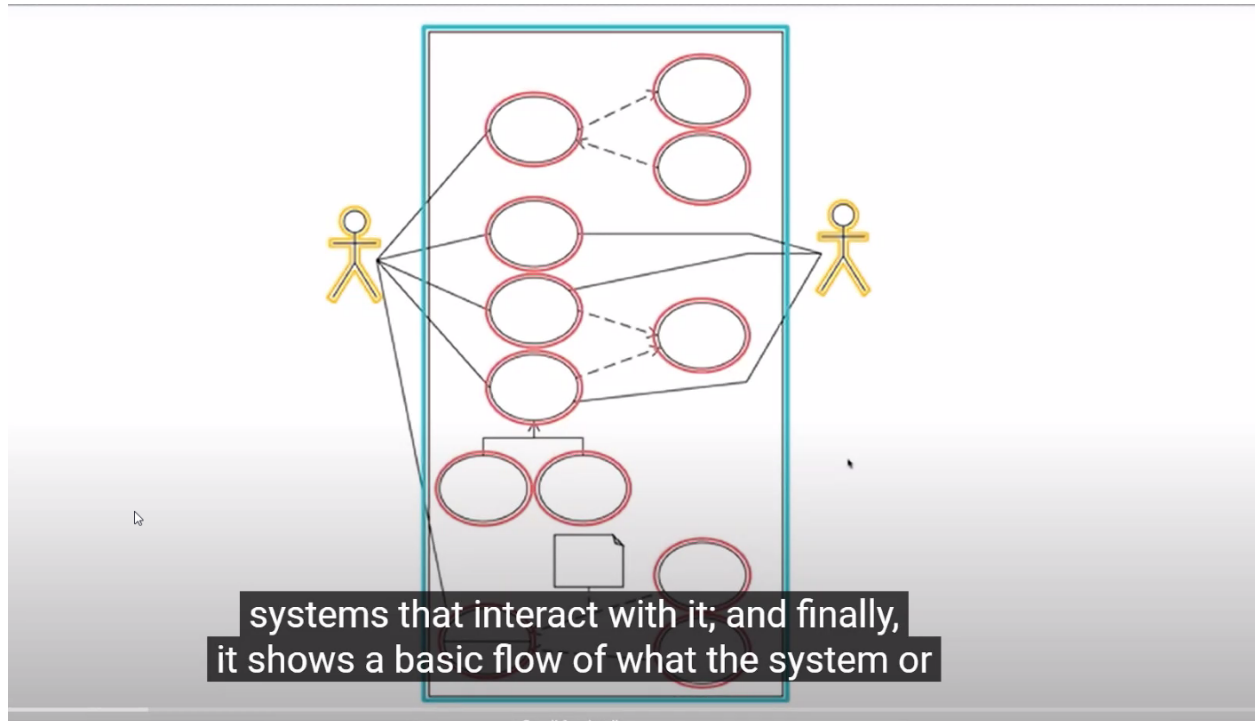


## Note Taking Assignment: DMDD Lectures

1. Usecase diagram in software engineering.
  - a. Used to represent the dynamic behaviour of a system.
2. Always focus on the problems and not the tools.

Usecase diagram youtube:



