

Activity diagrams

- Activity diagram is another important behavioral diagram in **UML** diagram to describe dynamic aspects of the system.
- Activity diagram is essentially an advanced version of flow chart that modeling the flow from one activity to another activity.
- The basic purpose of activity diagrams is to capture the dynamic behavior of the system.
- It is also called object-oriented flowchart.






When to use Activity diagram

- Activity Diagrams describe how activities are coordinated to provide a service which can be at different levels of abstraction.
- Typically, an event needs to be achieved by some operations, particularly where the operation is intended to achieve a number of different things that require coordination
- It can show how the events in a single use case relate to one another, in particular, use cases where activities may overlap and require coordination.
- It is also suitable for modeling how a collection of use cases coordinate to represent business workflows

Benefits of activity diagram

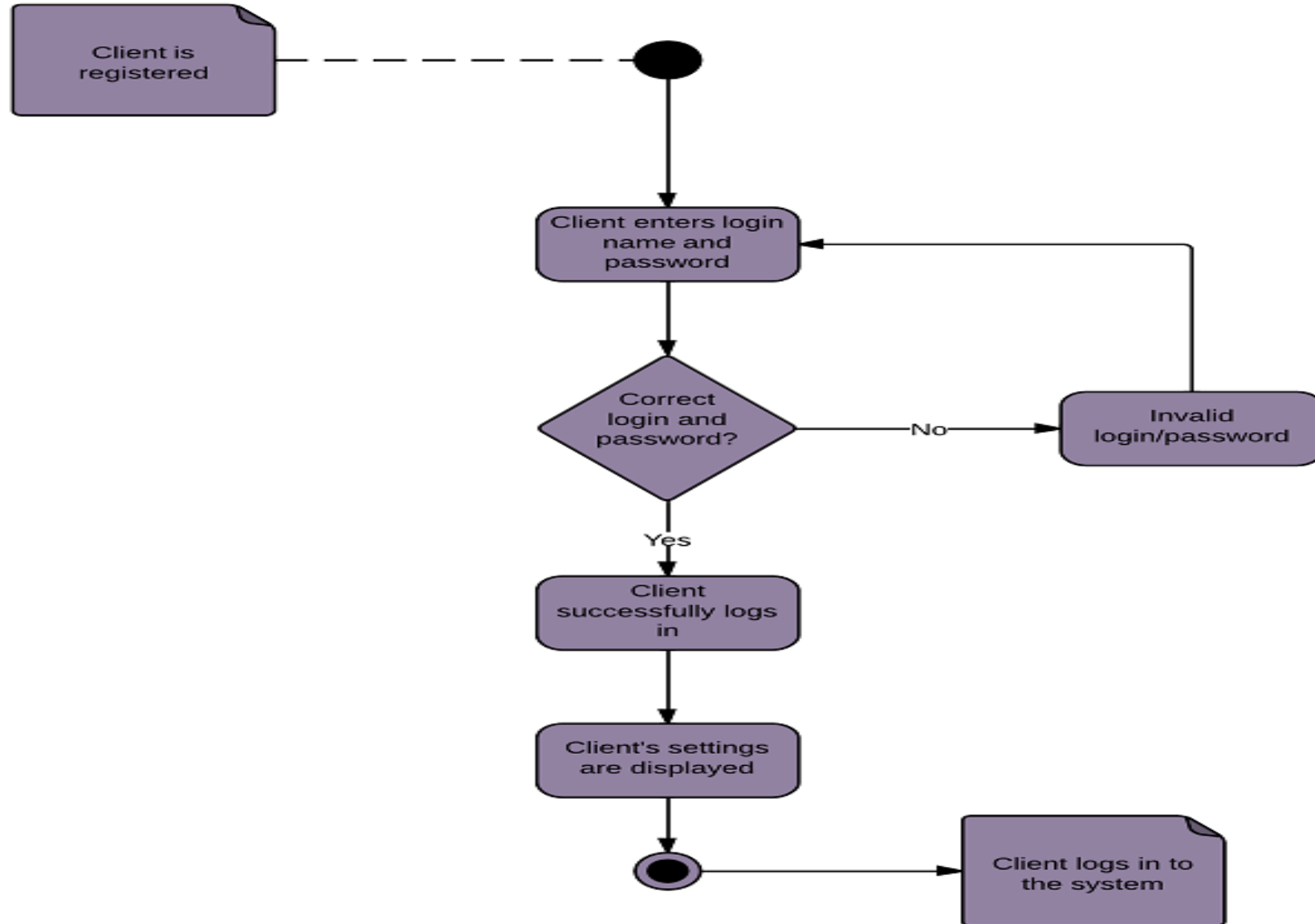
- Demonstrate the logic of an algorithm.
- Describe the steps performed in a UML use case.
- Illustrate a business process or workflow between users and the system.
- Simplify and improve any process by clarifying complicated use cases.
- Model software architecture elements, such as method, function, and operation.

