Assignment no 2

Que 1 :

Ans :**public** **class** LeapYearcheck {

**public** **static** **boolean** isLeapYearIfElse(**int** year) {

**if** (year % 4 == 0) {

**if** (year % 100 == 0) {

**if** (year % 400 == 0) {

**return** **true**;

} **else** {

**return** **false**;

}

} **else** {

**return** **true**;

}

} **else{**

return false; }

Que 2:

**package** code1;

**import** java.util.Scanner;

**public** **class** BMICalculator {

**public** **static** **void** main(String[] args) {

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

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

**double** height = scanner.nextDouble();

System.***out***.print("Enter your weight in kilograms: ");

**double** weight = scanner.nextDouble();

**double** bmi = weight / (height \* height);

System.***out***.printf("Your BMI is: %.2f%n", bmi);

**if** (bmi < 18.5) {

System.***out***.println("You are underweight.");

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

System.***out***.println("You have a normal weight.");

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

System.***out***.println("You are overweight.");

} **else** **if** (bmi >= 30 && bmi < 34.9) {

System.***out***.println("You are in the obese category (Class 1).");

} **else** **if** (bmi >= 35 && bmi < 39.9) {

System.***out***.println("You are in the severely obese category (Class 2).");

} **else** {

System.***out***.println("You are in the morbidly obese category (Class 3).");

}

scanner.close();

}

}

Output:

Enter your height in meters: 4.191

Enter your weight in kilograms: 55

Your BMI is: 3.13

You are underweight.

Que3:

Sol:-

package code2;

**import** java.util.Scanner;

**public** **class** VotingEligibilityChecker {

**public** **static** **void** main(String[] args) {

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

// Input age

System.***out***.print("Enter your age: ");

**int** age = scanner.nextInt();

// Check eligibility

**if** (age >= 18) {

System.***out***.println("You are eligible to vote.");

} **else** {

System.***out***.println("You are not eligible to vote.");

}

scanner.close();

}

}

Output:

Enter your age: 23

You are eligible to vote.

Que4:

**package** code3;

**import** java.util.Scanner;

**public** **class** SeasonFinder {

**public** **static** **void** main(String[] args) {

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

System.***out***.print("Enter the month number (1-12): ");

**int** month = scanner.nextInt();

String season;

**switch** (month) {

**case** 12:

**case** 1:

**case** 2:

season = "Winter";

**break**;

**case** 3:

**case** 4:

**case** 5:

season = "Spring";

season = "Spring";

**break**;

**case** 6:

**case** 7:

**case** 8:

season = "Summer";

**break**;

**case** 9:

**case** 10:

**case** 11:

season = "Autumn";

**break**;

**default**:

season = "Invalid month number. Please enter a number between 1 and 12.";

**break**;

}

System.***out***.println("The corresponding season is: " + season);

scanner.close();

}

}

Output:

Enter the month number (1-12): 5

The corresponding season is: Spring

Que 5:

Sol:

**package** code4;

**import** java.util.Scanner;

**public** **class** ShapeAreaCalculator {

**public** **static** **void** main(String[] args) {

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

System.***out***.println("Select a shape to calculate the area:");

System.***out***.println("1. Circle");

System.***out***.println("2. Square");

System.***out***.println("3. Rectangle");

System.***out***.println("4. Triangle");

System.***out***.print("Enter the number corresponding to your shape: ");

**int** choice = scanner.nextInt();

**double** area = 0;

**switch** (choice) {

**case** 1:

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

**double** radius = scanner.nextDouble();

area = Math.***PI*** \* radius \* radius;

System.***out***.printf("The area of the circle is: %.2f%n", area);

**break**;

**case** 2:

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

**double** side = scanner.nextDouble();

area = side \* side;

System.***out***.printf("The area of the square is: %.2f%n", area);

**break**;

**case** 3:

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

**double** length = scanner.nextDouble();

System.***out***.print("Enter the width of the rectangle: ");

**double** width = scanner.nextDouble();

area = length \* width;

System.***out***.printf("The area of the rectangle is: %.2f%n", area);

**break**;

**case** 4:

System.***out***.print("Enter the base of the triangle: ");

**double** base = scanner.nextDouble();

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

**double** height = scanner.nextDouble();

area = 0.5 \* base \* height;

System.***out***.printf("The area of the triangle is: %.2f%n", area);

**break**;

**default**:

System.***out***.println("Invalid choice. Please select a valid shape.");

**break**;

}

scanner.close();

}

}

Output:

elect a shape to calculate the area:

1. Circle

2. Square

3. Rectangle

4. Triangle

Enter the number corresponding to your shape: Triangle