<u>UML Diagrams</u>
- Class Diagrams
- Use Case Diagrams
- Sequence Diagrams

Unified Modeling Language (UML)

What is UML?

    Another way to visualize the design of a software system

UML 2.0 is an industry standard.

Calls for 13 types of diagrams.

These can be organized into 2 groups.

1. Structural UML Diagrams
   a. Represent static characteristics of the system
   b. Emphasis on things that must be part of the system
2. Behavioral UML Diagrams
   a. Emphasis on what happens in the system

Structural	Behavioral
Class Package Object Component Compite structure Deployment	Activity Sequence Use Case State Communication Interactive Overview Timing

<u>Class Diagram</u>

A class diagram

1. Describes classes and their structure
2. Models relationships between classes
- Static structural view of the system

ClassName
- attribute1 : T + attribute2 : U
operationsPlease(arg1 : T, arg2 : T) : T

Visibility
Visibility markers indicate access to data in the class

Markers	Visibility
+	public
-	private
#	protected
~	package

Relationships in class diagrams
- Describe interactions between objects

3 types
1. Dependencies
   - X uses Y
   - →
2. Association/Aggregation
   - X has a Y
   - --□ or ---
3. Generalization
   - X is a Y

- Asdf

Dependency
- Shows relationships between the supplier and the client that relies on it.

Association
- Objects of one class connect to objects of another class through a "has a" relationship

Aggregation
- A class represents a collection of another class

Generalization
- Superclass and subclass, "is a", relationship

USE CASE DIAGRAMS

Use case diagrams provide outside view of the system
1. Sequence of interactions of outside entities (actors) with our system
2. System actions that yield an observable result of value to the actors

3 elements
1. Use case is circled
2. Actor is a stick figure
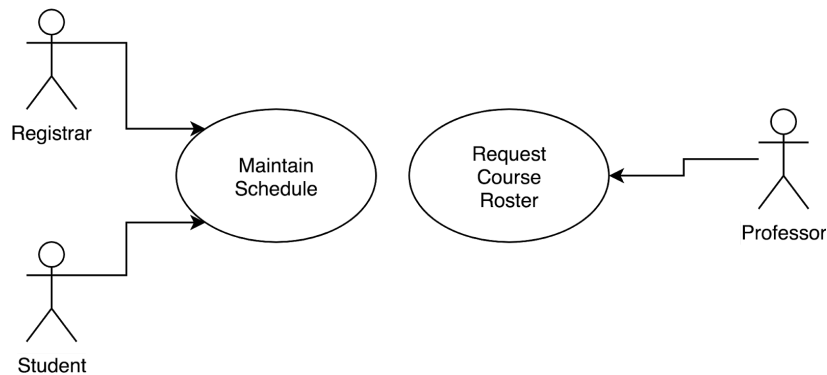3. Straight line connects actors and use cases

Actor
Entitiy: human or device
Play a role:
- Can play multiple roles
- More than one actor can play the same role

May appear in more than one use case

Sequence Diagrams

Interactive Diagram that emphasizes time ordering of messages.
1. First place objects that participate in the interaction along the top
2. Place objects that initiate interactions on the left
3. Place vertical object life lines that shows existence of objects over a period of time.

Note Note Note Note Note Note Note

:Object :Object :Object :Object :Object :Object :Object

dispatch

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