

Unified Modelling Language (UML)

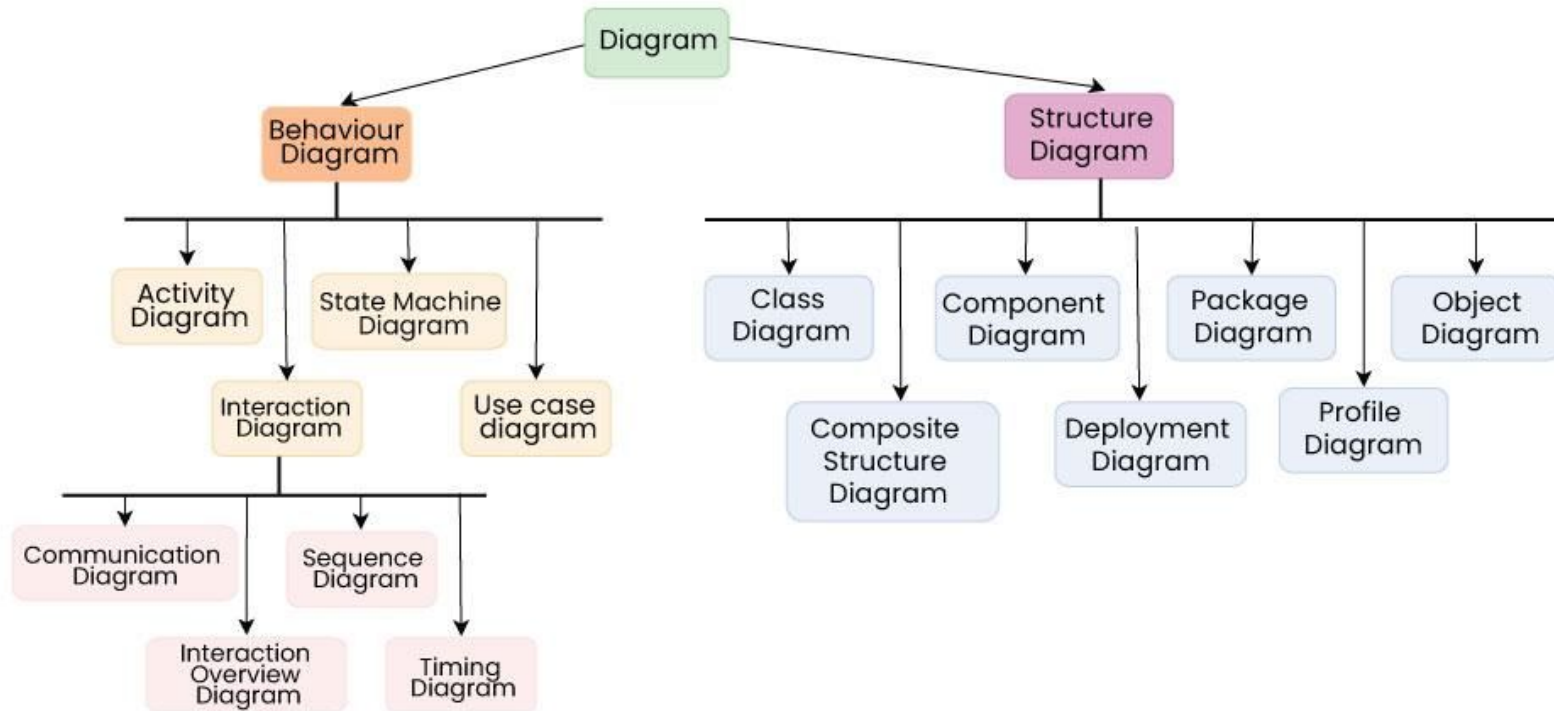
SCS 1310 - Object Oriented Programming and Modelling

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What is UML?

- It is a industry-standard graphical language for specifying,constructing and documenting the artifacts of software system.
- UML is not a programming language, it is rather a visual language.
- Linked with object-oriented design and analysis.

Types of UML Diagrams



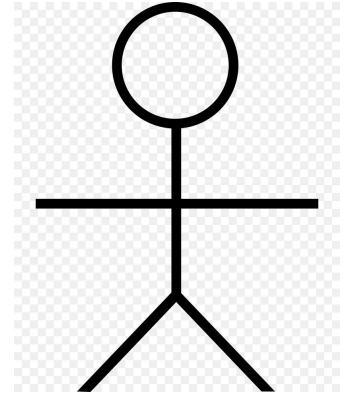
Use Case Diagram

- Used for describing a set of user scenarios.
- Used during requirement analysis to represent external behavior.
- Illustration of functionalities provided by the system.
- Act as a contract between end user and software developers.

Core components of a use case diagram

Actors

- An actor models an external entity which communicates with the system.
- An actor has a unique name and description(optional)
- Examples
 - Passenger: A person in the train
 - GPS satellite: Provides the system with GPS coordinates.



Core components of a use case diagram

Use case

- A use case represents a class of functionality provided by the system as an event flow.

System boundary

- Rectangle diagram representing the boundary between the actors and the system.



Core Relationships of Use case diagram

Association

- Communication between an actor and a use case; Represented by a solid line.



Generalization

- Relationship between one general use case and a special use case



Core Relationships of Use case diagram

Include

- Dotted arrow beginning at base use case and ending with an arrow pointing to the include use case.
- Occurs when a chunk of behavior is similar across more than one use case.

