

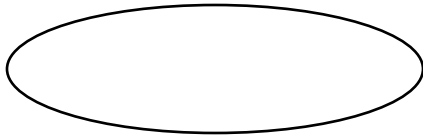
INTERACTION MODELING

- Use Case Diagram

INTRODUCTION

- The interaction model describes how the objects interact

Use Case Symbols

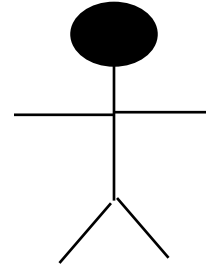


◆ Use Case



◆ Boundary

◆ Actor



◆ Connection



◆ Include relationship

<<include>>

Note: different names
used in different software

◆ Extend relationship

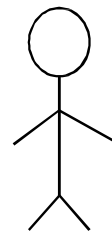
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USE CASE MODELS

- Use case diagram displays the **relationship** among **actors** and **use cases**.

Actors:

- **Direct external user** of system → an object or set of objects that communicates directly with the system but not part of the system.
- Entity that performs certain roles in a given system.
EX - In a banking application, a customer represents an actor. Similarly, the person who provides service at the counter is also an actor.



name

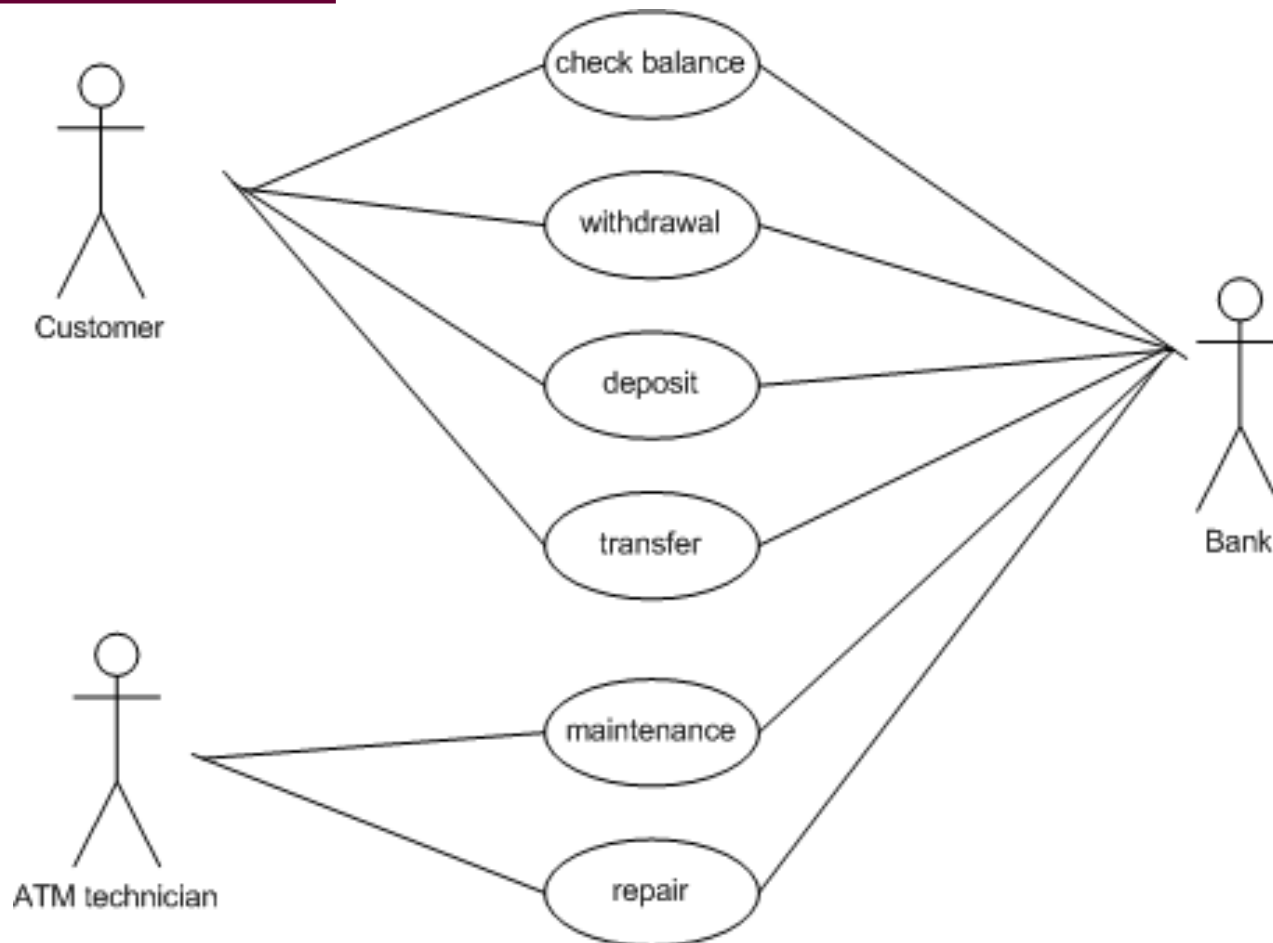
Actor

- Each objects actor represents those objects that behave in a particular way toward the system
- Actor can be persons , devices and other systems
- anything that interacts directly with the system
- An object can be bound to multiple actor if it has different facets to its behavior
 - For ex : x , y , z are customer of bank but z also one of the employee
- An actor has a single well defined purpose. In contrast , objects and classes often combine many different purpose

USE CASE DIAGRAM

- A system involves a set of use cases and set of actors.
- Each use case shows single functionality of system provides
- Set of use case shows complete functionality
- Each actor represents one kind of object for which system can perform behavior.
- Set of actor represents complete set of object that system can serve.

DRAW USE CASE DIAGRAM FOR ATM SCENARIO



Interaction Diagrams

- A **Sequence diagram** is an interaction diagram that emphasizes the time ordering of messages;
- A **collaboration diagram** is an interaction diagram that emphasizes the structural organization of the objects that send and receive messages.

SEQUENCE MODEL

■ SCENARIOS

- it's a **sequence of events that occurs during one particular execution of a system.**
- The scope of a scenario can vary
 - Include all event in system or some part of event generated by certain objects
- scenario can be displayed as a list of text statements
- scenario contains message between objects
- each message transmits information from one object to another

scenario for a session with online stock broker

- person logs in
- system establishes secure communication
- system displays portfolio information
- person enters buy order for 100 shares of GE at market price
- system verifies sufficient funds for purchase
- system display confirmation screen
- person confirms purchases
- system places order
- system display transaction tracking
number
- person logs out