Reading Assignment:

- What are the advantages 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.

- How is inheritance useful to achieve Polymorphism in Java?

  + Inheritance facilities polymorphism in java through method overriding.

  + Inheritance allows objects to be treated though their common superclass interface.

  + Inheritance promotes a hierarchical structure that reflects the relationships between different classes in the system. This structure makes the codebase easier to understand and maintain.

- What are the differences between Polymorphism and Inheritance in Java?

  + Polymorphism:

. Polymorphism can be achieved though various mechanisms, including method overriding, dynamic binding, interface implementation.

. Polymorphism is a concept that allows objects of different classes to be treated as objects of a common superclass. It enables flexibility in method invocation, where the same method call can produce different behaviors depending on the actual object type at runtime.

. Polymorphism promotes flexibility and abstraction by allowing different objects to be treated uniformly through a common interface. It enables dynamic behavior and runtime flexibility in method invocation.

+ Inheritance:

. Inheritance is a mechanism for creating a new class based on an existing class. It facilitates code reuse by allowing subclasses to inherit attributes and methods from their superclass.

. Inheritance is implemented through class hierarchies, where subclasses explicitly declare their relationship with a superclass using keywords like 'extends'