

## 7. Constructors and Destructors

### 1) Constructor Types (Default, Parameterized)

**Answer:** In Java, a **constructor** is a special method used to initialize objects. It has the same name as the class and does not have a return type. Constructors are invoked automatically when an object of a class is created.

There are two primary types of constructors:

1. **Default Constructor:** A **default constructor** is a constructor that takes no parameters.
2. **Parameterized Constructor:** A **parameterized constructor** is a constructor that takes arguments to initialize the object with specific values.

### 2) Copy Constructor (Emulated in Java)

**Answer:** Java does not provide a built-in copy constructor like in C++, but you can emulate it by creating a constructor that accepts an object of the same class and initializes the new object with the values of the pass object.

### 3) Constructor Overloading

**Answer: Constructor Over loading** is a feature in Java where multiple constructors in the same class have the **same name** but **different parameter lists**. It allows objects of the same class to be initialized in different ways.

### 4) Object Life Cycle and Garbage Collection

**Answer:** In Java, an **object life cycle** refers to the stages an object goes through during its existence in a program, from creation to garbage collection. Java manages memory automatically using a process called **garbage collection**, which removes unused objects to free up memory.

