

HW2

1.

- A. If a motor is in an off state, it can only change to running. Once a motor is running, it can only change to idle. A motor in the idle state can turn off or go to a running motor.
- B. When an automatic door is locked, the door will open and become unlocked when the sensor detects movement. After 15 seconds, the door will close, but it will remain unlocked. After 15 more seconds, the door will become locked unless the sensor detects motion again. If the sensor detects motion again, the door will open.

2.

State: running

Description: The cassette player is running to indicate sound is being played.

Event sequence that produces the state:

Initial: StopMotor(), DisengageHead()
EngageHead()
s=="play"
StartMotor()

Condition that characterizes the state:

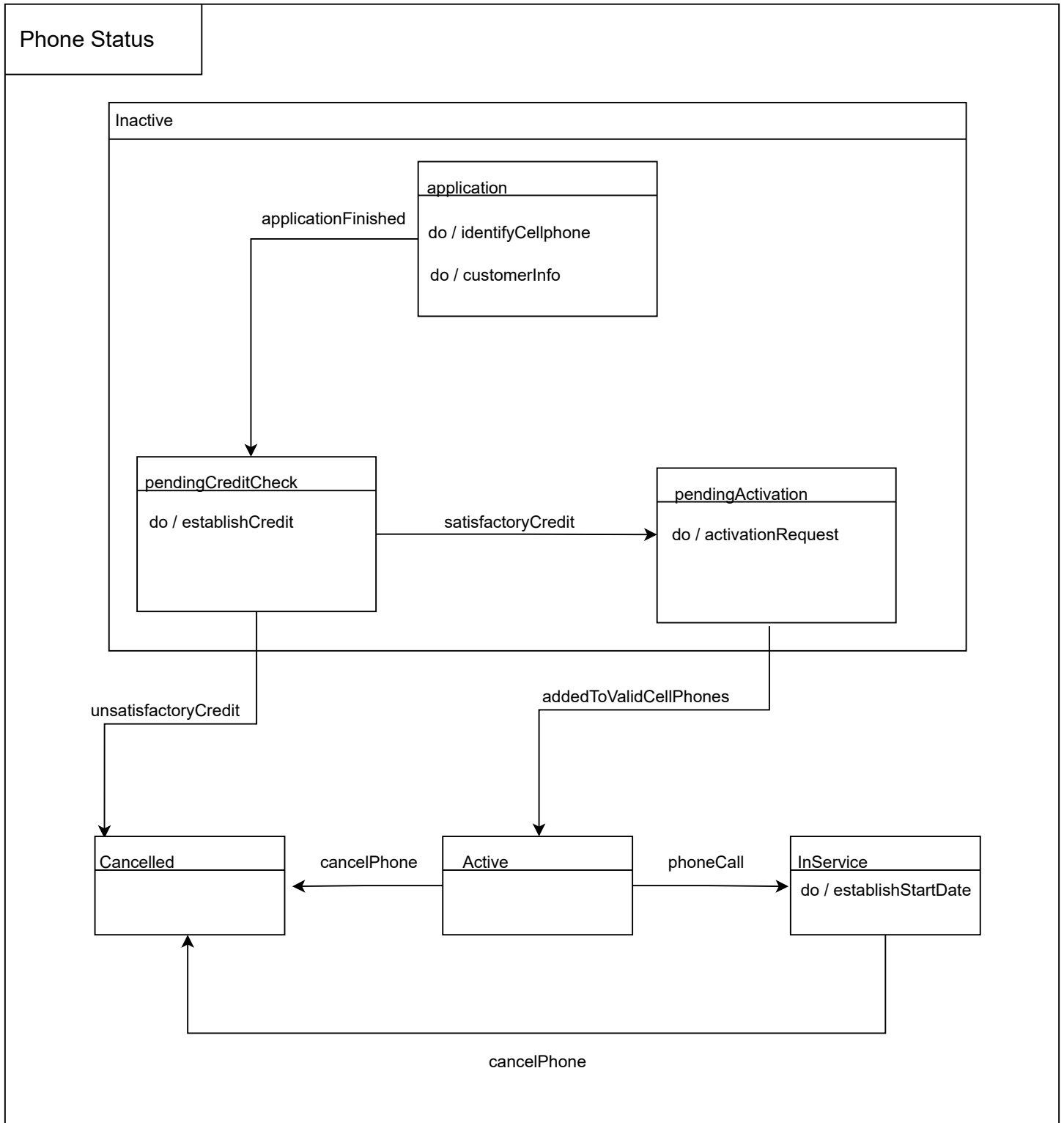
The cassette player is running to indicate sound is being played.

