

Structural diagrams show different objects in a system.

Examples:

- Class Diagram
- Component Diagram
- Deployment Diagram

Behavioral diagrams show how the objects interact with each other in the system

Examples:

- Use case Diagram
- Activity Diagram
- State Chart Diagram
- Sequence Diagram
- Collaboration Diagram

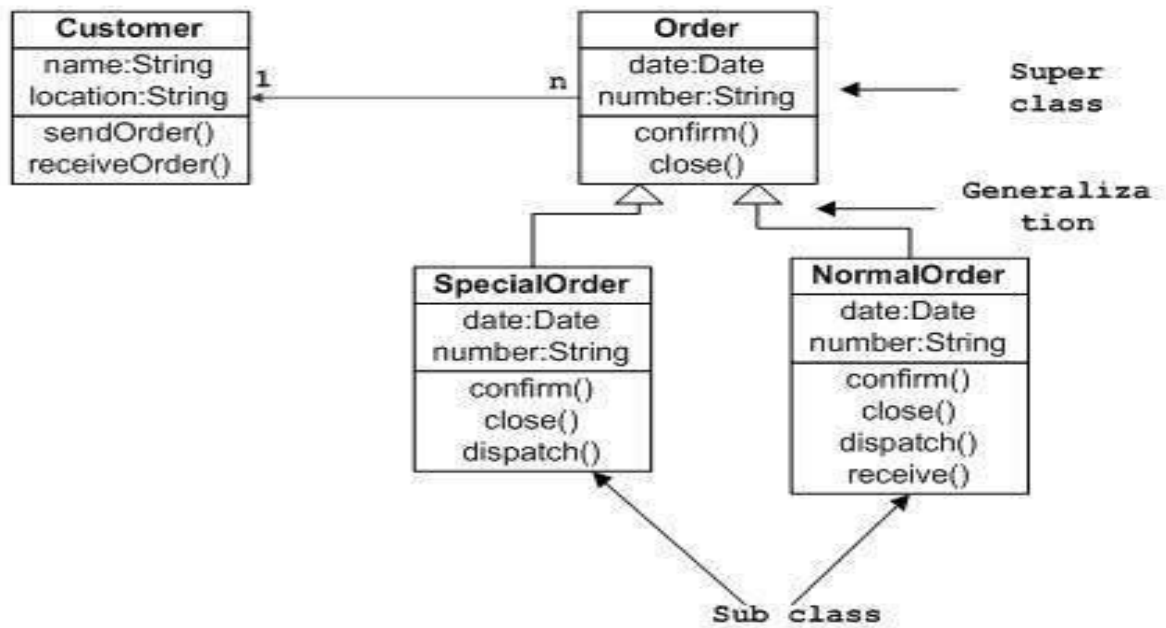
Class diagram is a static diagram. It represents the static view of an application.

Class diagram describes the attributes and operations of a class and also the constraints imposed on the system. The class diagrams are widely used in the modeling of object-oriented systems ie used in object-oriented languages.

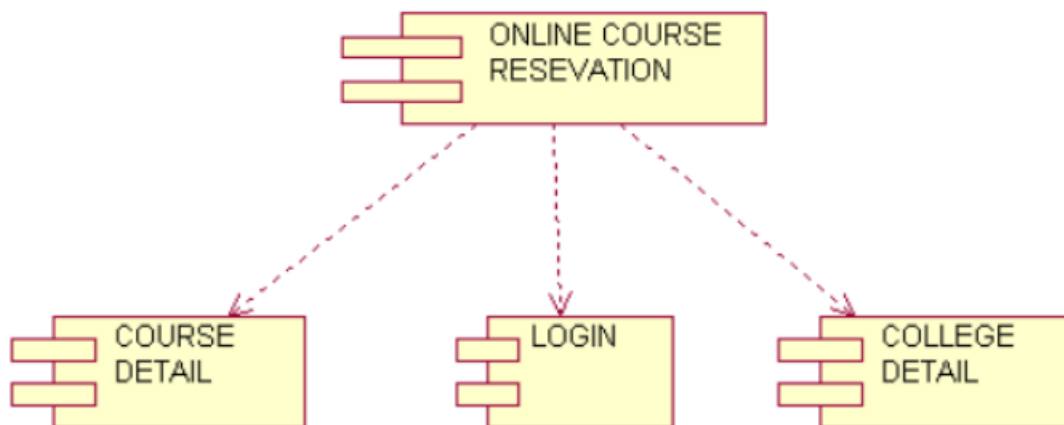
The purpose of the class diagram –

- Analysis and design of the static view of an application.
- Describe responsibilities of a system.