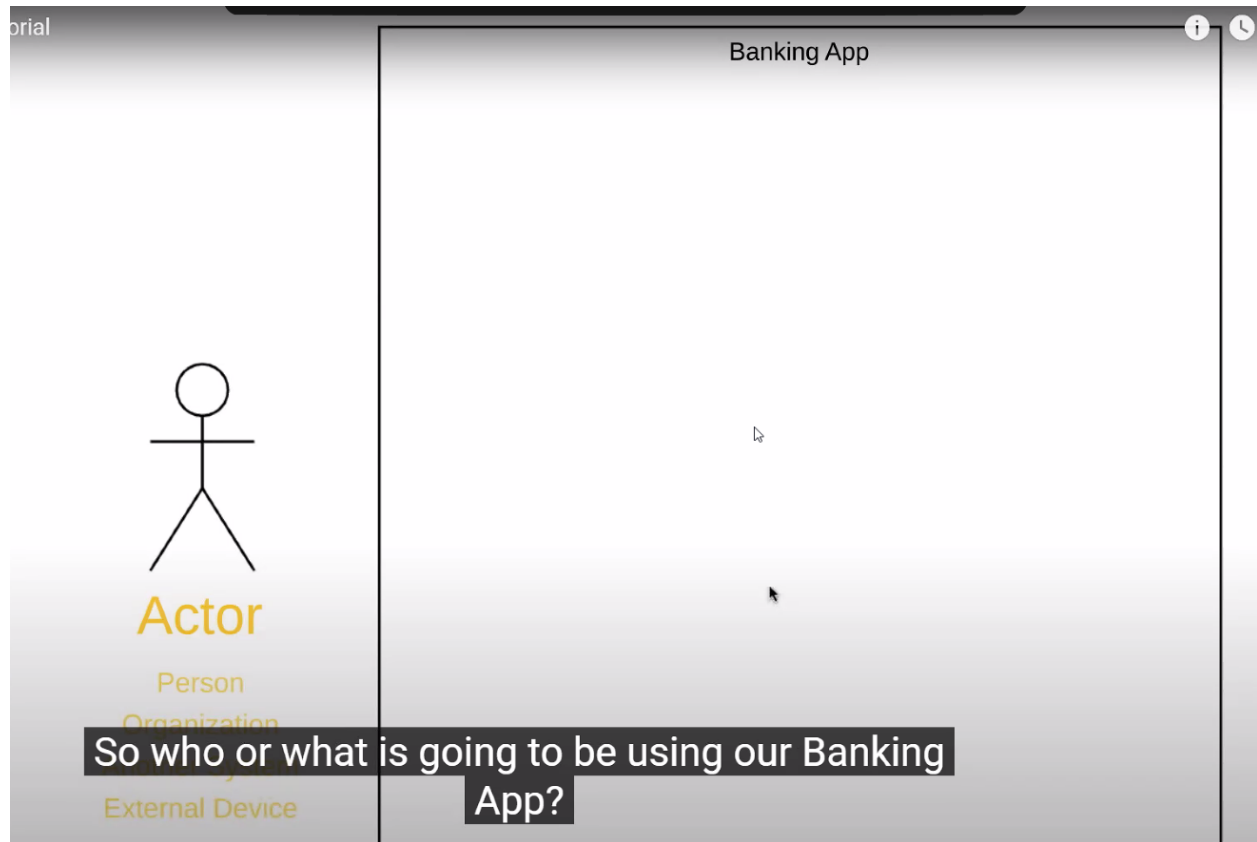
→ Use a Lucidchart website for all the diagram creations.

Usecase Diagram Breakdown:

Sys  
Actors  
Usecases  
Relationships

System:

1. Banking application



Actors for Jobs database:

