

Activity Diagram

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Activity Diagram...

- ❖ Activity diagrams represent the dynamic (behavioral) view of a system.
- ❖ Activity diagrams are typically used for business (transaction) process modeling and modeling the logic captured by a single use-case or usage scenario.
- ❖ Activity diagram is used to represent the flow across use cases or to represent flow within a particular use case.
- ❖ UML activity diagrams are the object oriented equivalent of flow chart and data flow diagrams in function-oriented design approach.
- ❖ Activity diagram contains activities, transitions between activities, decision points, synchronization bars, swim lanes and many more...

Activity Diagram...

- ❖ Describes how activities are coordinated.
- ❖ Is particularly useful when you know that an operation has to achieve a number of different things, and you want to model what the essential dependencies between them are, before you decide in what order to do them.
- ❖ Records the dependencies between activities, such as which things can happen in parallel and what must be finished before something else can start.
- ❖ Represents the workflow of the process.

Activity Diagram...(Notations)

1. Activity

- ✓ The Core symbol is used for Activities.



- ✓ An activity is some task which needs to be done.
- ✓ Each activity can be followed by another activity (sequencing).
- ✓ An activity may be a manual thing, so that it's not necessarily in a program.

Activity Diagram...(Notations)

2. Transmission (Flow)

- ✓ When the action or activity of a state completes, flow of control passes immediately to the next action or activity state
- ✓ The flow of control is shown by arrow symbol.



Activity Diagram...(Notations)

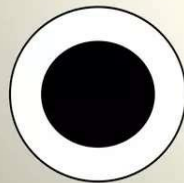
3. Starting and Ending Nodes

- ✓ The source of flow of control is known as '**Initial Node or Starting Node**'.



Starting Node(Mark)

- ✓ Destination of flow of control is called '**Ending Node or Final Node**'.



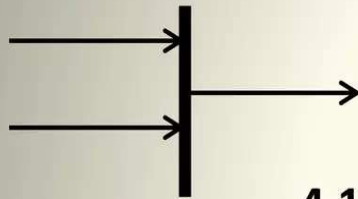
Ending Node

Activity Diagram...(Notations)

4. Join and Fork

✓ Join

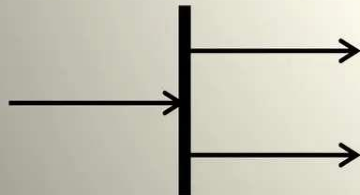
A block bar with several flows entering in it and one leaving from it. this denotes the end of parallel activities



4.1 Synch. Bar (Join)

✓ Fork

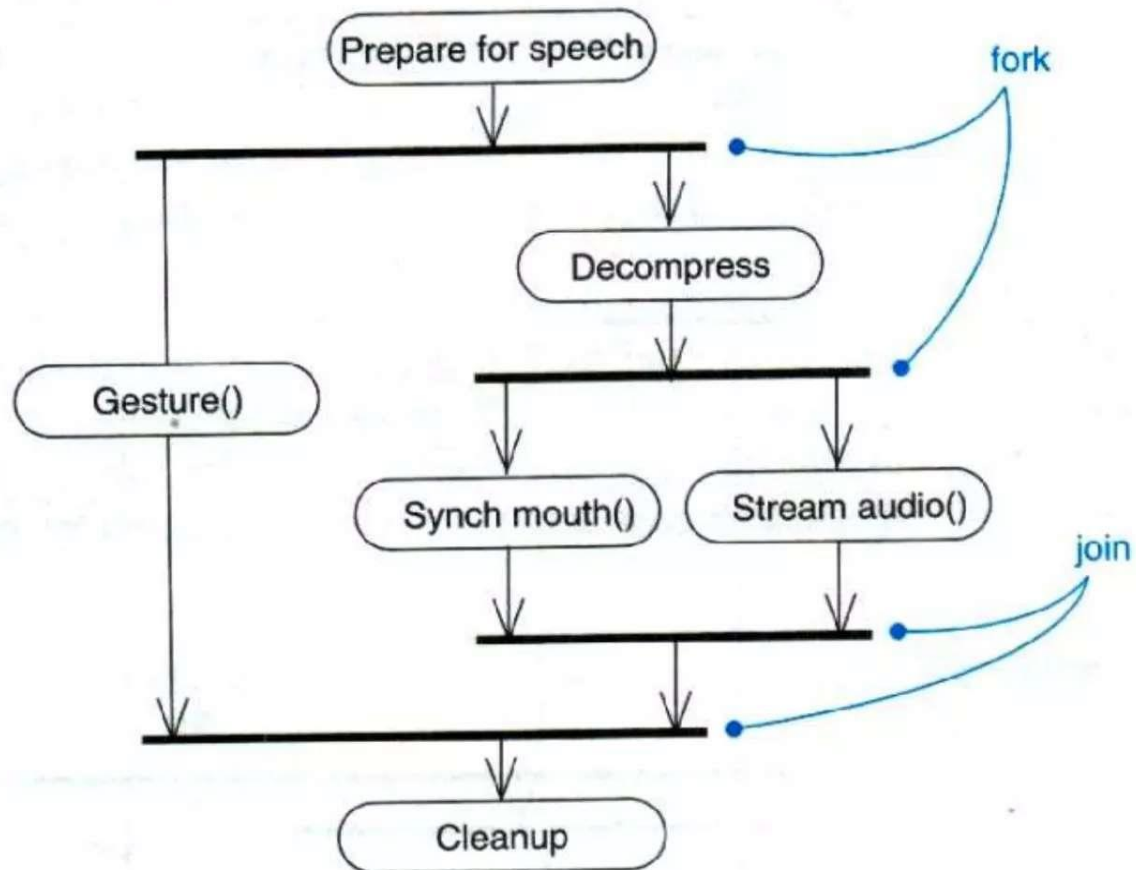
A black bar (horizontal/vertical) with one flow going into it and several leaving it. This denotes the beginning of parallel activities



