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 (<>) 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.