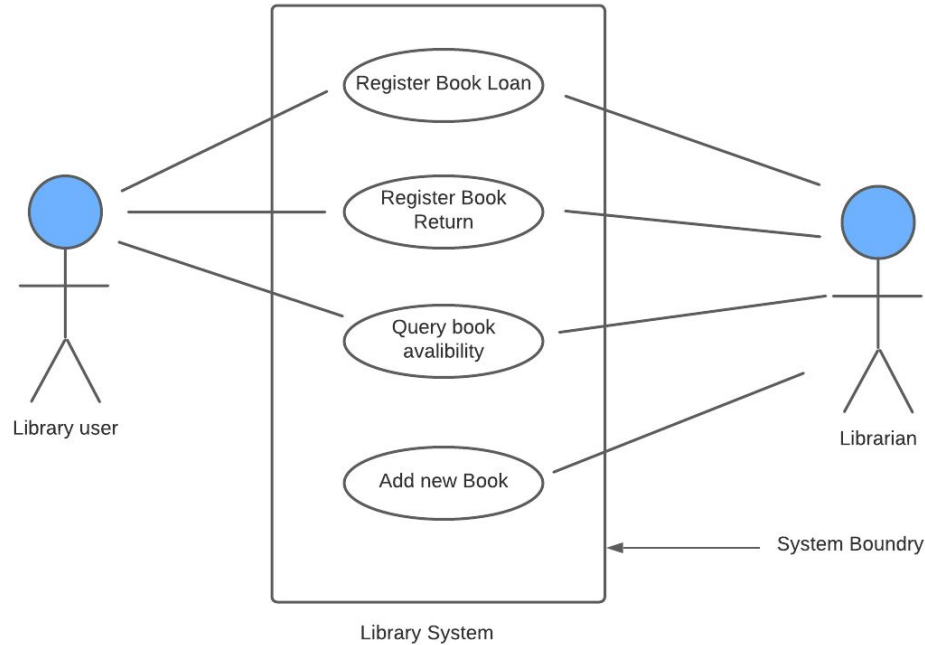


Extend

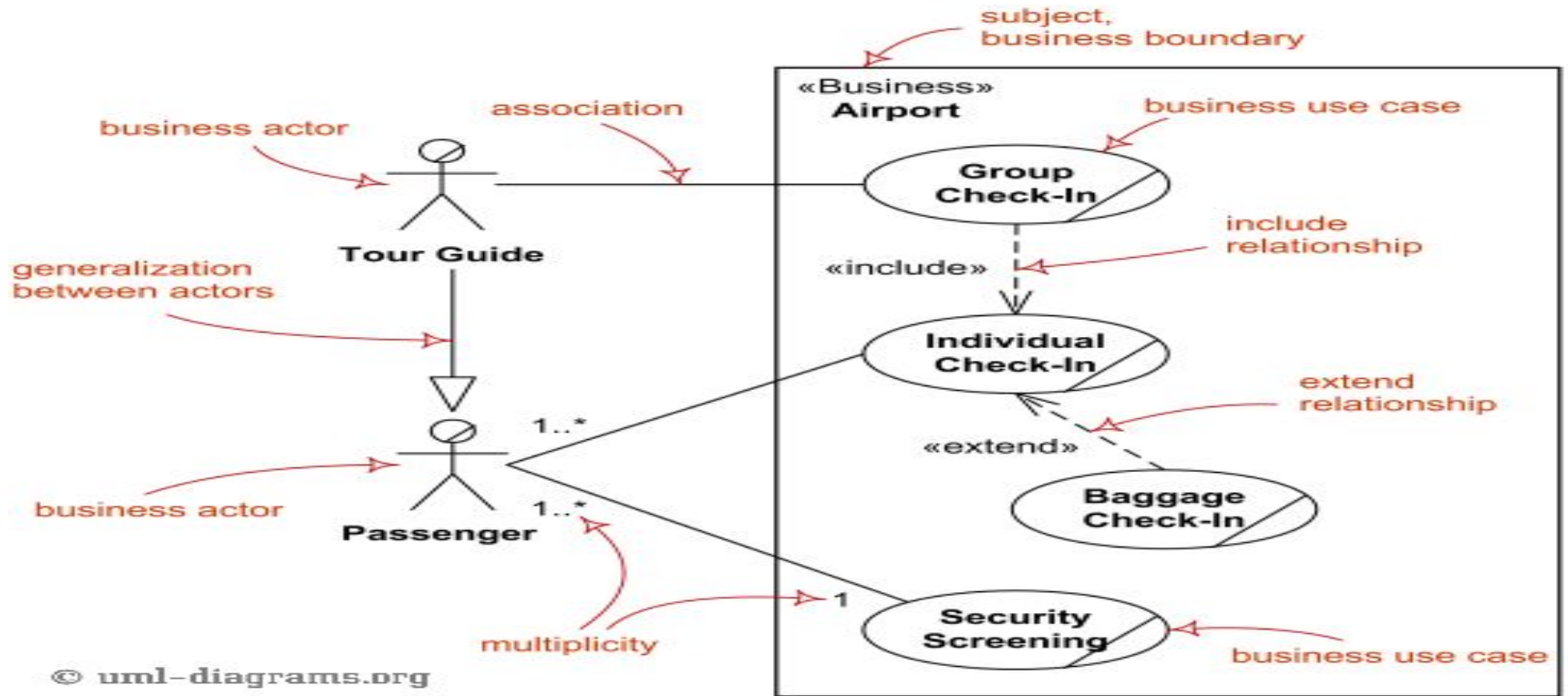
- Dotted arrow towards the base case.
- Declares extension points.



Use Case Diagrams



Use case diagrams Ctd...



Activity

You are designing a food delivery system where:

- **Customers can register, browse menus, place orders, track orders, and make payments.**
- **Delivery drivers can accept orders, pick up food from restaurants, and deliver to customers.**
- **Restaurants can update menus and confirm orders.**
- **The system sends notifications about order status.**

Identify relevant component for sketching a use case diagram for this application.