Incremental development. In this life cycle model the system is partitioned according to areas of functionality. Each major functional area is developed and delivered independently to the client. For example, in the bike hire system, tasks relating to issuing a bike might be developed and delivered, followed by returning a bike and then maintaining customer records.

The object-oriented approach

One of the differences that is immediately obvious between traditional life cycle models and the object-oriented approach is the way that the various stages are named. In traditional models the names, such as 'analysis' or 'implementation', reflect the activities that are intended to be carried out in that stage. In object-orientation, however, a clear distinction is made between the activities and the stages (generally referred to as phases) of development. The phases in object-oriented development are known as inception, elaboration, construction and transition, indicating the state of the system, rather than what happens at that point in development.

Inception covers the initial work required to set up and agree terms for the project. It includes establishing the business case for the project, incorporating basic risk assessment and the scope of the system that is to be developed. Inception is similar to a standard feasibility study, but frequently includes a small part of the requirements for the system that have been implemented in a working program.

Elaboration deals with putting the basic architecture of the system in place and agreeing a plan for construction. During this phase a design is produced that shows that the system can be developed within the agreed constraints of time and cost.

Construction involves a series of iterations covering the bulk of the work on building the system; it ends with the beta release of the system, which means that it still has to undergo rigorous testing.

Transition covers the processes involved in transferring the system to the clients and users. This includes sorting out errors and problems that have arisen during the development process.

In object-orientation, activities such as analysis or design are referred to as workflows. Figure 1.1 shows the different workflows that typically take place during a system development project.