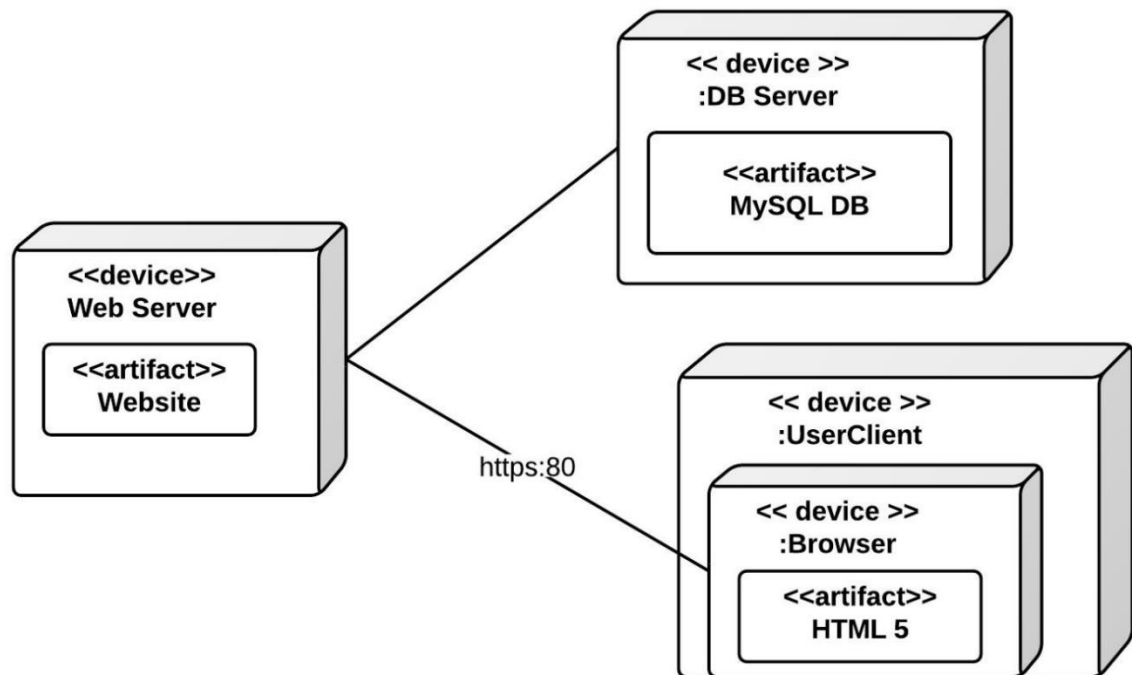
Sample Class Diagram



Component diagrams Component diagrams are used to model the physical aspects of a system such as executables, libraries, files, documents, etc.



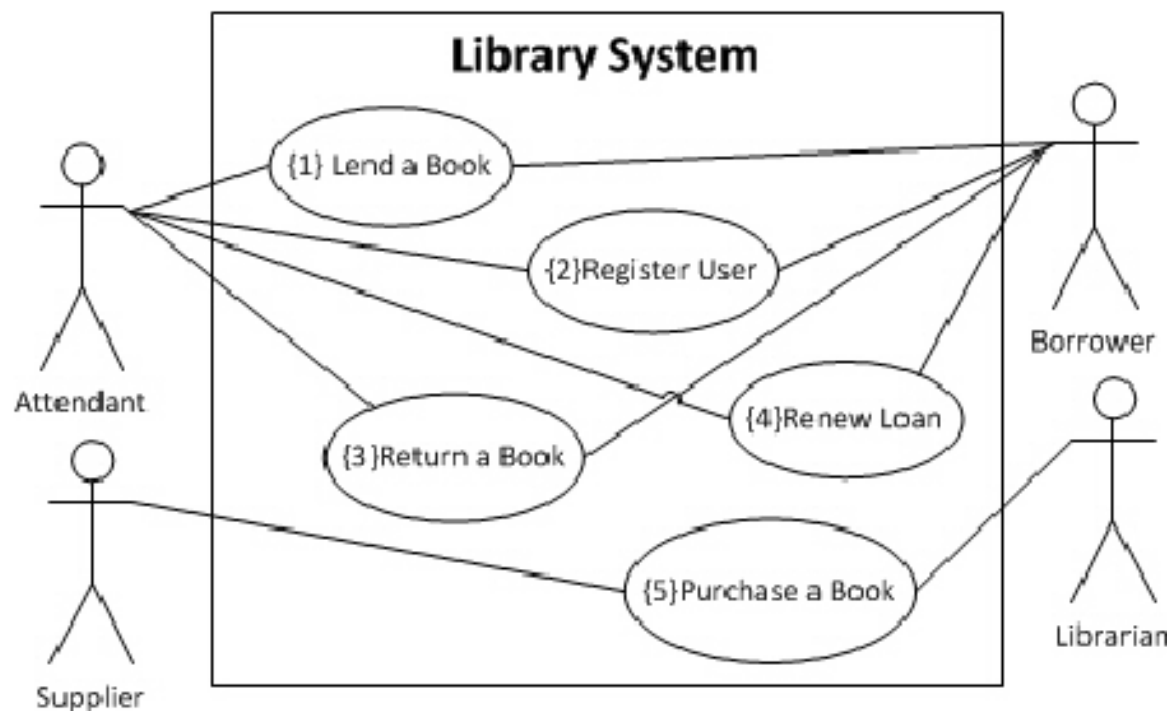
Deployment diagrams are used for describing the hardware components, where software components are deployed.



