28 • Design & Programming Design & Programming • 29

Partial Contents

Part I: Introduction

- 1 What Does It Mean to Be Object Oriented, Anyway?
- 2 A Brief History of Object Orientation

Part II: The Unified Modeling Language

- 3 Basic Expression of Classes, Attributes, and Operations
- 4 Class Diagrams
- 5 Object-Interaction Diagrams
- 6 State Diagrams
- 7 Architecture and Interface Diagrams

Part III: The Principles of Object-**Oriented Design**

- 8 Encapsulation and Connascence
- 9 Domains, Encumbrance, and Cohesion
- 10 State-Space and Behavior
- 11 Type Conformance and Closed Behavior
- 12 The Perils of Inheritance and Polymorphism
- 13 Techniques for Organizing Operations
- 14 Class Cohesion and Support of States and Behavior
- 15 Designing a Software Component

Appendix A: Checklist for an Object-Oriented Design Walkthrough

Appendix B: The Object-Oriented **Design Owner's Manual** Appendix C: The Blitz Guide to

Object-Oriented Terminology Glossary

Bibliography Index

Fundamentals ... in UML

"A real tour de force. Page-Jones manages with rare warmth and wit to combine academic precision and practical help for all those facing the complex challenges of software design and development in the 21st century." —Stan Kelly-Bootle

". . . when What Every Programmer Should Know About Object-Oriented Design, the first edition of this book, was published, it was immediately recognized as an original, insightful, and valuable contribution from one of the most consistently lucid thinkers and readable authors in software development today.

"This newly revised and retitled second edition extends the foundation, expands the material, and updates the notation to create a reference of both immediate and lasting value. . . .

"Meilir draws on extensive experience with objectoriented development, as a consultant, as a teacher, and as a methodologist. . . . we were collaborators on the creation of the influential Uniform Object Notation, whose features can be found today reflected and incorporated into numerous object-oriented methods and notations. The legacy of our work can even be recognized in the Unified Modeling Language (UML) that has been adopted as a de facto industry standard and is used to illustrate and clarify examples throughout this book.

"Here you will find everything you need to begin to master the fundamentals of object-oriented design. Not only are the basic techniques for designing and building with objects explained with exceptional clarity, but they are illustrated with abundant examples, and elaborated with discussions of the do's and don'ts of good object-oriented systems. The rest is up to you." —Larry Constantine, from the foreword

About the Author

Dased in Bellevue, Washington, **D**Meilir Page-Jones is president and senior consulting methodologist at Wayland Systems. He has extensive experience in training, consulting, and hands-on system development, and has created several courses on object-oriented soft-



ware engineering and project management. He is also the author of Practical Project Management.

Fundamentals of Object-Oriented Design in UML

by Meilir Page-Jones foreword by Larry L. Constantine



ISBN: 0-201-69946-X ©2000 480 pages softcover \$45.95 (incl. \$6.00 for UPS in US)

Improve Your Design Skills and Learn UML from a Gifted Teacher

With the widespread adoption of the Unified Modeling Language (UML), programmers are equipped with a powerful tool for expressing software designs. Fundamentals of Object-Oriented Design in UML shows aspiring and experienced programmers alike how to apply UML, design concepts, and the best practices in O.O. development to improve their code and their success with object-based projects.

Tdited by Dorset House and pub-Lished by Addison-Wesley in a special arrangement, this text is a UML-based revision of the author's award-winning What Every Programmer Should Know About Object-Oriented Design.

Part I introduces the basic princi-■ ples of object orientation and explores its history and place in development. Part II is a practical and well-illustrated guide to UML notation and to building the most useful UML diagrams. Part III grapples with advanced topics in the testing and improvement of design quality, including connascence, level-2 encapsulation, and the use of statespace and behavior to assess class hierarchies. These design principles are explained and demonstrated without reference to any one design methodology so that they are easily accessible and applicable in a variety of contexts. Programmers and designers learn how to assess and enhance their work as the author walks them through the evaluation of designs taken from actual projects.

TA 7ith the author's guidance, you'll gain a better understanding of how to design high-quality software.

Read more about this book at http://www.dorsethouse.com/books/fundood.html