UML Activity Diagram

- An activity diagram is essentially a flowchart that shows activities performed by a system.
- Activity diagram is basically a flowchart to represent the flow from one activity to another activity. The activity can be described as an operation of the system.
- The control flow is drawn from one operation to another. This flow can be sequential, branched, or concurrent. Activity diagrams deal with all type of flow control by using different elements such as fork, join, etc
- Captures the dynamic behavior of the system

The purpose of an activity diagram can be described as –

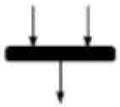
- Draw the activity flow of a system.
- Describe the sequence from one activity to another.
- Describe the parallel, branched and concurrent flow of the system.

Basic components of an activity diagram

- Before you begin making an activity diagram, you should first understand its makeup. Some of the most common components of an activity diagram include:
- **Action:** A step in the activity wherein the users or software perform a given task. Actions are symbolized with round-edged rectangles.
- **Decision node:** A conditional branch in the flow that is represented by a diamond. It includes a single input and two or more outputs.
- **Control flows:** Another name for the connectors that show the flow between steps in the diagram.
- **Start node:** Symbolizes the beginning of the activity. The start node is represented by a black circle.
- **End node:** Represents the final step in the activity. The end node is represented by an outlined black circle.

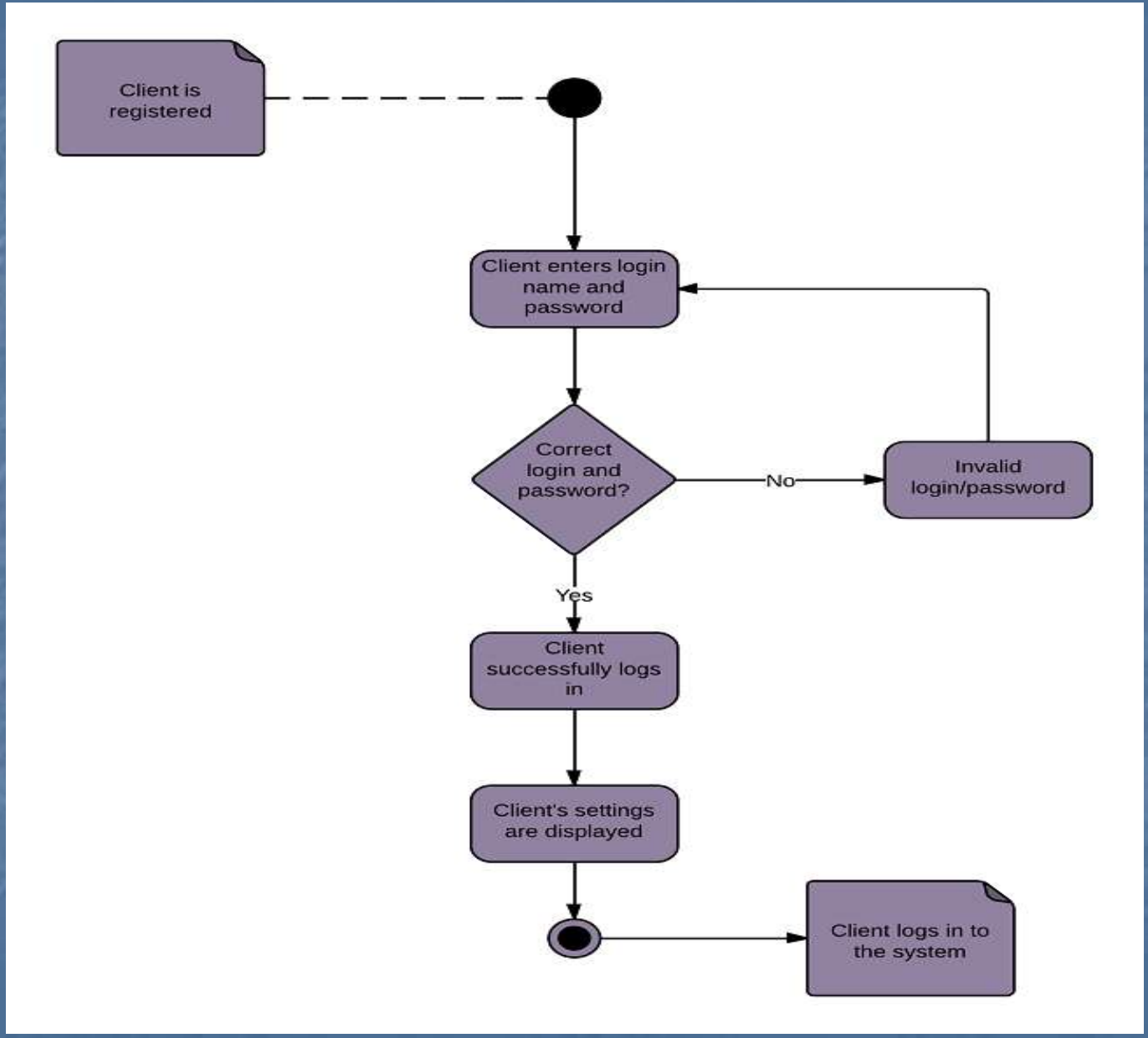
Activity diagram symbols

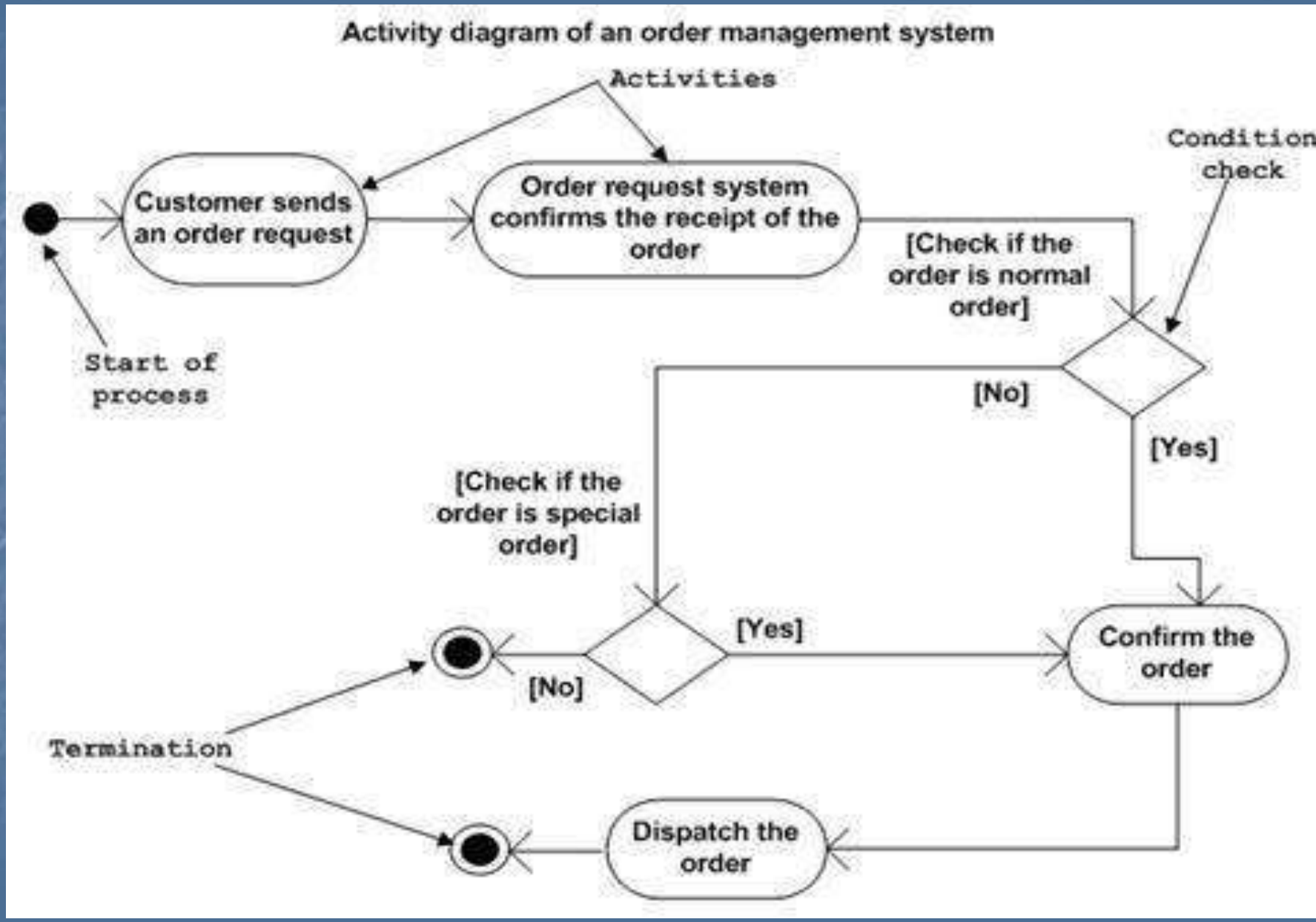
Symbol	Name	Description
	Start symbol	Represents the beginning of a process or workflow in an activity diagram. It can be used by itself or with a note symbol that explains the starting point.
	Activity symbol	Indicates the activities that make up a modeled process. These symbols, which include short descriptions within the shape, are the main building blocks of an activity diagram.
	Connector symbol	Shows the directional flow, or control flow, of the activity. An incoming arrow starts a step of an activity; once the step is completed, the flow continues with the outgoing arrow.