Components of Activity diagram

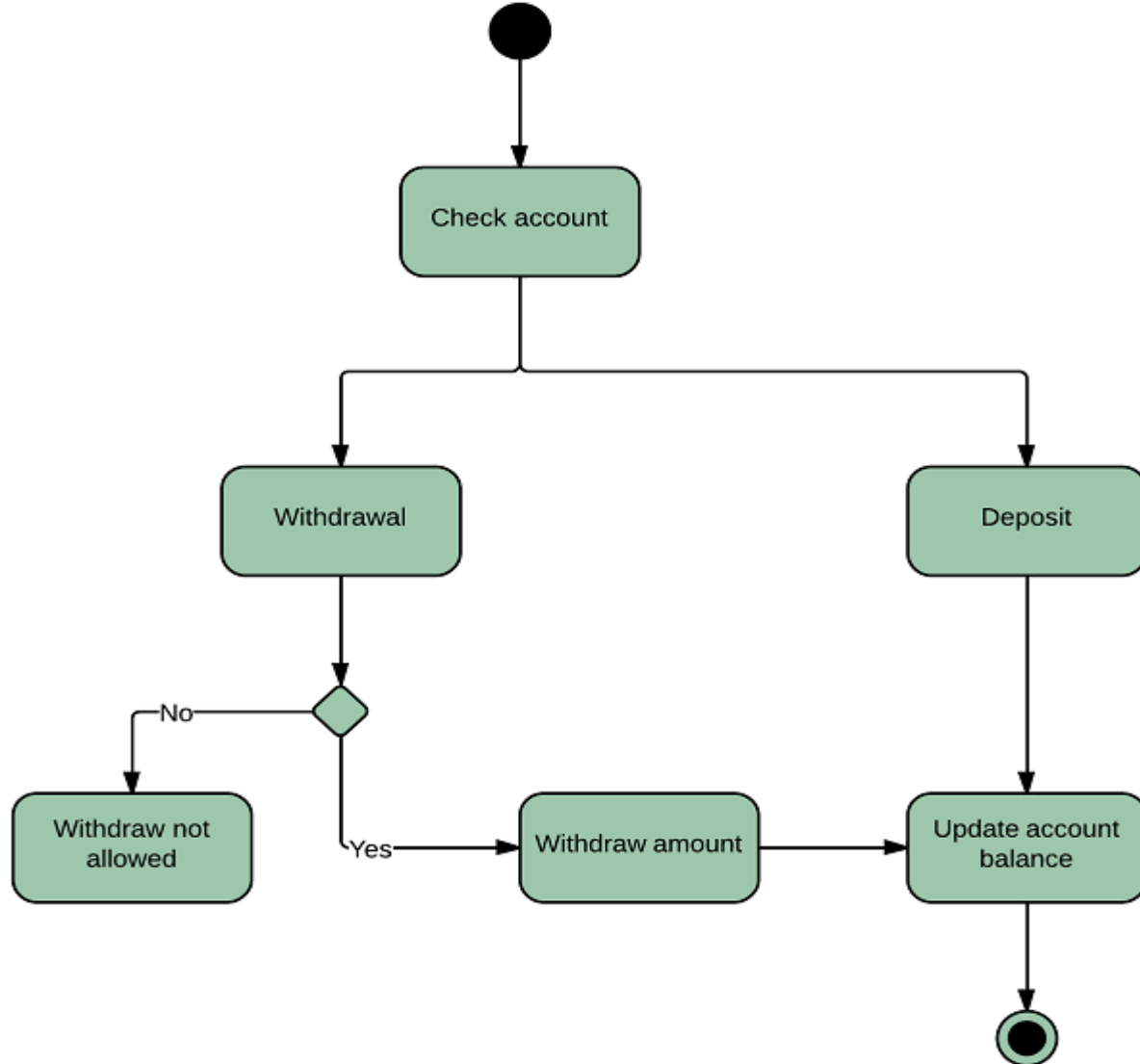
- **Action**: A step in the activity wherein the users or software perform a given task. Symbolised by round-edged rectangles. 
- **Decision node**: A conditional branch in the flow that is represented by a diamond. It includes a single input and two or more outputs. 
- **Control flows**: Another name 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. 

