ASSIGNMENT NU 2

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

Ans : If-else

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


        System.out.println("enter your number ");
        int year = sc.nextInt();
        if(year%4==0 && year%100!=0 || year%400==0){
                System.out.println("year is leap");
        }
        else {
                System.out.println("year is not leap");
        }
}}
```

2 switch case:

```java
import java.util.Scanner;
class switchleap{
public static void main(String... args){
        Scanner sc = new Scanner(System.in);
        System.out.println("enter your year");
        int year = sc.nextInt();
        System.out.println("enter your choice");
        int ch = sc.nextInt();
        switch(ch){
```

```
        case 1 :

        //System.out.println("hi");

            if ( year%4==0 && year%100!=0 || year%400==0)

                {

                        System.out.println("year is leap");

                 }

                else {

                    System.out.println("year not leap");

                  }

                            break;

    default:

                            System.out.println("invalid case");

                            break;

        }

 }

}
```
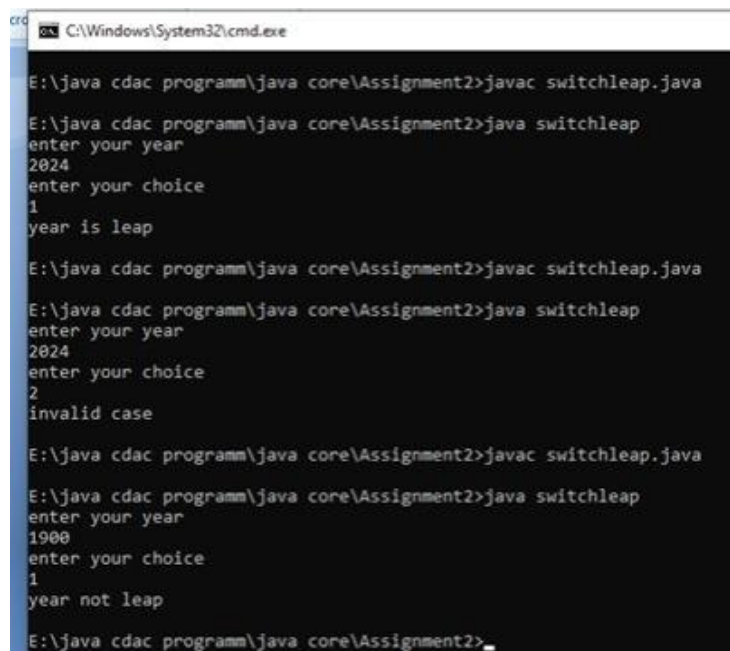

Q.2Implement a program that calculates the Body Mass Index (BMI) based on height and

weight input using if-else to classify the BMI int categories (underweight, normal weight, overweight,etc).

```java
import java.util.Scanner;
class BMI{
public static void main (String [] args){
        Scanner sc = new Scanner(System.in);
         System.out.println("Enter your height :");
         double height = sc.nextDouble();
         double  h = height * height;
         System.out.println(+h);
         System.out.println("enter Your weight :");
         double  weight =sc.nextDouble();
         double bmi = weight/h ;
         int BMIcal = (int)bmi;
         System.out.println("Your BMI is: %.2f " +BMIcal);
         if (BMIcal<=18)
         {
         System.out.println(" Your weight is underweight");
         }
         else if(19<= BMIcal && BMIcal<= 25)
         {
         System.out.println("your weight is normal weight");
         }
         else
         {
                 System.out.println(" your weight is overweight");
         }
```

}

}

```
E:\java cdac programm\java core\Assignment2>javac BMI.java

E:\java cdac programm\java core\Assignment2>java BMI
Enter your height :
1.85
3.4225000000000003
enter Your weight :
60
Your BMI is: %.2f 17
 Your weight is underweight

E:\java cdac programm\java core\Assignment2>
```

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

```
import java.util.Scanner;

class vote{

public static void main(String args[]){

Scanner sc = new Scanner(System.in);