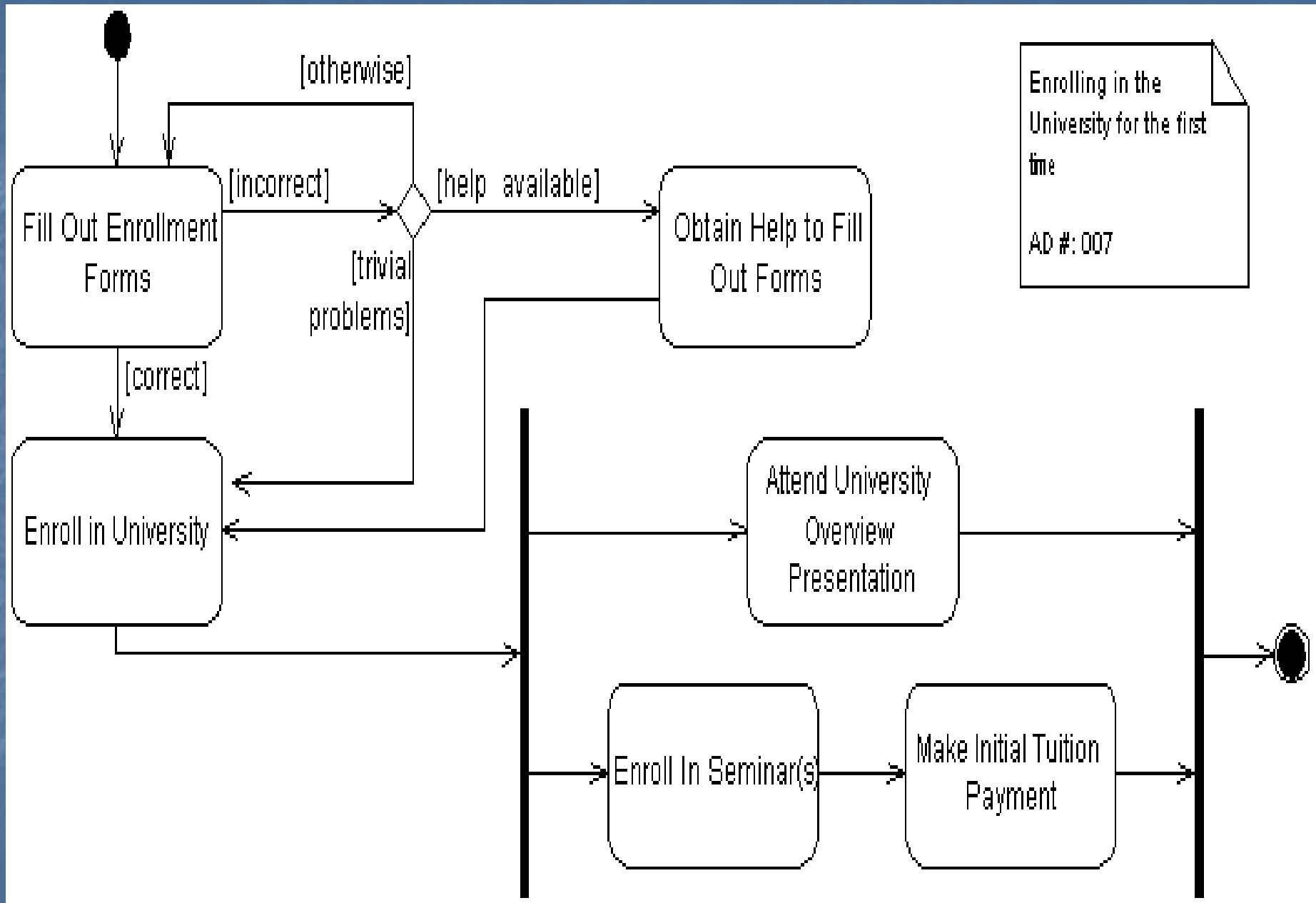
	Joint symbol/ Synchronization bar	Combines two concurrent activities and re-introduces them to a flow where only one activity occurs at a time. Represented with a thick vertical or horizontal line.
	Fork symbol	Splits a single activity flow into two concurrent activities. Symbolized with multiple arrowed lines from a join.
	Decision symbol	Represents a decision and always has at least two paths branching out with condition text to allow users to view options. This symbol represents the branching or merging of various flows with the symbol acting as a frame or container.
	Note symbol	Allows the diagram creators or