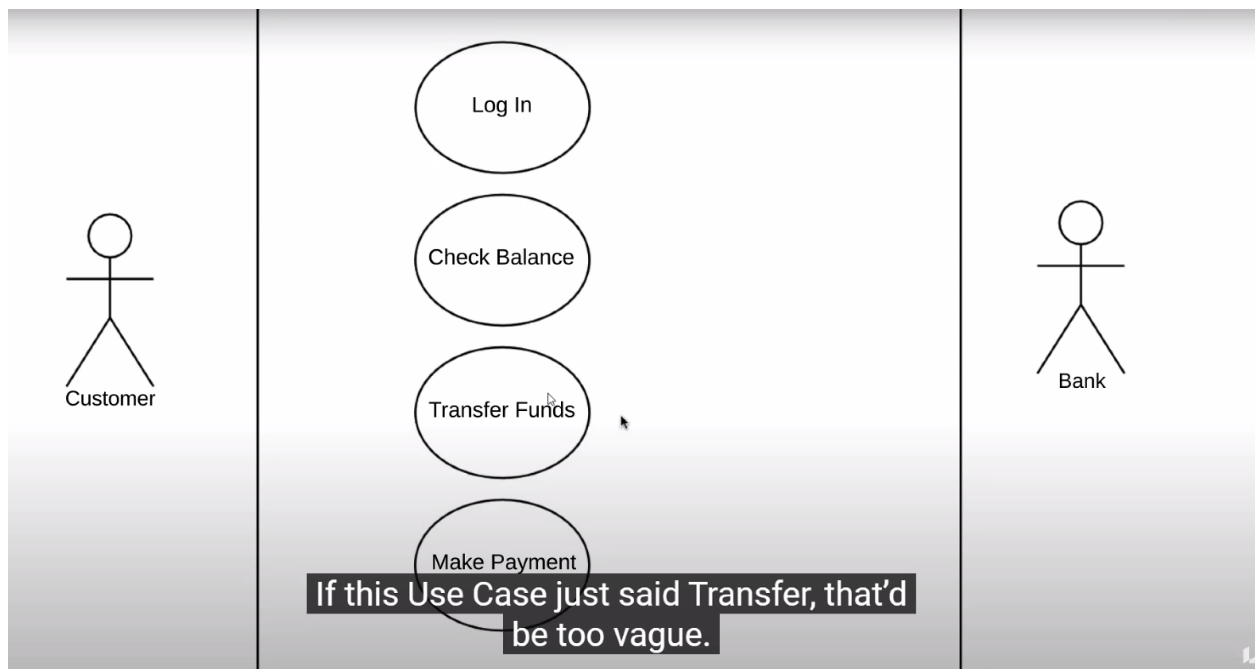
Most obvious actor is the customer

Actors are external objects.

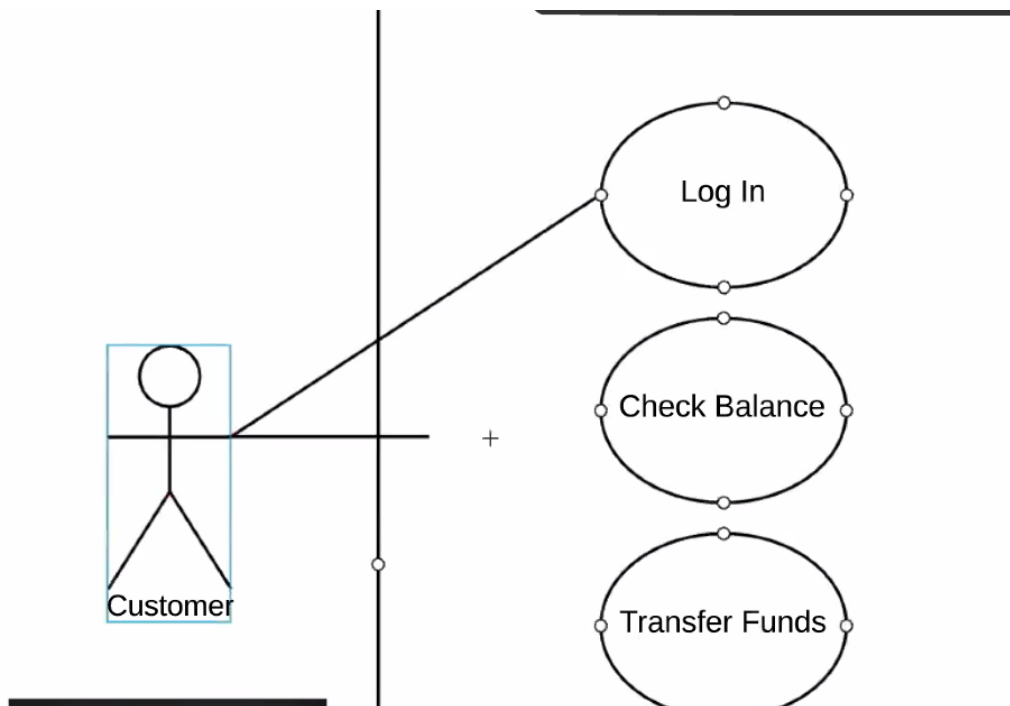
Types of actors:

