

Advanced Software Development Coursework

Diagrams Report

23085483 – Tran Duy Anh
23085487 – Nguyen Nhat Minh
23085492 – Nguyen Duc Trung

Contents

| | | |
|----------|-----------------------------|----------|
| 1 | Introduction | 4 |
| 2 | Use Case Diagram | 4 |
| 3 | Class Diagram | 5 |
| 4 | Sequence Diagrams | 6 |
| 4.1 | Adding a Product | 6 |
| 4.2 | Payment Process | 6 |
| 4.3 | Shop Registration | 7 |
| 4.4 | Order Processing | 7 |
| 5 | Conclusion | 8 |

List of Figures

| | | |
|---|---|---|
| 1 | Use Case Diagram of the E-commerce System | 4 |
| 2 | Class Diagram of the E-commerce System | 5 |
| 3 | Sequence Diagram: Adding a Product | 6 |
| 4 | Sequence Diagram: Payment Process | 6 |
| 5 | Sequence Diagram: Shop Registration | 7 |
| 6 | Sequence Diagram: Order Processing | 8 |

1 Introduction

This report contains the diagrams required for Element 1 of the Advanced Software Development coursework (UFCF8S-30-2). It includes a use case diagram, a class diagram, and four sequence diagrams, all in a single PDF document as required by the assignment. These diagrams model a design for an e-commerce system, specifying interactions and structures required for the system's functionality.

2 Use Case Diagram

The use case diagram illustrates interactions among actors (Customer, Shop Owner, Admin, Third-Party) and the e-commerce system. It includes use cases such as registration, login, product management, order handling, payment, and system administration.

