

SAD

Lecture 5

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ACTIVITY DIAGRAM

Activity Diagram

- UML activity diagrams represent workflows in a graphical way.
- They can be used to describe business workflow or the operational workflow of any component in a system.
- The diagrams describe the state of activities by showing the sequence of activities performed.

Activity Diagram Purposes

- 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.

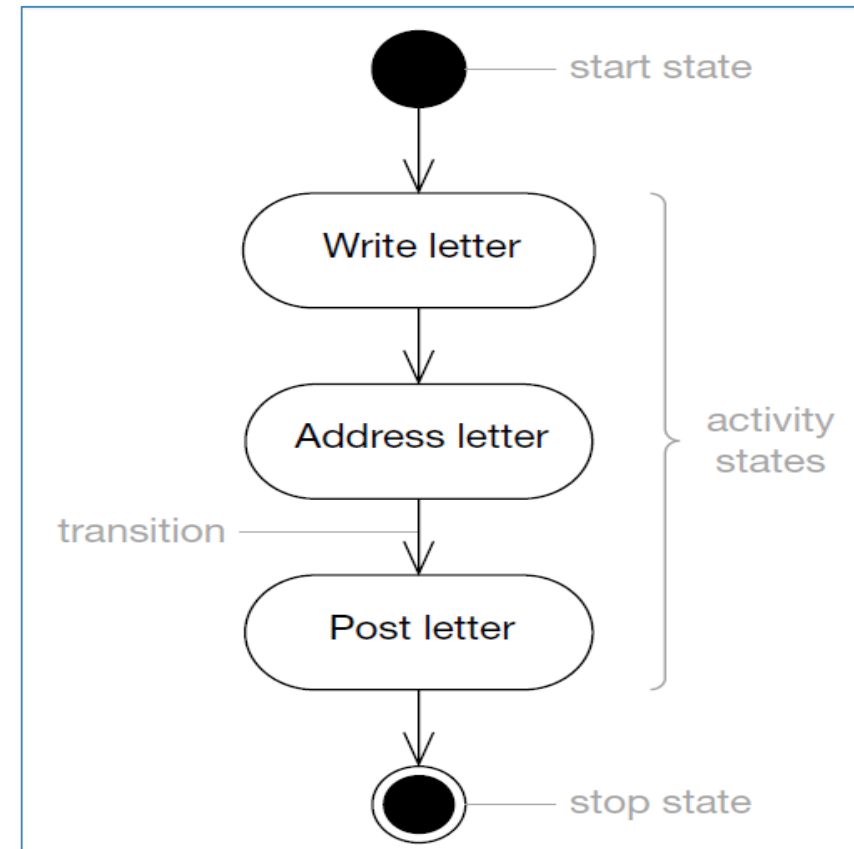
Activity Diagram Actions

- Atomic: can't be broken down into smaller pieces.
- Uninterruptible: once the piece of work starts it always progresses to the finish.
- Instantaneous: the work of an action state is generally considered to take an insignificant amount of time.

Activity Diagram Elements

Transitions

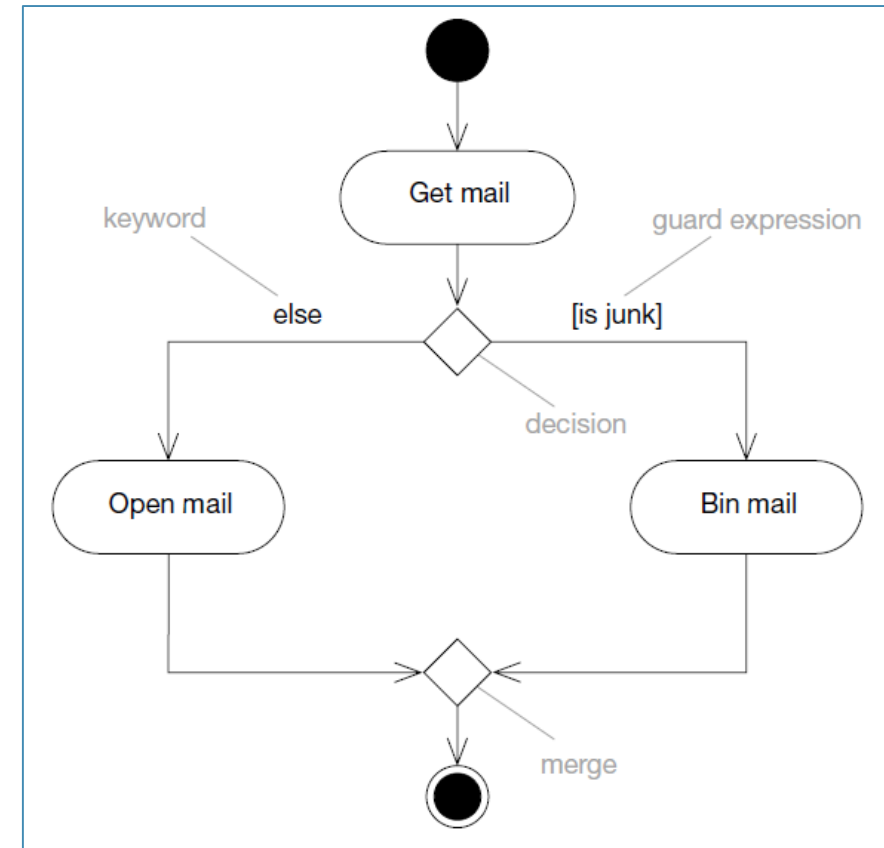
- **Initial Activity:**
 - This shows the starting point or first activity of the flow.
 - Denoted by a solid circle.
- **Activity:**
 - Represented by a rectangle with rounded (almost oval) edges.
- **Transitions**