- **Fork**: Used when an activity has to split into two
- **Join**: Used when two activities have to merge as one

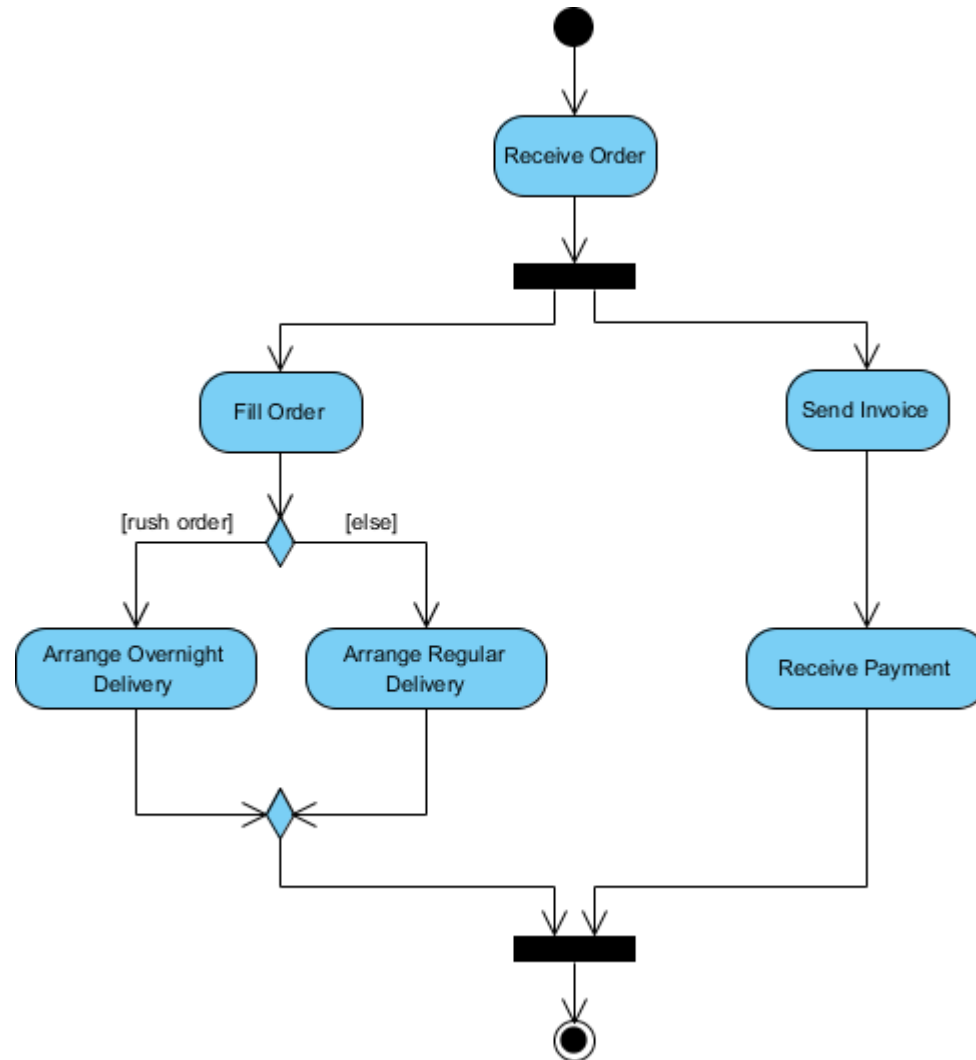
Activity diagram for Login Page



Activity diagram to show Bank transactions



Activity diagram to 'process order'



Swimlane Activity diagrams

- A swimlane is a way to group activities performed by the same actor on an activity diagram or activity diagram or to group activities in a single thread.

Meeting a new client using an activity Diagram with swimlane

