.

The Model-Driven Architecture (MDA) aims at better software engineering by enhancing the productivity, portability and interoperability of software. To guarantee the quality of the resulting software systems, testing plays a decisive role. In this work, an approach to model-driven testing based on the idea of the MDA framework is presented. It introduces a new test modeling language and a test generation technique in order to develop both functional and real-time tests by models. The former is defined as an extension of a standardized system modeling language to facilitate test model generation from system models. The latter presumes the availability of a system model which can be reused for test specification - a prerequisite that is almost always true in modern software development processes. Through different abstraction levels, the test model can be adapted to platforms on which test code is to run. As a result, test codes that are executable on different platforms can be generated from a single model. The effectiveness of this approach is demonstrated by testing a Bluetooth application.

"Highlights of this book include: the MDA framework, including the Platform Independent Model (PIM) and Platform Special Model (PSM); OMG standards and the use of UML; MDA and Agile, Extreme Programming, and Rational Unified Process (RUP) development; how to apply MDA, including PIM-to-PSM and PSM-to-code transformations for Relational, Enterprise JavaBean (EJB), and Web models; transformations, including controlling and tuning, traceability, incremental consistency, and their implications; metamodeling; and relationships between different standards, including Meta Object Facility (MOF), UML, and Object Constraint Language (OCL)."--Jacket.

This volume contains the final versions of the technical papers presented at MoDELS 2005 in Montego Bay, Jamaica, October 2–7, 2005.

This book constitutes the refereed proceedings of workshops, held at the 30th International Conference on Conceptual Modeling,

ER 2011, in Brussels, Belgium in October/November 2011. The 31 revised full papers presented together with 9 posters and demonstrations (out of 88 submissions) for the workshops and the 6 papers (out of 11 submissions) for the industrial track were carefully reviewed and selected. The papers are organized in sections on the workshops Web Information Systems Modeling (WISM); Modeling and Reasoning for Business Intelligence (MORE-BI); Software Variability Management (Variability@ER); Ontologies and Conceptual Modeling (Onto.Com); Semantic and Conceptual Issues in GIS (SeCoGIS); and Foundations and Practices of UML (FP-UML).

This book constitutes the refereed proceedings of the Third International Conference on Generative Programming and Component Engineering, GPCE 2004, held in Vancouver, Canada in October 2004. The 25 revised full papers presented together with abstracts of 2 invited talks were carefully reviewed and selected from 75 submissions. The papers are organized in topical sections on aspect-orientation, staged programming, types for meta-programming, meta-programming, model-driven approaches, product lines, and domain-specific languages and generation.

Model-Driven Software Development (MDSD) is currently a highly regarded 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, JAOO and OOP. MDSD is about using domain-specific languages to create models that express application structure or behaviour in an efficient and domain-specific way. These models are subsequently transformed into executable code by a sequence of model transformations. This practical guide for software architects and developers is peppered with practical examples and extensive case studies. International experts deliver:

- * A comprehensive overview of MDSD and how it relates to industry standards such as MDA and Software Factories.
- * Technical details on meta modeling, DSL construction, model-to-model and model-to-code transformations, and software architecture.
- * Invaluable insight into the software development process, plus engineering issues such as versioning, testing and product line engineering.
- * Essential management knowledge covering economic and organizational topics, from a global perspective. Get started and benefit from some practical support along the way!

The conference series BIR (Business Informatics Research) was established 10 years ago in Rostock as an initiative of researchers from Swedish and German universities. The objective was to create a global forum where researchers in business informatics, seniors as well as juniors, could meet, collaborate and - change ideas. Over the years BIR has matured into a series of international conferences, typically organized in the Baltic Sea region, including Norway and Iceland. A steering committee ensures the high quality of the BIR proceedings. We are very proud that this year an international and very well known editor has agreed to publish selected papers of the conference. The interest in the conference in terms of submissions and participation has steadily increased over the years. This year, we received 53 contributions among which 14 submissions were accepted as long papers and 4 as short papers. A few additional contributions were invited for presentation at the conference. The selection was carefully carried out by an International Program Committee. The result is a set of interesting and stimulating papers that address

important issues such as knowledge management, ontologies, models, workflow specifications, data bases and OLAP. The conference was opened by an invited technical talk by Dr. Klaus Brunnstein from The University of Hamburg who discussed the topic “The Information Society on the Way to Web 3.0: Perspectives, Opportunities and Risks”, which is challenging for all of us.

