MOD -02 -> OOPs

Variables

Types of Variables

Java Programming language defines mainly three kind of variables.

1. Instance variables
2. Static Variables
3. Local Variables

Local variable

- A variable that is declared within the method, constructor, or block is known as local variable.
- No Access modifier is used for local variables.
- Scope of local variable is limited to that method, constructor, or block only in which it declared.

Instance variable

- A variable that is declared within the class but outside of method, constructor, or block is known as instance variable (Non static).
- They are associated with object.
- Access modifiers can be used with instance variables.
- Inside class you can access instance variable direct by variable name without any object reference.

Static variable

- A variable that is declared within the class with static keyword but outside of method, constructor, or block is known as Static/class variable.
- They are associated with class.
- Static variable are accessed by `ClassName.variableName.`

```
package oopsprg;

class Participant{
	int rollNo; // rollno is an instance variable
	private String name; //name is an instance variable with access modifier
	static int school=“Rajagiri”; // school is static variable

	Student(){
		rollNo=123;
		name="bini";
	}
	public void display(){
		int no=5; // no is a local variable
		System.out.println("\ndisplay method of class Student: Value of instance variables\n=======");
		System.out.println("Value of local variable no="+no);
		System.out.println("RollNo="+rollNo);
		System.out.println("Name="+name);
		System.out.println("Static variable school ="+ school);
	}
}
```

```
public class VariablesInClass {
    public static void main(String[] arg){
        Student.school =“Naipunya”; // can change static value (no need of object)


        System.out.println(“RollNo="+Student. school); //Static variables are accessed using
    ClassName.variableName from outside the class. (no need of object)

    Student obj=new Student();
        System.out.println(“RollNo="+obj.rollNo); //non static variables are accessed by object
        System.out.println(“Name="+obj.name ); //non static variables are accessed by object

        obj.display();
    }

}
```

Class Exercise

Write a program to create a class “Employee” with basic details ”empID & empName”. Pass these values to instance variables using appropriate methods and print 2 employees’ details in a proper format.

Note:

1. Employee class should be a separate class.
2. Create another class for main()

1

```java
package oopsassignment;

class Employee{
    int empId;
    String empName;

    public void setDetails(){
        empId=23;
        empName="bini";
    }
    public void getDetails(){
        System.out.println("empId = "+empId+"\tempName = "+empName);
    }

}

public class EmployeeTest {
    public static void main(String[] args){

        Employee firstEmployee=new Employee();
        firstEmployee.setDetails();
        firstEmployee.getDetails();

    }

}
```

2

```java
package oopsassignment;

class Employee{
    int empId;
    String empName;

    public void setDetails(int id,String name){
        empId=id;
        empName=name;
    }
    public void getDetails(){
        System.out.println("empId = "+empId+"\tempName = "+empName);
    }

}

public class EmployeeTest {
    public static void main(String[] args){

        Employee firstEmployee=new Employee();
        firstEmployee.setDetails(23,"bini");
        firstEmployee.getDetails();

    }

}
```

3

```java
package oopsassignment;

import java.util.Scanner;
class Employee{
    int empId;
    String empName;

    public void setDetails(int id,String name){
        empId=id;
        empName=name;
    }
    public void getDetails(){
        System.out.println("empId = "+empId+"\tempName = "+empName);
    }
}

public class EmployeeTest {
    public static void main(String[] args){
        int id;
        String name;
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter employee id");
        id=sc.nextInt();
        System.out.println("Enter employee name");
        name=sc.next();
        Employee firstEmployee=new Employee();
        firstEmployee.setDetails(id,name);
        firstEmployee.getDetails();

    }

}
```

4

```java
package oopsassignment;

class Employee{
    int empId;
    String empName;

    Employee(){
        empId=23;
        empName="bini";
    }
    public void getDetails(){
        System.out.println("empId = "+empId+"\tempName = "+empName);
    }
}

public class EmployeeTest {
    public static void main(String[] args){

        Employee firstEmployee=new Employee();
        firstEmployee.getDetails();

    }
```

5

```java
package oopsassignment;

class Employee{
    int empId;
    String empName;

    Employee(int id,String name){
        empId=id;
        empName=name;
    }
    public void getDetails(){
        System.out.println("empId = "+empId+"\tempName = "+empName);
    }
}

public class EmployeeTest {
    public static void main(String[] args){

        Employee firstEmployee=new Employee(23,"bini");
        firstEmployee.getDetails();

    }

}
```

6

```java
package oopsassignment;
import java.util.Scanner;
class Employee{
    int empId;
    String empName;

    Employee(int id,String name){
        empId=id;
        empName=name;
    }
    public void getDetails(){
        System.out.println("empId = "+empId+"\tempName = "+empName);
    }
}

public class EmployeeTest {
    public static void main(String[] args){
        int id;
        String name;
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter employee id");
        id=sc.nextInt();
        System.out.println("Enter employee name");
        name=sc.next();

        Employee firstEmployee=new Employee(id,name);
        firstEmployee.getDetails();

    }
}
```

Thank you ☺ Happy coding ☺