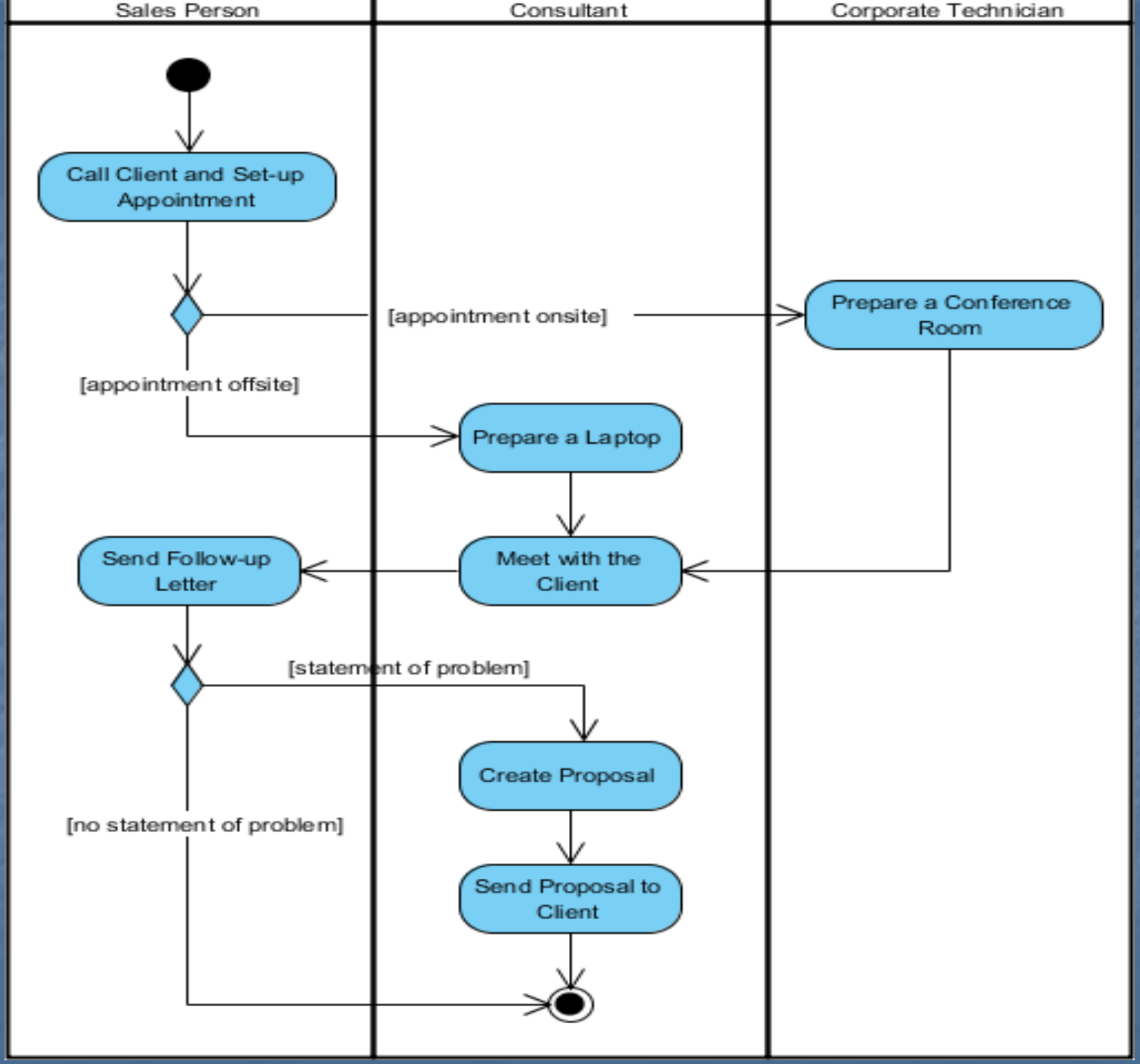
	Send signal symbol	Indicates that a signal is being sent to a receiving activity.
	Receive signal symbol	Demonstrates the acceptance of an event. After the event is received, the flow that comes from this action is completed.
	Shallow history pseudostate symbol	Represents a transition that invokes the last active state.
	Option loop symbol	Allows the creator to model a repetitive sequence within the option loop symbol.
	Flow final symbol	Represents the end of a specific process flow. This symbol shouldn't represent the end of all flows in an activity; in that instance, you would use the end symbol. The flow final symbol should be placed at the end of a process in a single activity flow.

