



SWE 4743:
Object-Oriented Design

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UML Class Diagramming





Agenda

- **Core Concepts and Layout**

Understanding the three-zone structure of a UML class box (Name, Members, and Methods) and basic annotations like interfaces and enumerations.

- **Defining Relationships**

Exploring inheritance (is-a), interface realization, and dependencies to represent how classes interact and utilize one another.

- **Structural Connections**

Distinguishing between long-lived associations and the lifetime-specific differences of aggregation (shared) versus composition (owned).

- **Design Constraints and Multiplicity**

Implementing access modifiers and multiplicity rules in code to enforce structural design decisions.

- **Practical Application**

Best practices for using Mermaid to create versionable, AI-friendly diagrams that evolve alongside the codebase.

Lecture Material

See **03-uml-class-diagramming.md** in the
Presentations folder.