4.2 Splitting Bar (Fork)

Activity Diagram...(Notations)

Example for Join and Fork

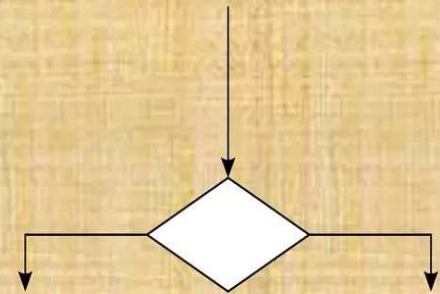


Activity Diagram...(Notations)

5. Decision and Merge

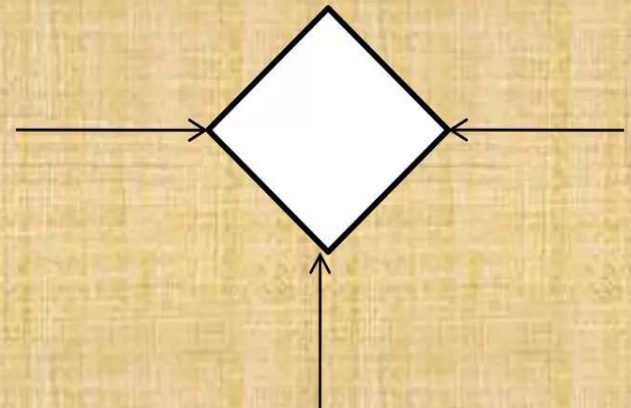
✓ Decision

- A diamond with one flow entering and several leaving. The flow leaving includes conditions as yes/ no state.



✓ Merge

- A diamond with several flows entering and one leaving. The implication is that all incoming flow to reach this point until processing continues

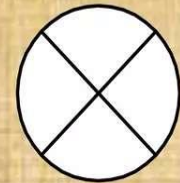


Activity Diagram...(Notations)

6.Flow Final and Swimlane

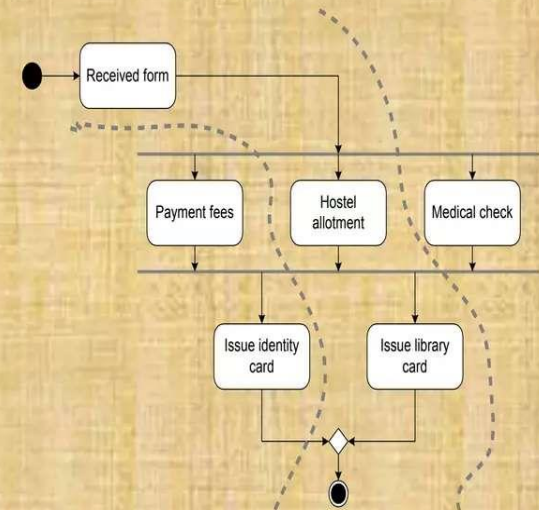
✓ Flow final

- The circle with X through it. This indicates that Process stop at this point



✓ Swim lane

- A partition in activity diagram by means of dashed line, called swim lane. This swim lane may be horizontal or vertical
- Each zone represents the responsibilities of a particular class or department