In areas such as military, security, aerospace, and disaster management, the need for performance optimization and interoperability among heterogeneous systems is increasingly important. Model-driven engineering, a paradigm in which the model becomes the actual software, offers a promising approach toward systems of systems (SoS) engineering. However, model-driven engineering has largely been unachieved in complex dynamical systems and netcentric SoS, partly because modeling and simulation (M&S) frameworks are stove-piped and not designed for SoS composability. Addressing this gap, Netcentric System of Systems Engineering with DEVS Unified Process presents a methodology for realizing the model-driven engineering vision and netcentric SoS using DEVS Unified Process (DUNIP). The authors draw on their experience with Discrete Event Systems Specification (DEVS) formalism, System Entity Structure (SES) theory, and applying model-driven engineering in the context of a netcentric SoS. They describe formal model-driven engineering methods for netcentric M&S using standards-based approaches to develop and test complex dynamic models with DUNIP. The book is organized into five sections: Section I introduces undergraduate students and novices to the world of DEVS. It covers systems and SoS M&S as well as DEVS formalism, software, modeling language, and DUNIP. It also assesses DUNIP with the requirements of the Department of Defense’s (DoD) Open Unified Technical Framework (OpenUTF) for netcentric Test and Evaluation (T&E). Section II delves into M&S-based systems engineering for graduate students, advanced practitioners, and industry professionals. It provides methodologies to apply M&S principles to SoS design and reviews the development of executable architectures based on a framework such as the Department of Defense Architecture Framework (DoDAF). It also describes an approach for building netcentric knowledge-based contingency-driven systems. Section III guides graduate students, advanced DEVS users, and industry professionals who are interested in building DEVS virtual machines and netcentric SoS. It discusses modeling standardization, the deployment of models and simulators in a netcentric environment, event-driven architectures, and more. Section IV explores real-world case studies that realize many of the concepts defined in the previous chapters. Section V outlines the next steps and looks at how the modeling of netcentric complex adaptive systems can be attempted using DEVS concepts. It touches on the boundaries of DEVS formalism and the future work needed to utilize advanced concepts like weak and strong emergence, self-organization, scale-free systems, run-time modularity, and event interoperability. This groundbreaking work details how DUNIP offers a well-structured, platform-independent methodology for the modeling and simulation of netcentric system of systems.

This book offers insight into a revolution in software development that will ultimately lead to automatic executable code generation directly from model specifications. Using the most widely adopted software modelling language, UML, it demonstrates the way to build robust specifications based on OMG's Model Driven Architecture (MDA). Chapters then describe the steps needed to move

directly to executable code using Executable UML (XUML). The volume will be a useful reference for professionals concerned with the future of software development for medium- and large-scale projects.

Model Driven Architecture with Executable UML Cambridge University Press

This book discusses how model-based approaches can improve the daily practice of software professionals. This is known as Model-Driven Software Engineering (MDSE) or, simply, Model-Driven Engineering (MDE). MDSE practices have proved to increase efficiency and effectiveness in software development, as demonstrated by various quantitative and qualitative studies. MDSE adoption in the software industry is foreseen to grow exponentially in the near future, e.g., due to the convergence of software development and business analysis. The aim of this book is to provide you with an agile and flexible tool to introduce you to the MDSE world, thus allowing you to quickly understand its basic principles and techniques and to choose the right set of MDSE instruments for your needs so that you can start to benefit from MDSE right away. The book is organized into two main parts. The first part discusses the foundations of MDSE in terms of basic concepts (i.e., models and transformations), driving principles, application scenarios, and current standards, like the well-known MDA initiative proposed by OMG (Object Management Group) as well as the practices on how to integrate MDSE in existing development processes. The second part deals with the technical aspects of MDSE, spanning from the basics on when and how to build a domain-specific modeling language, to the description of Model-to-Text and Model-to-Model transformations, and the tools that support the management of MDSE projects. The second edition of the book features: a set of completely new topics, including: full example of the creation of a new modeling language (IFML), discussion of modeling issues and approaches in specific domains, like business process modeling, user interaction modeling, and enterprise architecture complete revision of examples, figures, and text, for improving readability, understandability, and coherence better formulation of definitions, dependencies between concepts and ideas addition of a complete index of book content In addition to the contents of the book, more resources are provided on the book's website <http://www.mdse-book.com>, including the examples presented in the book.