Events accepted in the state:

<u>Event</u>	<u>Response</u>	<u>Next state</u>
s=="pause"	StopMotor()	paused
s=="stop"	StopMotor() DisengageHead()	stopped

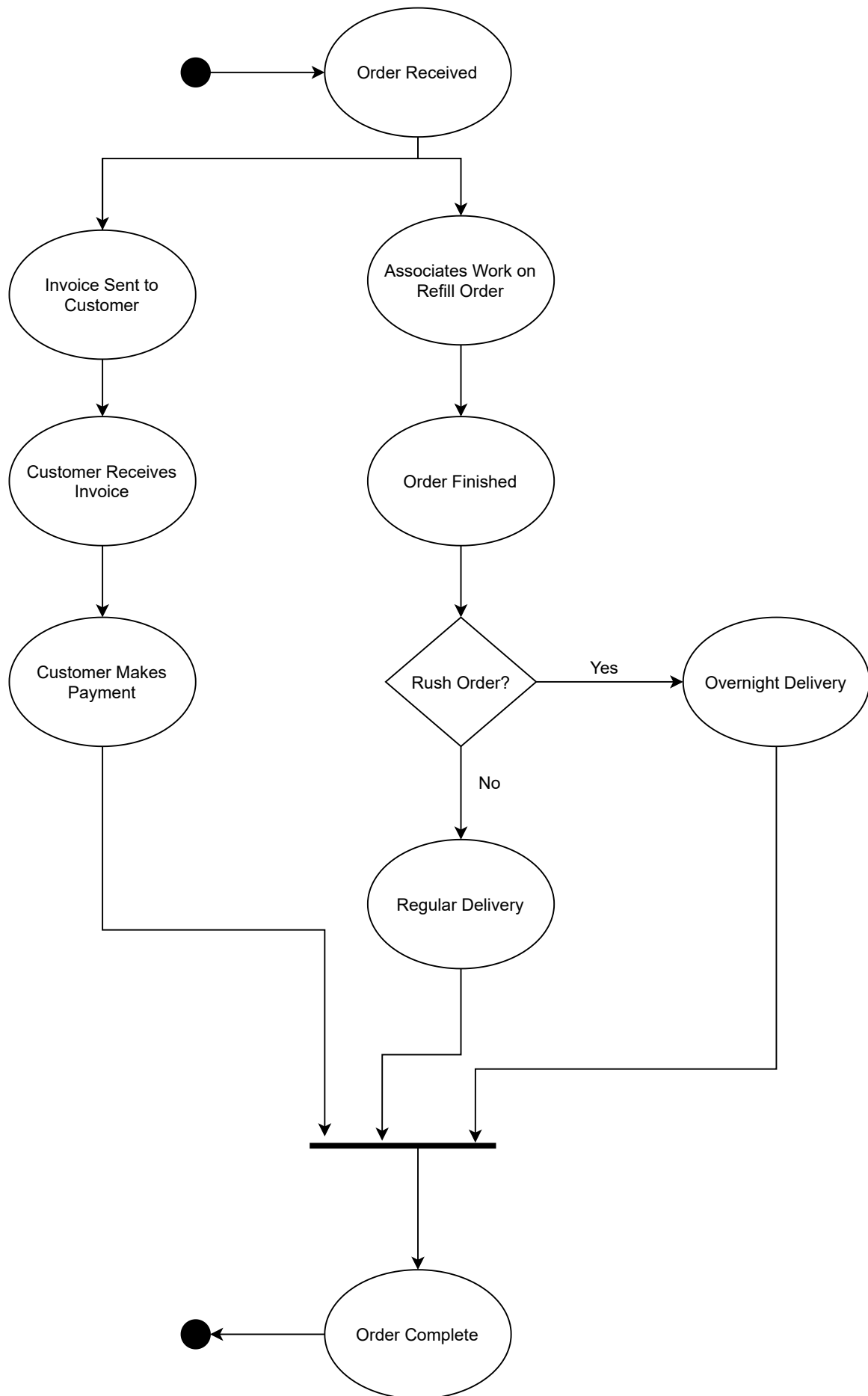
HW2

3.



