Core java

Assignment-1

1) Write a program to print Hello World. Compile and run it using command prompt.

```
class Hello
{
	public static void main(String args[])
	{
		System.out.println("Hello World");
	}
}
```

Output:

```
E:\Assignment>javac Hello.java

E:\Assignment>java Hello
Hello World
```

2) Write a program to declare a variable named rollNo of integer type. Assign it a value (let say 100) to it and print the following statement **roll no = 100**

```
class Student
{
	static int rollNo=100;
	public static void main(String args[])
	{
		System.out.println("rollNo:"+rollNo);
	}
}
```

Output:

```
E:\Assignment>javac Student.java

E:\Assignment>java Student
rollNo:100
```

3) Find the result of following expressions. You need to determine the primitive data type of the variable by looking carefully the given expression and initialize variables by any random value.

A. $y = x^2 + 3x - 7$ (print value of y)
B. y = x++ + ++x (print value of x and y)
C. z = x++ - --y - --x + x++ (print value of x ,y and z)
D. z = x && y || !(x || y) (print value of z) [x, y, z are boolean variables]

```
class Random
{
 public static void main(String args[])
 {
        int x=20;
        int y=10;
        y= x*x + 3*x - 7 ;
        System.out.println("print value y:"+y);


        y = x++ + ++x ;
        System.out.println("print value y:"+y);

        int z=23;
        z = x++ - --y - --x  +  x++ ;
        System.out.println("print value z:"+z);

 }
}
```

Output:

```
E:\Assignment>javac Random.java

E:\Assignment>java Random
print value y:453
print value y:42
print value z:-19
```

3) Write a program that initializes 2 byte type of variables. Add the values of these variables and store in a byte type of variable. [Note: primitive down casting is required in this program]

```
class Casting
{
        int val;
```

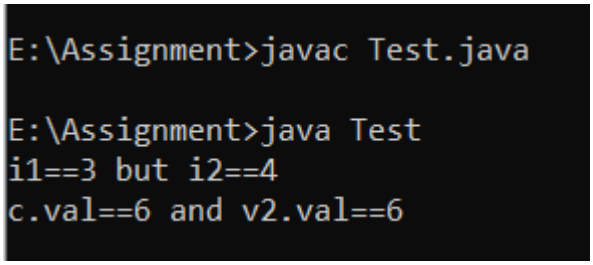
```
}
class Test
{

	public static void main(String args[])
	{
		int i1=3;
		int i2=i1;
		i2=4;
		System.out.print("i1=="+i1);
		System.out.println(" but i2=="+i2);

		Casting c=new Casting();
		c.val=5;
		Casting v2=c;
		v2.val=6;
		System.out.print("c.val=="+c.val);
		System.out.println(" and v2.val=="+v2.val);

	}
}
```

Output:

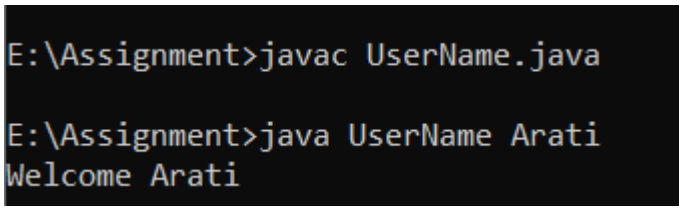


5) Write a program that takes user's name as command line argument and prints Welcome <entered user name>.

```
class UserName
{
	public static void main(String args[])
	{
		System.out.println("Welcome " +args[0]);
```

```
    }
}
```

Output:



6) Write a program that takes radius of a circle as input. Read the entered radius using Scanner class. Then calculate and print the area and circumference of the circle.

```
import java.util.Scanner;
class Circle
{
    public static void main(String args[])
    {
        Scanner scan=new Scanner(System.in);
        System.out.println("Enter the radius:");
        double radius=scan.nextDouble();

        double area=Math.PI*(radius*radius);
        System.out.println("The area of circle:" +area);

        double circumference=Math.PI* 2*radius;
        System.out.println("The area of circumference:" +circumference);
    }
}
```

Output:

```
E:\Assignment>java Circle
Enter the radius:
5
The area of circle:78.53981633974483
The area of circumference:31.41592653589793
```

