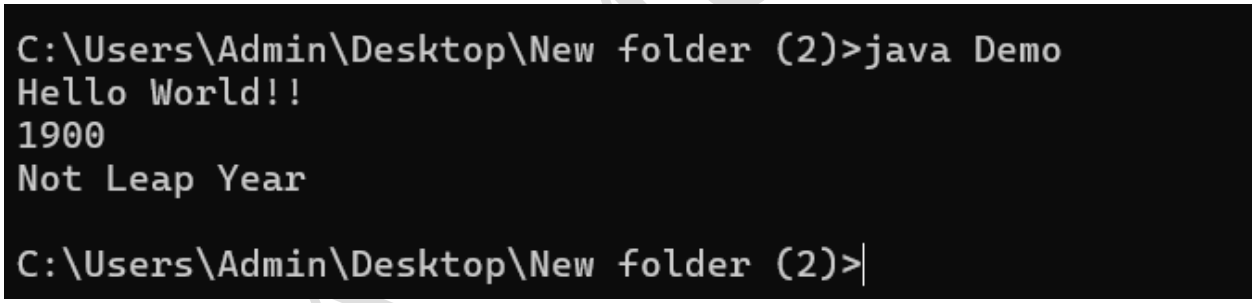
CDAC Mumbai PG-DAC AUGUST 24
Assignment No- 2

1)Write a program that checks if a given year is a leap year or not using both if-else and switch-case.

if-else

```
import java.util.*;
class Demo{
public static void main(String args[]){

System.out.println("Hello World!!");
Scanner sc=new Scanner(System.in);

int n=sc.nextInt();

if(((n%4==0) && (n%100!=0)) || (n%400==0)){
System.out.println("leap Year");
}
else{
System.out.println("Not Leap Year");
}
}
}
```




```
import java.util.*;
class Demo{
public static void main(String args[]){

System.out.println("Hello World!!");
Scanner sc=new Scanner(System.in);

int n=sc.nextInt();

int r=((n%400==0) && (n%4==0) || (n%100!=0))?1:0;
switch(1){
case 1:
```

```
System.out.println("leap Year");
break;
case 2:
System.out.println("not leap Year");
break;
default:
System.out.println("not leap Year");

}

}

}
```

```
C:\Users\Admin\Desktop\New folder (2)>java Demo
Hello World!!
2020
leap Year

C:\Users\Admin\Desktop\New folder (2)>
```

2)Implement a program that calculates the Body Mass Index (BMI) based on height and weight input using if-else to classify the BMI int categories (underweight, normal weight, overweight,etc).

```
import java.util.*;
class Demo{
public static void main(String args[]){

System.out.println("Hello World!!");
Scanner sc=new Scanner(System.in);


System.out.println("Enter Weight in lbs");
int w=sc.nextInt();
System.out.println("Enter Height in inc");
int h=sc.nextInt();


int bmi= (703*w)/(h*h);
System.out.println("BMI is "+bmi);

if(bmi<18){
System.out.println("Underweight");
}else if(bmi >18 && bmi <25){
```

```
System.out.println("Normal Weight");
}
else{
System.out.println("Overweight");
}
}

}
```

```
C:\Users\Admin\Desktop\New folder (2)>java Demo
Hello World!!
Enter Weight in lbs
160
Enter Height in inc
70
BMI is 22
Normal Weight

C:\Users\Admin\Desktop\New folder (2)>
```

3)Write a program that checks if a person is eligible to vote based on their age.

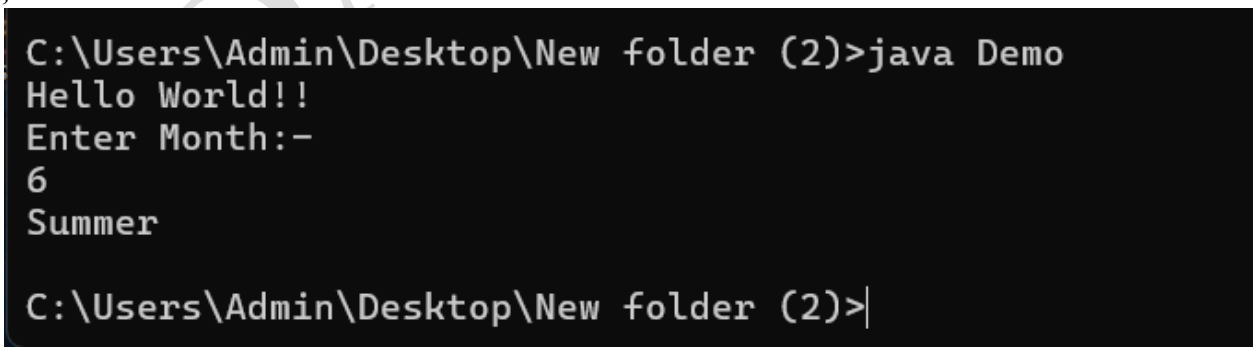
```
import java.util.*;
class Demo{
public static void main(String args[]){

System.out.println("Hello World!!");
Scanner sc=new Scanner(System.in);
System.out.println("Enter age:- ");
int age=sc.nextInt();

if(age<18){
System.out.println("You are not eligible for voting");
}else{
System.out.println("You are eligible for voting");
}
}

}
```

```
C:\Users\Admin\Desktop\New folder (2)>java Demo
Hello World!!
20
You are eligible for voting

C:\Users\Admin\Desktop\New folder (2)>
```

