**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.

import java.util.\*;

class LeapYear

{

public static void main(String[] args)

{

System.out.println("Enter Year: ");

Scanner sr = new Scanner(System.in);

int year = sr.nextInt();

int checkyear;

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

{

checkyear=1;

}

else

{

checkyear=2;

}

switch(checkyear)

{

case 1 : System.out.println("This is Leap year");

break;

case 2 : System.out.println("This is not leap year");

}

}

}

Output:

Enter Year:

2024

This is Leap year

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.\*;

public class Assig2\_prg2 {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("Enter your height(in meters) : ");

float height = sc.nextFloat();

System.out.println("Enter your weight(in kgs) : ");

Float weight = sc.nextFloat();

sc.close();

Float bmi;

bmi = weight / (height\*height);

if (bmi < 18.5)

{

System.out.println("You are Underweight");

}else if (bmi >= 18.5 && bmi<=24.9)

{

System.out.println("You are Healthy Weight");

}else if (bmi >= 25 && bmi<=29.9)

{

System.out.println("You are OverWeight");

}else if (bmi >= 30 && bmi<=39.9)

{

System.out.println("You are Obese");

}else if (bmi >= 40)

{

System.out.println("You are Severely Obese");

}

}

}

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

import java.util.\*;

public class Assig2\_prg3

{

public static void main(String[] args)

{

Scanner sc = new Scanner(System.in);

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

int age = sc.nextInt();

sc.close();

if (age >= 18)

{

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

} else

{

System.out.println("You are not eligible for voting.");

}

}

}

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

mport java.util.\*;

public class Assig2\_prg4

{

public static void main(String[] args)

{

Scanner sc = new Scanner(System.in);

System.out.println("Enter month(1-12): ");

int month = sc.nextInt();

//sc.close();

switch (month)

{

case 12,1,2: System.out.println("Winter");

break;

case 3,4,5: System.out.println("Spring");

break;

case 6,7,8: System.out.println("Summer");

break;

case 9,10,11: System.out.println("Autumn");

break;

default: System.out.println("Invalid input");

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.\*;

public class Assi2\_prog5

{

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("Select a shape for which you want to the find area(circle, square, rectangle, triangle): ");

String shape = sc.next();

switch (shape)

{

case "circle":

System.out.println("Enter the radius of the circle: ");

float r = sc.nextInt();

float areac = 3.14f\*r\*r;

System.out.println("The area of circle is "+areac);

break;

case "square":

System.out.println("Enter the side of the square: ");

int side = sc.nextInt();

int areas = side\*side;

System.out.println("The area of square is "+areas);

break;

case "rectangle":

System.out.println("Enter the length of the rectangle: ");

int length = sc.nextInt();

System.out.println("Enter the breadth of the rectangle: ");

int width = sc.nextInt();

int arear = length\*width;

System.out.println("The area of rectangle is "+arear);

break;

case "triangle":

System.out.println("Enter the length of each side the triangle: ");

int base = sc.nextInt();

System.out.println("Enter the height of the triangle: ");

int heightt = sc.nextInt();

float areat = (0.5f\*base)\*heightt;

System.out.println("The area of triangle is "+areat);

break;

}

// sc.close();

}

}