

Rajalakshmi Engineering College

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Branch: REC

Department: AI & DS - Section 4

Batch: 2028

Degree: B.E - AI & DS

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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;
```

```
// Parent class
```

```
class Subscription {  
    protected double monthlyCost;  
    protected double serviceTax;  
    protected double extraFeatureCost;  
}
```

```
class PremiumSubscription extends Subscription {
```

```
    public PremiumSubscription(double monthlyCost, double serviceTax, double  
extraFeatureCost) {  
        this.monthlyCost = monthlyCost;  
        this.serviceTax = serviceTax;  
        this.extraFeatureCost = extraFeatureCost;  
    }
```

```
    public 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;

// You are using Java
class Product {
    public double price;
}
class DiscountedProduct extends Product {
    private double discountRate;

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

    public 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