

# Object-Oriented Methodology Quiz 05

2024 Fall Semester

21 CST H3Art

Final Score: 90/100

1. UML package diagrams are used to illustrate which aspect of a software system?

- A. Sequence of events
- B. Collaboration between objects
- C. Logical architecture**
- D. Physical deployment

2. What does "sd" stand for in UML interaction diagrams?

- A. Sequence Diagram**
- B. Sketch Diagram
- C. Sequence Definition
- D. System Definition

3. Which pattern is a large-scale application of the Model-View Separation Principle?

- A. Singleton
- B. Strategy
- C. Model-View-Controller (MVC)**
- D. Observer

4. How is the destruction of an object represented in UML sequence diagrams?

- A. With a large "X" symbol**
- B. With a dashed lifeline
- C. With a solid line
- D. With a "destroy" message

5. Which of the following is NOT a typical layer in an OO system?

- A. User Interface Layer
- B. Technical Services Layer
- C. Database Management Layer**
- D. Application Logic Layer

6. What does the Model-View Separation Principle aim to achieve?

- A. Combine UI and domain logic
- B. Separate domain logic from user interface**
- C. Centralize all system functionality in the model layer
- D. Make the UI layer independent of the model layer

✗ 7. In UML, what notation is used to represent instance creation?

- A. A dashed line with a filled arrow**
- B. A solid line with an open arrow

- C. A message named "create"
- D. A tagged value "{new}"

Correct Answer: C

8. What does the term "partition" refer to in the context of software architecture?

- A. A set of related classes in a package
- B. A horizontal division of subsystems within a layer**
- C. A layer that represents a physical processing node
- D. A set of interconnected packages

9. Which of the following is an example of a technical service?

- A. Sales Order Processing
- B. User Authentication
- C. Database Access**
- D. Product Display

10. In which diagram type can objects be placed anywhere on the diagram?

- A. Sequence Diagram
- B. Communication Diagram**
- C. Use Case Diagram
- D. Class Diagram

11. Which of the following is NOT a benefit of using layers in software architecture?

- A. Increased reuse potential
- B. Improved clarity
- C. Tighter coupling between components**
- D. Simpler maintenance

12. In a logical architecture, which layer is typically most specific to the application?

- A. Foundation Layer
- B. Technical Services Layer
- C. Application Logic Layer**
- D. User Interface Layer

13. What does the "ref" frame represent in UML interaction diagrams?

- A. A reference to another sequence diagram**
- B. A return message
- C. A conditional message
- D. A loop message

14. How is polymorphism modeled in UML sequence diagrams?

- A. By using multiple diagrams for each concrete case**
- B. By using a special message labeled "polymorphic"
- C. By representing the abstract superclass with a dashed lifeline
- D. By using a "poly" frame

15. Which notation is used to invoke class or static methods in UML?

**A. lifeline box representing an instance of a metaclass**

- B. special message labeled "static"
- C. dashed line with an arrow
- D. frame labeled "class method"

✗ 16. Sequence diagrams illustrate interactions in which format?

A. A graph or network format

**B. A horizontal line format**

- C. An enclosed format with objects added to the left
- D. An enclosed format with objects added to the right

Correct Answer: D

17. What is the recommended approach to naming classes in the domain layer?

A. Arbitrary names unrelated to the problem domain

**B. Names inspired by the domain model**

- C. Names related to the programming language
- D. Names based on database table names

18. In a logical architecture, what is typically the bottom layer?

A. User Interface Layer

B. Application Logic Layer

C. Technical Services Layer

**D. Foundation Layer**

19. Which of the following is NOT a strength of sequence diagrams?

A. Clearly shows sequence or time ordering of messages

**B. Space-efficient for wall sketching**

- C. Larger set of detailed notation options
- D. Excellent for documentation

20. What is the purpose of using layers in software architecture?

A. To increase coupling between components

B. To simplify testing

**C. To separate concerns and reduce dependencies**

D. To add more complexity

21. The "alt" frame operator is used to represent mutually exclusive conditional logic



22. The "found message" notation in UML is often omitted in practice.



23. UML tools usually emphasize communication diagrams over sequence diagrams.



24. The primary benefit of using layers in software architecture is to increase coupling between components.



✗ 25. In a logical architecture, a layer can only call upon services of the layer directly below it.



Correct Answer: ✗

26. UML package diagrams can only represent Java packages.



27. In a logical architecture, partitions represent vertical slices of the system.



28. The Application Logic layer is the most generic and reusable layer in a software system.



29. The Foundation layer typically contains reusable, general-purpose functions.



30. In communication diagrams, messages always flow from left to right.



31. Sequence diagrams and communication diagrams can express similar interactions.



32. The Observer pattern allows domain objects to communicate with UI objects directly.



33. Singleton objects are marked with a "T" in the upper right corner of their lifeline box in UML diagrams.



34. In sequence diagrams, new objects must always be added to the left edge of the diagram.



35. In the context of software architecture, the term "tier" refers to a physical processing node.



36. Asynchronous calls are represented with a filled arrow in UML diagrams.



37. Sequence diagrams have fewer notation options compared to communication diagrams.



38. A UML package diagram can show dependencies between packages.



39. Frames are used in UML to support conditional and looping constructs.



✗ 40. The Model-View-Controller pattern is a small-scale pattern originally applied to GUI design.



Correct Answer: ✓