**Inheritance :**

Inheritance is a fundamental OOPS concept where a new class(child/subclass) is created by derived properties and behavior from an existing class(parent/super class)

**Use case:**

* Code reusability
* Organizing the code
* Method overriding (polymorphism)
* **extends** is the keyword to implement inheritance between 2 classes.
* **Implements** is the keywordto implementinheritance with an interface.

**Types of inheritance:**

* **Single** – A subclass which extends only one super class (1 parent 1 child).
* **Multilevel -** A class of inheritance where a sub class becomes a super class for another class.
* **Multiple –** Inheriting properties and behaviour from 2 different parents. In java classes doesn’t support multiple inheritance, however **interface** provides support for multiple inheritance.
* **Hierarchal** – Multiple subclasses or child classes inheritance properties and behaviour from a single parent/super class.

**Polymorphism**:

Polymorphism in Java is the ability of a single entity (such as a method or class) to take on multiple forms. There are two types of polymorphism in Java: compile-time (method overloading) and runtime (method overriding).

**Compile-time Polymorphism (Method Overloading):**

Compile-time polymorphism is also known as method overloading. It occurs when two or more methods in the same class have the same name but different parameters (number, type, or order)

**Runtime Polymorphism (Method Overriding):**

Runtime polymorphism is also known as method overriding. It occurs when a subclass provides a specific implementation for a method that is already defined in its superclass. The decision on which method to execute is made at runtime.