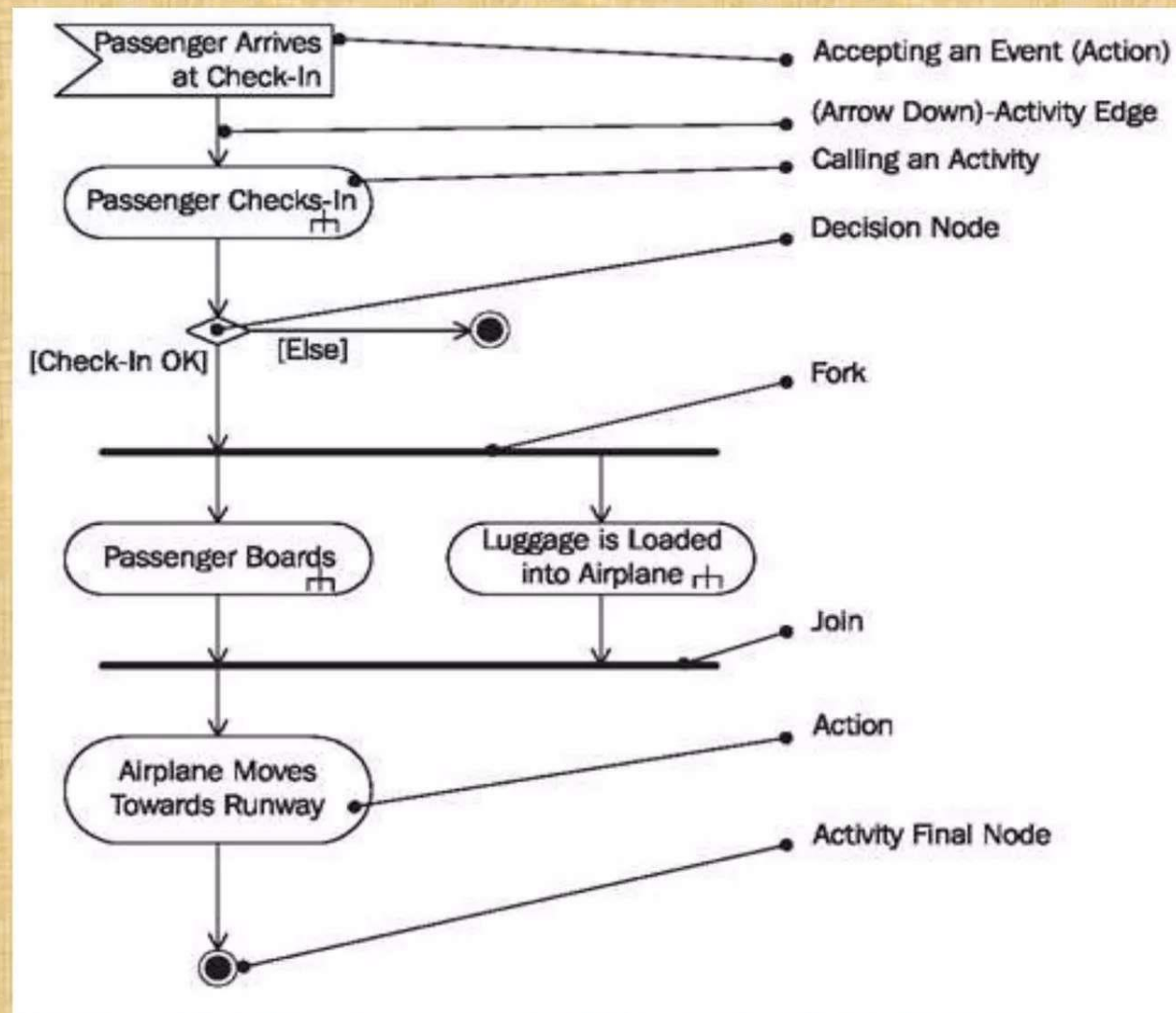


Activity Diagram...(Notations)

Difference between Join and Merge

- A join is different from a merge in that the join synchronizes two inflows and produces a single outflow. The outflow from a join cannot execute until all inflows have been received
- A merge passes any control flows straight through it. If two or more inflows are received by a merge symbol, the action pointed to by its outflow is executed two or more times

Example of Activity Diagram...



Example of Activity Diagram...

