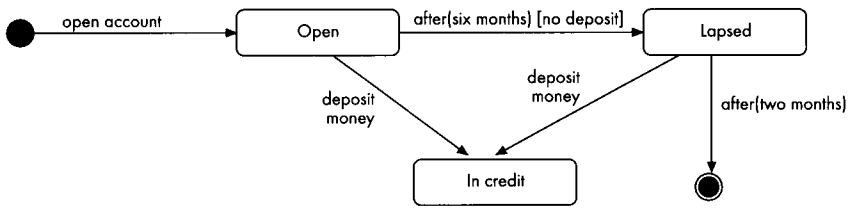

Figure 7.11 *Modified BankAccount example showing use of keyword 'after'*

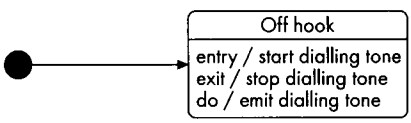

Figure 7.12 *Off hook state showing exit and entry events and activity*

example 'after (six months)'. In the bank account example we might find, on further investigation, that an account can be opened without a deposit. It is then in the 'Open' state. If a deposit is made it goes into the 'In credit' state. If no deposit is made after six months, it goes into a 'Lapsed' state. It will be deleted two months later unless a deposit is made. This is illustrated in Figure 7.11.

An event can also occur when a certain condition is satisfied; this is represented by the keyword 'when', as for example 'when (all items in stock)'.

Sometimes events with actions occur every time a state is entered or exited. For example, every time a phone enters the state where it is off the hook, but a number has not yet been dialled, it starts emitting a dialling tone which ends when the first number is dialled. These are known as entry and exit events and are shown in the label for the state with the associated action, as for example 'entry / start dialling tone' (see Figure 7.12). Behaviour that lasts for the duration of the state is called an activity and is modelled using the keyword 'do'. Unlike actions associated with events, activities can be interrupted.

Nested states. If a state diagram becomes too complex, it can be simplified by nesting related sets of substates. For example, the 'New bike' state in Figure 7.10 has three substates: 'Bike check', 'Assign Wheels number', 'Register bike on computer'. These are modelled as nested substates in Figure 7.13. If we showed the detail of the substates on the main diagram it would become too cluttered, but it is sometimes useful to be able to decompose states