Assignment 1

- 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 we a use of constructors.

4. To study different access specifiers in Java and their use of encapsulation.

- Theory :

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

Ans. A class is a blueprint or template used to create objects. It defines the properties and behaviour that the objects created from it will have.

An object is a real world instance of a class. It represents an actual entity and occupies memory. Objects use the properties and methods defined in the class.

eg. class Student {
        string name;
        int roll no. ;

```
void display {
    System.out.println("name" + sname);
    System.out.println("rollno." + rollno);
}
public static void main (string [], args) {
    student s1 = new student ();
    s1. name = "Ajit";
    s1. rollno. = 101;
    s1. display ();
```

Here student is the class and s1 is an object of the student class.

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

Ans. access_modifier return_type method-name
                                    (parameter_list) {
    // method body
    // statement.
    return value
}

access_modifier : public, private, protected
return_type : type of return value.
method_name : the name of the method.
parameter_list : inputs passed to the method
return : sends a value back to caller.

eg. Parameter Passing

```
class math {
    void add (int a, int b) {
        int sum = a+b
        system.out.printer ("sum = " + sum)
    }
    public static void main (string []. args) {
        math obj = new math ()
        obj.add (10, 20);
    }
}
```

2. Method Returning a value.

```
class Math {
    void multiply (int a, int b) {
        return . a * b ;
    }
    public static void main (string [] , args) {
        Math obj = new Math ();
        int result = obj. multiply (5, 4);
        system . out. printer ("Result = " + result);
    }
}
```

Q: Write about the use of constructor with example.

Ans. A constructor in Java is a special method to initialize objects. It is automatically called when an object of a class is created. constructors are mainly used to assign initial values

data members of a child class

eg. 1. Default constructor
```
student () {
    name = "Unknown";
    roll no. = 0  }
}
```

2. Parameterized constructor
```
Employee (string name, int id) {
    emp = name;
    emp. Id = id;
}
```

Platform : Open source Java programing tool like Eclipse Editor / Netbeans

Conclusions : Thus studied what are classes objects th creation , methods , constructors access specifiers.

FAQ's :

Q.1 What is a class and object ?
A class is a blueprint or template used to create object. It defines the properties (data members) and behaviors that the objects will have.

An object is an instance of a class. It represents a real world entity occupies memory objects use the variables and meth defined in the class.