Introduction to Object-Oriented Modeling

Table of contents

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.