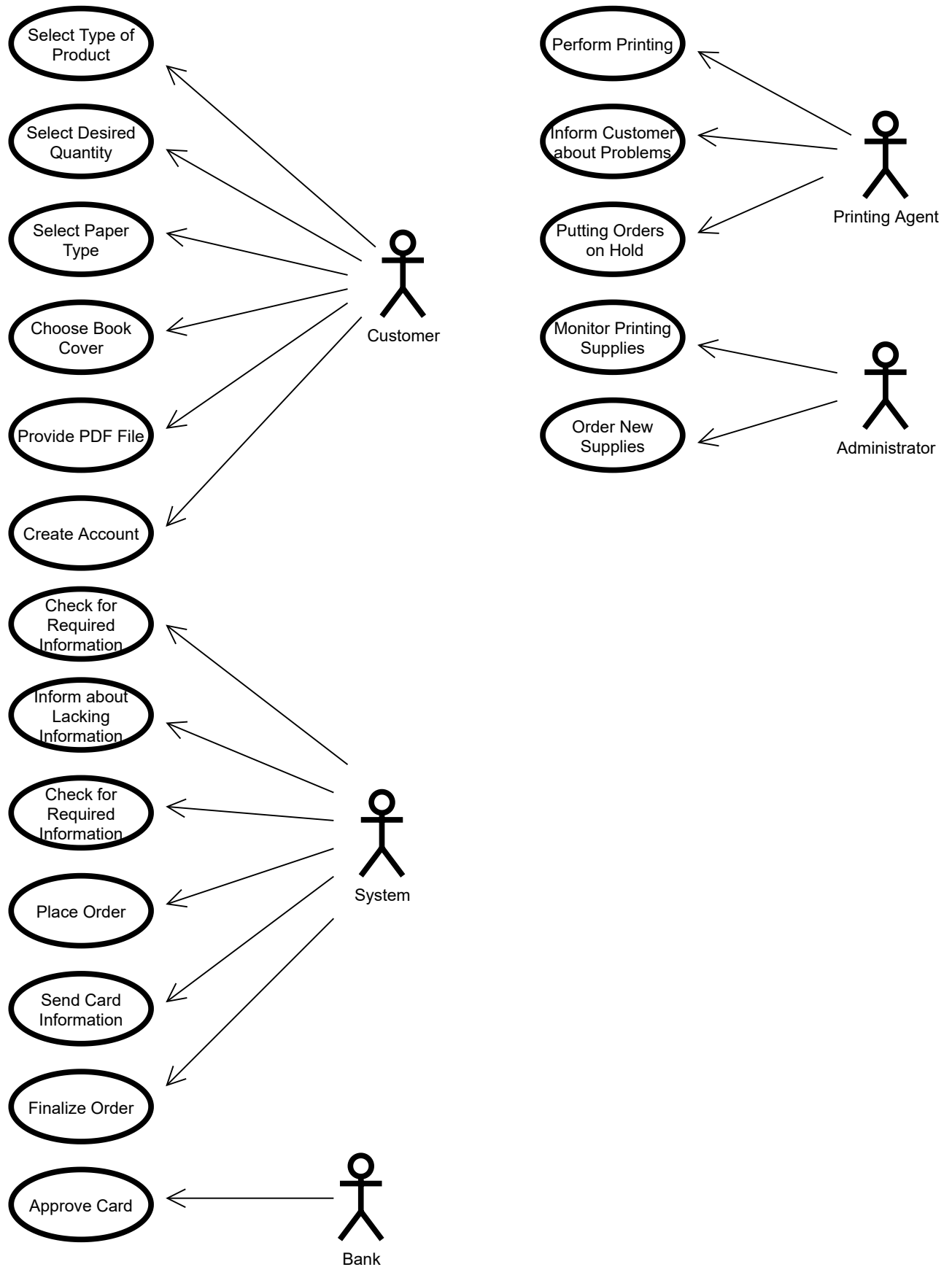
HW2

4.



HW2

5.a.



HW2

5.b.

Use case: Place an Order

Pre: User has account

Trigger: User wants to place an order

Main:

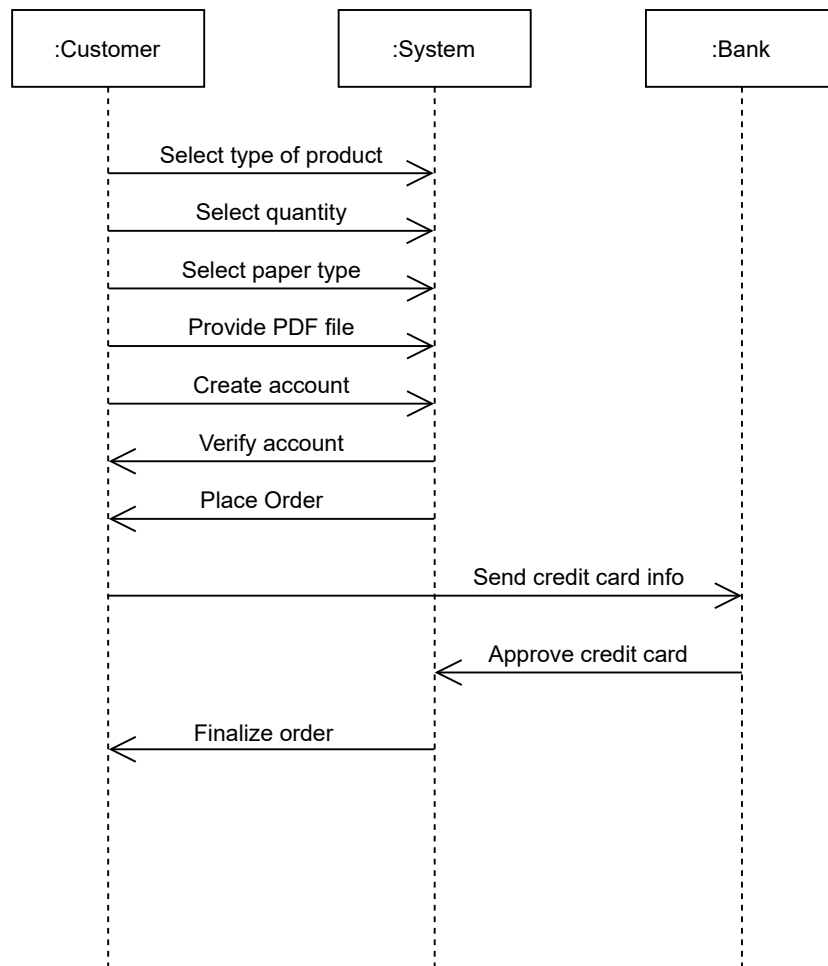
- Customer places order
- System verifies account
- Order is placed
- Credit card information is sent to bank
- Bank approves credit card
- Order is finalized

Alternatives:

- If account is missing information, the system notifies the customer
- If credit card is not approved, the customer is notified

HW2

5.c.



HW2

5.d.

