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.text.DecimalFormat;

// Parent Class
class Subscription {
    // Protected variables can be accessed by the child class
(PremiumSubscription)
    protected double baseMonthlyCost;
    protected double serviceTax;

    // Constructor to initialize the parent's properties
    public Subscription(double baseMonthlyCost, double serviceTax) {
        this.baseMonthlyCost = baseMonthlyCost;
        this.serviceTax = serviceTax;
    }
}

// Child Class - Inherits from Subscription
class PremiumSubscription extends Subscription {
    private double extraFeatureCost;

    // Constructor calls the parent's constructor using 'super'
    public PremiumSubscription(double baseMonthlyCost, double serviceTax,
```

```
double extraFeatureCost) {
        // Initialize parent properties
        super(baseMonthlyCost, serviceTax);
        // Initialize child's specific property
        this.extraFeatureCost = extraFeatureCost;
    }

    // Method required to calculate the total cost
    public double calculateMonthlyCost() {
        // Calculate the total by summing all three costs
        return baseMonthlyCost + serviceTax + extraFeatureCost;
    }
}

// Main class to handle input and output
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***