THEME ARTICLES

6 Implementing Quantitative SQA: A Practical Model
Victor R. Basili and H. Dieter Rombach
Considering the product is not enough in SQA — you must also consider the development process. This model addresses both needs.

11 Quality-Assurance Technology in Japan
Kouichi Kishida, Masanori Teramoto, Koji Torii, and Yoshiyori Urano
A survey of the state of SQA in Japan finds that the situation is much like, but slightly different than, that in the US.

19 Cleanroom Software Engineering
Harlan D. Mills, Michael Dyer, and Richard Linger
Software quality can be engineered under statistical quality control and delivered with better quality. The Cleanroom process gives management an engineering approach to release reliable products.

26 Quality Assurance in Future Development Methods
Joseph P. Cavano and Frank S. LaMonica
SQA will evolve into a broader software-quality technology, shifting from a passive process to an active one, from fault detection to fault avoidance.

35 Measuring and Managing Software Maintenance
Robert B. Grady
Before you can measure and improve quality, you have to measure your current quality, defects, and goals. Hewlett-Packard has developed some ways to do just that.

46 Software Quality Assurance for Maintenance
James S. Collofello and Jeffrey J. Buck
Maintenance plays a vital role in protecting quality as a system evolves. The results of this study pinpoint how to make maintenance a part of SQA.

54 Counting Down to Zero Software Failures
Robert M. Poston and Mark W. Bruen
Can you eliminate software failures? Perhaps not, but one methodology will let you get very close to doing so, as this case study shows.

SPECIAL FEATURES

62 Programmer as Reader
Adele Goldberg
Research has focused on training programmers to write readable programs. New exploratory environments, like Smalltalk, offer improvements in system support for program reading as well as writing.

71 Using Types and Inheritance in Object-Oriented Programming
Daniel C. Halbert and Patrick D. O'Brien
To be a good object-oriented programmer, you should use types and inheritance wisely. This tutorial will help you do so.