SOFTWARE ENGINEERING PRACTICAL DOCUMENT

PRACTICAL NO: 6

AIM: Study and implementation of Activity Diagrams.

SOLUTION

In UML, the activity diagram is used to demonstrate the flow of control within the system rather.

than the implementation. It models the concurrent and sequential activities.

The activity diagram helps in envisioning the workflow from one activity to another. It put emphasis.

on the condition of flow and the order in which it occurs. The flow can be sequential, branched, or

concurrent, and to deal with such kinds of flows, the activity diagram has come up with a fork, join,

etc.

It is also termed as an object-oriented flowchart. It encompasses activities composed of a set of

actions or operations that are applied to model the behavioral diagram.

Basic Activity Diagram Notations and Symbols

**Initial State or Start Point**

A small, filled circle followed by an arrow represents the initial action state or the start point for any activity diagram. For activity diagram using swim lanes, make sure the start point is placed in the top left corner of the first column.

Start Point/Initial State

**Activity or Action State**

An action state represents the non-interruptible action of objects. You can draw an action state using a rectangle with rounded corners.

Activity

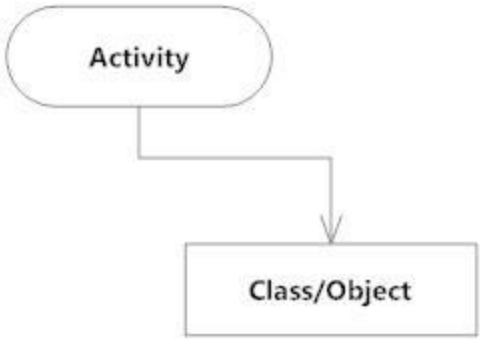
**Action Flow**

Action flows, also called edges and paths, illustrate the transitions from one action state to another. They are usually drawn with an arrowed line.

Action Flow

**Object Flow**

Object flow refers to the creation and modification of objects by activities. An object flow arrow from an object to an action indicates that the action state uses the object.




Object Flow

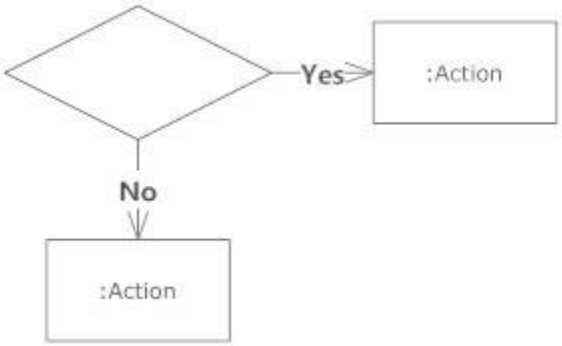
**Decisions and Branching**

A diamond represents a decision with alternate paths. When an activity requires a decision prior to moving on to the next activity, add a diamond between the two activities.

Decision Symbol

**Guards**

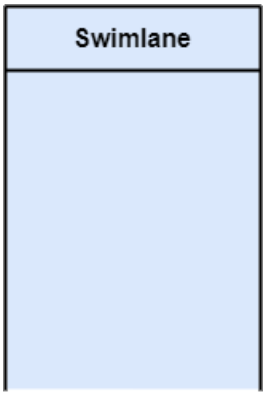
In UML, guards are a statement written next to a decision diamond that must be true before moving next to the next activity. These are not essential, but are useful when a specific answer, such as "Yes, three labels are printed," is needed before moving forward.




Guard Symbols

**Swimlanes**

Swimlanes group related activities into one column.




Activity diagram constitutes following notations:

**Initial State**: It depicts the initial stage or beginning of the set of actions.

**Final State:** It is the stage where all the control flows and object flow end.

**Decision Box**: It makes sure that the control flow or object flow will follow only one path.

**Action Box**: It represents the set of actions that are to be performed.

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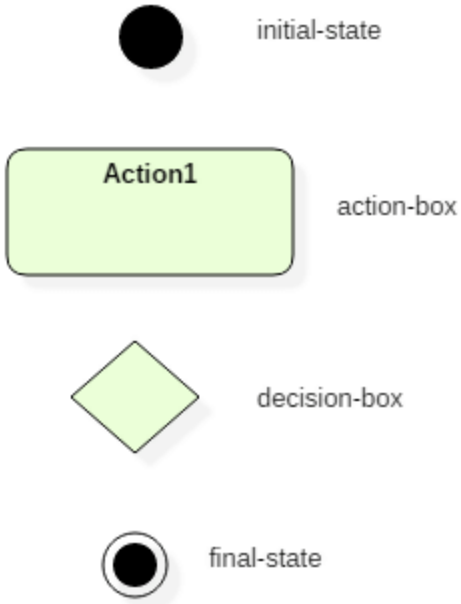


