# HOME WORK

**Reg.Number :-SUE/IS /20/ICT/084** **Submission Due: 2023-06-15**

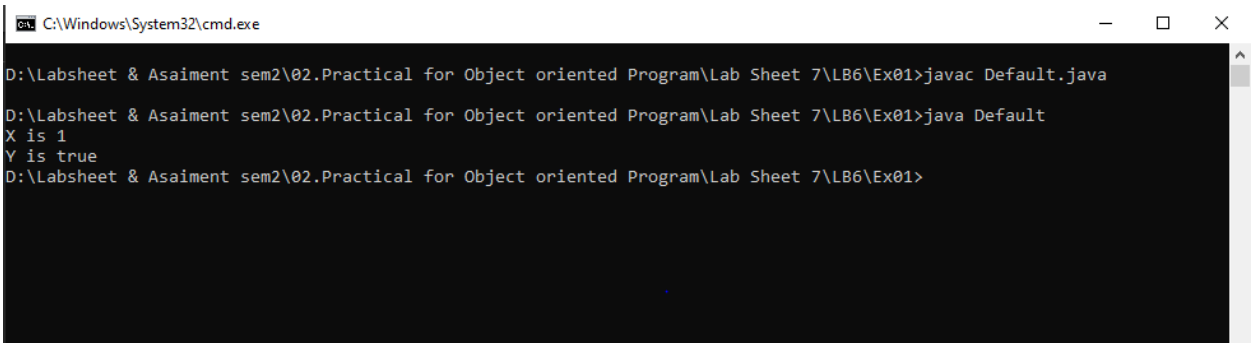
**Exercise 01:**

1. Write a java program to demonstrate the Default Constructor.
    a. Create a class Default.
    b. Initialize two variables called ‘x’ and ‘y’. Make a as the integer variable and b as the Boolean variable.
    c. Create an object deconstructor.
    d. Access the objects through reference variables

Answer:-

```
public class Default {

   int a;
   boolean b;

   public void Display() {

   System.out.println("X is "+a);
   System.out.print("Y is "+b);
   }

   public static void main(String[] args) {

      Default D1 =new Default();

      D1.a=1;
      D1.b=true;
      D1.Display();


   }
}
```

Output:-




2. Write a java program to demonstrate the Non Argument Construtor.
   a. Create a class University.
   b. Include a constructor to initialize a name for the object.
   c. Modify the program to bring the main method to a separate class TestYourUniversity.
   d. Create one object.
   e. Access the object / Display the object.

Answer:-

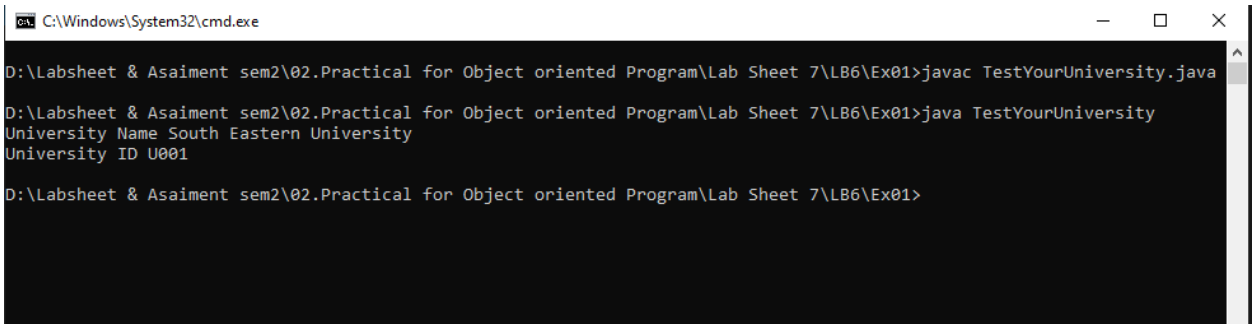
**University.java**

```
public class University{

    String University_Name;
    String University_ID;

    public University(){

       University_Name="South Eastern University ";
       University_ID ="U001";
    }

}
```

**TestYourUniversity.java**

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

       University U1 =new University();

       System.out.println("University Name "+U1.University_Name);
       System.out.println("University ID "+U1.University_ID);
    }
}
```

**Output:-**




3. Write a java program to demonstrate the Parameterized or User Defined Construtor.
   a. Create a class Student with the attribiutes student number, marks and fees.
   b. Include a construtor to initialize the user defined values for the object and display metod to display the object values.
   c. Create one object.
   d. Bring the main method to a separate class MyStudent.

**Answer:-**

**Student.java**

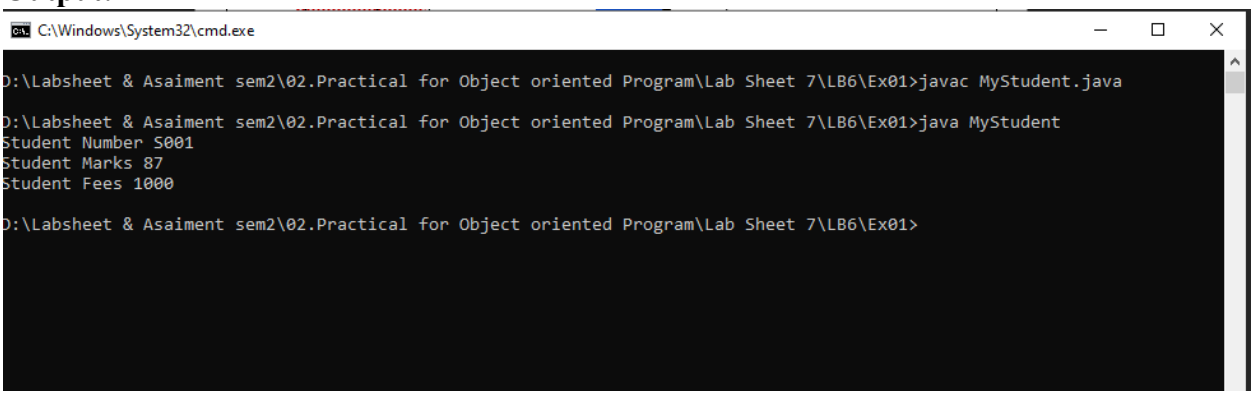
```
public class Student   {
   String Student_number;
   int Student_marks;
   int Student_fees;

