**Exercise 8: Implementing the Strategy Pattern**

**Scenario:**

You are developing a payment system where different payment methods (e.g., Credit Card, PayPal) can be selected at runtime. Use the Strategy Pattern to achieve this.

**File Structure:**

PaymentStrategy.java – Strategy interface

CreditCardPayment.java – Concrete strategy

PayPalPayment.java – Concrete strategy

PaymentContext.java – Context class

TestStrategy.java – Main class

**Codes:**

**//PaymentStrategy.java**

public interface PaymentStrategy {

void pay(double amount);

}

**// CreditCardPayment.java**

public class CreditCardPayment implements PaymentStrategy {

private String cardNumber;

private String cardHolderName;

public CreditCardPayment(String cardNumber, String cardHolderName) {

this.cardNumber = cardNumber;

this.cardHolderName = cardHolderName;

}

@Override

public void pay(double amount) {

System.out.println("Paid ₹" + amount + " using Credit Card: " + cardNumber);

}

}

**// PayPalPayment.java**

public class PayPalPayment implements PaymentStrategy {

private String email;

public PayPalPayment(String email) {

this.email = email;

}

@Override

public void pay(double amount) {

System.out.println("Paid ₹" + amount + " using PayPal account: " + email);

}

}

**//PaymentContext.java**

public class PaymentContext {

private PaymentStrategy paymentStrategy;

public void setPaymentStrategy(PaymentStrategy paymentStrategy) {

this.paymentStrategy = paymentStrategy;

}

public void payAmount(double amount) {

if (paymentStrategy == null) {

System.out.println("No payment method selected!");

} else {

paymentStrategy.pay(amount);

}

}

}

//**TestStrategy.java**

public class TestStrategy {

public static void main(String[] args) {

PaymentContext context = new PaymentContext();

context.setPaymentStrategy(new CreditCardPayment("1234-5678-9012-3456", "Geethamrutha"));

context.payAmount(2500.00);

context.setPaymentStrategy(new PayPalPayment("geetha@example.com"));

context.payAmount(1800.00);

}

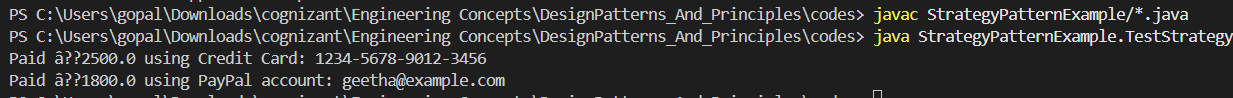
}

**Compile and Run:**

javac StrategyPatternExample/\*.java

java StrategyPatternExample.TestStrategy

**Output:**

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