**Quiz 2**

**Github:** <https://github.com/Dubs2310/CS5800-Quiz-2.git>

**Adapter**

* PaymentGateway

public interface PaymentGateway {  
 public void printUserInfo();  
}

* PayPal

public class PayPal implements PaymentGateway {  
 private String userEmail;  
 public PayPal(String userEmail) { this.userEmail = userEmail; }  
  
 @Override  
 public void printUserInfo() {  
 System.*out*.println("Email: " + this.userEmail);  
 }  
}

* Stripe

public class Stripe implements PaymentGateway {  
 private String cardholderName;  
 private String cardNumber;  
 private String expirationDate;  
   
 public Stripe(String cardholderName, String cardNumber, String expirationDate) {   
 this.cardholderName = cardholderName;  
 this.cardNumber = cardNumber;  
 this.expirationDate = expirationDate;  
 }  
  
 @Override  
 public void printUserInfo() {  
 System.*out*.println("Name on Card: " + this.cardholderName);  
 System.*out*.println("Card Number: " + this.cardNumber);  
 System.*out*.println("Card Expiration: " + this.expirationDate);  
 }  
}

* Square

public class Square implements PaymentGateway {  
 private String locationID;  
 public Square(String locationID) { this.locationID = locationID; }  
  
 @Override  
 public void printUserInfo() {  
 System.*out*.println("Location ID: " + this.locationID);  
 }  
}

* PaymentProcessor

public interface PaymentProcessor {  
 public void processPayment(double paymentAmount);  
}

* PaymentAdapter

public class PaymentAdapter implements PaymentProcessor {  
 private PaymentGateway gateway;  
 public PaymentAdapter(PaymentGateway gateway) { this.gateway = gateway; }  
  
 @Override  
 public void processPayment(double paymentAmount) {  
 System.*out*.println("Processing your payment:");  
 gateway.printUserInfo();  
 System.*out*.println("Amount: " + paymentAmount);  
 System.*out*.println("Thank you for using " + gateway.getClass().getSimpleName() + "!\n");  
 }  
}

* Main

/\*   
 \* Explanation:  
 \* There are 3 payment gateways (PayPal, Stripe, Square)  
 \* Each have their unique fields when it comes to payment processing  
 \* Only the payment amount is common among all gateways  
 \* The PaymentGateway interface is responsible for printing user input for the respective gateways  
 \* The PaymentProcessor, on the other hand, is responsible for processing the payment amount for the respective gateway  
 \* To avoid having to change the payment processing logic for each gateway that is implemented, we have a PaymentAdapter  
 \* The PaymentAdapter allows the PaymentGateway to connect with the PaymentProcessor, so it can pass user input along  
\*/  
  
public class Main {  
 public static void main(String[] args) {  
 double paymentAmount = 1100.25;  
  
 PaymentGateway payPal = new PayPal("abdullahi@cpp.com");  
 PaymentProcessor payPalProcessor = new PaymentAdapter(payPal);  
 payPalProcessor.processPayment(paymentAmount);  
  
 PaymentGateway stripe = new Stripe("Abdullah Irfan Siddiqui", "1200-4369-2783-1176", "04/24");  
 PaymentProcessor stripeProcessor = new PaymentAdapter(stripe);  
 stripeProcessor.processPayment(paymentAmount);  
   
 PaymentGateway square = new Square("Location@2310");  
 PaymentProcessor squareProcessor = new PaymentAdapter(square);  
 squareProcessor.processPayment(paymentAmount);  
 }  
}

* Output

A screenshot of a computer

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