4)Write a program that takes a month (1-12) and prints the corresponding season (Winter, Spring, Summer, Autumn) using a switch case

```
import java.util.*;
class Demo{
public static void main(String args[]){

System.out.println("Hello World!!");
Scanner sc=new Scanner(System.in);
System.out.println("Enter Month:-");
int month=sc.nextInt();

switch(month){
case 1:
System.out.println("Winter");
break;

case 2:
System.out.println("Winter");
break;

case 3:
System.out.println("Spring");
break;

case 4:
System.out.println("Spring");
break;

case 5:
System.out.println("Spring");
break;

case 6:
System.out.println("Summer");
break;
```

```
case 7:
System.out.println("Summer");
break;

case 8:
System.out.println("Summer");
break;

case 9:
System.out.println("Autumn");
break;

case 10:
System.out.println("Autumn");
break;

case 11:
System.out.println("Autumn");
break;

case 12:
System.out.println("Winter");
break;

default:
System.out.println("Not valid month");
break;


}


}

}
```



5)Write a program that allows the user to select a shape (Circle, Square, Rectangle, Triangle) and then calculates the area based on user-provided dimensions using a switch case.

```
import java.util.*;
class Demo{
public static void main(String args[]){

System.out.println("Hello World!!");
Scanner sc=new Scanner(System.in);
System.out.print("Enter the number of your choice: ");
System.out.printf("1) circle ");
System.out.printf("2) square ");
System.out.printf("3) rectangle ");
System.out.println("4) triangle ");
System.out.println("Enter the number of your choice: ");
int choice = sc.nextInt();

switch (choice) {
case 1:

System.out.print("Enter radius: ");
double r = sc.nextDouble();
double c_area = 3.14 * r * r;
System.out.printf("The area of circle is"+c_area);
break;

case 2:


System.out.print("Enter the side: ");
double s = sc.nextDouble();
double s_area = s * s;
System.out.printf("The area of squar "+s_area);
break;


case 3:

System.out.print("Enter the length: ");
double l = sc.nextDouble();
System.out.print("Enter the width: ");
double w = sc.nextDouble();
double r_area = l * w;
System.out.printf("The area of rectangle "+r_area);
break;

case 4:

System.out.print("Enter the base: ");
double b = sc.nextDouble();
System.out.print("Enter the height: ");
double h = sc.nextDouble();
double t_area = 0.5 * b * h;
```

```
System.out.printf("The area of tringle "+t_area);
break;

default:
System.out.println("Invalid case.");
break;
      }


   }
}
```

```
C:\Users\Admin\Desktop\New folder (2)>java Demo
Hello World!!
Enter the number of your choice: 1) circle 2) square 3) rectangle 4) triangle
Enter the number of your choice:
3
Enter the length: 6
Enter the width: 5
The area of rectangle 30.0
C:\Users\Admin\Desktop\New folder (2)>java Demo
Hello World!!
Enter the number of your choice: 1) circle 2) square 3) rectangle 4) triangle
Enter the number of your choice:
1
Enter radius: 2
The area of circle is12.56
C:\Users\Admin\Desktop\New folder (2)>java Demo
Hello World!!
Enter the number of your choice: 1) circle 2) square 3) rectangle 4) triangle
Enter the number of your choice:
2
Enter the side: 3
The area of squar 9.0
C:\Users\Admin\Desktop\New folder (2)>java Demo
Hello World!!
Enter the number of your choice: 1) circle 2) square 3) rectangle 4) triangle
Enter the number of your choice:
4
Enter the base: 5
Enter the height: 6
The area of tringle 15.0
C:\Users\Admin\Desktop\New folder (2)>
```