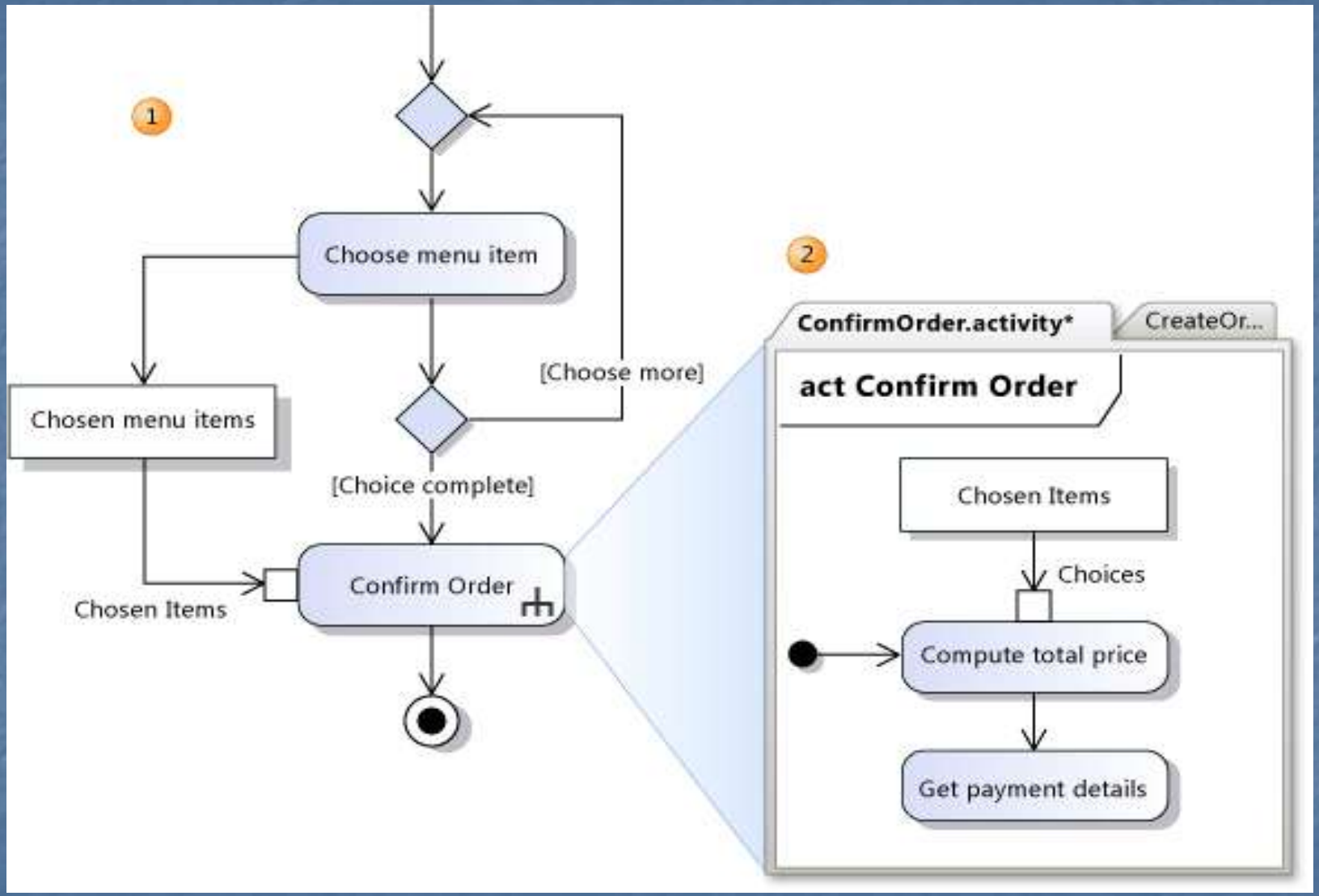
		process in a single activity flow.
[Condition]	Condition text	Placed next to a decision marker to let you know under what condition an activity flow should split off in that direction.
	End symbol	Marks the end state of an activity and represents the completion of all flows of a process.


