

## Lab Exercise 4

Programming In Java

Implement the concept of **package** and **interface** in your domain

Pharmacy.java

Java

```
package lab_4.pharmacyPackage;

public class Pharmacy implements PriceCalculable {
    String id;
    String product_name;
    private int quantity;
    private double price;

    // default constructor
    public Pharmacy() {
        this.id = "Unknown";
        this.product_name = null;
        this.quantity = 0;
        this.price = 0.0;
    }

    // parameterized constructor
    public Pharmacy(String id, String product_name, double price) {
        this.id = id;
        this.product_name = product_name;
        this.price = price;
    }

    // parameterized constructor 2
    public Pharmacy(String id, String product_name, int quantity, double price) {
        this.id = id;
        this.product_name = product_name;
        this.quantity = quantity;
        this.price = price;
    }

    public void display() {
        System.out.println("Medication ID : " + id);
        System.out.println("Medicine Name : " + product_name);
        System.out.println("Quantity : " + quantity);
    }
}
```

```

        System.out.println("Price : " + price);
        calculateTotalPrice("Aspirin");
        System.out.println("Price of 10 Items : $" + calculateTotalPrice(10));
        System.out.println("Total Price: $" + calculateTotalPrice());
    }

    // method overloading
    public void calculateTotalPrice(String product_name) {
        System.out.println("Total price of medicine is shown below :");
    }

    @Override
    public double calculateTotalPrice() {
        return price * quantity;
    }

    @Override
    public double calculateTotalPrice(int quantity) {
        return price * quantity;
    }

    public static void main(String[] args) {
        Pharmacy pharmacy = new Pharmacy();
        System.out.println("Default Constructor");
        pharmacy.display();
        Pharmacy medication1 = new Pharmacy("D308", "Paracetamol", 20.0);
        System.out.println("\nConstructor Overloading 1");
        medication1.display();
        Pharmacy medication2 = new Pharmacy("D327", "Aspirin", 100, 48.5);
        System.out.println("\nConstructor Overloading 2");
        medication2.display();
    }
}

```

## PriceCalculable.java

```

Java
package lab_4.pharmacyPackage;
public interface PriceCalculable {
    double calculateTotalPrice();
    double calculateTotalPrice(int quantity);
}

```

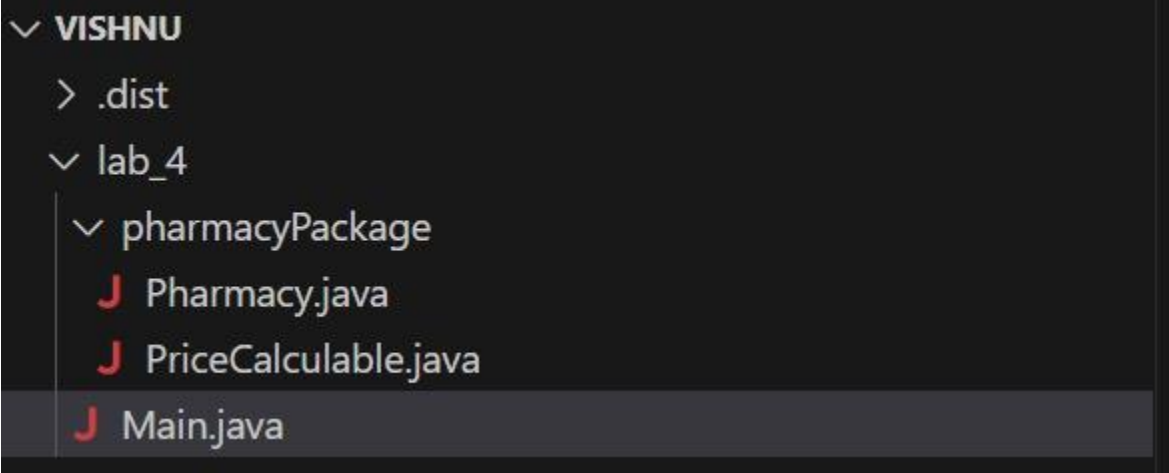
## Main.java

```
Java
package lab_4;
import lab_4.pharmacyPackage.*;

public class Main {
    public static void main(String[] args) {

        Pharmacy pharmacy = new Pharmacy();
        System.out.println("Default Constructor");
        pharmacy.display();
        Pharmacy medication1 = new Pharmacy("D308", "Paracetamol", 20.0);
        System.out.println("\nConstructor Overloading 1");
        medication1.display();
        Pharmacy medication2 = new Pharmacy("D327", "Aspirin", 100, 48.5);
        System.out.println("\nConstructor Overloading 2");
        medication2.display();
    }
}
```

## File Structure



```

VISHNU
├── .dist
├── lab_4
│   ├── pharmacyPackage
│   │   ├── Pharmacy.java
│   │   ├── PriceCalculable.java
│   └── Main.java
```

The screenshot shows a file explorer with a dark theme. The root directory is 'VISHNU'. Under 'VISHNU', there is a folder '.dist' and a folder 'lab\_4'. Inside 'lab\_4', there is a folder 'pharmacyPackage' and a file 'Main.java'. The 'pharmacyPackage' folder contains two files: 'Pharmacy.java' and 'PriceCalculable.java'. The 'Main.java' file is highlighted with a grey background.

## Output

```
Default Constructor  
Medication ID : Unknown  
Medicine Name : null  
Quantity : 0  
Price : 0.0  
Total price of medicine is shown below :  
Price of 10 Items : $0.0  
Total Price: $0.0
```

```
Constructor Overloading 1  
Medication ID : D308  
Medicine Name : Paracetamol  
Quantity : 0  
Price : 20.0  
Total price of medicine is shown below :  
Price of 10 Items : $200.0  
Total Price: $0.0
```

```
Constructor Overloading 2  
Medication ID : D327  
Medicine Name : Aspirin  
Quantity : 100  
Price : 48.5  
Total price of medicine is shown below :  
Price of 10 Items : $485.0  
Total Price: $4850.0
```

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