

Suggested reading

The following are synopses of recent books on architecture and reuse that may be of interest to readers of the *IBM Systems Journal*. Inquiries should be directed to the publishers cited. One important omission is *Software Architecture in Practice* by Bass, Clements, and Kazman (Addison-Wesley Publishing Co., 1998), a book which had a substantial influence on the Enterprise Solutions Structure (ESS) architecture team whose work is featured in this issue. A full review by Tom Mowbray appears in the Books section.

Software Architecture: Perspectives on an Emerging Discipline, Mary Shaw and David Garlan, Prentice Hall, Upper Saddle River, NJ, 1996. 300 pp. (ISBN 0-13-182957-2). This is a very good book. The authors are on the senior staff within the Software Engineering Institute at Carnegie Mellon, and one can see their influence on the later book by Bass et al. mentioned above. There is a good treatment of software architecture definition and architecture styles, and a particularly useful section on education for software architects. Shaw and Garlan cover certain topics, such as formal description of architecture description languages, in more technical detail than Bass et al., whereas the later book maintains a fairly high level of commentary and is able to cover more ground. Both books are well-structured, but the formatting of the Bass book is particularly clear and helpful.

Software Reuse: Architecture, Process and Organization for Business Success, Ivar Jacobson, Martin Griss, and Patrik Jonsson, Addison-Wesley Publishing Co., Reading, MA, 1997. 497 pp. (ISBN 0-201-92476-5). This book was extensively reviewed in Volume 37, Number 2 of the *IBM Systems Journal* (1998) by Shari Lawrence Pfleeger and has received wide circulation in those parts of IBM that specialize in reuse. It is a "second-generation" software reuse book, packed with useful guidance on how to avoid the pitfalls that we all fell into first time around. In particular, it highlights the importance of establishing architectural structures *before* the harvesting-for-reuse process begins.

Developing Business Objects: A Framework-Driven Approach, Robert Prins, McGraw-Hill Publishing Company, London, 1996. 372 pp. (ISBN 0-07-709294-5). Unlike some of the other books on architecture that we have read, there is a clear sense in Prins's book of the challenges in developing *enterprise-scale* business systems. In the first part of this book, Prins lays out in no uncertain terms the need for separation of concerns in such an environment, and proposes a layered structure for the functional architecture that is particularly suitable for the "administrative systems" type of solution that is ESS's initial focus; the process/activity/service paradigm flows naturally from his anal-

ysis. Later sections of the book propose some domain-specific object models that are perhaps less generally applicable, but the early sections are recommended reading with a refreshingly strong pragmatic flavor.

UML Distilled: Applying the Standard Object Modeling Language, Martin Fowler, with Kendall Scott, Addison-Wesley Publishing Co., Reading, MA, 1997. 179 pp. (ISBN 0-201-32563-2). This book serves as a useful introduction to UML (Unified Modeling Language) for those architects who are new to objects and may be wary of some of the new concepts and terminology. Although still rather a tough read for those unversed in object-oriented (OO) technology, the style is clear and "unstuffy" and full of practical advice. The book is primarily aimed at OO designers, but is also valuable for architects, because UML is likely to become more and more important in establishing a common set of semantics among IT architects over the coming years.

The Essential CORBA: Systems Integration Using Distributed Objects, Thomas J. Mowbray and Ron Zahavi, John Wiley & Sons, Inc., 1995. 336 pp. (ISBN 0-471-10611-9). On the face of it, the focus of this book is on CORBA** (and therefore the book might run the risk of appearing a little too specific or dated), but in fact this book is largely about architecture in general. Its chapters on issues in computing and systems integration, and the sections on the Software Architecture Design Process, among others, are important, and the text is full of good, mature, and pragmatic advice on architecture.

Design Patterns: Elements of Reusable Object-Oriented Software, Erich Gamma, Richard Helm, Ralph Johnson, and John Vlissides, Addison-Wesley Publishing Co., Reading, MA, 1995. 395 pp. (ISBN 0-201-63361-2). *Design Patterns* has been reviewed previously in the *IBM Systems Journal* (Volume 35, Number 2, 1996). This is of course a seminal book, and although most of the patterns are in the design space rather than the architecture space, it is valuable for its concepts and method of expression. For architects, the early chapters are the important ones.

P. T. L. (Tim) Lloyd
Object Technology Practice
IBM United Kingdom Ltd.
Warwick, England

**Trademark or registered trademark of Object Management Group

©Copyright 1999 by International Business Machines Corporation.