7) Write a program to calculate sum of 5 subject's marks & find percentage. Take the obtained marks from user using Scanner class. Output should be in this format [percentage marks = 99 %]. Use concatenation operator here.

```
import java.util.Scanner;

class percentage

{

	public static void main(String args[])

	{

		int english,maths,computers,java,datastructer;

		float total,Percentage;

		Scanner scan=new Scanner(System.in);

		System.out.println("Enter the five subject marks:");

		english=scan.nextInt();

		maths=scan.nextInt();

		computers=scan.nextInt();

		java=scan.nextInt();

		datastructer=scan.nextInt();


		total=english+maths+computers+java+datastructer;

		Percentage=(total/500)*100;

		System.out.println("Marks Percentage:" +Percentage + " % ");

	}

}
```

```
E:\Assignment>java percentage
Enter the five subject marks:
96
56
89
87
82
Marks Percentage:82.0 %
```

8) Write a program to find the simple interest. Take the principle amount, rate of interest and time from user using Scanner class.

```
import java.util.Scanner;

class Interest
{
	public static void main(String args[])
	{
		float pi,r,ti,Simple_interest;
		Scanner scan=new Scanner(System.in);
		System.out.println("Enter the Principle ammount:");
		pi=scan.nextFloat();

		System.out.println("Enter the Rate of interest:");
		r=scan.nextFloat();

		System.out.println("Enter the Time:");
		ti=scan.nextFloat();

		Simple_interest=(pi*r*ti)/100;
		System.out.println("Simple interest:" +Simple_interest);
	}
}
```

Output:

```
E:\Assignment>javac Interest.java

E:\Assignment>java Interest
Enter the Principle ammount:
5000
Enter the Rate of interest:
6
Enter the Time:
8
Simple interest:2400.0
```

09) Write a program to read the days (eg. 670 days) as integer value using Scanner class. Now convert the entered days into complete years, months and days and print them.

```
import java.util.Scanner;

class Year_Day_Month

{

	public static void main(String args[])

	{

		int m,year,week,day;

		Scanner scan=new Scanner(System.in);

		System.out.println("Enter the numbers of day:");

		m=scan.nextInt();


		year=m/365;

		m=m%365;

		System.out.println("Number of year:" +year);


		week=m/7;

		m=m%7;

		System.out.println("Number of week:" +week);


		day=m;
```

```
            System.out.println("Number of day:" +day);


        }
}
```

Output:

```
E:\Assignment>javac Year_Day_Month.java

E:\Assignment>java Year_Day_Month
Enter the numbers of day:
670
Number of year:1
Number of week:43
Number of day:4
```

10) Write a program to convert temperature from Fahrenheit to Celsius. Take Fahrenheit as input using Scanner class. [formula : C= 5*(f-32)/9]

```
import java.util.Scanner;
class Temperature
{
    public static void main(String args[])
    {
            Scanner scan=new Scanner(System.in);
            float temperature;
            System.out.println("Enter the temperature in Fahrenheit:");
            temperature=scan.nextFloat();


            temperature=(5*(temperature-32))/9;
            System.out.println("temperature in Celsius:" +temperature);
    }
}
```

Output:

```
E:\Assignment>javac Temperature.java

E:\Assignment>java Temperature
Enter the temperature in Fahrenheit:
97
temperature in Celsius:36.11111
```

11)Write a program to swap two numbers without using third variable.

```
import java.util.Scanner;
class Swap
{
    public static void main(String args[])
    {
            int a,b;
            Scanner scan=new Scanner(System.in);
            System.out.println("==========Before Swapping===========");
            System.out.print("Enter the first no:");
            a=scan.nextInt();
            System.out.print("Enter the second no:");
            b=scan.nextInt();

            System.out.println("=========After Swapping============");
            a=a+b;
            b=a-b;
            a=a-b;



            System.out.println("Value the First no:" +a);
            System.out.println("Value the Second no:" +b);
```

```
    }
}
```

Output:

```
E:\Assignment>javac Swap.java

E:\Assignment>java Swap
==========Before Swapping============
Enter the first no:6
Enter the second no:2
=========After Swapping=============
Value the First no:2
Value the Second no:6
```

