软件工程

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5.4 Dynamic Modeling

Dynamic Modeling

- State diagram is replenishment of class description. It depicts all the states that a class' instance may experience and the causing events.
- An event may be an action which causes state change.
- An event may be a message from another object, or meeting some conditions.

Dynamic Modeling

- Not all classes need state diagram.
- Some classes have clear states changing according to conditions and events.

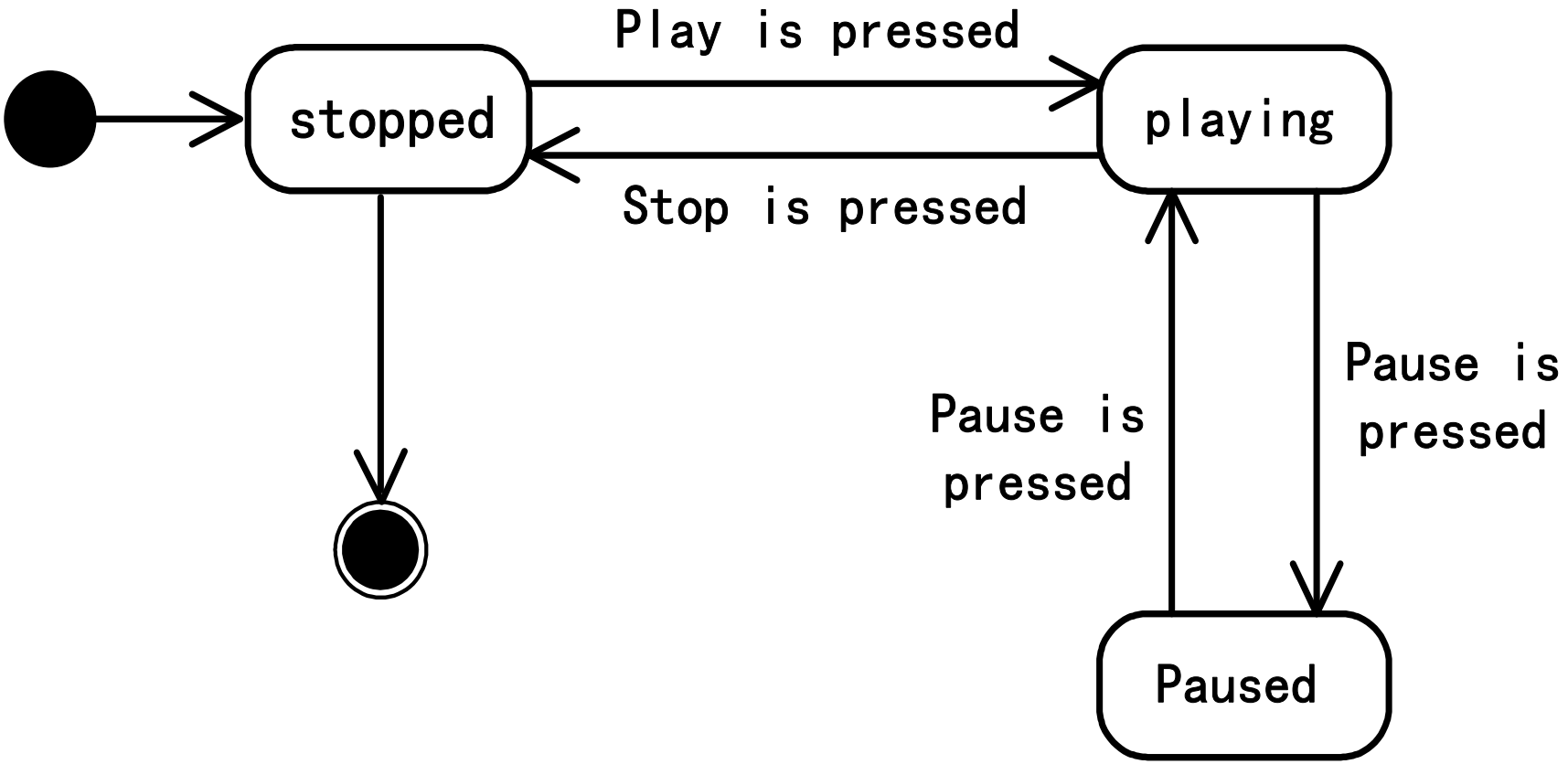
Dynamic Modeling

- **Case 1**

  Draw a UML state diagram to model the control program for a portable CD player. Include three states: *stopped*, *playing*, and *paused*. Also, include three events possible in any state: *pause_is_pressed*, *stop_is_pressed*, and *play_is_pressed*.

