



Figure 7.7 Completed state diagram with superstate for the Job Application class

An example from the Wheels case study

For a final example of a state diagram, we return to the Wheels case study. Most of the classes in the Wheels system are relatively simple; the only one where the behaviour is complex enough to merit a state diagram is the Bike class.

As with the previous example, we begin by identifying the events in the system that can affect an object of the Bike class and the different states that an object can be in. The information that we use here to identify the events and states comes from Chapter 2, Requirements for the Wheels case study system.

There may also be some actions that we will need to consider, but we will first construct the basic state diagram. As before, we begin with the start state, the event that creates a Bike object, and the state that the object moves into. Figure 7.8 shows the initial stage of the diagram.

We now build up the diagram as in the previous example, working through the events and states in the list and adding them to the diagram, until every item on the list has been included (see Table 7.5). Some of the events may occur more than once, when the object is in different states; for example, a bike may be sold when it is new or available for hire, but not when it is on hire or under repair. The 'sold' event will appear in the diagram as a transition to a stop state from both the 'New bike' state and the 'Available for hire' state.

We should also take particular note of any events which appear as separate on the list, but which should be represented in the diagram as the same event with different guards. In this case the events 'minor