Unified Modeling Language
(A Brief Overview)

Types of Diagrams

Objectives: visualize, specify, construct, and document a system

- Structural: focus on static aspects of system
- Behavioral: focus on dynamic aspects of system (changing parts)
Structural Diagrams

- **Class**: set of classes and their relationships
  - Interface: is a collection of operations that specify a service of a class
- **Object**: set of objects and their relationships
- **Component**: set of components and their relationships
  - component: physical realization of a logical grouping of elements (e.g., classes, interfaces)
- **Deployment**: set of nodes and their relationships
  - exists at run time; represents computational resource
  - node typically encloses one or more components

Behavioral Diagrams

- **Use case**: organize behaviors of system
  - user goals (high-level services of system)
  - perspective from external entities (actors)
- **Interaction Diagrams**
  - **Sequence**: focus on time ordering of messages
  - **Collaboration**: focus on structural organization of objects that send/receive messages
- **Statechart**: changing state of system driven by events
- **Activity**: focus on flow of control from one activity to another
Development Process

- High-Level capture of requirements
  - Use Case Diagram
- Identify major objects and relationships
  - Class diagram (object diagram)
- Create scenarios of usage
  - Interaction Diagrams
    - Sequence Diagram
    - Collaboration Diagram
- Generalize scenarios to describe behavior
  - State Diagram
  - Activity Diagram
- Refine to add implementation details
  - Implementation Diagrams
    - Component Diagram
    - Deployment Diagram