**Exercise 4: Implementing the Adapter Pattern**

**Scenario:**

You are developing a payment processing system that needs to integrate with multiple third-party payment gateways with different interfaces. Use the Adapter Pattern to achieve this.

**Steps:**

1. **Create a New Java Project:**
   * Create a new Java project named **AdapterPatternExample**.
2. **Define Target Interface:**
   * Create an interface **PaymentProcessor** with methods like **processPayment()**.

public interface PaymentProcessor {

    void processPayment(double amount);

}

1. **Implement Adaptee Classes:**
   * Create classes for different payment gateways with their own methods.

**PayPal.java:**

public class PayPal {

    public void sendMoney(double money) {

        System.out.println("Paid Rs." + money + " using PayPal.");

    }

}

**Stripe.java:**

public class Stripe {

    public void makePayment(double cost) {

        System.out.println("Charged Rs." + cost + " using Stripe.");

    }

}

1. **Implement the Adapter Class:**
   * Create an adapter class for each payment gateway that implements PaymentProcessor and translates the calls to the gateway-specific methods.

**PayPalAdapter.java:**

public class PayPalAdapter implements PaymentProcessor {

    private PayPal payPal;

    public PayPalAdapter(PayPal payPal) {

        this.payPal = payPal;

    }

    @Override

    public void processPayment(double amount) {

        payPal.sendMoney(amount);

    }

}

**StripeAdapter.java:**

public class StripeAdapter implements PaymentProcessor {

    private Stripe stripe;

    public StripeAdapter(Stripe stripe) {

        this.stripe = stripe;

    }

    @Override

    public void processPayment(double amount) {

        stripe.makePayment(amount);

    }

}

1. **Test the Adapter Implementation:**
   * Create a test class to demonstrate the use of different payment gateways through the adapter.

**Main.java:**

public class Main {

    public static void main(String[] args) {

        PayPal payPal = new PayPal();

        PaymentProcessor paypalProcessor = new PayPalAdapter(payPal);

        paypalProcessor.processPayment(500.00);

        Stripe stripe = new Stripe();

        PaymentProcessor stripeProcessor = new StripeAdapter(stripe);

        stripeProcessor.processPayment(1200.50);

    }

}

**Output:**

Paid Rs.500.0 using PayPal.

Charged Rs.1200.5 using Stripe.P