Activity Diagram Elements

Decisions & Merge

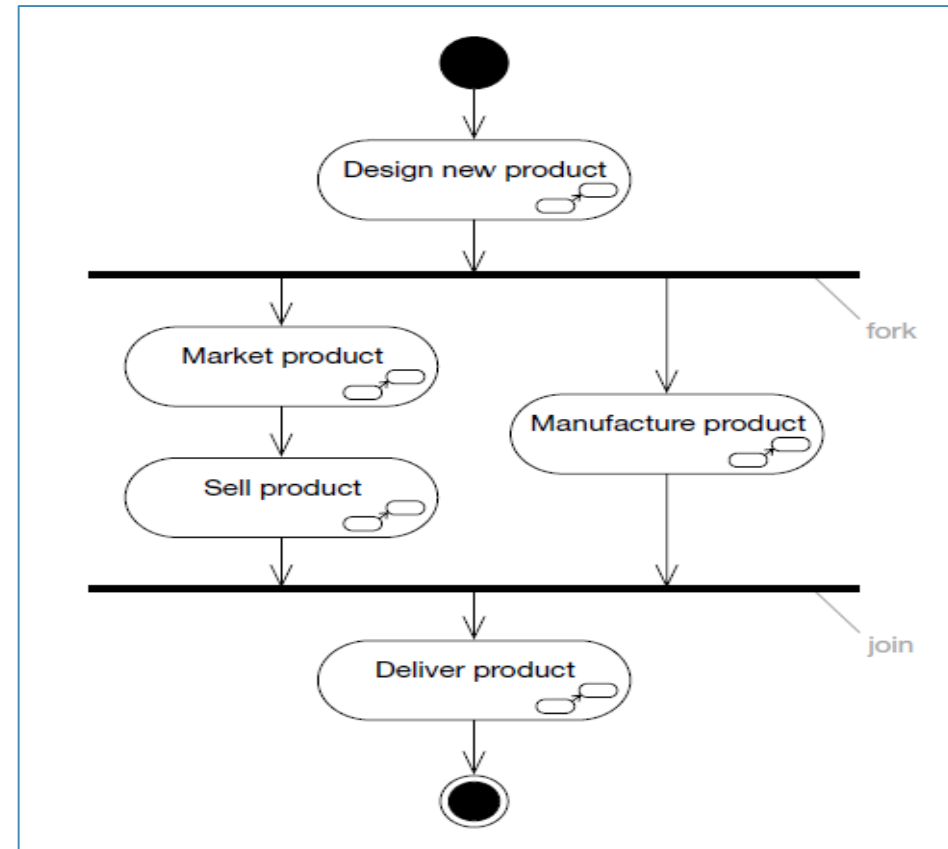
- A diamond shape.
- The control flows coming away from a decision node will have guard conditions which will allow control to flow if the guard condition is met.



