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1. What are the advantages of Polymorphism?

Polymorphism in Java allows one interface to be used for different underlying data types. It helps reduce code duplication by enabling methods to work with objects of different classes that share a common superclass. It improves flexibility, as changes in one part of the system do not affect other parts. Polymorphism also makes code easier to extend and maintain, especially in large projects.

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2. How is Inheritance useful to achieve Polymorphism in Java?

Inheritance is essential to polymorphism because it allows one class to inherit the behavior and properties of another. When a subclass overrides a method from its superclass, polymorphism lets that method be called through a superclass reference, but the actual method executed is from the subclass. This mechanism supports dynamic method dispatch, which is a core aspect of polymorphism.

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3. What are the differences between Polymorphism and Inheritance in Java?

Inheritance is a mechanism for reusing code by creating a new class based on an existing one. It creates a relationship between parent and child classes. Polymorphism, on the other hand, refers to the ability of different classes to respond to the same method call in their own way. While inheritance focuses on code structure and sharing, polymorphism focuses on behavior and flexibility at runtime.