

Question: Discuss which UML models are most applicable at different stages of the Software Development Life Cycle.

Answer:

Various Unified Modelling Language (UML) models are used at different stages of the Software Development Life Cycle (SDLC) to help visualize and construct the artifacts of the software system. Here are the details of the most applicable ones at each stage:

1. Requirements Gathering:

During the early stages of requirement gathering, the most important UML models are Use Case Diagram and Activity Diagram.

Use Case Diagram: is used to capture the functional requirements of the system. They are used to identify the primary actors and their interaction with the system so as to help stakeholders understand the system's intended functions and interactions.

Activity Diagram: is used to model the workflow or business process. They are very useful in detailing the steps described in the Use Case Diagram.

2. System Design:

Class Diagram is the most applicable UML model here as it is used to detail the static structure of the system by detailing its classes, attributes, etc.

Sequence Diagram is also used to model the sequence of interactions between the identified objects.

3. Implementation:

Class Diagram is used to refine the class structure and relationships for actual coding.

4. Testing:

Sequence Diagram: is used to validate that the interactions and sequences match the expected behaviour according to the scenarios defined.

5. Maintenance:

Class Diagram: is used here to understand the existing structure of the system.