Client is registered
Client enters login name and password
Correct login and password?
No
Invalid login/password
Yes
Client successfully logs in
Client's settings are displayed
Client logs in to the system


Activity diagram of an order management system
Activities
Condition check
Customer sends an order request
Order request system confirms the receipt of the order
[Check if the order is normal order]
Start of process
[No]
[Yes]
[Check if the order is special order]
[Yes]
[No]
Confirm the order
Termination
Dispatch the order


[otherwise]
Enrolling in the University for the first time
AD #: 007
Fill Out Enrollment Forms
[incorrect]
[help available]
Obtain Help to Fill Out Forms
[trivial problems]
[correct]
Enroll in University
Attend University Overview Presentation
Enroll In Seminar(s)
Make Initial Tuition Payment


Sales Person
Consultant
Corporate Technician
Call Client and Set-up Appointment
[appointment onsite]
Prepare a Conference Room
[appointment offsite]
Prepare a Laptop
Send Follow-up Letter
Meet with the Client
[statement of problem]
Create Proposal
[no statement of problem]
Send Proposal to Client


1
Choose menu item
[Choose more]
Chosen menu items
[Choice complete]
Chosen Items
Confirm Order
2
ConfirmOrder.activity*
CreateOr...
act Confirm Order
Chosen Items
Choices
Compute total price
Get payment details