Activity Diagrams

Activity Diagram

- Activity diagrams describe the workflow behavior of a system.
  - Activity diagrams are used in process modeling and analysis of during requirements engineering.
  - A typical business process which synchronizes several external incoming events can be represented by activity diagrams.
- They are most useful for understanding work flow analysis of synchronous behaviors across a process.

Activity Diagram

- Activity diagrams are used for
  - documenting existing process
  - analyzing new Process Concepts
  - finding reengineering opportunities.

- The diagrams describe the state of activities by showing the sequence of activities performed.
  - they can show activities that are conditional or parallel.

Components

- An *activity* is an ongoing, though interruptible, execution of a step in a workflow (such as an operation or transaction)
  - Represented with a rounded rectangle.
  - Text in the activity box should represent an activity (verb phrase in present tense).

Components

- An *event* is triggered by an activity. It specifies a significant occurrence that has a location in time and space.
  - An instance of an event (trigger) results in the flow from one activity to another.
  - These are represented by directed straight lines emerging from triggering activity and ending at activity to be triggered. Label text for events should represent event but not the data involved.

- A *decision* may be shown by labeling multiple output transitions of an activity with different guard conditions.
  - For convenience a stereotype is provided for a decision: the traditional diamond shape, with one or more incoming arrows and with two or more outgoing arrows, each labeled by a distinct guard condition with no event trigger.

How to Draw an Activity Diagram

- Diagrams are read from top to bottom and have branches and forks to describe conditions and parallel activities.
  - A fork is used when multiple activities are occurring at the same time.
  - A branch describes what activities will take place based on a set of conditions.
  - All branches at some point are followed by a merge to indicate the end of the conditional behavior started by that branch.
  - After the merge all of the parallel activities must be combined by a join before transitioning into the final activity state.

Activity Diagram Example