**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.

class tellme {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int year;

System.out.println("Enter yr ");

year = sc.nextInt();

if (year % 4 == 0) {

if (year % 100 == 0) {

if (year % 400 == 0) {

return true;

} else {

return false;

}

} else {

return true;

}

} else {

return false;

}

}

With --- Switch-case

class tellme {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int year;

System.out.println("Enter yr ");

year = sc.nextInt();

int leap = 0;

switch (year % 4) {

case 0:

switch (year % 100) {

case 0:

switch (year % 400) {

case 0:

leap = 1;

break;

default:

leap = 0;

break;

}

break;

default:

leap = 1;

break;

}

break;

default:

leap = 0;

break;

}

if (leap == 1) {

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

} else {

System.out.println(year + " is not a 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).

class tellme {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("Enter wt and height in kg and m ");

double n1,n2;

n1 = sc.nextDouble();

n2=sc.nextDouble();

double bm = n2 / Math.pow(n1, 2);

if(bm<18.5)

{

System.out.println("Under");

}

else if(bm>18.5 && bm<24.9)

{

System.out.println("NORMAL");

}

else{

System.out.println("OVER");

}

}

}

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

class age {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int n;

n = sc.nextInt();

if(n>=18)

{

System.out.println("YES");

}

else{

System.out.println("NO");

}

}

}

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

class tellme {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("Enter 1,2,3,4 for the number of the month");

int n;

n = sc.nextInt();

switch(n){

case 1:

System.out.println("jan");

break;

case 2:

System.out.println("feb");

break;

case 3:

System.out.println("march");

break;

case 4:

System.out.println("apr");

break;

case 5:

System.out.println("may");

break;

case 6:

System.out.println("jun");

break;

case 7:

System.out.println("july");

break;

case 8:

System.out.println("aug");

break;

case 9:

System.out.println("sept");

break;

case 10:

System.out.println("oct");

break;

case 11:

System.out.println("nov");

break;

case 12:

System.out.println("dec");

break;

default:

System.out.println("invalid");

}

}

}

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.

class tellme {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("Enter 1,2,3,4 for Circle, Square, Rectangle, Triangle");

int n;

n = sc.nextInt();

switch(n){

case 1:

System.out.println("Circle");

break;

case 2:

System.out.println("SQUARE");

break;

case 3:

System.out.println("rectangle");

break;

case 4:

System.out.println("traingle");

break;

default:

System.out.println("invalid");

}

}

}