1. Primary: initiates the use of the system (should be at the left of the system)
2. Secondary: reactory (on the right)

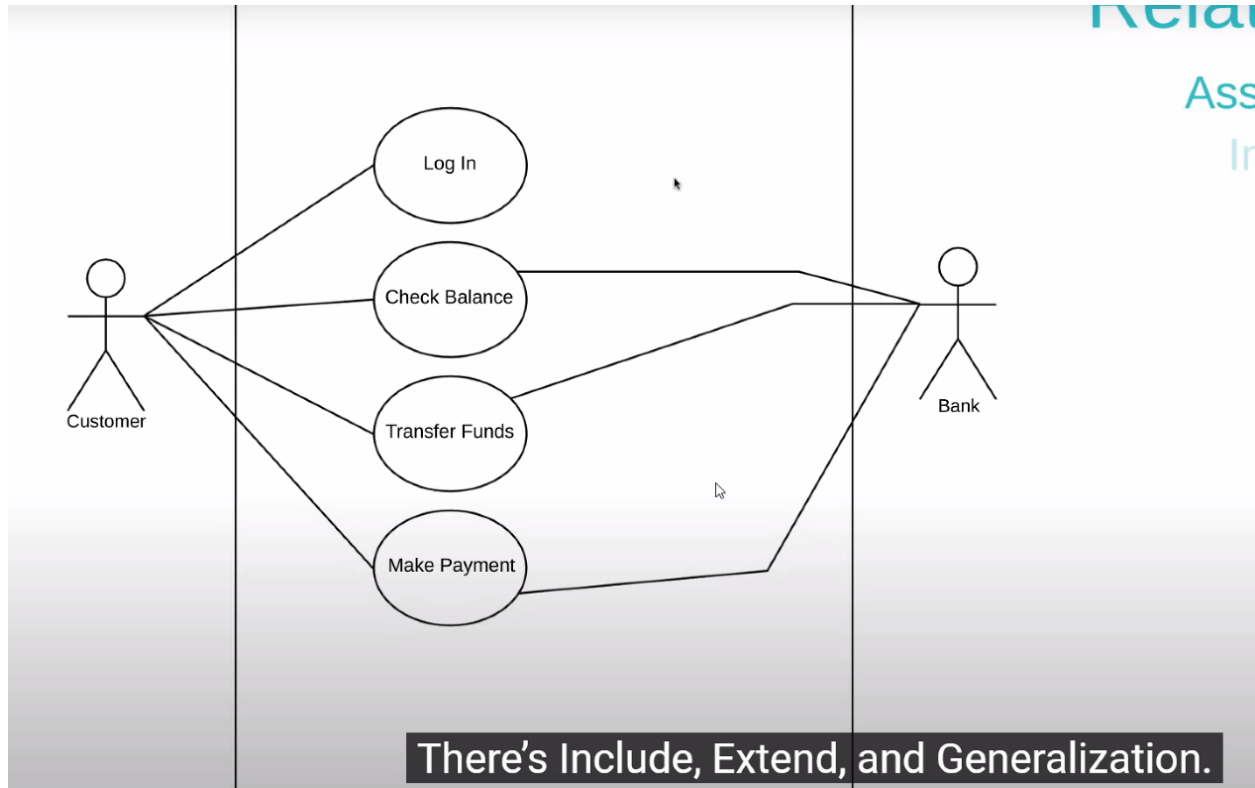
Use cases: oval shaped



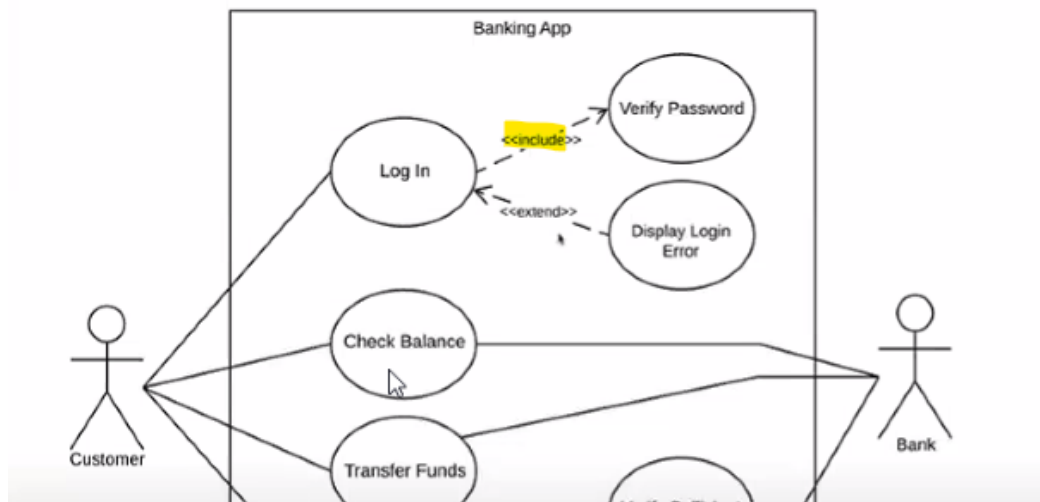
Put use cases in a logical order for eg (login is at the top).



