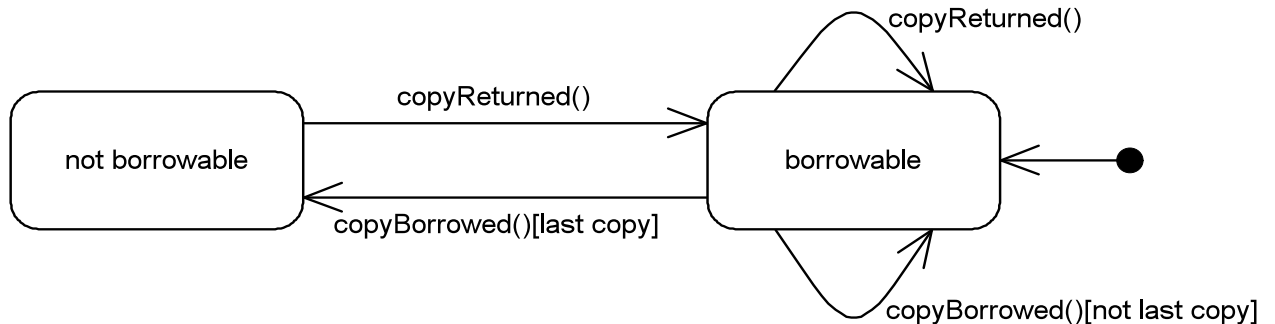


State Machine and Activity Diagrams

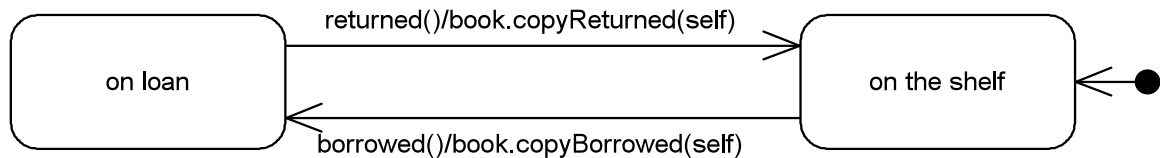
(a) Consider the following state machine diagram which shows how the state of a Book object in a library software system changes between "borrowable" and "not borrowable".



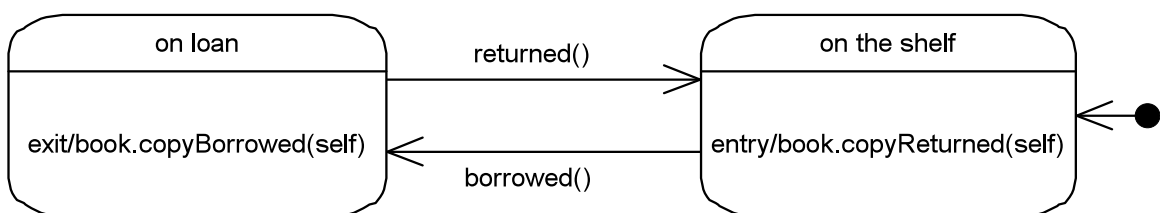
- (i) According to this diagram, what state does a Book object start off in, "borrowable" or "not borrowable"?
- (ii) Under what conditions does the state of a Book object change from being "borrowable" to "not borrowable"?

(b) Consider the following diagrams which relate to a Copy object in a library software system and answer the questions that follow.

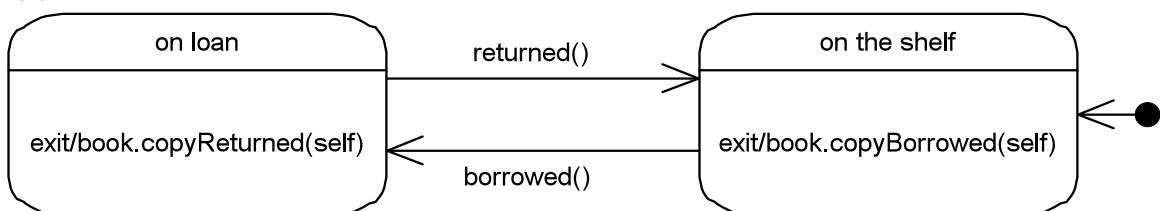
(1)



(2)



(3)



- (i) Which two of the three diagrams, (1), (2) and (3), are equivalent?

- (ii) In diagram (2), under what conditions is the `book.copyBorrowed(self)` message sent?
- (iii) To what does the argument "self" refer?

(c) A hardware update wizard can be in three states as follows:

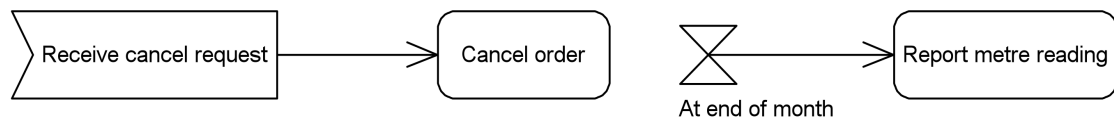
1. Displaying a hardware update window.
2. Searching for new hardware.
3. Displaying new hardware found.

The wizard starts by displaying a hardware update window. While displaying this window, the user can press a "Search" button to cause the wizard to start searching for new hardware, or the user can press a "Finish" button to leave the wizard. While the wizard is searching for new hardware, the user may cancel the search at any time. If the user cancels the search, the wizard displays the hardware update window again. When the wizard has completed searching for new hardware, it displays the new hardware found.

Draw a state machine diagram that represents the function of the hardware update wizard just described

Question 17

Study the following two diagrams and answer the questions that follow.



- a. What kind of diagrams are these?
- b. What kind of thing is the element labelled "At end of month"? Explain the meaning of the diagram in which it occurs.
- c. What kind of thing is the element labelled "Receive cancel request"? Explain the meaning of the diagram in which it occurs.