**Assignment No- 2**

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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.Scanner;

class Day2 {

public static void main(String args[])

{

Scanner sc = new Scanner(System.***in***);

System.***out***.println("enter the year : ");

int a = sc.nextInt();

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

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

else

System.***out***.println("Year is not a leap year");

}

}

op

enter the year :

200

Year is leap year

import java.util.Scanner;

class Day2 {

public static void main(String args[])

{

Scanner sc =new Scanner(System.***in***);

System.***out***.println("enter the year: ");

int a = sc.nextInt();

int result=0;

if(a%4==0 && a%100!=0)

{

result = 1;

}

else if(a%400==0)

{

result = 2;

}

else if(a%100==0 && a%400!=0)

{

result = 3;

}

else if(a%100==0 && a%4!=0)

{

result = 4;

}

switch(result) {

case 1:

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

case 2:

System.***out***.println(a+ " is a leap year and century..!!!");

break;

case 3:

System.***out***.println(a+ "Year is not leap But Century..!");

break;

case 4:

System.***out***.println(a+ "Not a leap year");

break;

default :

System.***out***.println(a+ " invalid year entered");

}

}

}

Op:

enter the year:

400

400 is a leap year and century..!!!

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.Scanner;

class Day2 {

public static void main(String args[])

{

Scanner sc = new Scanner(System.***in***);

System.***out***.println("Enter the weight into kg :");

float weight = sc.nextFloat();

System.***out***.println("Enter the height into meter :");

float height = sc.nextFloat();

float BMI = weight/(height \* height);

System.***out***.println("BMI = : " +BMI+ " kg/m");

if (BMI < 18.5)

System.***out***.println("You Are Underweignt :( ");

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

System.***out***.println("You Are Normal-Weighted :) ");

else if (BMI>=25)

System.***out***.println("You Are over-weignt :( ");

}

}

Enter the weight into kg :

90

Enter the height into meter :

1

BMI = : 90.0 kg/m

You Are over-weignt :(

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

Scanner sc = new Scanner(System.***in***);

System.***out***.println("Enter the age of the person:");

int age = sc.nextInt();

if (age<=18)

System.***out***.println("Person is not eligible age to vote");

else

System.***out***.println("Person is eligible to vote");

}

}

Op:

Enter the age of the person:

20

Person is eligible to vote

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.Scanner;

class Day2 {

public static void main(String args[])

{

Scanner sc = new Scanner(System.***in***);

int s;

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

int m = sc.nextInt();

switch (m)

{

case 1: System.***out***.println(" Jan ");break;

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

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

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

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

case 6: System.***out***.println(" June ");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("Wrong month chosen ");

}

if(m>=3 && m<=5)

System.***out***.println("Spring");

else if(m>=6 && m<=8)

System.***out***.println("Summer");

else if(m>=9 && m<=11)

System.***out***.println("Autumn");

else

System.***out***.println("winter");

}

}

Op:

Enter the month

12

Dec

winter

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.Scanner;

class Day2 {

public static void main(String args[])

{

Scanner sc = new Scanner(System.***in***);

System.***out***.println("Area of Shapes: ");

System.***out***.println("1.CIRCLE \n2.SQUARE \n3.RECTANGLE \n4.TRIANGLE ");

System.***out***.println("Enter the Choice ");

int m = sc.nextInt();

switch(m)

{

case 1:

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

float r = sc.nextFloat();

double circle = 3.14\*(r\*r);

System.***out***.println("Area of circle = " +circle);

break;

case 2:

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

float s = sc.nextFloat();

float square = s\*s;

System.***out***.println("Area of square = " +square);

break;

case 3:

System.***out***.println("Enter the height and width of the Rectangle: ");

float l = sc.nextFloat();

float b = sc.nextFloat();

float rectangle = l\*b;

System.***out***.println("Area of rectangle = " +rectangle);

break;

case 4:

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

float h = sc.nextFloat();

float base = sc.nextFloat();

float triangle = 1/2\*(base\*h);

System.***out***.println("Area of triangle = " +triangle);

break;

default:

}

}

}

Op:

Area of Shapes:

1.CIRCLE

2.SQUARE

3.RECTANGLE

4.TRIANGLE

Enter the Choice

2

Enter the side length of square:

5

Area of square = 25.0