

# Java for beginners

## Constructor and Singleton Class



Saurabh Shukla (MySirG)

## Agenda

- ① Constructor
- ② Why constructor ?
- ③ Types of constructors
- ④ Copy constructor
- ⑤ private constructor
- ⑥ Singleton class
- ⑦ Design pattern of Singleton class

## Constructor

- Constructor is a special member of the class whose name is the same as the name of the class.
- Constructor has no return type
- Constructors are called implicitly only once at the time of object creation
- Constructor is always instance member

- When there is no constructor defined in the class by programmer, compiler implicitly provide a default constructor for the class.
- Constructors can be parameterized
- Constructors can be overloaded
- Constructor can not be abstract, final, static, or synchronized.
- Any access modifier can be used on constructor.

## Why Constructor?

Object is a real world entity, that is, it must be a representative of a real world thing.

In order to represent a real world entity, an object must have the same state as of the entity.

To make it possible object member variables must be initialized with appropriate values.

Constructors are used to assign values to instance variables.

## Types of Constructor

- 1) Non-parameterized Constructor
- 2) Parameterized Constructor
- 3) Default Constructor

## Copy Constructor

Unlike C++, Java doesn't create a default copy constructor

You can define an explicit copy constructor.

Student s1 = new Student();

Student s2 = s1;

The diagram shows two pointer variables, s1 and s2, represented by boxes with arrows pointing to a single rectangular box. This visualizes how s2 is a copy of s1, both pointing to the same memory location.

## private Constructor

- What will happen when you define a private constructor in your class?
- You can access private members only within the class.
- Why there is a need to create private constructor?

## Singleton Class

If only one instance of a class can be created, then it is called singleton class.

## Design Pattern of Singleton class

class should contain

- private static reference variable of same class type
- private constructor
- public static method returning object reference. method may return null when object is already created.