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CS 5800 Advanced Software Engineering

Quiz 2

Github:

**Quiz 2: Adapter Design Pattern**

File - C:\msys64\home\Sean\soft\_eng\_examples\adapter\_design\src\Main.java

1 import java.util.Vector; 2

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

5

6 Vector<PaymentGateway> payment\_gateways = new Vector<>();

7

1. PaypalGateway paypal\_gateway = new PaypalGateway();
2. paypal\_gateway.SetEmail("test@test.com");
3. payment\_gateways.add(paypal\_gateway);

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1. StripeGateway stripe\_gateway = new StripeGateway();
2. stripe\_gateway.SetCardName("Joe");
3. stripe\_gateway.SetCardNumber("161843541354");
4. stripe\_gateway.SetExpiration(3, 2028);
5. payment\_gateways.add(stripe\_gateway);

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1. SquareGateway square\_gateway = new SquareGateway();
2. square\_gateway.SetLocationId(3);
3. PaymentAdapter payment\_adapter = new PaymentAdapter(square\_gateway);
4. payment\_gateways.add(payment\_adapter);

22

1. for (PaymentGateway pay : payment\_gateways) {
2. String result = pay.PayAmount(1.0f);
3. System.out.println(result);
4. }

27

1. }
2. }

File - C:\msys64\home\Sean\soft\_eng\_examples\adapter\_design\src\PaypalGateway.java

1. public class PaypalGateway implements PaymentGateway {
2. private String email;

3

1. public void SetEmail (String email) {
2. this.email = email;
3. }

7

1. @Override
2. public String PayAmount(float amount) {
3. String result;
4. if (email.contains("@") && email.contains(".com")) {
5. result = "Using Paypal to make payment of $" + amount;
6. }
7. else {
8. result = "PayPal needs valid email!";
9. }

17

1. return result;
2. }
3. }

File - C:\msys64\home\Sean\soft\_eng\_examples\adapter\_design\src\SquareGateway.java

1. public class SquareGateway {
2. private int locationId;

3

1. void SetLocationId(int location\_id) {
2. this.locationId = location\_id;
3. }

7

1. public String PayLocation(float amount) {
2. String result;
3. if (locationId >= 0) {
4. if ((locationId % 2) == 0) {
5. result = "Using Square to make payment of $" + amount \* 1.02f;
6. }
7. else {
8. result = "Using Square to make payment of $" + amount \* 1.01f;
9. }
10. }
11. else {
12. result = "Square needs valid location id!";
13. }

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1. return result;
2. }
3. }

File - C:\msys64\home\Sean\soft\_eng\_examples\adapter\_design\src\StripeGateway.java

1. public class StripeGateway implements PaymentGateway {
2. private String name;
3. private String cardNumber; 4 CardExpiration expiration;

5

1. public void SetCardName (String name) {
2. this.name = name;
3. }

9

1. public void SetCardNumber (String card\_number) {
2. cardNumber = card\_number;
3. }

13

1. public void SetExpiration(int month, int year) {
2. expiration = new CardExpiration();
3. expiration.month = month;
4. expiration.year = year;
5. }

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1. @Override
2. public String PayAmount(float amount) {
3. String result;
4. if (!name.isEmpty() && !cardNumber.isEmpty() && (expiration.year >= 2023) && ( expiration.month >= 1)) {
5. result = "Using Stripe to make payment of $" + amount;
6. }
7. else {
8. result = "Stripe needs valid card name, number and expiration date!";
9. }

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1. return result;
2. }
3. }

File - C:\msys64\home\Sean\soft\_eng\_examples\adapter\_design\src\CardExpiration.java

1. public class CardExpiration {
2. public int month;
3. public int year;
4. }

File - C:\msys64\home\Sean\soft\_eng\_examples\adapter\_design\src\PaymentAdapter.java

1. public class PaymentAdapter implements PaymentGateway {
2. private final SquareGateway squareGateway;

3

1. PaymentAdapter(SquareGateway square\_gateway) {
2. this.squareGateway = square\_gateway;
3. }

7

1. @Override
2. public String PayAmount(float amount) {
3. return squareGateway.PayLocation(amount);
4. }
5. }

File - C:\msys64\home\Sean\soft\_eng\_examples\adapter\_design\src\PaymentGateway.java

1. public interface PaymentGateway {
2. String PayAmount(float amount);
3. }

Text

Description automatically generated