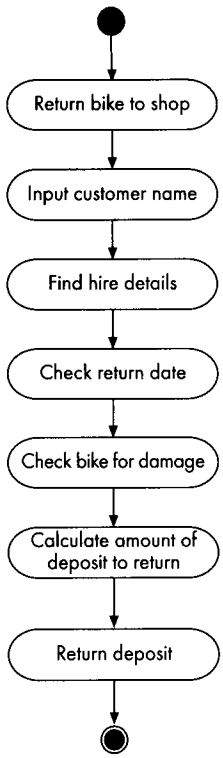

Figure 8.7 *Initial activity diagram for the 'Handle bike return' use case*

Modelling activities that are carried out in parallel

A further advantage of activity diagrams is that they illustrate where activities can be performed in parallel. In fact, the process of drawing an activity diagram often uncovers the possibility of performing in parallel activities that have previously been carried out sequentially. Figure 8.7 shows an initial activity diagram for the use case 'Handle bike return'.

We know from earlier investigations (see Chapter 2) that the order in which these activities are performed is irrelevant; the return date can be processed before checking the bike or vice versa. This means that the activities 'Check bike' and 'Check return date' can be shown on the activity diagram in parallel, as can be seen in the amended diagram in Figure 8.8.

In Figure 8.8 the top synchronization bar indicates that once the activity ('Find hire details') that is the source of the single incoming transition has completed, the outgoing transitions ('Check return date' and 'Check bike for damage') are taken in any order. The bottom synchronization bar indicates that the single outgoing transition is only triggered once both these activities have completed. A synchronization bar that signals the start of parallel activities is known as a fork, and one that signals the end of the