Rajalakshmi Engineering College

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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;

// You are using Java
import java.util.Scanner;
import java.util.Scanner;

class Subscription {
    protected double baseCost;
    protected double serviceTax;

    public Subscription(double baseCost, double serviceTax) {
        this.baseCost = baseCost;
        this.serviceTax = serviceTax;
    }

    public double calculateCost() {
        return baseCost + serviceTax;
    }
}

class PremiumSubscription extends Subscription {
    private double extraFeatureCost;

    public PremiumSubscription(double baseCost, double serviceTax, double
extraFeatureCost) {
        super(baseCost, serviceTax);
```

```
        this.extraFeatureCost = extraFeatureCost;
    }

    public double calculateMonthlyCost() {
        return super.calculateCost() + 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
import java.util.Scanner;

class Product {
    public double price;

    public Product(double price) {
        this.price = price;
    }
}

class DiscountedProduct extends Product {
    private double discountRate;

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

```
    public double calculateSellingPrice() {
        if (discountRate > 1) {
            return -1; // invalid case
        }
        return price * (1 - discountRate);
    }
}

class discount{
    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();
    }
}
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*