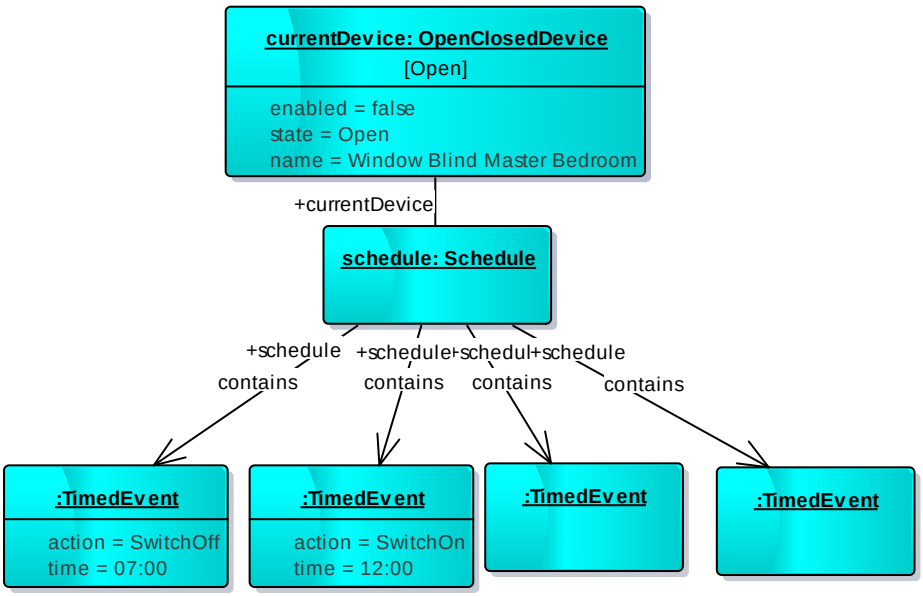
Learning UML

O'Reilly

Exercises – Object State

If you have followed along, your *objects* diagram should look similar to the one in the movie. If not, first create a diagram that looks like this.



Now do the following:

Set the *action* and *time* slot values for the other two *TimedEvents* in the diagram. One should be set with the *action* = SwitchOff and *time* = 14:30, the other *action* = SwitchOn and *time* = 18:30.

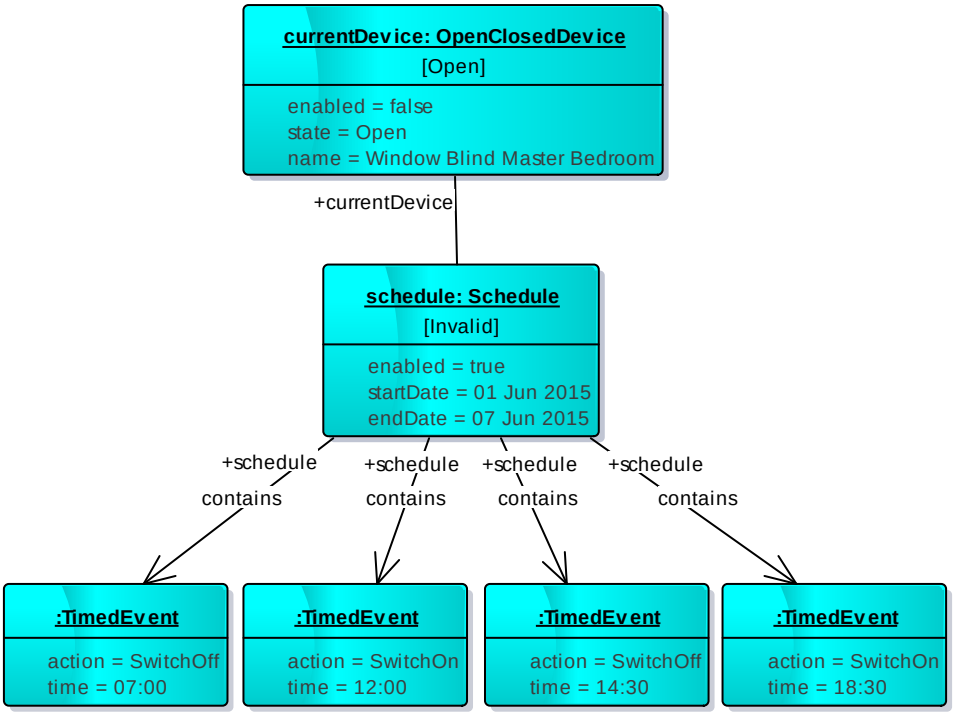
Set attribute values for the object called *schedule*. Set *enabled* = true and set suitable dates for *startDate* and *endDate*. (Note. It's a good idea not to use a numeric format like the date 01/06/2015, as some countries treat that as dd/mm/yyyy and others treat it as mm/dd/yyyy.)

Set the object state for *schedule* to Invalid.

If you changed the class of currentDevice to be an OnOffDevice, what other changes would you have to make to the diagram? (Suggested solution on next page.)

Tidy up the layout of the diagram.

Your *objects* diagram should now look something like this.



If you changed the class of currentDevice to be an OnOffDevice, there would be a number of implications.

- The *enabled* attribute is an attribute of *OpenClosedDevice*, so would not be available. If it is required by both subclasses of *Device*, then it should be moved to *Device*.
- Both the overall object state of *Open* and the attribute value for *state* of Open would not make sense for an object of the class *OnOffDevice*, which presumably can be On or Off.
- The *name* attribute of *currentDevice* would need to be changed to something like Security Light.
- The overall object state of *schedule* would probably change, as it would no longer necessarily be Invalid due to the mismatch of the types of actions and the class of *currentDevice*. It could perhaps be Waiting, or Active if today's date is between the two dates you have set for it.