System.out.println("Enter your age");

int age = sc.nextInt();

if (age>= 18 )

{

System.out.println(" you are eligible for voting");

}

else {

System.out.println("not eligible");

}


}}
```

```
E:\java cdac programm\java core\Assignment2>javac vote.java

E:\java cdac programm\java core\Assignment2>java vote
Enter your age
32
 you are eligible for voting

E:\java cdac programm\java core\Assignment2>javac vote.java

E:\java cdac programm\java core\Assignment2>java vote
Enter your age
17
not eligible

E:\java cdac programm\java core\Assignment2>javac vote.java

E:\java cdac programm\java core\Assignment2>java vote
Enter your age
18
 you are eligible for voting

E:\java cdac programm\java core\Assignment2>
```

Q.4Write a program that takes a month (1-12) and prints the corresponding season (Winter,

Spring, Summer, Autumn) using a switch case

class season{

public static void main(String args[]){

Scanner sc = new Scanner(System.in);

System.out.println("Enter the month nu");

int month= sc.nextInt();

int m = month;

switch(month){

 case 1:

 case 2:

 case 12:

                                System.out.println(" this is winter season");

                                        break;

        case 3:

case 4:

```java
case 5 :
                System.out.println(" this is spring season");
                                        break;
case 6:
case 7:
case 8:
                System.out.println(" this is summer season");
                                        break;
case 9:
case 10:
case 11:
                System.out.println(" this is autumn season");
                                        break;
default:        System.out.println("default nu");
                        break;
}}}
```

```
E:\java cdac programm\java core\Assignment2>javac season.java

E:\java cdac programm\java core\Assignment2>java season
Enter the month nu
2
 this is winter season

E:\java cdac programm\java core\Assignment2>java season
Enter the month nu
6
 this is summer season

E:\java cdac programm\java core\Assignment2>java season
Enter the month nu
8
 this is summer season

E:\java cdac programm\java core\Assignment2>java season
Enter the month nu
00
default nu

E:\java cdac programm\java core\Assignment2>_
```

Q.5

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.

```java
import java.util.Scanner;
class demo{
public static void main( String args[]){
Scanner sc = new Scanner(System.in);
 System.out.println("Enter the nu");
 System.out.println("case 1: select for circle");
 System.out.println("case 2: select for square");
 System.out.println("case 3: select for rectangular ");
 System.out.println("case 4: select for triangualr ");
 int nu = sc.nextInt();
 switch (nu){
  case 1:
      System.out.println(" Enter the radius");
                int r = sc.nextInt();
                double pi=3.14;
                double area = pi*r*r;
                System.out.println("Area of circle is :" +area);
                break;
 case 2:
     System.out.println(" Enter the side");
                int s = sc.nextInt();
                int area1 = s*s;
                System.out.println("Area of square is :" + area1);
                break;
 case 3:
     System.out.println(" Enter the Length and breadth");
```

```java
                int l = sc.nextInt();

                int b = sc.nextInt();

                int area2 = l*b;

                System.out.println("Area of rectangular is :" + area2);

                break;
case 4:

    System.out.println(" Enter the height and base");

                int h = sc.nextInt();

                int b1 = sc.nextInt();

                double n= 0.5;

                double area3 = 0.5*(h*b1);

                System.out.println("Area of Triangular is :" + area3);

                break;
}}}
```

```
Enter the nu
case 1: select for circle
case 2: select for square
case 3: select for rectangular
case 4: select for triangualr
5 6

E:\java cdac programm\java core\Assignment2>java demo
Enter the nu
case 1: select for circle
case 2: select for square
case 3: select for rectangular
case 4: select for triangualr
3
 Enter the Length and breadth
5 6
Area of rectangular is :30

E:\java cdac programm\java core\Assignment2>java demo
Enter the nu
case 1: select for circle
case 2: select for square
case 3: select for rectangular
case 4: select for triangualr
4
 Enter the height and base
4 6
Area of Triangular is :12.0

E:\java cdac programm\java core\Assignment2>_
```