Activity Diagram Elements

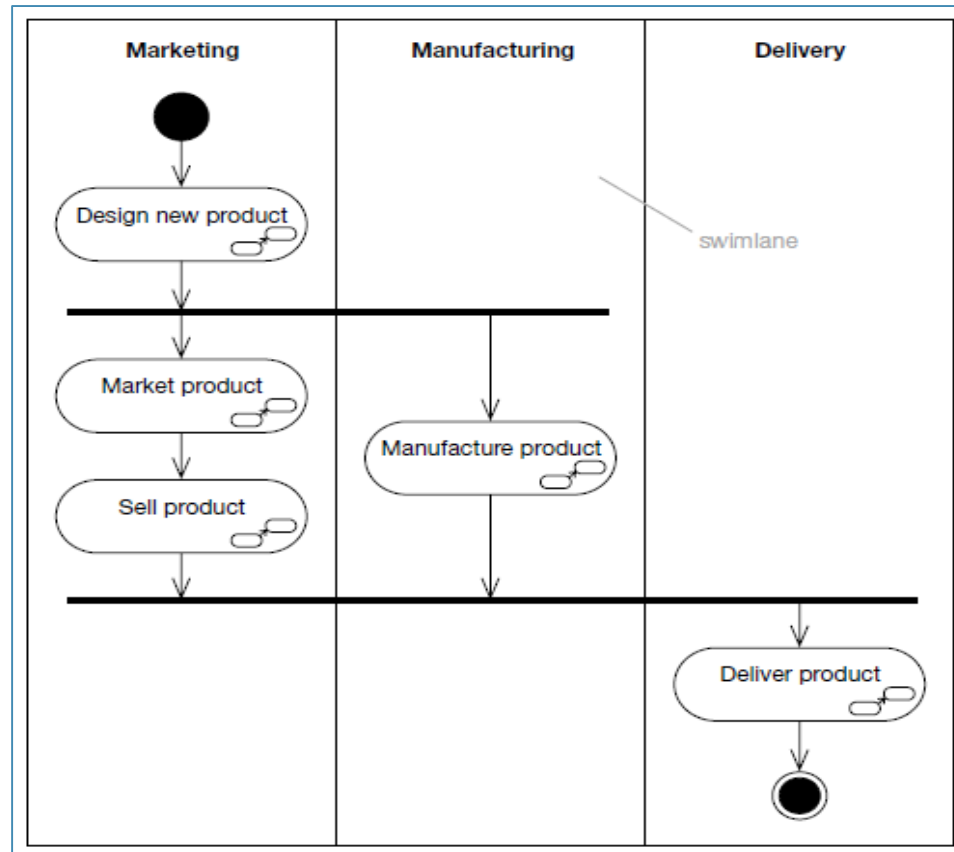
Forks & Joins

- Either a horizontal or vertical bar.
- They indicate the start and end of concurrent threads of control.