12) In a company an employee is paid as under: If his basic salary is less than Rs. 10000, then HRA = 10% of basic salary and DA = 90% of basic salary. If his salary is either equal to or above Rs. 10000, then HRA = Rs. 2000 and DA = 98% of basic salary. If the employee's salary is input by the user write a program to find his gross salary. [formula : GS= Basic + DA + HRA]

```
import java.util.Scanner;

class Employee

{

        public static void main(String args[])

        {

                int basic,da,hra,gs;

                Scanner scan=new Scanner(System.in);

                System.out.println("Enter the basic salary:");

                basic=scan.nextInt();


                if(basic<10000)

                {

                        hra=basic*10/100;

                        da=basic*90/100;
```

```
        }
        else
        {
            hra=2000;
            da=basic*98/100;
        }
        gs=basic+da+hra;
        System.out.println("basic salary:"+basic);
        System.out.println("HRA:"+hra);
        System.out.println("DA:"+da);
        System.out.println("GS:"+gs);
    }
}
```

Output:

```
E:\Assignment>javac Employee.java

E:\Assignment>java Employee
Enter the basic salary:
80000
basic salary:80000
HRA:2000
DA:78400
GS:160400
```

13)Program to find greatest in 3 numbers. [once using if else statement and then using ternary operator (logical operator)]

```
class Greatest
{
    public static void main(String args[])
    {
        int x=52,y=23,p=65;
```

```
                if(x>=y && x>=p)
                {
                        System.out.println(x+ " is a Greatest number ");
                }
                else if(y>=x && y>=p)
                {
                        System.out.println(y+ " is a Greatest number ");
                }
                else
                {
                        System.out.println(p+ " is a Greatest number ");
                }
        }
}
```

Output:

```
E:\Assignment>javac Greatest.java

E:\Assignment>java Greatest
65 is a Greatest number
```

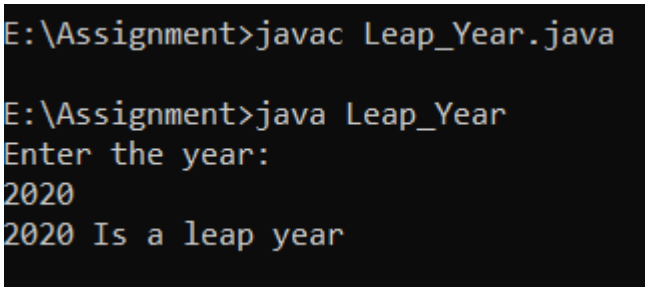
14)Program to check that entered year is a leap year or not.

```
import java.util.Scanner;
class Leap_Year
{
    public static void main(String args[])
    {
        Scanner scan=new Scanner(System.in);
        System.out.println("Enter the year:");
        int year=scan.nextInt();

        if((year%4==0 && year%100!=0) || (year%4==0 && year%400==0))
        {
                System.out.println(year+ " Is a leap year ");
        }
```

```
            else
            {
                System.out.println(year+ " Is a not leap year ");
            }
        }
    }
```

Output:



15) Accept person's gender (character m for male and f for female), age (integer), as input and then check whether person is eligible for marriage or not.

```
import java.util.Scanner;
class Person
{
    public static void main(String args[])
    {
        Scanner sc = new Scanner (System.in);




        System.out.println("Enter age");
        int age = sc.nextInt();

        System.out.println("Enter gender: M/F");
        int gender = sc.next().charAt(0);
```

```
            System.out.println("Are you married? Y/N");
            int married = sc.next().charAt(0);



            if(gender == 'F') {
                System.out.println("work only in city areas");
            }



            if(gender == 'M') {
                if((age >= 20) && (age < 40)) {
                    System.out.println("You may work anywhere");
                }
                else if((age >= 40) && (age < 60)) {
                    System.out.println("work only in city areas");
                }
                else {
                    System.out.println("ERROR");
                }
            }
        }
}
```

Output:

```
E:\Assignment>javac Person.java

E:\Assignment>java Person
Enter age
45
Enter gender: M/F
F
Are you married? Y/N
Y
work only in city areas
```