   public Student(String number,int marks,int fees){

      Student_number = number;
      Student_marks =marks;
      Student_fees=fees;

   }
}
```

**MyStudent.java**

```
      public class MyStudent {

   public static void main(String[] args) {
      Student S1 = new Student("S001", 87, 1000);

      System.out.println("Student Number " + S1.Student_number);
```

```
        System.out.println("Student Marks " + S1.Student_marks);
        System.out.println("Student Fees " + S1.Student_fees);


    }
}
```

**Output:-**




**Exercise 02:**

a. Create the class Employee with the attributes employee number, basic salary, allowance and net salary.

b. Create a construtor and initialize the employee object with the input data values (Employee number and basic salary).

c. Included the methods to do the following.

- Calculation() – To calculate the net salary with the following contions.
  - Basic salary > 100, 000
  - Allowance – 10%
  - Basic salary <= 100, 000
- Display() – to display the calculation with employee number

d. Create one object.

e. Bring the main method to a separate class TestEmployee

Answer:-

**Employee.java**

```
public class Employee {

    String Employee_Number;
    double Basic_Salary;
    double Allowance;
    double Salary;
```

```
    public Employee(String Number, double  Salary) {

        Employee_Number = Number;
        Basic_Salary = Salary;

    }

    public void Calculation() {

        if (Basic_Salary > 100000) {

            Allowance = (0.1 * Basic_Salary);

        } else {

            Allowance = 0;
        }
        Salary = Allowance + Basic_Salary;

    }

    public void Display() {

        System.out.println("Employee Number:- " + Employee_Number);
        System.out.println("Employee Basic Salary:- " + Basic_Salary);
        System.out.println("Employee Allownce:- " + Allowance);
        System.out.println("Employee Salary:- " + Salary);
    }

}
```

**TestEmployee.java**

```
import java.util.Scanner;

public class TestEmployee {

    public static void main(String []args){

        String Nunmber;
        double Salary;

        Scanner scanner =new Scanner(System.in);
```

```
        System.out.print("Enter Employee Number:-");
        Nunmber =scanner.nextLine();
        System.out.print("Enter Employee salary:-");
        Salary=scanner.nextDouble();
        System.out.println("");

        Employee Em1 =new Employee(Nunmber,Salary);

        Em1.Calculation();
        Em1.Display();

    }
}
```

**Output:-**


**Exercise 03:**

a. Create the class Student including the attributes number, namen marks for three subjects, total, average and grade.
b. Create a constructor and initialize the student obejcts with the input data values (Number, name and three marks).
c. A method to calculate the total. Average amd grade (pass or fail).
d. A method to display the calculations with the student number and name.
e. Create one object.

Answer:-
Student.java

```
import java.util.Scanner;
```

```
public class Student{

   String Number;
   String Namen;
   int [] Marks;
   int Total =0;
   float Average;
   String  Grade;

   public Student(String number,String Name, int[] marks){
      Number =number;
      Namen =Name;
      Marks =marks;

   }


   public void calculateTotal(){

      for (int i=0;i<3;i++){

         Total = Total +Marks[i];
      }

   }

   public void calculateAverage() {
      Average =Total/3;
   }
   public void calculateGrade() {
      if(Average >=45){
         Grade ="Pass";
      }
      else{
         Grade ="Fail";
      }
   }

   public void Display(){
      System.out.println("Students Number:- " + Number);
      System.out.println("Students Name- " + Namen);

      for(int i=0;i<3;i++){
         System.out.println("Students Subjacet "+(i+1)+"Mark:-"+ Marks[i]);
```

```
        }

        System.out.println("Students Total Marks:- " + Total);
        System.out.println("Students Marks Average:- " + Average);
        System.out.println("Students Grade:- " + Grade);
    }

}
```

**TestStudent.java**

```
import java.util.Scanner;

public class TestStudent {

    public static void main(String[] args) {

        String Name;
        String Number;
        int [] marks =new int[3] ;

        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter Student Name:-");
        Name = scanner.nextLine();
        System.out.print("Enter Student Number:-");
        Number = scanner.nextLine();

        for(int i=0;i<3;i++){

            System.out.print("Enter Student Suject "+(i+1)+" Marks:-");
            marks[i] =scanner.nextInt();
        }

        //int [] marks ={85 ,55 ,45};

        Student S1 = new Student(Number, Name,marks);
```

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

        S1.calculateTotal();
        S1.calculateAverage();
        S1.calculateGrade();
        S1.Display();

    }

}
```

**Output:-**