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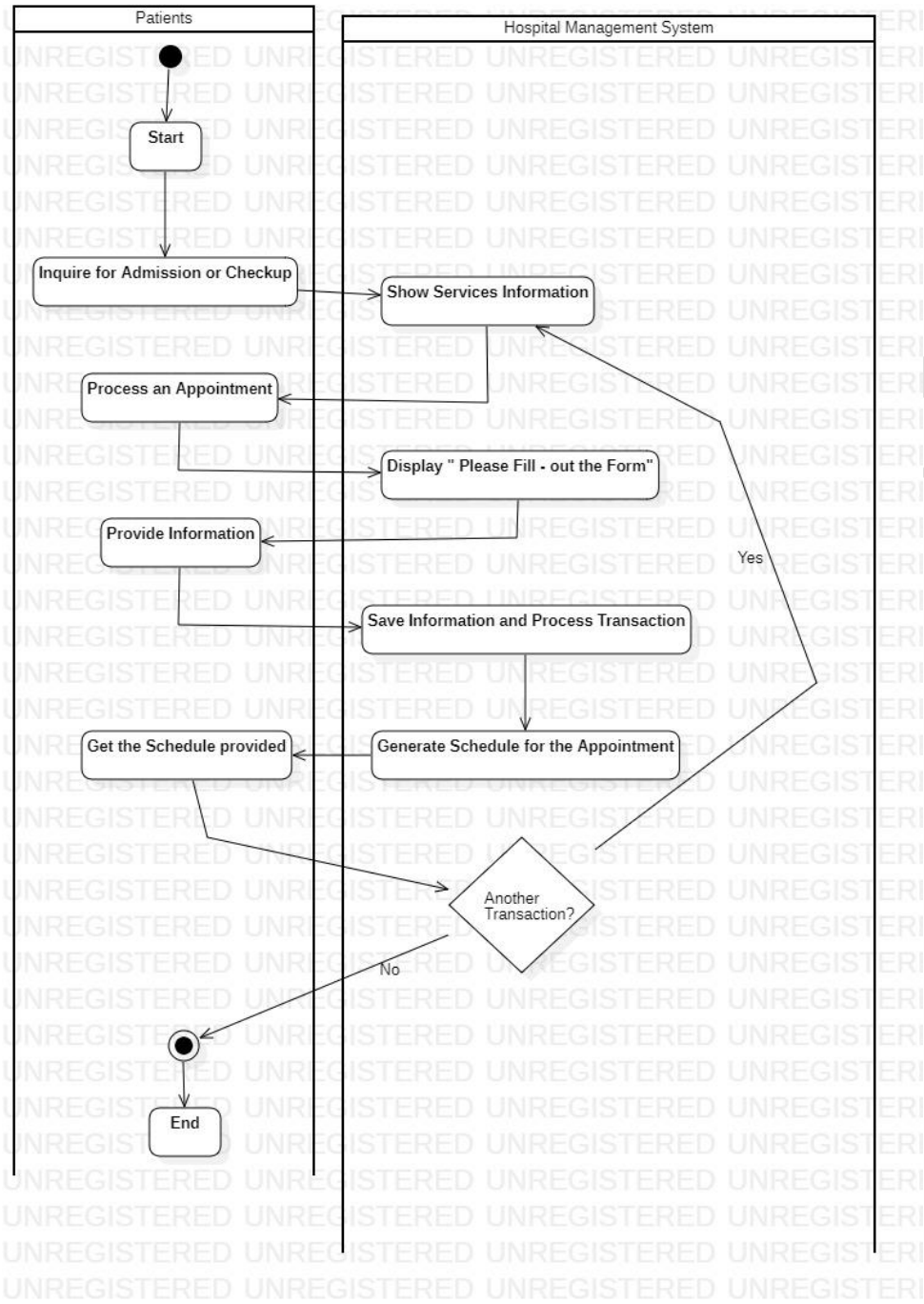
**Example**

**Activity Diagram of Hospital Management System Hospital Management System Activity Diagram for the Patient Use**



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