Case Study 2: Java-Based Configuration

Case Study Title: E-Commerce Order Processing

POJO Classes:

1. Product.java

◦ addProduct(), listProducts()

2. Order.java

◦ createOrder(), cancelOrder()

3. Payment.java

◦ processPayment(), refundPayment()

Code:

```
//Product.java
package com.ecommerce;
import java.util.ArrayList;
import java.util.List;
public class Product {
private List<String> productList = new ArrayList<>();
public void addProduct(String product) {
productList.add(product);
System.out.println("Product added: " + product);
}
public void listProducts() {
System.out.println("Available products:");
productList.forEach(System.out::println);
}
}
//Order.java
package com.ecommerce;
```

```
public class Order {
public void createOrder(String product) {
System.out.println("Order created for: " + product);
}
public void cancelOrder(String product) {
System.out.println("Order cancelled for: " + product);
}
}
//Payment.java
package com.ecommerce;
public class Payment {
public void processPayment(String product) {
System.out.println("Payment processed for: " + product);
}
public void refundPayment(String product) {
System.out.println("Payment refunded for: " + product);
}
}
//EcommerceService.java
package com.ecommerce;
public class EcommerceService {
private Product product;
private Order order;
private Payment payment;
public EcommerceService(Product product, Order order, Payment payment) {
this.product = product;
this.order = order;
this.payment = payment;
}
public void placeOrder(String productName) {
product.addProduct(productName);
order.createOrder(productName);
payment.processPayment(productName);
}
public void cancelOrder(String productName) {
order.cancelOrder(productName);
payment.refundPayment(productName);
}
public void showProducts() {
product.listProducts();
}
}
//AppConfig.java
package com.ecommerce;
import org.springframework.context.annotation.Bean;
import org.springframework.context.annotation.Configuration;
@Configuration
public class AppConfig {
@Bean
public Product product() {
return new Product();
}
@Bean
public Order order() {
```

```
return new Order();
}
@Bean
public Payment payment() {
return new Payment();
}
@Bean
public EcommerceService ecommerceService() {
return new EcommerceService(product(), order(), payment());
}
}
//Main.java
package com.ecommerce;
import
org.springframework.context.annotation.AnnotationConfigApplicationContext;
public class Main {
public static void main(String[] args) {
AnnotationConfigApplicationContext context =
new AnnotationConfigApplicationContext(AppConfig.class);
EcommerceService service = context.getBean(EcommerceService.class);
service.placeOrder("Laptop");
service.placeOrder("Smartphone");
service.showProducts();
service.cancelOrder("Laptop");
context.close();
}
}
```

```
Output: Laptop

Smartphone

Order cancelled for: Laptop

Payment refunded for: Laptop
```