

Part IV Implementation by Assembly

Part III, *Factoring Models and Designs*, describes how you can factor specifications and models into parts and then compose them to readily build larger models. Although the basic idea of factoring and composing carry over to design and implementation, a different set of constraints is imposed by the implementation technology.

This part is about the reuse of implementation code and discusses approaches to designing and building components so that they can be readily extended or adapted for use in different contexts.

Chapter 10, *Components and Connectors*, describes the richness of component-based development and explains how it raises the level at which implementation units can be connected to build larger systems. Because there is no single answer to what constitutes useful component and connection mechanisms, we use frameworks (see Chapter 9, *Model Frameworks and Template Packages*) to define the generic building blocks of different component architectures.

Chapter 11, *Reuse and Pluggable Design: Frameworks in Code*, discusses the design and development of pluggable components, including how it affects the development process.

Chapter 12, *Architecture*, shows how the architecture of a system—views of its components structure and their relationships to one another—is defined by the set of available design and implementation building blocks and the set of rules and patterns for applying those blocks coherently and consistently.