Polymorphism offers several benefits for Java programmers:

- **Code Reusability:** By allowing methods to behave differently based on the object's type, you can write generic code that works with various objects. This reduces code duplication and makes your program more efficient.
- **Maintainability:** Polymorphic code is easier to maintain and update. Changes made to a parent class can automatically propagate to its child classes, reducing the need to modify code in multiple places.
- **Flexibility:** Polymorphism enables you to design programs that can adapt to different situations. You can write algorithms that operate on various object types without knowing their specific details beforehand.
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Inheritance plays a crucial role in achieving polymorphism in Java.

- **Subtyping:** Inheritance establishes an "is-a" relationship between classes. A subclass inherits methods from its parent class. These inherited methods can be overridden in the subclass to provide specialized behavior.
- **Dynamic Binding:** At runtime, when a method is called on a polymorphic reference variable, Java determines the actual class of the object and invokes the appropriate method implementation (overridden or inherited). This allows for different behaviors based on the object's type.

The differences between Polymorphism and Inheritance in Java:

Inheritance and polymorphism are fundamental concepts in object-oriented programming (OOP) like Java, but they serve different purposes:

Inheritance establishes a hierarchical relationship between classes. It's about code reusability and creating specialized classes. A subclass inherits properties and methods from a parent class, promoting code reuse and reducing redundancy. Inheritance allows you to build upon existing functionality and tailor it for specific use cases.

Polymorphism, on the other hand, focuses on the ability of objects to exhibit different behaviors under the same method call. It's about having "multiple forms" (poly meaning many) for a functionality. In Java, polymorphism is achieved through method overriding in subclasses that inherit from a common parent class. When you call a method on a polymorphic reference variable (a variable that can hold objects of different subclasses), the actual behavior executed depends on the object's class at runtime.