Dynamic Modeling

- **State Diagram for *CDPlayer***



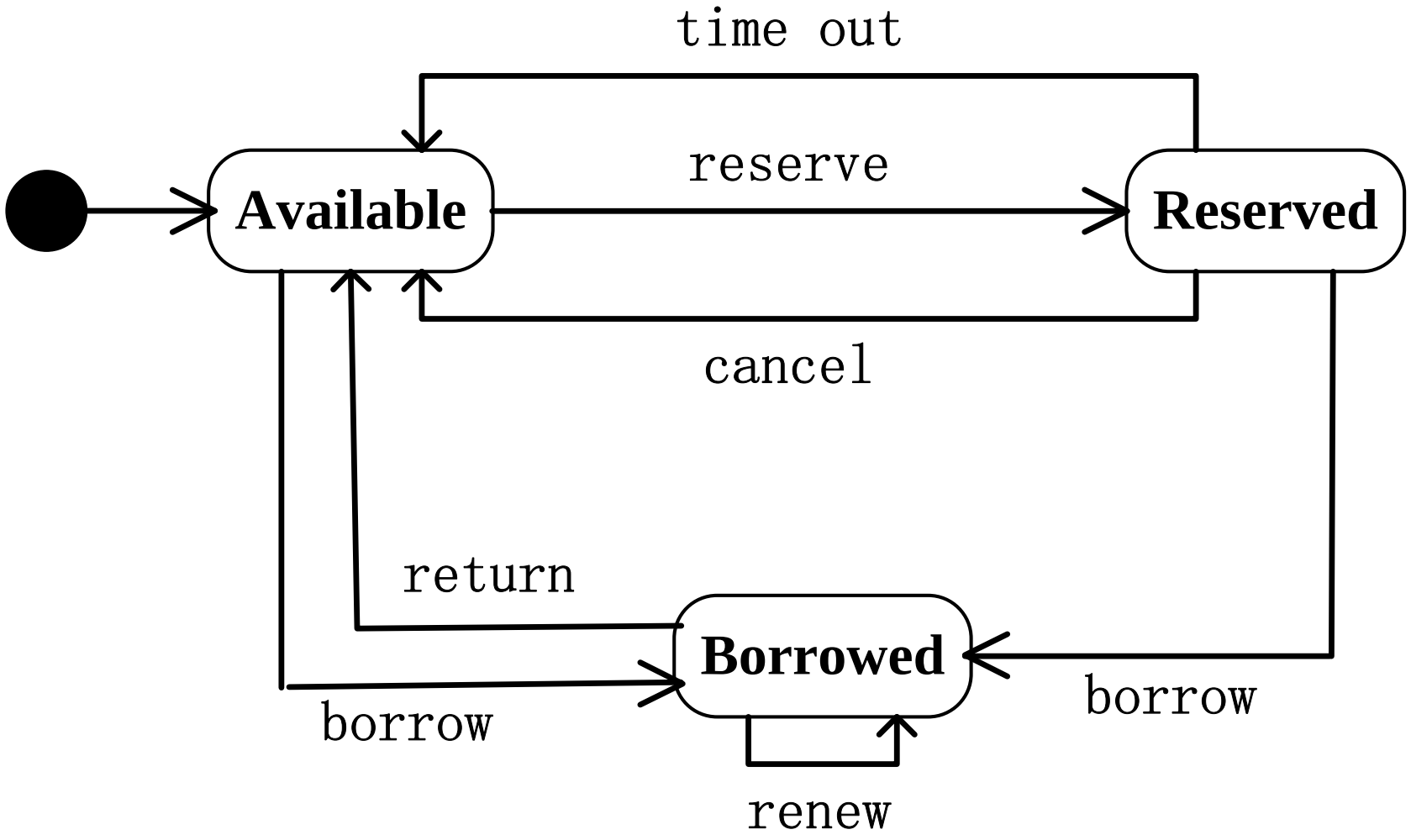
Dynamic Modeling

- **Case 2 :**

  Draw a UML state diagram for a book in a Library Mgmt. System. Include three states: *available*, *borrowed*, and *reserved*. Also, include events possible in any state: *borrow*, *return*, *reserve*, *cancel