

Object-Oriented Methodology Quiz 13

2024 Fall Semester

21 CST H3Art

Final Score: 100/100

1. What is the main benefit of using design patterns?

- A. They are easy to learn and implement.
- B. They increase the complexity of designs.
- C. They provide proven solutions to recurring problems.**
- D. They require less documentation.

2. What is a Design Pattern?

- A. A specific solution to a unique problem.
- B. A method for optimizing software performance.
- C. A general solution to a recurring problem in a context.**
- D. A set of coding guidelines.

3. In the DJView example, what component updates the BPM display when the model changes?

- A. The View**
- B. The Model
- C. The Observer
- D. The Controller

4. Which pattern is used to encapsulate interchangeable behaviors and uses delegation to decide which one to use?

- A. State
- B. Observer
- C. Decorator
- D. Strategy**

5. In the Model 2 adaptation of MVC for web applications, what technology is used to implement the Controller?

- A. HTML
- B. Servlet**
- C. JDBC
- D. JSP

6. Which method is called on the InvocationHandler when a method is invoked on a dynamic proxy?

- A. process()
- B. execute()
- C. handle()
- D. invoke()**

7. What does the term "forces" refer to in the Design Pattern definition?

- A. The goals and constraints of the problem.**
- B. The class diagram of the pattern.

- C. The relationships between objects.
- D. The name of the pattern.

8. What is the Rule of Three in the context of design patterns?

- A. A pattern must be applied in at least three real-world solutions to qualify as a pattern.**
- B. A pattern can be adapted in three different ways.
- C. A pattern can only be used three times in a project.
- D. A pattern has three main components: context, problem, and solution.

9. What is the primary difference between a Virtual Proxy and a Remote Proxy?

- A. The object's creation cost
- B. The object's interface
- C. The object's lifecycle
- D. The object's location**

10. How does the Model in MVC notify observers of state changes?

- A. By using the Observer pattern**
- B. By updating the View
- C. By broadcasting events
- D. By calling methods directly on the observers

11. What is the primary purpose of the Proxy Pattern?

- A. To add behavior to an object
- B. To simplify the object's state
- C. To change the interface of an object
- D. To control access to an object**

12. In the context of MVC, what is the role of the View?

- A. To maintain the application's logic
- B. To adapt the Model to different interfaces
- C. To handle user input
- D. To present the Model's data to the user**

13. What is the primary advantage of using MVC in web applications?

- A. It reduces the number of HTTP requests
- B. It eliminates the need for JavaScript
- C. It separates concerns and allows for better team collaboration**
- D. It ensures that the application is secure

14. In the Duck Simulator example, what pattern was used to count the number of quacks?

- A. Composite
- B. Observer
- C. Strategy
- D. Decorator**

15. What exception is thrown when a client tries to perform an illegal operation through a Protection Proxy?

- A. IllegalArgumentException
- B. SecurityException

- C. `IllegalStateException`
- D. `IllegalAccessException`**

16. What is the main goal of refactoring code?

- A. To fix bugs.
- B. To optimize performance.
- C. To add new features.
- D. To improve code organization.**

17. In MVC, which component is responsible for maintaining the application's state and data?

- A. View
- B. Controller
- C. Observer
- D. Model**

18. What method does the `InvocationHandler` interface define?

- A. `handle()`
- B. `proxy()`
- C. `intercept()`
- D. `invoke()`**

19. Which of the following is NOT a characteristic of a good compound pattern?

- A. It promotes reusability
- B. It is specific to a single use case**
- C. It solves a general problem
- D. It combines multiple design patterns

20. Which pattern is used to control access to an object?

- A. Facade
- B. Composite
- C. Proxy**
- D. Command

21. Which of the following is NOT a compound pattern discussed in the chapter?

- A. Model-View-Controller
- B. Observer
- C. Adapter**
- D. Strategy

22. In the `DJView` example, how is the Controller notified of user actions?

- A. Through event listeners**
- B. Through direct method calls
- C. Through the Observer pattern
- D. Through the Strategy pattern

23. What is the purpose of the rmi registry in RMI?

- A. To handle deserialization
- B. To act as a locator service for remote objects**

- C. To manage network connections
- D. To handle serialization

24. What is the primary function of the Adapter pattern in the context of MVC?

- A. To control access to a model
- B. To create multiple views of the same model
- C. To change the interface of a class to another interface clients expect**
- D. To add additional functionality to a class

25. Which of the following is NOT a part of the Design Pattern definition?

- A. Problem
- B. Context
- C. Solution
- D. Algorithm**

26. The main purpose of a Structural Pattern is to describe how classes and objects interact.



27. The name of a design pattern is not important because it does not affect the pattern's functionality.



28. A Protection Proxy controls access to an object's methods based on the caller's identity or role.



29. A Remote Proxy allows a client to interact with a remote object as if it were local.



30. Design Patterns are always the simplest solution to a problem.



31. The Controller in MVC is tightly coupled to both the Model and the View.



32. The main goal of refactoring code is to add new features.



33. Compound patterns are combinations of multiple design patterns that solve recurring problems.



34. Design Patterns are laws that must be strictly followed.



35. The View in MVC is responsible for maintaining the application's state and data.



36. The Singleton pattern ensures that multiple instances of a class can be created.



37. A Virtual Proxy is used to represent an object that is expensive to create or initialize.



38. The Observer pattern allows objects to subscribe to events generated by other objects.



39. In the Gumball Machine example, the GumballMachine class extends the UnicastRemoteObject class to become a remote service.



40. The Proxy Pattern can be used to hide the complexity of a set of classes by providing a simplified interface.



41. The Adapter pattern is not relevant in the context of MVC.



42. The Proxy Pattern is structurally similar to the Decorator Pattern, but they serve different purposes.



43. The Proxy Pattern is used to add additional behavior to an object.



44. In the Gumball Machine example, the GumballMachineRemote interface extends the Serializable interface.



45. The context in the Design Pattern definition refers to the situation in which the pattern applies.



46. In the Duck Simulator example, the QuackCounter decorator counts the number of quacks without modifying the original duck classes.



47. Anti-Patterns describe bad solutions to common problems.



48. The Model in MVC is responsible for handling user input and updating the View.



49. The Adapter pattern can be used to adapt an existing model to work with a new view without modifying the model.



50. The Model in MVC should have knowledge of both the View and the Controller.

