Introduction to Object-Oriented Modeling

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1 Multiple Choice Questions

- 1. What is Encapsulation in OOP?
 - A) The process of inheriting properties from a class.
 - B) Combining data and functions that operate on them.
 - C) The process of creating multiple objects from a class.
 - D) A technique to optimize code performance.
- 2. Which of the following is an example of Polymorphism in OOP?
 - A) A class with multiple methods.
 - B) A class inheriting from multiple classes.
 - C) Multiple classes having methods with the same name but different implementations.
 - D) A method changing data types during execution.
- 3. Which OOP principle hides the internal state of an object and only exposes operations?
 - A) Encapsulation.
 - B) Abstraction.
 - C) Inheritance.
 - D) Polymorphism.

4. Choose the correct statement about 'Loose Coupling' in software design.

- A) It makes it easier to modify and maintain software.
- B) It implies a high degree of interdependence between modules.
- C) It is the process of combining multiple classes into one.
- D) It refers to a class with multiple responsibilities.

2 Descriptive Questions

- 5. Describe the difference between an 'Abstract Class' and an 'Interface'.
- 6. Why does software such as the Linux kernel or Mozilla Firefox tend to get more complex over time?
- 7. How do techniques such as information hiding, polymorphism, and interfaces promote loose coupling?
- 8. Explain what the waterfall model of software development lifecycle is with a detailed overview of each phase.