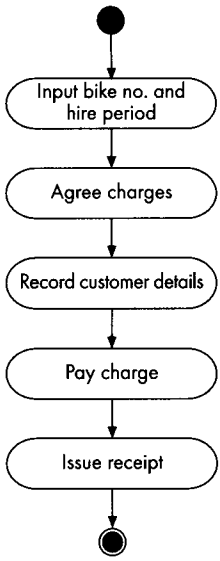

Figure 8.4 *Initial activity diagram for the 'Issue bike' use case*

Modelling alternative courses of action

One of the advantages of activity diagrams is that they can model different possible courses of action and the conditions which determine which course is taken.

Figure 8.4 shows an initial activity diagram for the 'Issue bike' use case.

Although this diagram illustrates the sequence of processing that occurs when a bike is issued, it only covers the situation where the customer is new to the Wheels system. In the case of an existing customer, it would be inefficient and confusing to input customer details each time the customer hires a bike; all the system needs to do is confirm that the customer details on record are correct.

Figure 8.5 shows an amended diagram for the 'Issue bike' use case that caters for both new and existing customers. The decision point is shown by the first diamond, and the conditions or guards for taking particular courses of action (whether the customer is new or existing) are indicated in square brackets.

As in state diagrams, it is essential that every guard evaluates to true or false, and that the guards on the alternative processing routes are mutually exclusive (for example, a customer cannot be both new and existing). This is to ensure that there is no ambiguity as to which route should be taken. The guard on one of the processing routes may be simply 'else', indicating that this is the default route in the case where all the other guards are false.