Use case diagram

The purpose of use case diagram is to capture the dynamic aspect of a system.

Use case diagrams are used to gather the requirements of a system

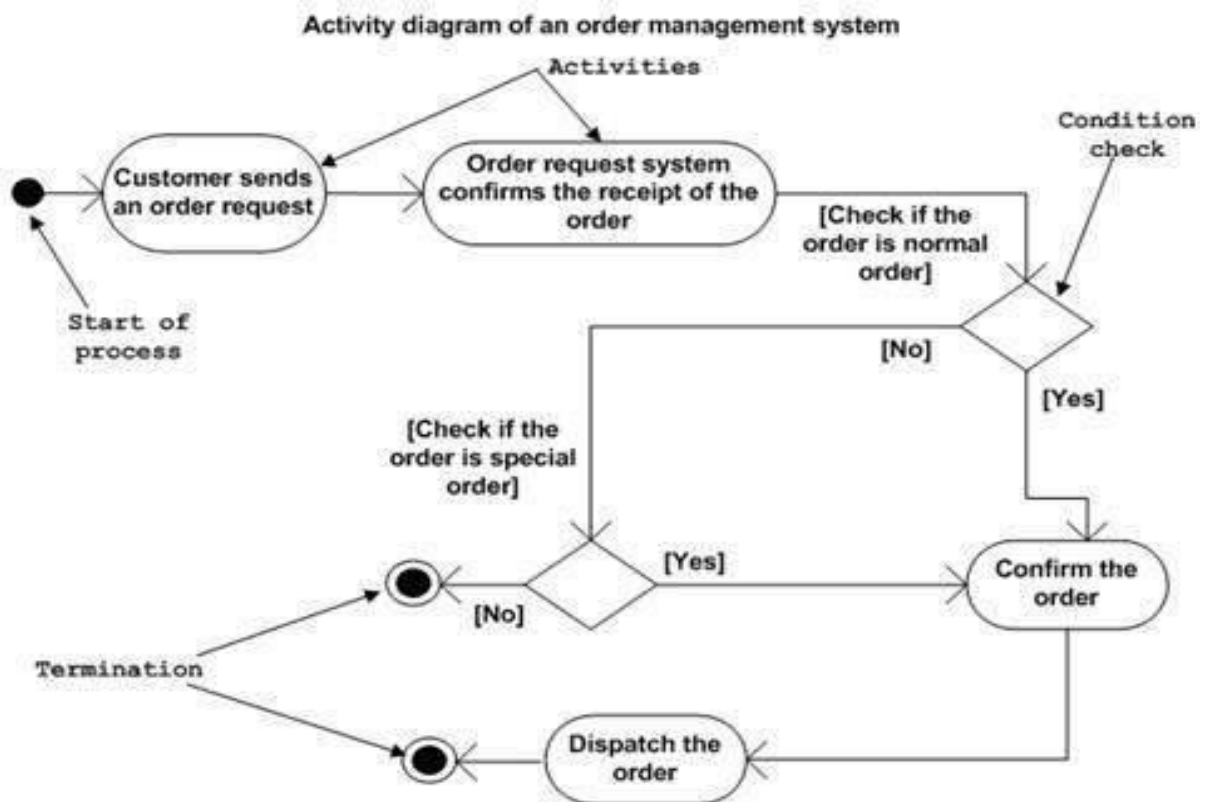


Activity diagrams

Activity diagram is used as a flowchart that consists of activities performed by the system.