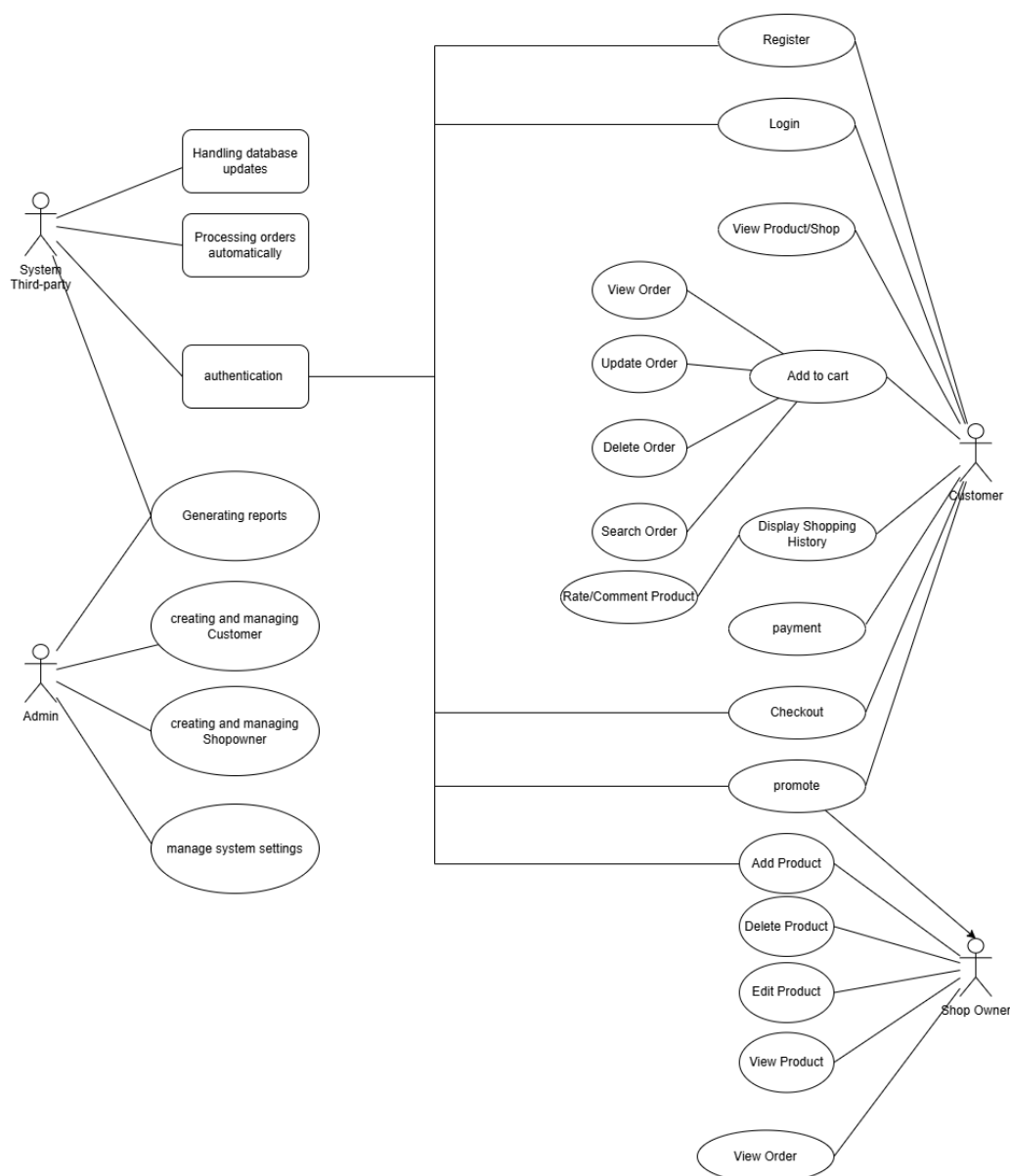


Figure 1: Use Case Diagram of the E-commerce System

3 Class Diagram

The class diagram defines the static structure of the e-commerce system, including the classes: User, Payment, Order, OrderItem, Shop, Product, ProductImage, and Category, Cart, CartItem

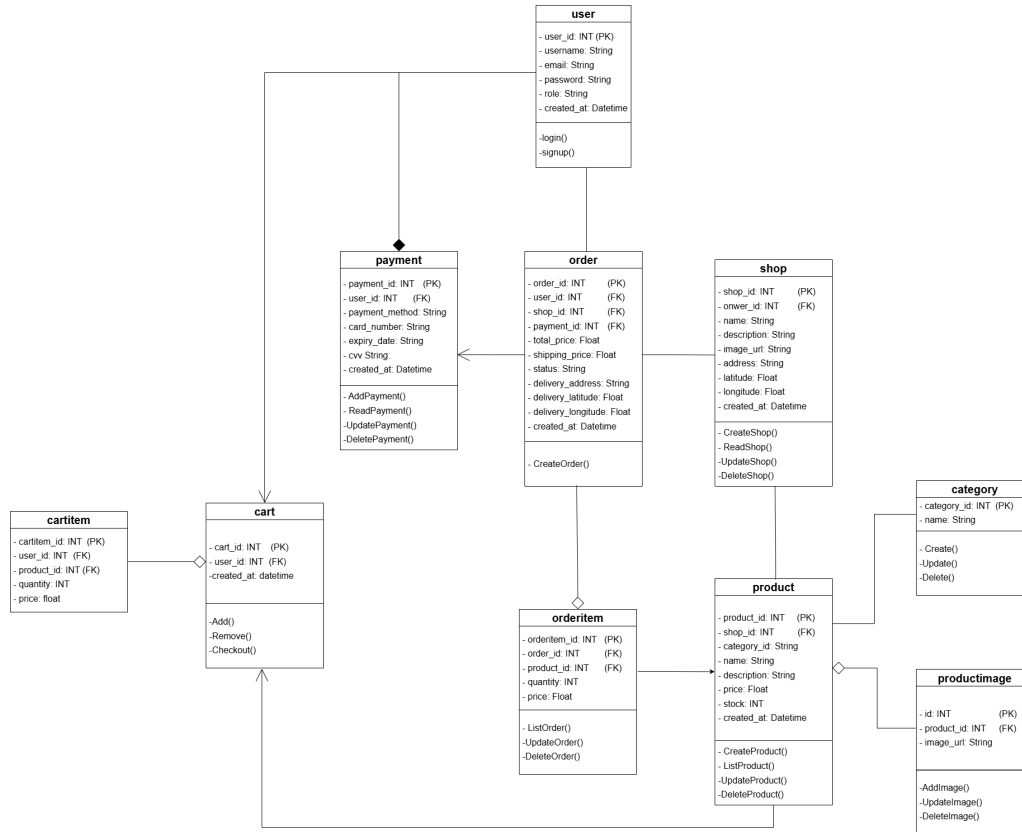


Figure 2: Class Diagram of the E-commerce System

4 Sequence Diagrams

4.1 Adding a Product

This sequence diagram shows the ShopOwner adding a product to the system. The ShopOwner logs in via the AuthController, then communicates with the ProductService to verify the product category and store the product details and images using the ProductRepository, CategoryRepository, and ProductImageRepository. The process is completed with a success message being sent back to the ShopOwner.

