1, What are the advantage of Polymorphism?

- Increases code reusability by allowing objects of different classes to be treated as objects of a common class.
- Improves readability and maintainability of code by reducing the amount of code that needs to be written and maintained.
- Supports dynamic binding, enabling the correct method to be called at runtime, based on the actual class of the object.
- Enables objects to be treated as a single type, making it easier to write generic code that can handle objects of different types.

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

In Java, inheritance allows a class to inherit fields and methods from another class, known as the superclass or parent class. The class that inherits from the superclass is called the subclass or child class. By extending a superclass, a subclass inherits its attributes and behaviors, enabling code reuse and promoting a hierarchical organization of classes.

Polymorphism refers to the ability of objects to take on multiple forms. In Java, polymorphism is achieved through method overriding and method overloading. Method overriding allows a subclass to provide a specific implementation of a method that is already defined in its superclass. Method overloading allows multiple methods with the same name but different parameters to coexist within the same class.

Inheritance: When a subclass inherits from a superclass, it can access the superclass's methods and fields. This allows the subclass to reuse the code defined in the superclass, promoting code reuse and avoiding duplication.

Method Overriding: Subclasses can provide their own implementation of methods that are already defined in the superclass. When a method is invoked on an object of the subclass, Java dynamically dispatches the call to the appropriate method implementation based on the actual type of the object at runtime. This is known as runtime polymorphism.

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

Inheritance	Polymorphism
Inheritance is one in which a new class is created (derived class) that inherits the features from the already existing class (Base class).	Polymorphism is that which can be defined in multiple forms.
It is basically applied to classes.	It is basically applied to functions or methods.
Inheritance supports the concept of reusability and reduces code length in OOP.	Polymorphism allows the object to decide which form of the function to implement at compile-time (overloading) as well as run-time (overriding).

Inheritance can be single, hybrid, multiple, hierarchical and multilevel inheritance.	It can be compiled-time polymorphism (overload) as well as run-time polymorphism (overriding).