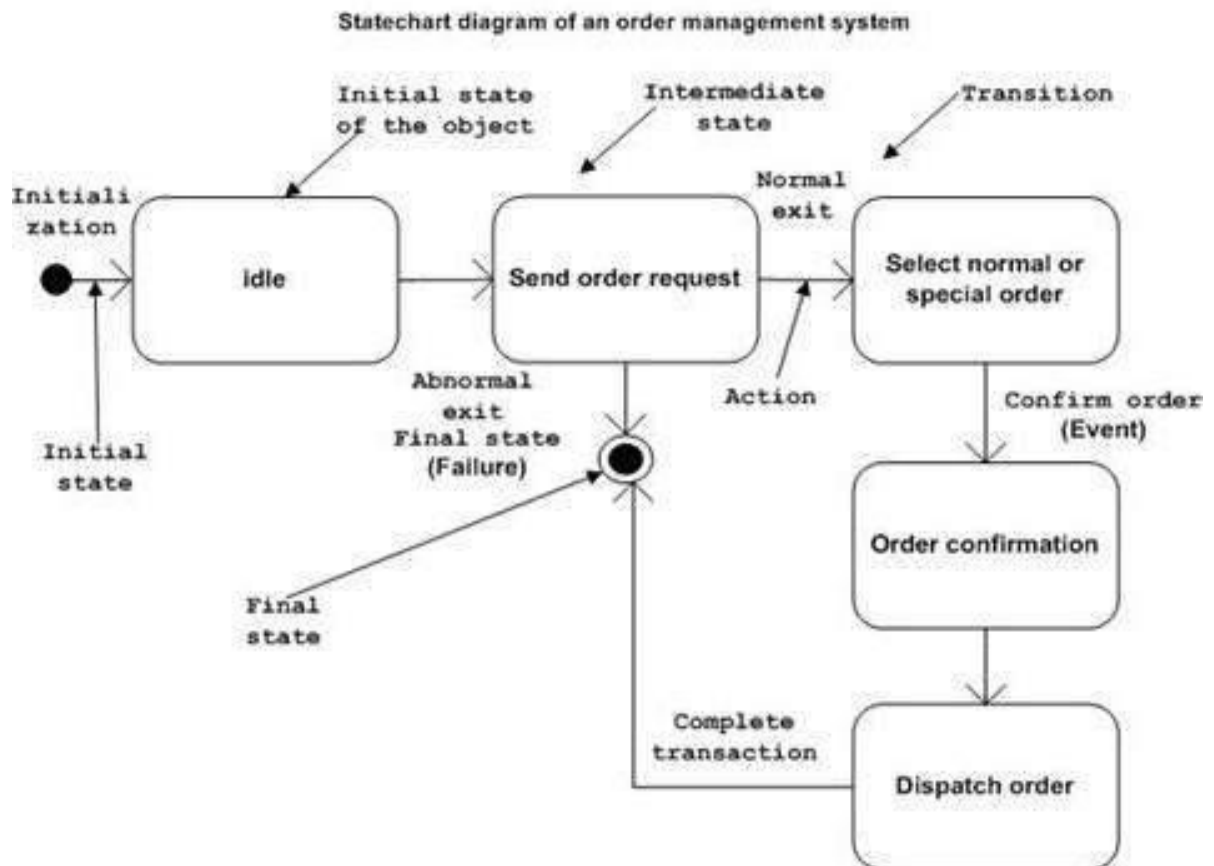
The purpose of an activity diagram can be described as –

- Draw the activity flow of a system.
- Describe the sequence from one activity to another.
- Describe the parallel, branched flow of the system.



State Chart Diagram:

- It describes different states of a component/Object in a system.
- The purpose of Statechart diagram is to model lifetime of an object from creation to termination.



