**Core Java Oops Concept:-**

**1.Object:-**Any entity that has state and behavior is known as an object. For example, a chair, pen, table, keyboard, bike etc.

**2.Class**:-Collection of objects is called class. It is a logical entity.

### 3. Inheritance:-

***When one object acquires all the properties and behaviors of a parent object*, it is known as inheritance**. It provides code reusability. It is used to achieve runtime polymorphism.

### 4. Polymorphism:-

**If one task is performed in different ways, it is known as polymorphism.**

In Java, we use **method overloading** and **method overriding** to achieve polymorphism.

#### 5. Abstraction:-

**Hiding internal details and showing functionality is known as abstraction.** For example phone call, we don't know the internal processing.

In Java, we use **abstract class and interface to achieve abstraction.**

### 6. Encapsulation:-

**Binding (or wrapping) code and data together into a single unit are known as encapsulation.** For example, a capsule, it is wrapped with different medicines.

A java class is the example of encapsulation. Java bean is the fully encapsulated class because all the data members are private here.

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| --- | --- | --- | --- |
| **Static Keyword** | **this Keyword** | **Super Keyword** | **Final Keyword** |
| The **static keyword** in [Java](https://www.javatpoint.com/java-tutorial) is used for memory management mainly. | In Java, this is a **reference variable** that refers to the current object. | The **super** keyword in Java is a reference variable which is used to refer immediate pare  nt class o  bject. | The **final keyword** in java is used to restrict the user. |
| Usage:-  1. For Variable (class variable) 2. For Method (class method) 3. For Block 4. For Nested class | Usage:-  1. [to refer current class instance variable.](https://www.javatpoint.com/this1) 2. [to invoke current class method (implicitly)](https://www.javatpoint.com/this2) 3. [to invoke current class constructor.](https://www.javatpoint.com/this3) 4. [this can be passed as an argument in the method call.](https://www.javatpoint.com/this4) 5. [this can be passed as argument in the constructor call.](https://www.javatpoint.com/this5) 6. [to return the current class instance from the method.](https://www.javatpoint.com/this6) | Usage:-  1. For immediate parent class instance variable. 2. For immediate parent class method. 3. For immediate parent class constructor. | Usage:-  1. For final variable 2. For final method 3. For final class |

### \*\*\*\*\*\*\*\*Java Access Modifiers:-

**The access modifiers in Java by a simple table:-**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Access Modifier** | **Within Class** | **Within Package** | **Outside package subclass only(outside package using Inheritance)** | **Outside package** | **Most Restricted** | **Most Visible** |
| **Private** | **Y** | **N** | **N** | **N** | **1** | **4** |
| **Default** | **Y** | **Y** | **N** | **N** | **2** | **3** |
| **Protected** | **Y** | **Y** | **Y** | **N** | **3** | **2** |
| **Public** | **Y** | **Y** | **Y** | **Y** | **4** | **1** |