

15 Lecture - CS504

Important Subjective

Q: What is the purpose of a Class Diagram in UML? **A:** Class Diagrams represent the static structure of a system, illustrating classes, their attributes, methods, and relationships, providing a blueprint for the software system.

Q: Describe the significance of associations in a Class Diagram. **A:** Associations in a Class Diagram represent relationships between classes, indicating how objects of one class are related to objects of another class.

Q: Explain the difference between Aggregation and Composition relationships in UML. **A:** Aggregation represents a "whole-part" relationship where parts can exist independently, while Composition represents a stronger "whole-part" relationship where the parts cannot exist without the whole.

Q: What is the purpose of the stereotype notation (<< >>) in UML Class Diagrams? **A:** Stereotypes are used to indicate special properties or types of classes, such as abstract classes (<<abstract>>) or interfaces (<<interface>>).

Q: What do the solid and dashed lines in an Association relationship signify? **A:** The solid line represents a regular association, while the dashed line represents a navigable association, indicating the direction of the relationship between classes.

Q: What is the role of a Multiplicity notation (e.g., "1..*" or "0..1") in an Association relationship? **A:** Multiplicity indicates the number of instances of one class that are associated with one instance of the other class, specifying cardinality.

Q: Describe the purpose of a Sequence Diagram in UML. **A:** Sequence Diagrams illustrate the dynamic behavior of objects during runtime, showcasing the sequence of interactions between objects and the order of message exchanges.

Q: What is a Lifeline in a Sequence Diagram, and what does it represent? **A:** A Lifeline represents the existence of an object and is represented by a vertical line on the diagram. It depicts the timeline of the object's interactions.

Q: What is the significance of a Message in a Sequence Diagram? **A:** Messages represent the communication between objects in a Sequence Diagram. They indicate the passing of information or a method call from one object to another.

Q: How do Object Diagrams differ from Class Diagrams in UML? **A:** Object Diagrams represent a specific instance of a system at a particular moment, showing objects and their relationships, while Class Diagrams illustrate the static structure of the system, focusing on classes and their associations.