Difference between state chart and activity diagram:

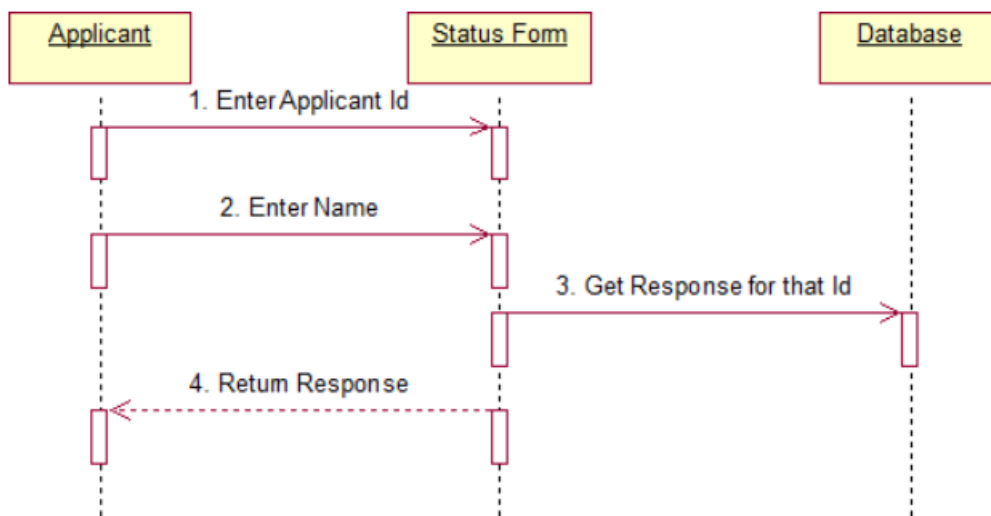
State chart diagram is used to show how a single object is changing its behaviour from one state to another state.

Activity diagram is used to show how the sequence of activities behave with each other.

Sequence Diagram

Example: Hotel System

Sequence Diagram is an interaction diagram that details how operations are carried out -- what messages are sent and when.



Actor

- a type of role played by an entity that interacts with the subject (e.g., by exchanging signals)

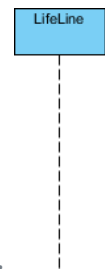


- external to the subject (i.e., in the sense that an instance of an actor is not a part of its corresponding subject).
- represent roles played by human users, external hardware, or other subjects.

Note that:

- An actor does not necessarily represent a specific physical entity but merely a particular entity
- A person may play the role of several different actors and, conversely, a given actor may represent multiple different persons.

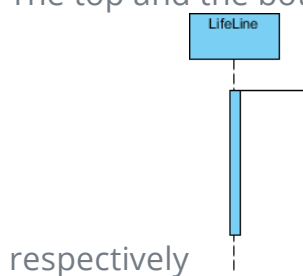
Lifeline



- A lifeline represents an individual participant in the Interaction.

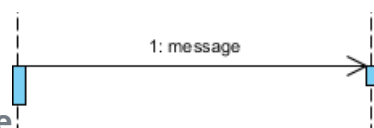
Activations

- A thin rectangle on a lifeline) represents the period during which an element is performing an operation.
- The top and the bottom of the of the rectangle are aligned with the initiation and the completion of the operation.



Call Message

- A message defines a particular communication between Lifelines of an Interaction.
- Call message is a kind of message that represents an invocation of operation of target.



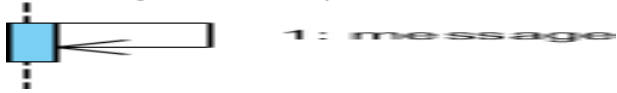
Return Message

- A message defines a particular communication between Lifelines of an Interaction.
- Return message is a kind of message that represents the pass of information back to the sender.



Self Message

- A message defines a particular communication between Lifelines of an Interaction.

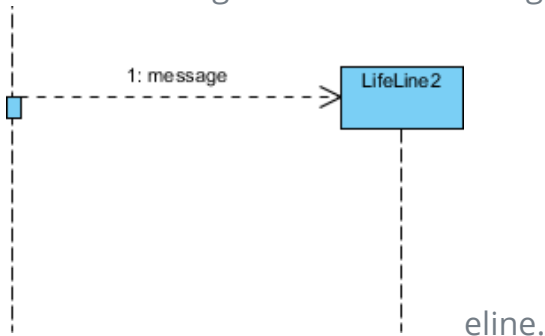


- Self message is a kind of message that represents the invocation of message of the sa

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Create Message

- A message defines a particular communication between Lifelines of an Interaction.
- Create message is a kind of message that represents the instantiation of (target) lif



Destroy Message

- A message defines a particular communication between Lifelines of an Interaction.
- Destroy message is a kind of message that represents the request of destroying the lifeline.



The collaboration diagram is used to show the relationship between the objects in a system. Both the sequence and the collaboration diagrams represent the same information but differently.