"This book provides integrated chapters on software engineering and enterprise systems focusing on parts integrating requirements engineering, software engineering, process and frameworks, productivity technologies, and enterprise systems"--Provided by publisher.

"This book proposes an integration of classical compiler techniques, metamodeling techniques and algebraic specification techniques to make a significant impact on the automation of MDA-based reverse engineering processes"--Provided by publisher. From the beginning of software time, people have wondered why it isn't possible to accelerate software projects by simply adding staff. This is sometimes known as the "nine women can't make a baby in one month" problem. The most famous treatise declaring this to be impossible is Fred Brooks' 1975 book *The Mythical Man-Month*, in which he declares that "adding more programmers to a late software project makes it later," and indeed this has proven largely true over the decades. Aided by a domain-driven code generator that quickly creates database and API code, Parallel Agile (PA) achieves significant schedule

compression using parallelism: as many developers as necessary can independently and concurrently develop the scenarios from initial prototype through production code. Projects can scale by elastic staffing, rather than by stretching schedules for larger development efforts. Schedule compression with a large team of developers working in parallel is analogous to hardware acceleration of compute problems using parallel CPUs. PA has some similarities with and differences from other Agile approaches. Like most Agile methods, PA "gets to code early" and uses feedback from executable software to drive requirements and design. PA uses technical prototyping as a risk-mitigation strategy, to help sanity-check requirements for feasibility, and to evaluate different technical architectures and technologies. Unlike many Agile methods, PA does not support "design by refactoring," and it doesn't drive designs from unit tests. Instead, PA uses a minimalist UML-based design approach (Agile/ICONIX) that starts out with a domain model to facilitate communication across the development team, and partitions the system along use case boundaries, which enables parallel development. Parallel Agile is fully compatible with the Incremental Commitment Spiral Model (ICSM), which involves concurrent effort of a systems engineering team, a development team, and a test team working alongside the developers. The authors have been researching and refining the PA process for several years on multiple test projects that have involved over 200 developers. The book's example project details the design of one of these test projects, a crowdsourced traffic safety system.

Model Driven Architecture (MDA) is a new approach to software development that helps companies manage large, complex software projects and save development costs while allowing new technologies that come along to be readily incorporated. Although it is based on many long-standing industry precepts and best practices, such as UML, it is enough of a departure from traditional IT approaches to require some "proof of the pudding." Real-Life MDA is composed of six case studies of real companies using MDA that will furnish that proof. The authors' approach MDA projects by describing all aspects of the project from the viewpoint of the end-users—from the reason for choosing an MDA approach to the results and benefits. The case studies are preceded by an introductory chapter and are followed by a wrap-up chapter summarizing lessons learned. Written for executives, analysts, architects, and engineers positioned to influence business-oriented software development at the highest levels Filled with concrete examples and analyses of how MDA is relevant for organizations of various sizes Considers a range of uses for MDA—from business process analysis to full-scale software modeling and development Presents results for each case study in terms of tangible, measured benefits, including automatically generated code, defect reduction, improved visibility, and ROI Integration -- Applications of transformations -- Applications of MDA -- Process -- Model consistency -- Model management -- Transformation (1) -- Ontologies -- Reengineering -- Tools and profiles -- Tool generation -- Constraints -- Model management and transformations -- Transformation (2).

The 7th edition of the European Conference on Model-Driven Architecture Foundations and Applications (ECMDA-FA 2009) was dedicated to furthering the state of knowledge and fostering the industrialization of Model-Driven Architecture (MDA) and Model-Driven Engineering (MDE). MDA is an initiative proposed by the Object Management Group for platform-generic systems -

velopment; MDA is one of a class of approaches under the umbrella of MDE. MDE and MDA promote the use of models in the specification, design, analysis, synthesis, deployment, and evolution of complex software systems. It is a pleasure to be able to introduce the proceedings of ECMDA-FA 2009. ECMDA-FA 2009 addressed various MDA areas including model transformations, modelling language issues, modelling of behavior and time, traceability and scalability, model-based embedded systems engineering, and the application of model-driven development to IT and networking systems. ECMDA-FA 2009 focused on engaging key European and international researchers and practitioners in a dialogue which will result in a stronger, more efficient industry, producing more reliable software on the basis of state-of-the-art research results. ECMDA-FA is a forum for exchanging information, discussing the latest results and arguing about future developments of MDA and MDE. Particularly, it is one of the few venues that engages both leading academic researchers and industry practitioners, with the intent of creating synergies.

