

**Reading Assignment:** Please answer three questions below:

- What are the advantages of Polymorphism?
- How is Inheritance useful to achieve Polymorphism in Java?
- What are the differences between Polymorphism and Inheritance in Java?

=> Answer:

- Advantages of Polymorphism:

- + Code Reusability: Promotes code reuse and simplifies maintenance.
- + Flexibility and Extensibility: Easily adapts to changing requirements.

- Inheritance and Polymorphism in Java:

+ How Inheritance Achieves Polymorphism: Through method overriding, allowing subclasses to be treated as their superclass.

- Differences between Polymorphism and Inheritance in Java:

+ Concept:

Polymorphism: Runtime concept, objects of different types treated as a common type.

Inheritance: Compile-time concept, new class inherits properties from an existing class.

+ Usage:

Polymorphism: Involves method overriding and interfaces.

Inheritance: Used for code reuse, establishes "is-a" relationship.

+ Scope:

Polymorphism: Broader, includes method overloading, interfaces, and generics.

Inheritance: Specific mechanism related to code reuse and class organization.