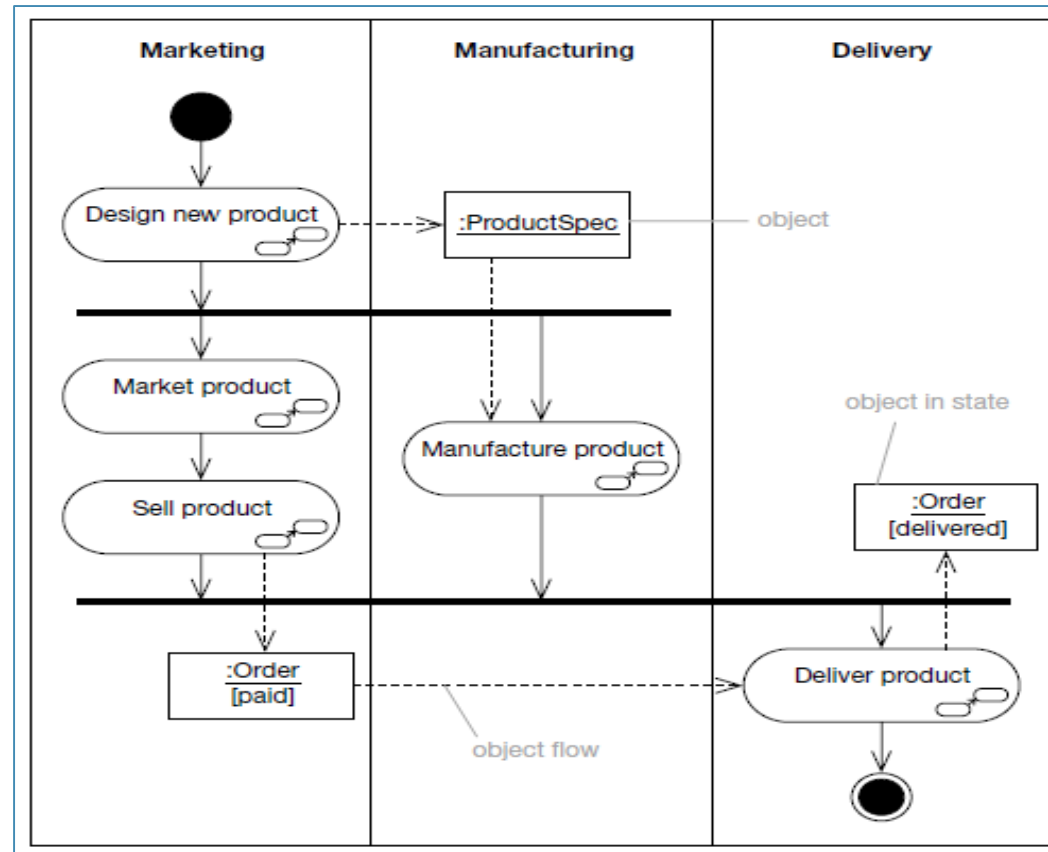
Activity Diagram Elements

Swim lanes



Activity Diagram Elements

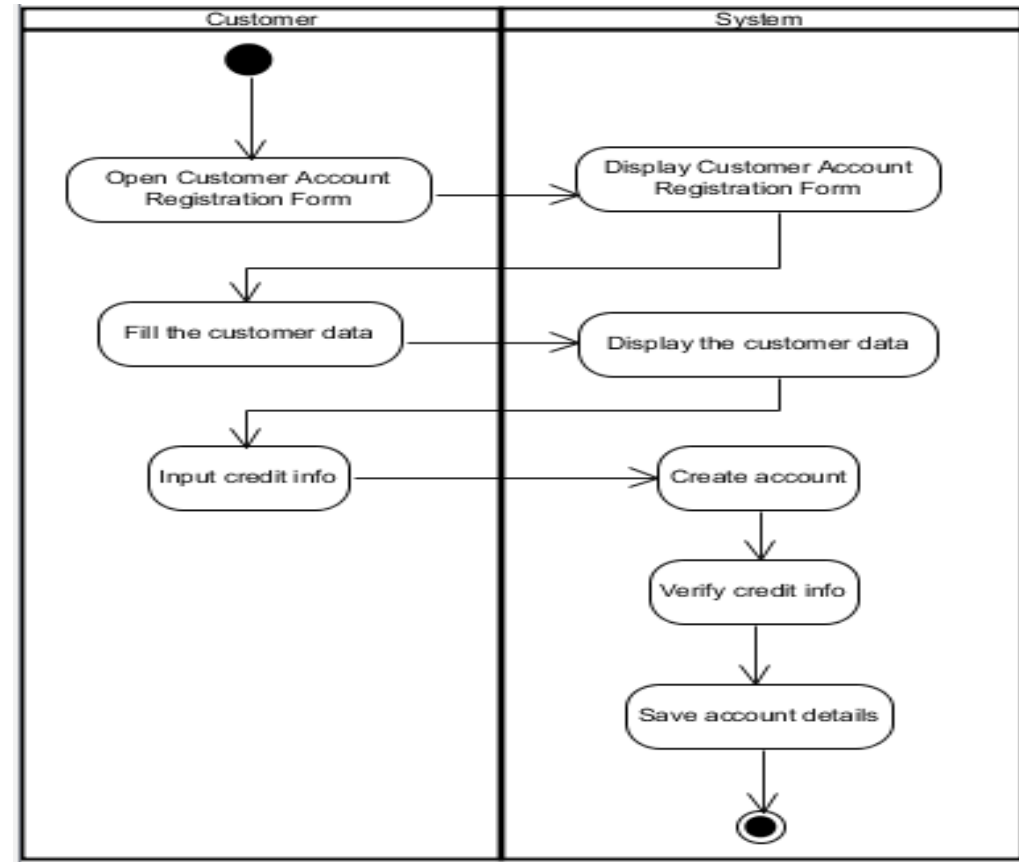
Object flows



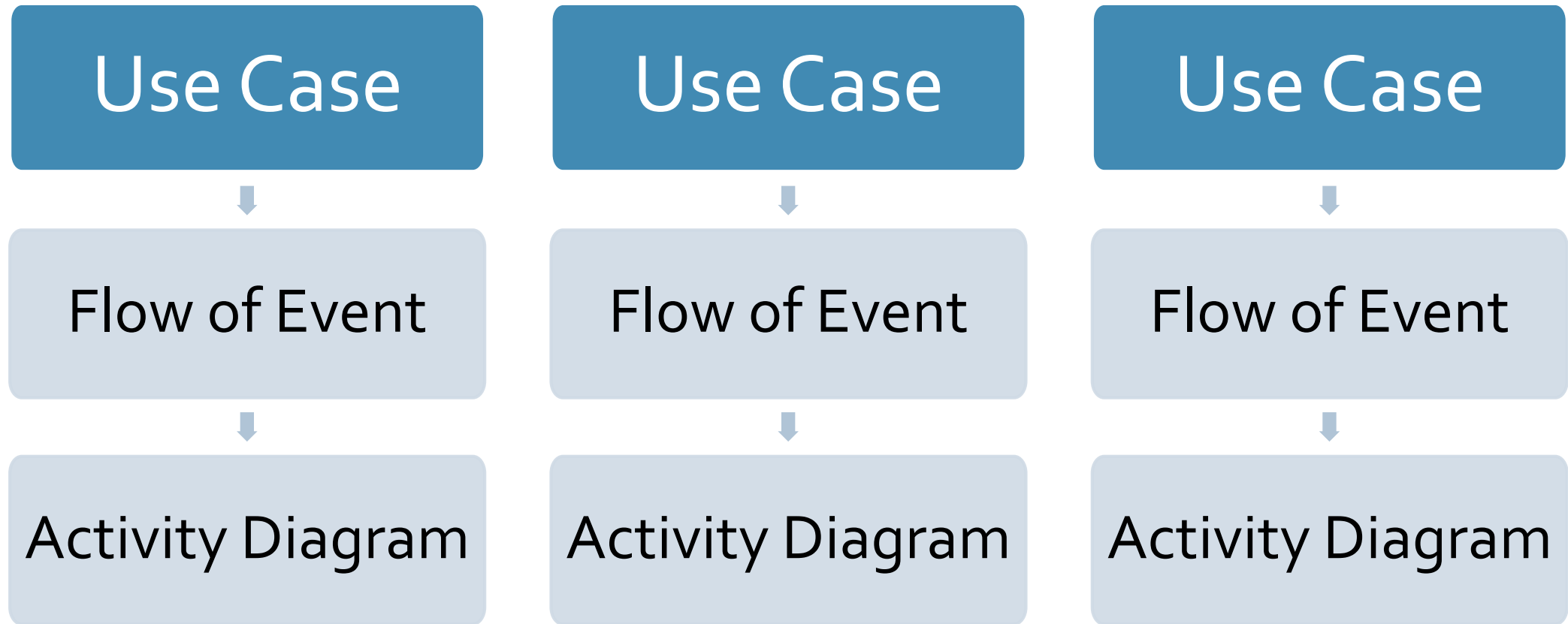
Simple Example

Create customer account use case

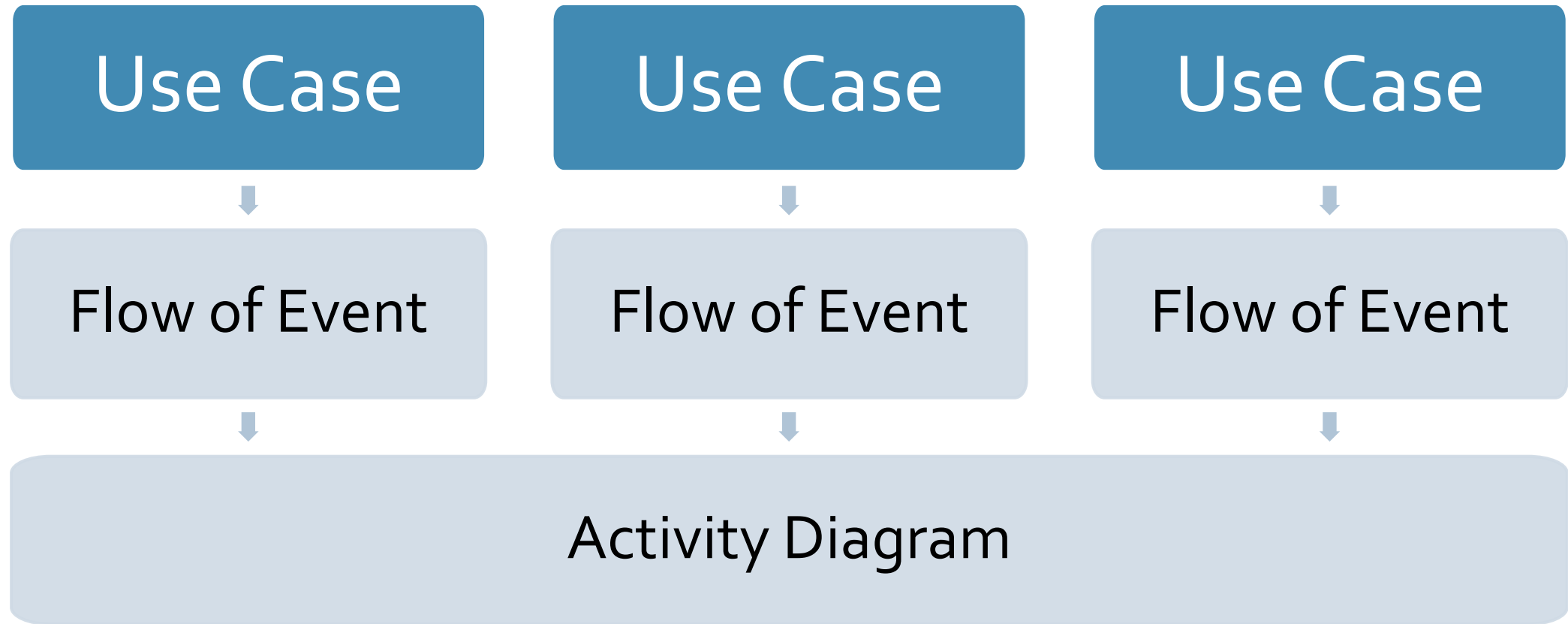
- There are two swim lanes: one for the customer and one for the system.
- The customer has three activities, and the system has five activities.
- Flow of events:
 - Customer will start the action by opening customer account registration form,
 - then system will display the customer account registration form.
 - After that, customer fills the required customer data,
 - so the system will display the customer data.
 - The next action, customer inputs the credit info and the system creates account of customer, verifies credit info, and saves the account details.