Defining a formal domain ontology is considered a useful, not to say necessary step in almost every software project. This is because software deals with ideas rather than with self-evident physical artefacts. However, this development step is hardly ever done, as ontologies rely on well-defined and semantically powerful AI concepts such as description logics or rule-based systems, and most software engineers are unfamiliar with these. This book fills this gap by covering the subject of MDA application for ontology development on the Semantic Web. The writing is technical yet clear, and is illustrated with examples. The book is supported by a website.

As organizations and research institutions continue to emphasize model-driven engineering (MDE) as a first-class approach in the software development process of complex systems, the utilization of software in multiple domains and professional networks is becoming increasingly vital. *Advances and Applications in Model-Driven Engineering* explores this relatively new approach in software development that can increase the level of abstraction of development of tasks. This publication covers the issues of bridging the gaps between various disciplines within software engineering and computer science. Professionals, researchers, and students will discover the most current tools and techniques available in the field to maximize efficiency of model-driven software development.

MODELS2008 was the 11th edition of the series of conferences on Model-Driven Engineering Languages and Systems. The conference was held in Toulouse, France, during the week of September 28 to October 3, 2008. The local arrangements were provided by the Institut de Recherche en Informatique de Toulouse (IRIT). The conference program included three keynote presentations, technical paper presentations, two panels, and several workshops and tutorials. The invited keynote speakers were Don Batory (University of Texas, USA), Je? Kramer (Imperial College London, UK), and Patrick Rauhut (Airbus, Germany).

This volume contains the final versions of the papers accepted for presentation at the conference. The papers cover a wider range of topics from the field including model transformation, model management, domain-specific modeling, modeling language semantics, model analysis, and applications. We received a record number of 271 full paper submissions from 40 different countries. Of these, 43 papers were submitted by authors from more than one country. The top

three countries submitting papers were France (40), Germany (38), and Canada (24). A total of 58 papers were accepted for inclusion in the proceedings. The acceptance rate was therefore 21%, which is somewhat lower than those of the previous MODELS conferences. At least three Program Committee or Expert Reviewer Panel members - viewed each paper. Reviewing was thorough, and most authors received detailed comments on their submissions. Conflicts of interest were taken very seriously. No one participated in any way in the decision process of any paper where a conflict of interest was identified. In particular, PC members who submitted papers did not have access to information concerning the reviews of their papers.

Abstraction is the most basic principle of software engineering. Abstractions are provided by models. Modeling and model transformation constitute the core of model-driven development. Models can be refined and finally be transformed into a technical implementation, i.e., a software system. The aim of this book is to give an overview of the state of the art in model-driven software development. Achievements are considered from a conceptual point of view in the first part, while the second part describes technical advances and infrastructures. Finally, the third part summarizes experiences gained in actual projects employing model-driven development. Beydeda, Book and Gruhn put together the results from leading researchers in this area, both from industry and academia. The result is a collection of papers which gives both researchers and graduate students a comprehensive overview of current research issues and industrial forefront practice, as promoted by OMG's MDA initiative.

Based on the paradigm of model-driven security, the authors of this book show how to systematically design and realize security-critical applications for SOAs. In a second step, they apply the principles of model-driven security to SOAs.

An integral element of software engineering is model engineering. They both endeavor to minimize cost, time, and risks with quality software. As such, model engineering is a highly useful field that demands in-depth research on the most current approaches and techniques. Only by understanding the most up-to-date research can these methods reach their fullest potential. *Advancements in Model-Driven Architecture in Software Engineering* is an essential publication that prepares readers to exercise modeling and model transformation and covers state-of-the-art research and developments on various approaches for methodologies and platforms of model-driven architecture, applications and software development of model-driven architecture, modeling languages, and modeling tools. Highlighting a broad range of topics including cloud computing, service-oriented architectures, and modeling languages, this book is ideally designed for engineers, programmers, software designers, entrepreneurs, researchers, academicians, and students.

