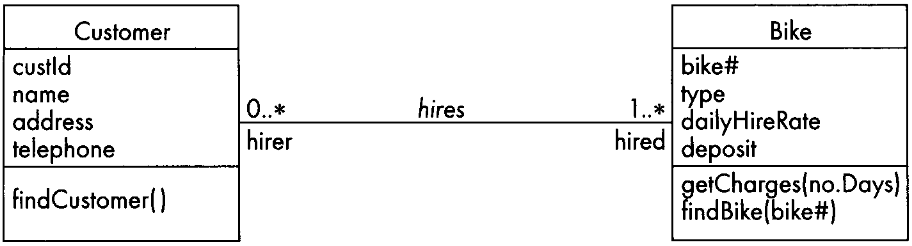

Figure 5.1 *A first attempt to model classes in the Wheels system in a class diagram*

used first to model things in the application domain as part of requirements capture. Subsequently, with classes added which are part of the solution not the problem domain (e.g. interface classes), it is used to design a solution. Finally, with classes added to facilitate the implementation (e.g. buttons, windows, mouse-listeners, etc.), it is used to design the program code.

The UML notation for a class diagram. Figure 5.1 (repeated from Figure 4.11) shows a first attempt to model the classes in the Wheels system using the UML notation. The diagram shows which attributes all Customer and Bike objects should have; as we work through the stages of building a class diagram, we will uncover more.

Stages in building a class diagram

There are many different approaches to building a class diagram. What is an appropriate approach will depend on factors such as the size and type of system being developed, the experience and ability of the team, the working practices and procedures of the organization concerned. One way to approach the class diagram is by *use case realization*. In use case realization we look at each use case in turn and decide what classes we would need to provide the functionality modelled in the use case. The group of classes required by a use case is called a *collaboration*. When each use case has been analysed, the resulting collaborations are amalgamated into a unified class diagram. We will look at collaborations in Chapter 6, but for the moment we are going to use a different approach to developing the class diagram. We will develop a *domain model*, i.e. a class diagram that sets out to model all of the classes in the problem domain in one go, not use case by use case. Both approaches should eventually arrive at the same model.

Building a class diagram is essentially an iterative process; no one, no matter how experienced, gets it right first time. However, to begin with, it is useful to identify stages in the process of building the model and to approach the process sequentially, even if we know that in fact we will repeat some of the stages many times