

# Rajalakshmi Engineering College

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Batch: 2028  
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## 2024\_28\_III\_OOPS Using Java Lab

### 2028\_REC\_OOPS using Java\_Week 6\_Q1

Attempt : 1  
Total Mark : 10  
Marks Obtained : 10

#### Section 1 : Coding

##### 1. Problem Statement

Elsa subscribes to a premium service with a base monthly cost, a service tax and an extra feature cost. Assist her in writing an inheritance program that takes input for these values and calculates the total monthly cost.

Refer to the below class diagram:

##### ***Input Format***

The first line of input consists of a double value, representing the base monthly cost.

The second line consists of a double value, representing the service tax.

The third line consists of a double value, representing the extra feature cost.

### **Output Format**

The output prints "Rs. X" where X is a double value, rounded off to two decimal places.

Refer to the sample output for formatting specifications.

### **Sample Test Case**

Input: 10.0

2.5

5.0

Output: Rs. 17.50

### **Answer**

```
import java.util.Scanner;
```

```
class PremiumSubscription {  
    double monthlyCost;  
    double serviceTax;  
    double extraFeatureCost;
```

```
    PremiumSubscription(double monthlyCost, double serviceTax, double  
extraFeatureCost)
```

```
{  
    this.monthlyCost = monthlyCost;  
    this.serviceTax = serviceTax;  
    this.extraFeatureCost = extraFeatureCost;  
}
```

```
    double calculateMonthlyCost() {  
        return monthlyCost + serviceTax + extraFeatureCost;  
    }
```

```
}
```

```
public class Main {  
    public static void main(String[] args) {
```

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

double baseMonthlyCost = scanner.nextDouble();
double serviceTax = scanner.nextDouble();
double extraFeatureCost = scanner.nextDouble();

PremiumSubscription premiumSubscription = new
PremiumSubscription(baseMonthlyCost, serviceTax, extraFeatureCost);

double totalMonthlyCost = premiumSubscription.calculateMonthlyCost();

System.out.printf("Rs. %.2f%n", totalMonthlyCost);

scanner.close();
}
```

**Status :** Correct

**Marks :** 10/10

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

### 2028\_REC\_OOPS using Java\_Week 6\_Q2

Attempt : 1  
Total Mark : 10  
Marks Obtained : 10

#### Section 1 : Coding

##### 1. Problem Statement

Alice is managing an online store and wants to implement a program using inheritance to calculate the selling price of products after applying discounts.

Guide her by following the instructions:

Create a base class called Product with a public double attribute price. Create a subclass called DiscountedProduct, which extends Product and includes a private double attribute discount rate. This subclass has a method called calculateSellingPrice() to determine the final selling price after applying the discount.

Formula: Discounted selling price = price \* (1 - discount rate)

***Input Format***

The first line of input consists of a double value p, the initial price of the product.

The second line consists of a double value d, the discount rate.

### **Output Format**

The output prints "Rs. X", where X is a double value, representing the calculated discounted selling price, rounded off to two decimal places.

If the discount rate is greater than 1, print "Not applicable".

Refer to the sample output for formatting specifications.

### **Sample Test Case**

Input: 50.00

0.20

Output: Rs. 40.00

### **Answer**

```
import java.util.Scanner;
```

```
class Product {  
    public double price;  
}
```

```
class DiscountedProduct extends Product {  
    private double discountRate;
```

```
    DiscountedProduct (double price, double discountRate) {  
        this.price = price;  
        this.discountRate = discountRate;  
    }
```

```
    double calculateSellingPrice() {  
        return price * (1 - discountRate);  
    }  
}
```

```
class ProductPricing {  
    public static void main(String[] args) {  
        Scanner scanner = new Scanner(System.in);
```

```
double initialPrice = scanner.nextDouble();
double discountRate = scanner.nextDouble();
DiscountedProduct discountedProduct = new
DiscountedProduct(initialPrice, discountRate);
double sellingPrice = discountedProduct.calculateSellingPrice();

if (sellingPrice >= 0) {
    System.out.printf("Rs. %.2f%n", sellingPrice);
} else {
    System.out.println("Not applicable");
}
scanner.close();
}
```

**Status :** Correct

**Marks :** 10/10

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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 {  
    public static int calculateFinalPrice(int int_price, int int_tax_rate) {  
        double final_price = int_price + ((int_price * (double) int_tax_rate) / 100.0);  
        return (int) final_price;  
    }  
}
```



```
public static double calculateFinalPrice(double double_price, double
double_tax_rate) {
    return double_price + ((double_price * double_tax_rate) / 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