

OOP Interview Questions and Answers

1. What is the difference between a Class and an Object?

A class is a blueprint or template for creating objects. An object is an instance of a class.

2. What are the four pillars of OOP?

Encapsulation, Inheritance, Polymorphism, and Abstraction.

3. Explain Encapsulation with an example.

Encapsulation means hiding internal object details and only exposing what's necessary. Example: private properties with public getters/setters.

4. What is the difference between Inheritance and Composition?

Inheritance derives new classes from existing ones. Composition means building classes using other classes.

5. What is the difference between Overriding and Overloading?

Overriding means redefining a method in a subclass. Overloading means defining multiple methods with the same name but different parameters.

6. What is Abstraction and why do we use it?

Abstraction means hiding complex implementation details and showing only the relevant features.

7. When would you use an abstract class instead of an interface?

Use abstract class when you want to provide base functionality. Use interface to define only method signatures.

8. Can a class inherit from multiple classes? Why or why not?

No in most languages (like Java, PHP) due to the diamond problem. Use interfaces instead.

9. Can an interface contain properties?

In some languages, no (like older Java). In others, like C#, interfaces can define properties.

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10. Explain the difference between static and non-static methods.

Static methods belong to the class, non-static (instance) methods belong to the object.