

Reading Assignment

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1 Questions 1

What are the advantages of Polymorphism?

-> Polymorphism in object-oriented programming offers code reusability, flexibility, and extensibility. It improves readability, maintains encapsulation, and enables dynamic binding. It facilitates code organization, enhances compatibility, and simplifies testing, contributing to more efficient and adaptable software development

2 Questions 2

How is Inheritance useful to achieve Polymorphism in Java?

-> In Java, inheritance enables polymorphism by allowing objects of a derived class to be treated as objects of their base class. This is achieved through method overriding, where a subclass provides a specific implementation for a method already defined in its superclass. Through polymorphism, a common interface (base class) can be used to interact with various objects (subclasses), promoting code flexibility and reuse.

3 Questions 3

What are the differences between Polymorphism and Inheritance in Java?

-> Polymorphism:

- Definition: Polymorphism allows objects of different types to be treated as objects of a common type.
- Mechanism: Achieved through method overriding and interfaces, enabling a single interface to represent multiple underlying types.
- Usage: Enhances code flexibility, reusability, and readability by providing a common interface for diverse objects.

-> Inheritance:

- Definition: Inheritance allows a class to inherit properties and behaviors from another class.
- Mechanism: Achieved by creating a subclass that extends a superclass, inheriting its attributes and methods.
- Usage: Promotes code reuse, extensibility, and organization by forming a hierarchy of classes with shared characteristics.