Unified Modeling Language (UML)

Reference:
https://www.techguruspeaks.com/introduction-to-oop-and-uml/

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UML

"The Unified Modeling Language (UML) is a graphical language for visualizing, specifying, constructing, and documenting the artifacts of a software-intensive system. The UML offers a standard way to write a system's blueprints, including conceptual things such as business processes and system functions as well as concrete things such as programming language statements, database schemas, and reusable software components."

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Goals of UML

The primary goals in the design of the UML are:

- Provide users with a ready-to-use, expressive visual modeling language so they can develop and exchange meaningful models.
- Provide extensibility and specialization mechanisms to extend the core concepts.
- Be independent of particular programming languages and development processes.
- Provide a formal basis for understanding the modeling language.
- Encourage the growth of object oriented tools in the market.
- Support higher-level development concepts such as collaborations, frameworks, patterns and components.
- Integrate best practices in Software Development Life Cycle (SDLC).

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Structural UML diagrams

Class Diagram
Object diagram
Package diagram
Deployment diagram
Component diagram

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Class Diagram

UML Class Notation

Classes are composed of three things: a name, attribute(s), and operation(s). Below is an example of a class.

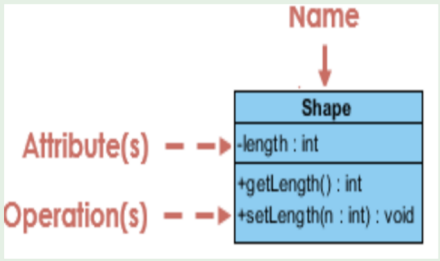

Figure 1: A Sample Class

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Class Diagram

Relationship: Many employees in One Company

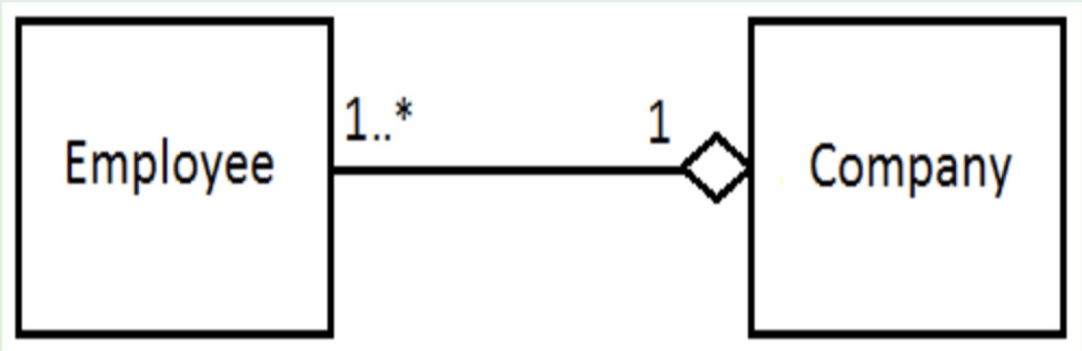

Figure 3: Class diagram showing Aggregation between two classes

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Class Diagram

Child Classes inherited from Parent Class

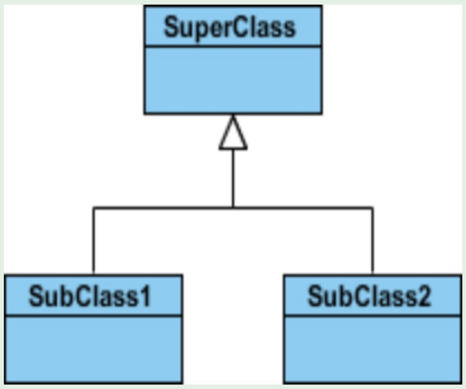

Figure 6: Generalization between one superclass and two subclasses

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Object Diagram

Object = Instance Of Class

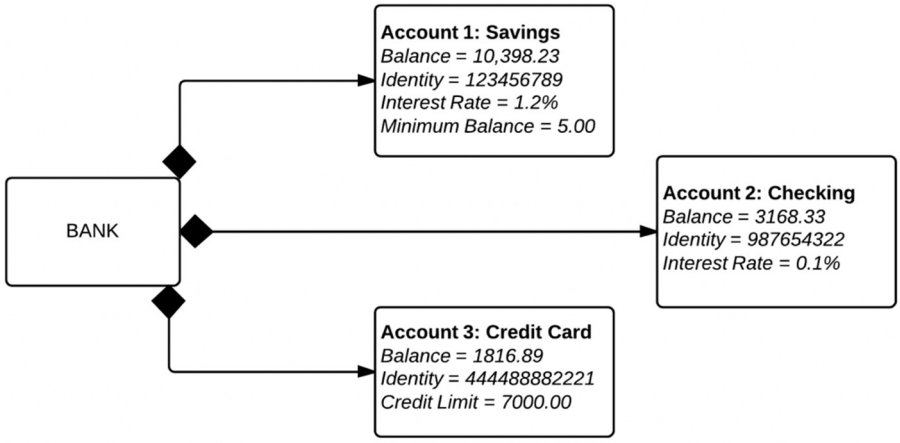

Figure 1: An example of object diagram

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Behavioral UML diagrams

Use Case Diagram
Activity diagram
State diagram
Sequence diagram
Communication diagram

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Sequence Diagram

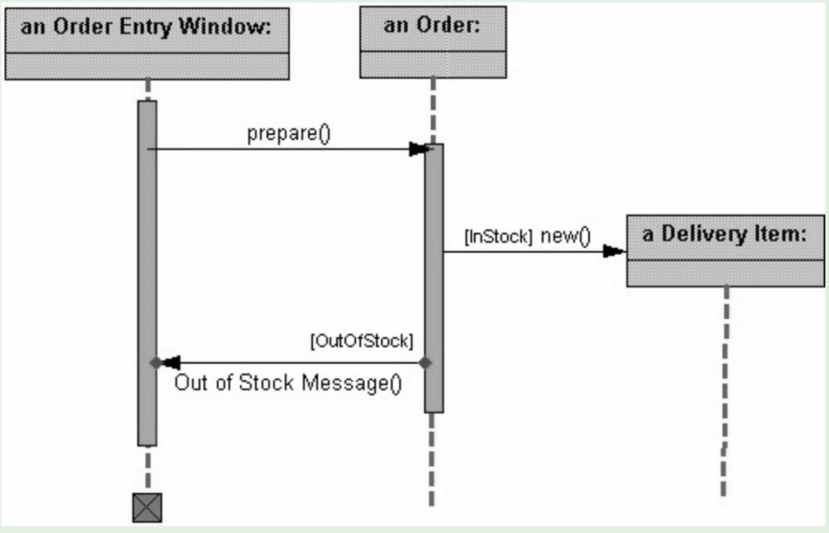

Figure 4: A Sequence Diagram with conditional message

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Activity Diagram

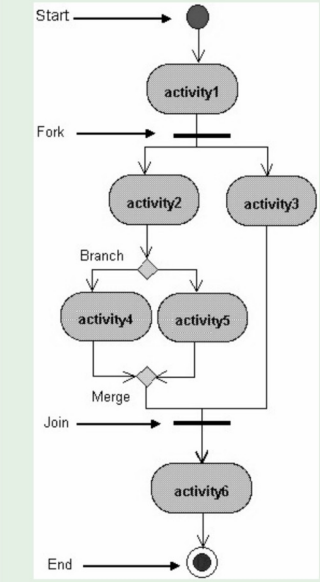

Figure 1: Activity Diagram Example

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