For all software engineering courses on UML, object-oriented analysis and modeling, and analysis/modeling for real-time or embedded software. *Executable UML* is for students who want to apply object-oriented analysis and modeling techniques to real-world UML projects. Leon Starr presents the skills and techniques needed to build useful class models for creating precise, executable software specifications that generate target code in multiple languages and for multiple platforms. Leon, who wrote the definitive guide to Shlaer-Mellor modeling, emphasizes the practical use of executable UML modeling, presenting extensive examples from real-time embedded and scientific applications. Using the materials in his *How to Build Shlaer-Mellor Object*

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Models as a starting point, Leon presents an entirely new introduction to Executable UML, expresses all diagrams in Executable UML notation, and adds advanced new object modeling techniques.

This book offers a unique insight into a revolution in software development that allows model specifications to be fully and efficiently translated into code. Using the most widely adopted, industry standard, software modelling language, UML, the reader will learn how to build robust specifications based on OMG's Model Driven Architecture (MDA). From there, the authors describe the steps needed to translate the Executable UML (xUML) models to any platform-specific implementation. The benefits of this approach go well beyond simply reducing or eliminating the coding stage - it also ensures platform independence, avoids obsolescence (programming languages may change, the model doesn't) and allows full verification of the models by executing them in a test and debug xUML environment. This is an excellent reference for anyone embarking on what is surely the future of software development for medium and large scale projects.

This book constitutes thoroughly revised and selected papers from the 6th International Conference on Model-Driven Engineering and Software Development, MODELSWARD 2018, held in Funchal, Madeira, Portugal, in January 2018. The 22 thoroughly revised and extended papers presented in this volume were carefully reviewed and selected from 101 submissions. They contribute to the development of highly relevant research trends in model-driven engineering and software development such as innovative methods for MDD-based development and testing of web-based applications and user interfaces, support for development of Domain-Specific Languages (DSLs), MDD-based application development on multiprocessor platforms, advances in MDD tooling, formal semantics and behaviour modelling, and MDD-based product-line engineering.

The only study to integrate a platform-driven decision framework with the model-driven architecture (MDA), this in-depth, practical guide explains how to combine three technology areas--MDA, ontologies, and software product lines--in order to integrate several platform-specific software products into a single MDA. Further exploring concepts such as knowledge-representation systems, artificial intelligence, and the "semantic web," this complete resource reveals why these technologies are so highly relevant today and speculates on how they will impact future software development.

Learn how to translate an executable model of your application into running code. This is not a book about theory, good intentions or possible future developments. You'll benefit from translation technology and solid software engineering principles that are demonstrated with concrete examples using an open source tool chain. Models don't deliver enough value if they are not on a direct path to code production. But to waste time building models that are merely pictures of your code doesn't add much value either. In this book, you'll translate detailed, yet platform-independent models that solve real application problems. Using a pragmatic approach, Models to Code quickly dives into two case studies of Executable UML models. The models and code are extensively annotated and illustrate key principles that are emphasized throughout the book. You'll work with code production using "C" as the implementation language and targeting microcomputer class processors. This might not be your particular target language or platform, but you can use what you learn here to engineer or re-evaluate your own code translation

system to dramatically increase the value of both your modeling and code generation solution. Written by three leading experts, Models to Code is an exceptional resource for producing software by model translation— add it to your library today. What You'll Learn See how detailed models resolve ambiguity and contradiction common in requirements. Examine how a model can be detailed enough to be executable and testable while remaining platform independent Produce code from a model, leaving the model intact so it can be redeployed on new platforms or adapted to changing software and hardware technology. Implement platform independent model execution rules in platform specific run-time code Who This Book Is For Modelers and systems engineers on active MBSE projects (using Executable UML or not), projects using Simulink, Matlab, Dymola, MatrixX and other math modelling tools. Any developers with current or past model experience, professors, students, systems engineers, embedded systems developers, or anyone interested in learning more about software modelling.

This book constitutes thoroughly revised and selected papers from the 5th International Conference on Model-Driven Engineering and Software Development, MODELSWARD 2017, held in Porto, Portugal, in February 2017. The 20 thoroughly revised and extended papers presented in this volume were carefully reviewed and selected from 91 submissions. They contribute to the development of highly relevant research trends in model-driven engineering and software development such as methodologies for MDD development and exploitation, model-based testing, model simulation, domain-specific modeling, code generation from models, new MDD tools, multi-model management, model evolution, and industrial applications of model-based methods and technologies.

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