Build your understanding

1. What is UML and why is it important in software development?
2. Explain the key differences between structural and behavioral diagrams.
3. What are the primary components of a UML class diagram?
4. How do you represent inheritance, aggregation, and composition relationships in a class diagram?
5. What is the purpose of a use case diagram? How do you identify actors and use cases?

Use Case Diagrams

1. Draw a use case diagram for an online shopping system, including actors like customer, administrator, and delivery person.
2. What is the difference between an include and an extend relationship in a use case diagram?
3. How do you model alternative flows and exceptions in a use case diagram?

Class Diagrams

1. Create a class diagram for a library system, including classes like Book, Member, and Loan.
2. Explain the concept of polymorphism and how it's represented in a class diagram.
3. What is the difference between an association and a dependency relationship?

Sequence Diagrams

1. Draw a sequence diagram for a customer placing an order on an e-commerce website.
2. How do you represent synchronous and asynchronous messages in a sequence diagram?
3. What is a lifeline in a sequence diagram, and how is it used to represent object lifespans?

Statechart Diagrams

1. Draw a statechart diagram for a traffic light.
2. What is the difference between a simple state and a composite state?
3. In a statechart diagram, how do you model events, transitions, and actions?

Activity Diagrams

1. Create an activity diagram to illustrate the process of enrolling in a university course.
2. How do you represent decision points and merge points in an activity diagram?