

Introduction

Use cases model the user's view of the functionality of a system, i.e. what the system does as far as the user is concerned; what it does that is of value to the user. The use case model provides a means of organizing, structuring and documenting the mass of information discovered during requirements elicitation; it therefore forms an integral part of the requirements specification stage of the development process. Use cases are normally presented in a graphical form, the use case diagram, supported by textual descriptions, use case and actor descriptions, and scenarios. Both the diagrams and the supporting text are simple and intuitive which makes them an ideal vehicle for discussions with the user and for clarifying the developer's understanding of the user's requirements.

Once the use case model has been completed and checked with the user, it forms an essential pool of structured information on which the other models of the system will draw. The model is also useful for testing the system. Use case modelling is done at various stages during the object-oriented software development process. The amount of detail and the type of information shown at each stage depends on what the model will be used for. In the early stages where the main purpose is to communicate with the user, no information is included that relates to the detailed design or implementation of the system. Later on technical details relating, for example, to the design of the user interface, are added for the information of the programmer.

It is important to realize that although the use case model divides and structures the system, this structure is not used as a basis for the design of the new software system – that is provided by the class diagram (see Chapter 5). The use case model structures the system into the user's view of its main tasks, the class diagram structures the system into logical software units.

This chapter explains the main use case concepts and illustrates them with examples from the Wheels case study.

Use case diagram

The use case model consists of a use case diagram, a set of use case descriptions, a set of actor descriptions and a set of scenarios. The use case diagram models the problem domain graphically using four concepts: the use case, the actor, the relationship link and the boundary. The UML symbols used to model these concepts are shown in Figure 3.1.

Figure 3.2 shows a use case diagram of the Wheels case study. The functionality of the new system has been divided into five use