Record Nr.	UNINA9910139871503321
Titolo	UML 2 semantics and applications / / edited by Kevin Lano
Pubbl/distr/stampa	Hoboken, NJ, : John Wiley & Sons, 2009
ISBN	1-282-33163-9 9786612331633 0-470-52262-3 0-470-52261-5
Edizione	[1st ed.]
Descrizione fisica	1 online resource (418 p.)
Altri autori (Persone)	LanoK
Disciplina	005.13/1 005.131
Soggetti	Computer software - Development Application software - Development UML (Computer science) Formal languages - Semantics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	UML 2 SEMANTICS AND APPLICATIONS; CONTENTS; CONTRIBUTORS; PREFACE; 1 INTRODUCTION TO THE UNIFIED MODELING LANGUAGE; 1.1 Introduction; 1.2 Class Diagrams; 1.3 Object Diagrams; 1.4 Use Cases; 1.5 State Machines; 1.6 Object Constraint Language; 1.7 Interaction Diagrams; 1.8 Activity Diagrams; 1.9 Deployment Diagrams; 1.10 Relationships Between UML Models; 1.11 Summary; 2 THE ROLE OF SEMANTICS; 2.1 Introduction; 2.2 Different Semantic Approaches; 2.3 Applications of Semantics; 2.4 UML Semantics; 2.5 Applications of Semantics to UML; 2.6 Application of Semantics to the Use of UML; 2.7 Summary 3 CONSIDERATIONS AND RATIONALE FOR A UML SYSTEM MODEL3.1 Introduction; 3.2 General Approach to Semantics; 3.3 Structuring the Semantics of UML; 3.4 The Math Behind the System Model; 3.5 What Is the System Model?; 3.6 Usage Scenarios; 3.7 Concluding Remarks; 4 DEFINITION OF THE SYSTEM MODEL; 4.1 Introduction; 4.2 Notational Conventions; 4.3 Static Part of the System Model; 4.4 Control Part of the System Model; 4.5 Messages and Events in the System Model; 4.6

1.

	Object State; 4.7 Event-Based Object Behavior; 4.8 Timed Object Behavior; 4.9 The System Model Definition Appendix A.1 State Transition SystemsAppendix A.2 Timed State Transition Systems; 5 FORMAL DESCRIPTIVE SEMANTICS OF UML AND ITS APPLICATIONS; 5.1 Introduction; 5.2 Definition of Descriptive Semantics in FOPL; 5.3 The LAMBDES Tool; 5.4 Applications Using Model and Metamodel Analysis; 5.5 Conclusions; 6 AXIOMATIC SEMANTICS OF UML CLASS DIAGRAMS; 6.1 Introduction; 6.2 Real-Time Action Logic; 6.3 Semantics of Class Diagrams; 6.4 Application of the Semantics; 6.5 Related Work; 6.6 Conclusions; 7 OBJECT CONSTRAINT I ANGUAGE: METAMODELING SEMANTICS: 7.1 Introduction; 7.2
	Metamodeling Semantics 7.3 OCL Semantics: Types and Values7.4 OCL Semantics: Expressions and Evaluations; 7.5 Summary and Conclusions; 8 AXIOMATIC SEMANTICS OF STATE MACHINES; 8.1 Introduction; 8.2 State Machine Semantics; 8.3 Extended State Machines; 8.4 Semantics for Extended State Machines; 8.5 Solutions for Semantic Problems; 8.6 Structured Behavior State Machines; 8.7 Related Work; 8.8 Summary; 9 INTERACTIONS; 9.1 Introduction; 9.2 Trace-Based Semantics; 9.3 Alternative Semantics; 9.4 Implementation and Refinement; 9.5 Verification and Validation 10 CO-ALGEBRAIC SEMANTIC FRAMEWORK FOR REASONING ABOUT INTERACTION DESIGNS10.1 Introduction; 10.2 Why Co-algebras?; 10.3 A Semantics for UML Sequence Diagrams; 10.4 New Sequence Diagrams from Old; 10.5 Coercions and Designs; 10.6 A Calculus for Interactions; 10.7 Concluding Remarks; 11 SEMANTICS OF ACTIVITY DIAGRAMS; 11.1 Introduction; 11.2 Semantics of Structured Activities; 11.3 Semantics of Intermediate Activities; 11.4 Data Flow Semantics; 11.5 Semantic Analysis; 11.6 Related Work; 11.7 Summary; 12 VERIFICATION OF UML MODELS: 12.1 Introduction; 12.2 Class Diagrams
Sommario/riassunto	12.3 State Machine Diagrams A coherent and integrated account of the leading UML 2 semantics work and the practical applications of UML semantics development With contributions from leading experts in the field, the book begins with an introduction to UML and goes on to offer in-depth and up-to-date coverage of: The role of semantics Considerations and rationale for a UML system model Definition of the UML system model UML descriptive semantics Axiomatic semantics of UML class diagrams The object constraint language Axiomatic semantics of state machines A coalgebraic