reservation*, *reservation times out* and *renew*.

Dynamic Modeling

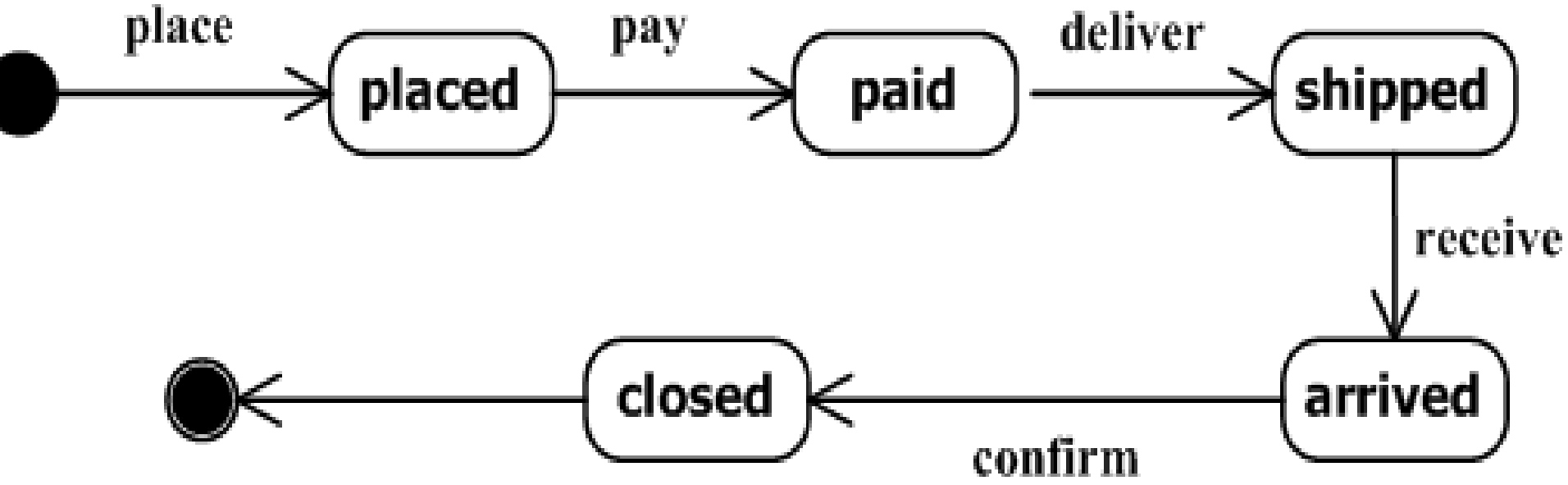
- **State Diagram for *Book* in Library Mgmt. System.**



Dynamic Modeling

- **Case 3 ---- *Order* in an eShop system**

An order goes through the states of *placed*, *paid*, *shipped*, *arrived*, *closed*.



Case 4: Elevator