- Association
- Include
- Extend
- Generalization



Extends: usage




### **Structural UML diagrams:**

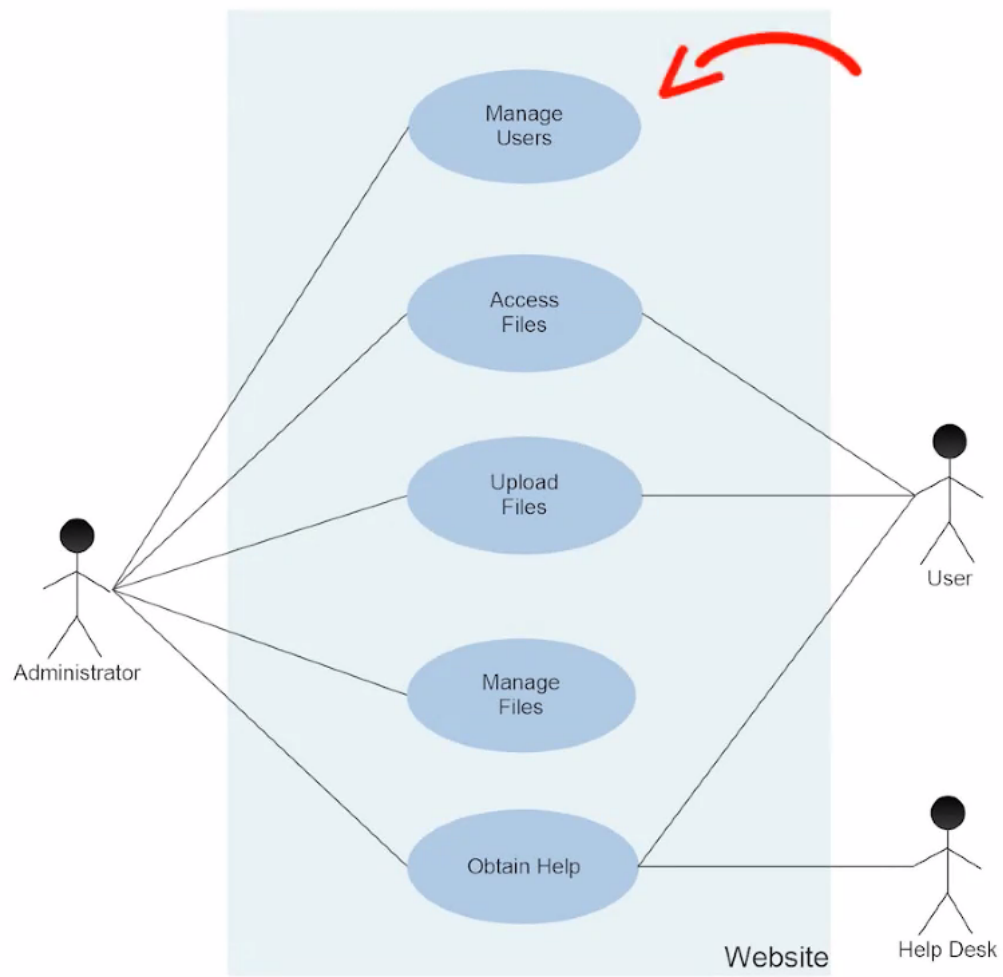
- Class diagram
- Package diagram
- Object diagram
- Component diagram
- Composite structure diagram
- Deployment diagram

