

# Rajalakshmi Engineering College

Name: Adithya B

Email: 240701018@rajalakshmi.edu.in

Roll no: 240701018

Phone: 9444117405

Branch: REC

Department: CSE - Section 10

Batch: 2028

Degree: B.E - CSE

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

### 2028\_REC\_OOPS using Java\_Week 6\_Q5

Attempt : 1

Total Mark : 10

Marks Obtained : 2.5

#### **Section 1 : Coding**

##### **1. Problem statement:**

Tim was tasked with developing a grocery shopping app. You have a class hierarchy that includes Item, Produce, and OrganicProduce. Your goal is to calculate the total cost of a shopping list, which may contain a mix of regular produce and organic produce items. Additionally, you need to apply discounts to organic items. Apply a 10% discount on organic produce items

Class Hierarchy:

Item: Base class for all items.

Produce: Subclass of Item for regular produce items.

OrganicProduce: Subclass of Produce for organic produce items.

### ***Input Format***

The first line of input consists of an integer, 'n'.

For each 'n' item, the user will provide:

- A string 'type' representing the item type ('Regular' or 'Organic').
- A string 'name' represents the item name.
- A double 'price' represents the item price.

### ***Output Format***

The output will display the total cost of the shopping list, including discounts on organic items.

Refer to the sample output for format specifications.

### ***Sample Test Case***

Input: 1  
Regular Banana 1.99  
Output: 1.99

### ***Answer***

```
import java.util.Scanner;  
  
class Item{  
    String name;  
    double price;  
    Item(String name,double price){  
        this.name=name;  
        this.price=price;  
    }  
    double calculateCost(){  
        return price;  
    }  
}  
class Produce extends Item{  
    Produce(String name,double price){  
        super(name,price);  
    }  
}
```

```
        double calculateCost(){
            return price;
        }
    }
    class OrganicProduce extends Produce{
        OrganicProduce(String name,double price){
            super(name,price);
        }
        double totalCost(){
            return price*0.9;
        }
    }
    public class Main {
        public static void main(String[] args) {
            Scanner sc = new Scanner(System.in);

            int n = sc.nextInt();
            sc.nextLine() // Consume newline

            double totalCost = 0.0;

            for (int i = 0; i < n; i++) {
                String type = sc.next();
                String name = sc.next();
                double price = sc.nextDouble();

                if (type.equals("Regular")) {
                    Item item = new Produce(name, price);
                    totalCost += item.calculateCost();
                } else if (type.equals("Organic")) {
                    Item item = new OrganicProduce(name, price);
                    totalCost += item.calculateCost();
                }
            }

            System.out.printf("%.2f%n", totalCost);
        }
    }
}
```

Status : Partially correct

Marks : 2.5/10