

## ASSIGNMENT NO. 01

AIM: Write a Java Program to showcase classes, object creation, methods, constructors using student information.

- OBJECTIVES:
1. To study classes, objects and creation of objects of a class.
  2. To study methods, return a value from the method, and pass parameters to the methods.
  3. To study constructors and use of constructor.
  4. To study different access specifiers in Java and their use for encapsulation.

### THEORY :

1. Define what is class and object with an example .

#### → CLASS :

A class is a blueprint or template used to create objects. It defines data(variables) and behavior(methods).

#### Ex:

```
class Student {  
    String name;  
    int age;  
}
```

#### • OBJECT :

An object is a real-world instance of a class.

vivo V27 <sup>15</sup> presents actual values and can use class methods.

Ex :

```
public class Main {  
    public static void main (String [], args) {  
        Student s1 = new Student ();  
        s1.name = "Rahul";  
        s1.age = 20;
```

```
    System.out.println (s1.name);
```

```
    System.out.println (s1.age);
```

```
}
```

```
}
```

2. Give the syntax/format to define methods in a class and give examples for parameter passing and returning a value from methods.

→ GENERAL SYNTAX :

```
return Type methodName (parameter1, parameter2, ...){  
    // method body  
    return value;  
}
```

Examples :

① Method with Parameters (NO Return)

```
class calculator {
```

```
    void add (int a, int b) {
```

```
        System.out.println (a+b);
```

```
}
```

```
}
```

Calling the method :

vivo V27

Feb 10, 2026, 01:03

```
calculator c = new calculator();  
c.add(5, 10);
```

FOR EDUCATIONAL USE

2) Method with Return value

```
class calculator {
```

```
    int multiply (int x, int y) {
```

```
        return x * y;
```

```
}
```

calling the method :

```
calculator c = new calculator();
```

```
int result = c.multiply (4, 5);
```

```
System.out.println(result);
```

③ Method with No parameters but Return

```
int getNumber () {
```

```
    return 100;
```

```
}
```

The void keyword don't have return

3. Write about the use of constructor with example.

→ constructor

A constructor is a special method that :

- Has the same name as class
- Has no return type
- Is used to initialize object data .

Ex : ① Default constructor

```
class student {
```

```
student () {
```

```
    System.out.println("Object created");
```

```
}
```

```
}
```

② Parameterized constructor .

```

class Student {
    String name;
    int age;

    Student(string n, int a) {
        name = n;
        age = a;
    }

    void display() {
        System.out.println(name);
        System.out.println(age);
    }
}

```

**CONCLUSION:** Thus, studied what are classes, objects, creation, methods, constructors, access specifiers.

**FAQs :**

1. What is a class and Object?
- **class** : A blueprint or template used to define properties (variables) and behaviors (methods) of an object.
- Object** → A real instance of a class that represents actual data and can use the class methods.
- Ex :**
- Student → class  
 $s1 \rightarrow$  Object of Student

1. What is a constructor in Java?
  - A constructor is a special method that has the same name as the class and is used to initialize objects.
  - No return type
  - Automatically called when object is created
  - can be parameterized or non-parameterized .
2. What is the Default Access Specifier and its Scope?
  - The default access specifier (no keyword used) allows access only within the same package.
  - scope :
  - Accessible inside the same package
  - Not accessible outside the package .
3. What are the different access specifiers?
  - Java provides four access specifiers:
    1. public - accessible everywhere
    2. protected - accessible within same package and subclasses
    3. default → accessible within same package only
    4. private - accessible within the same class only .