

# Rajalakshmi Engineering College

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## 2024\_28\_III\_OOPS Using Java Lab

### 2028\_REC\_OOPS using Java\_Week 6\_Q3

Attempt : 1  
Total Mark : 10  
Marks Obtained : 10

#### **Section 1 : Coding**

##### **1. Problem Statement**

Preethi is working on a project to automate sales tax calculations for items in a store. She wants to create a program that takes the price of an item and the sales tax rate as input and calculates the final price of the item after applying the sales tax.

Write a program using the class SalesTaxCalculator, which contains an overloaded method named calculateFinalPrice to handle both integer and double inputs. The program should also include a Main class that takes user input, calls the appropriate method from SalesTaxCalculator, and prints the final price of the item.

Formula Used: Final price = price + ((price \* sales tax rate) / 100)

***Input Format***

The first line of input consists of an integer price (the price of the item for integer inputs).

The second line of input consists of an integer taxRate (the sales tax rate for integer inputs).

The third line of input consists of a double price (the price of the item for double inputs).

The fourth line of input consists of a double taxRate (the sales tax rate for double inputs).

### ***Output Format***

The first line of output prints an integer, representing the final price of the item after applying the sales tax for integer inputs (a and b).

The second line prints a double value, representing the final price of the item after applying the sales tax for double-value inputs (m and n), rounded to two decimal places.

Refer to the sample output for formatting specifications.

### ***Sample Test Case***

Input: 100

10

100.0

5.0

Output: 110

105.00

### ***Answer***

```
import java.util.Scanner;  
class SalesTaxCalculator {
```

```
    // Overloaded method for integer inputs
```

```
    public static int calculateFinalPrice(int price, int taxRate) {
```

```
        // Calculate tax amount and final price using integer arithmetic
```

```
        int taxAmount = (price * taxRate) / 100;
```

```
        int finalPrice = price + taxAmount;
        return finalPrice;
    }

    // Overloaded method for double inputs
    public static double calculateFinalPrice(double price, double taxRate) {
        double taxAmount = (price * taxRate) / 100.0;
        double finalPrice = price + taxAmount;
        // Round to 2 decimal places
        return Math.round(finalPrice * 100.0) / 100.0;
    }
}

class Main {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        int intPrice = scanner.nextInt();
        int intTaxRate = scanner.nextInt();
        double doublePrice = scanner.nextDouble();
        double doubleTaxRate = scanner.nextDouble();

        int finalPriceInt = SalesTaxCalculator.calculateFinalPrice(intPrice,
intTaxRate);
        double finalPriceDouble =
SalesTaxCalculator.calculateFinalPrice(doublePrice, doubleTaxRate);

        System.out.println(finalPriceInt);
        System.out.format("%.2f", finalPriceDouble);
    }
}
```

**Status :** Correct

**Marks :** 10/10