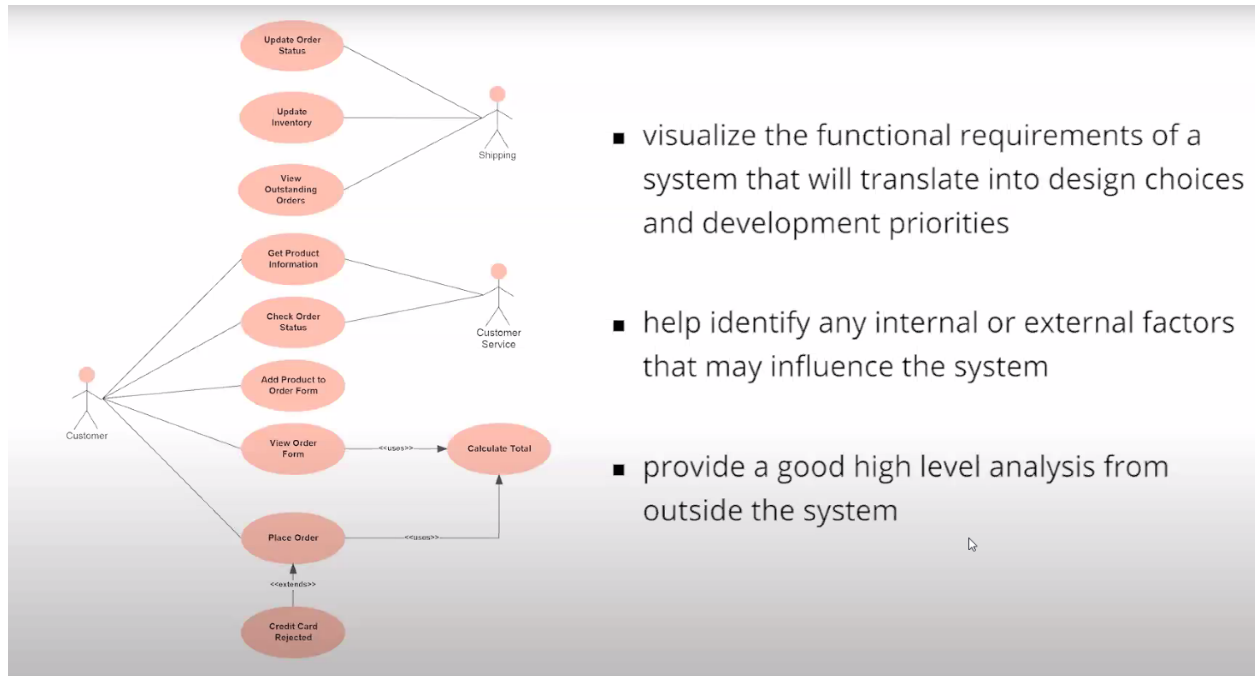
### **Behavioral UML diagrams:**

- Use case diagram
- Activity diagram
- Sequence diagram
- State diagram
- Communication diagram
- Interaction overview diagram
- Timing diagram



*what must happen in a system*



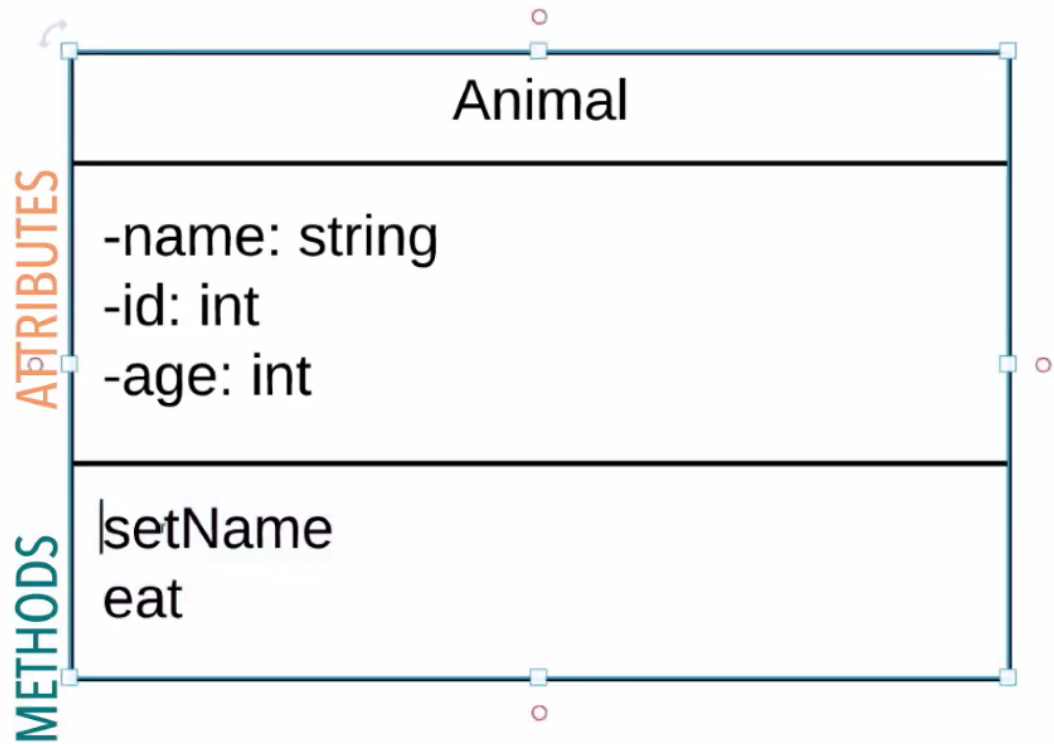


UML Class Diagram include the following:

