

# Rajalakshmi Engineering College

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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;
```

```
    public DiscountedProduct(double price, double discountRate) {
```

```
        this.price = price;
```

```
        this.discountRate = discountRate;
```

```
}
```

```
    public double calculateSellingPrice() {
```

```
        return price * (1 - discountRate);
```

```
}
```

```
    public boolean isValid() {
```

```
        return discountRate <= 1;
```

```
        }
    }

public class Main {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        double p = sc.nextDouble();
        double d = sc.nextDouble();
        DiscountedProduct dp = new DiscountedProduct(p, d);
        if (!dp.isValid()) {
            System.out.println("Not applicable");
        } else {
            System.out.printf("Rs. %.2f%n", dp.calculateSellingPrice());
        }
    }
}

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**