Activity Diagram From Use Case Specification

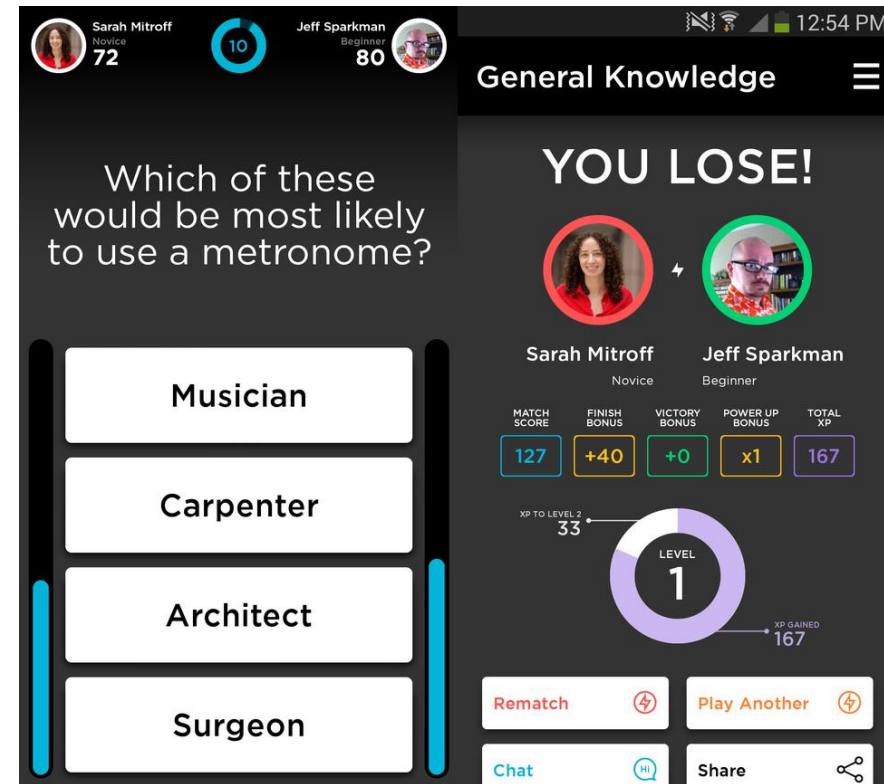


Activity Diagram From Use Case Specification



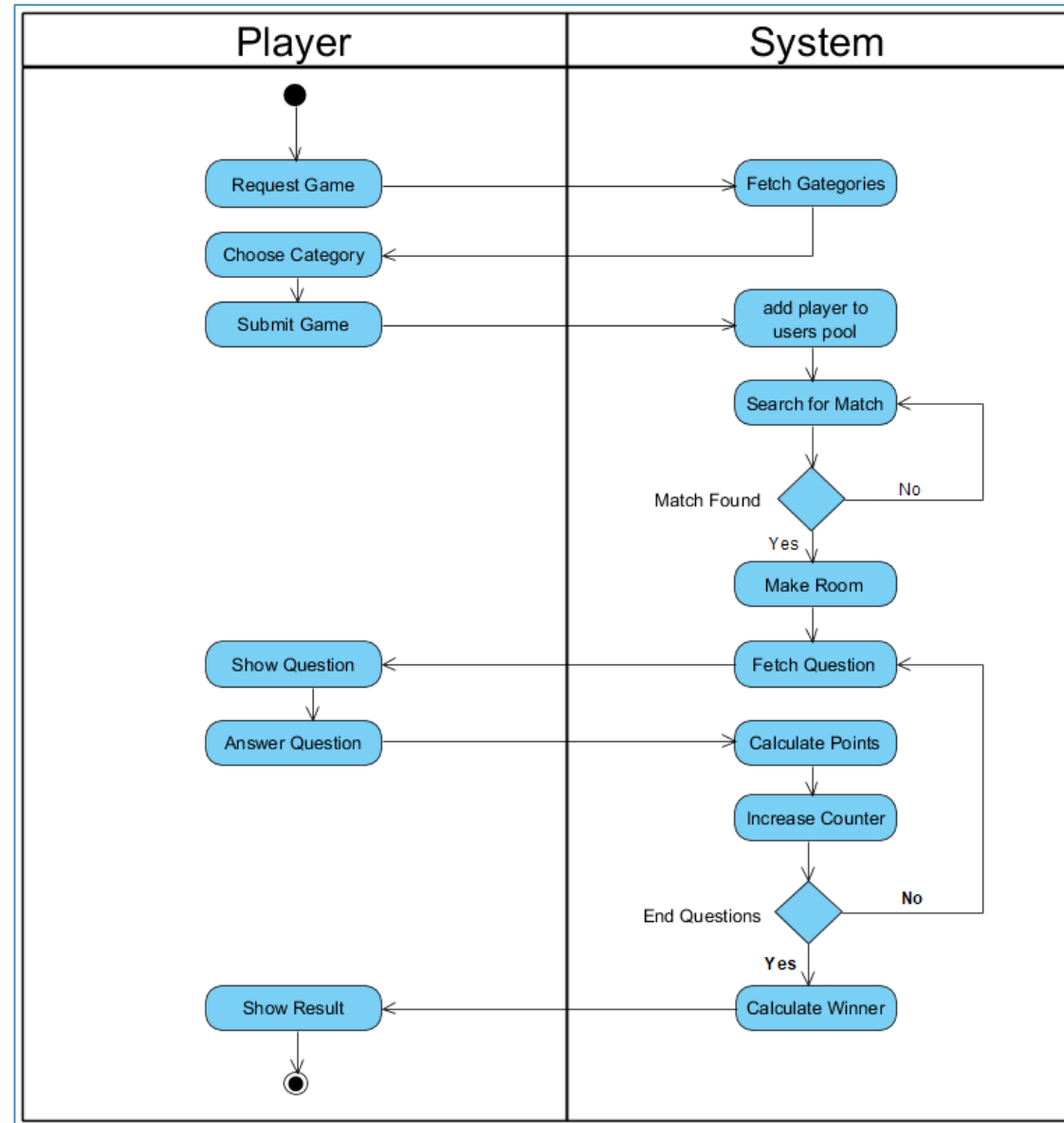
Practical Example

A multiplayer game in which one user competes against another during seven rounds of timed multiple-choice questions of various topics.



Practical Example

Solution





HOMework

Draw an activity diagram that shows the process of cash withdrawal workflow from an ATM

Extra Example