- Attributes
- Methods
- Functions

# Zoo System

---



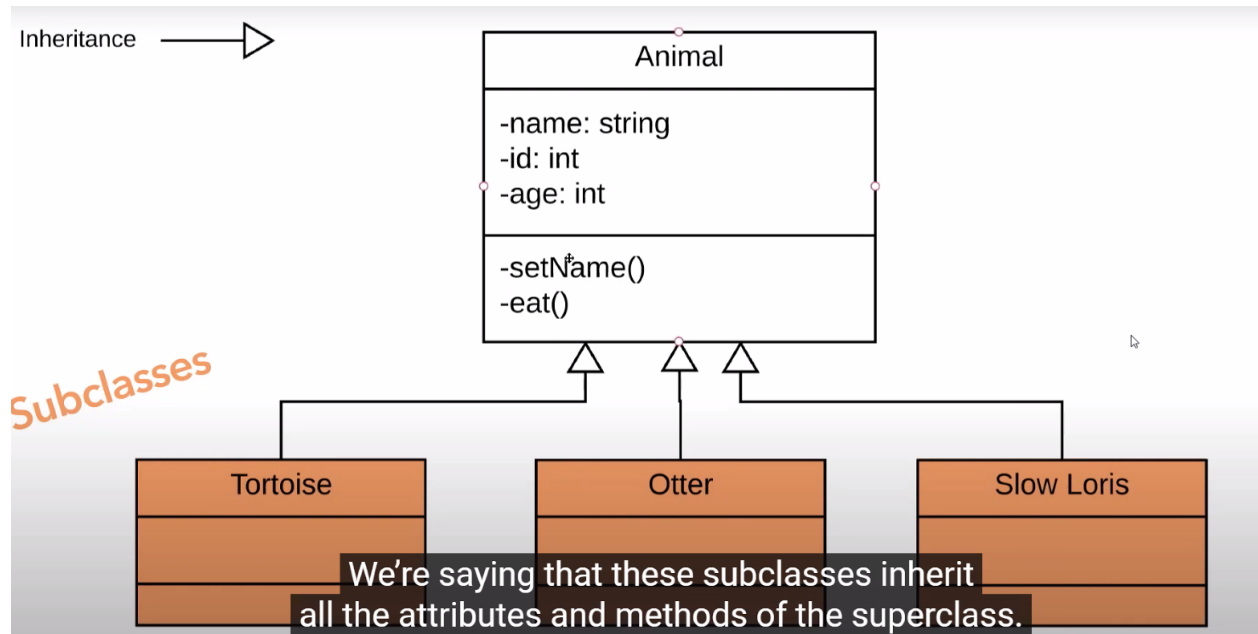
## Zoo System

---

| Animal                                 |
|--|
| -name: string<br>-id: int<br>-age: int |
| -setName()<br>-eat()                   |

