Advanced C++ Programming Styles and Idioms

Jim Coplien
Bell Laboratories, Naperville, Illinois, USA

Is C++ a high-level or low-level language? It depends on how you use it! This tutorial introduces programming techniques that raise the level of C++ programming by freeing the programmer from administrative details, and by modeling the powerful semantics of high-end object-oriented programming languages. These techniques form C++-specific patterns called idioms, which remain an important component of the contemporary pattern discipline. Many of the techniques are presented in pattern form.

This tutorial goes beyond most introductory C++ texts with programming styles that can expand the horizons of accomplished C++ programmers. Drawing from the book Advanced C++ Programming Styles and Idioms, the tutorial tackles difficult but common problems faced by developers of C++ systems, both large and small.

This tutorial is for the C++ programmer with at least one year of experience in C++ or another object-oriented programming language.

Jim Coplien is a member of the Software Production Research Department at Bell Laboratories. He holds a B.S. in Electrical and Computer Engineering, and a M.S. in Computer Science, both from the University of Wisconsin at Madison. His early career work includes applied research in software development environments, version and configuration management models, and in object-oriented design and programming.

He is currently studying organization communication patterns to help guide process evolution. This research has already created a generative pattern language that has successfully been used for business process engineering in corporations worldwide. His other research areas include multi-paradigm design and architectural patterns of telecommunication software.

Jim Coplien is the author of C++ Programming Styles and Idioms, the foremost high-end C++ book in the industry, and co-editor of two volumes of Pattern Languages of Program Design. He writes a patterns column for the C++ Report and sits on the board of the Hillside Generative Patterns Group, a small consortium of industry leaders providing industry-wide leadership and support in the pattern discipline. He also served as a program chair of ACM OOPSLA ’96.