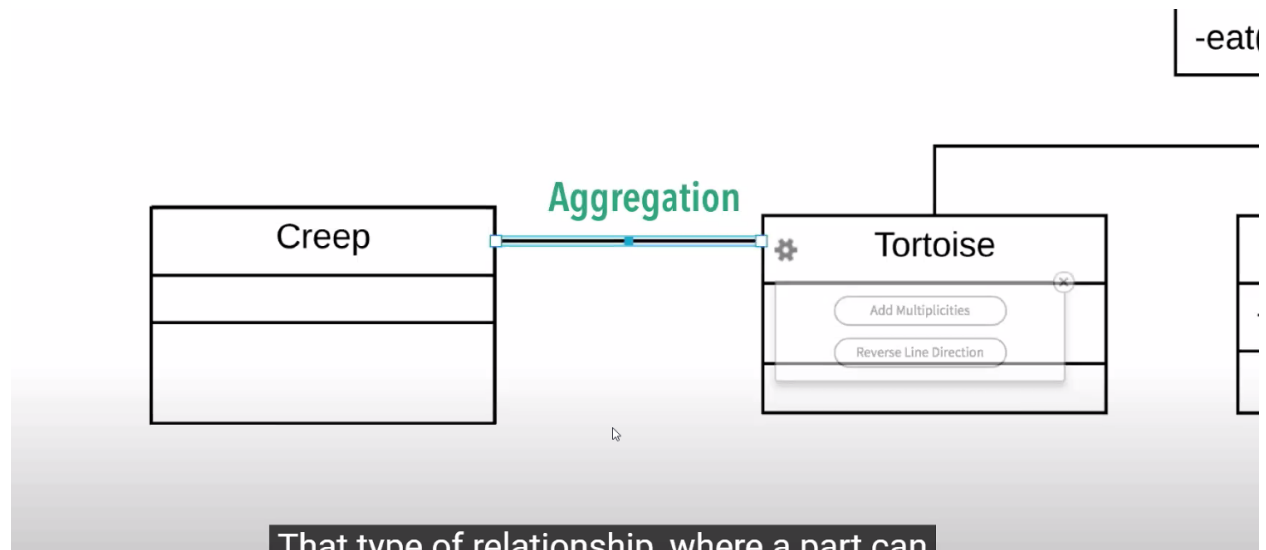
| Class  |
|--|
| -attribute: type<br>-attribute: type<br>-attribute: type<br>-attribute: type |
| -method()  |





- Inheritance
- Subclasses

- Aggrigation:

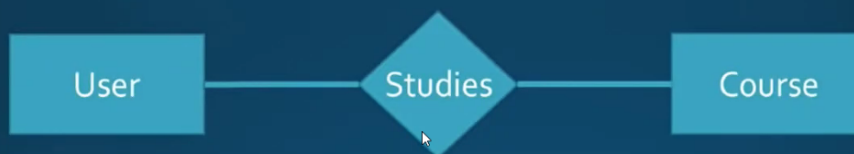


# Entity-Relationship (ER) Diagrams

Depict entities, the relationships between them and attributes of those entities and relationships.

- A relationship is always between two rectangles:

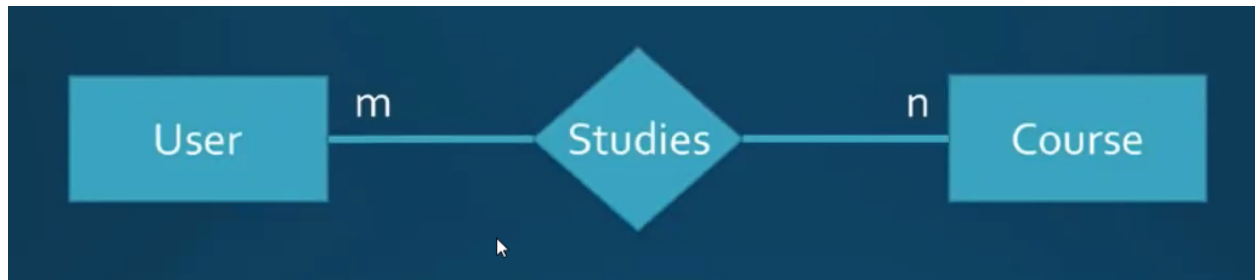
## Entity-Relationship (ER) Diagrams



Types of Cardinality:

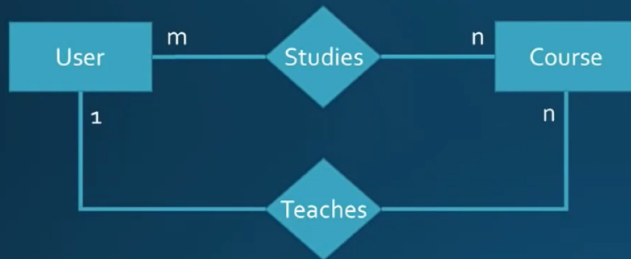
- ❖ One - To - One
- ❖ One - To - Many
- ❖ Many - To - Many

- Cardinality: Any no of users can study any no of courses.



- Entity - Relationship (ER) Diagrams:

# Entity-Relationship (ER) Diagrams



## Cardinality Rules of Thumb

Can a **user** study multiple courses, or only one?

*Multiple:* 'n' next to course

*Only one:* '1' next to course

Can a **course** be studied by multiple users or only one?

*Multiple:* 'm' next to user

*Only one:* '1' next to user

One more shape, the *attribute*:

Title