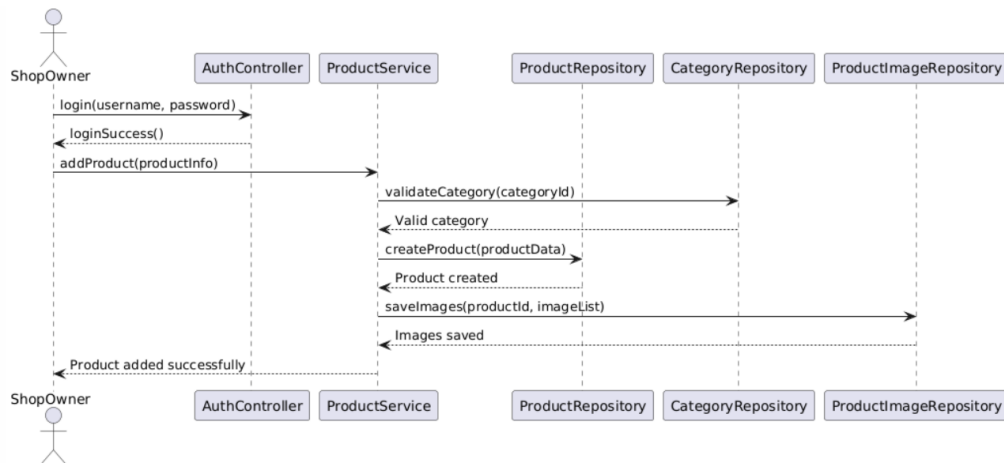


Figure 3: Sequence Diagram: Adding a Product

4.2 Payment Process

This sequence diagram shows a User paying. The User logs in via the AuthController and submits payment information to the PaymentService, which saves the payment to the PaymentRepository and links it to an order via the OrderService and OrderRepository. A confirmation is returned to the User.

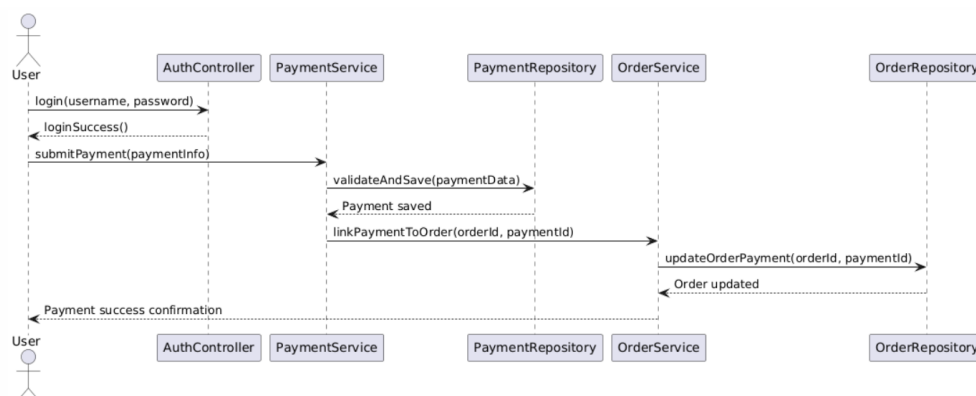


Figure 4: Sequence Diagram: Payment Process

4.3 Shop Registration

This graph shows a ShopOwner registering a new shop. After authentication from the AuthController, the ShopOwner submits shop information, and the ShopService checks for uniqueness of the shop name with the ShopRepository prior to creating the shop. Success message is sent back upon success.

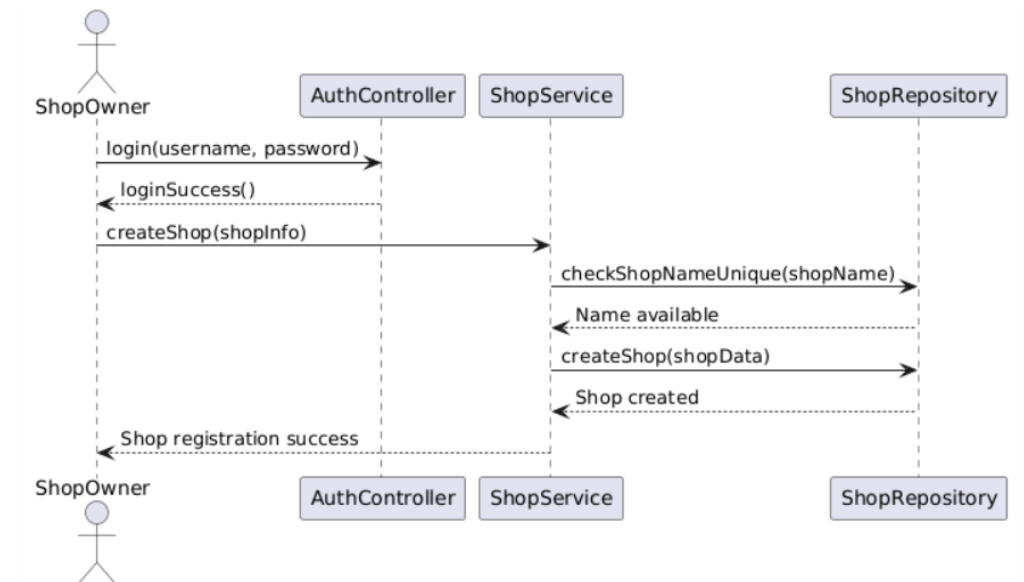


Figure 5: Sequence Diagram: Shop Registration

4.4 Order Processing

This sequence diagram models the order processing process initiated by a User. The User logs in, views products via the ProductService, places an order with the OrderService, makes a payment via the PaymentService, and updates inventory in the ProductRepository. The sequence ends with an order confirmation to the User.

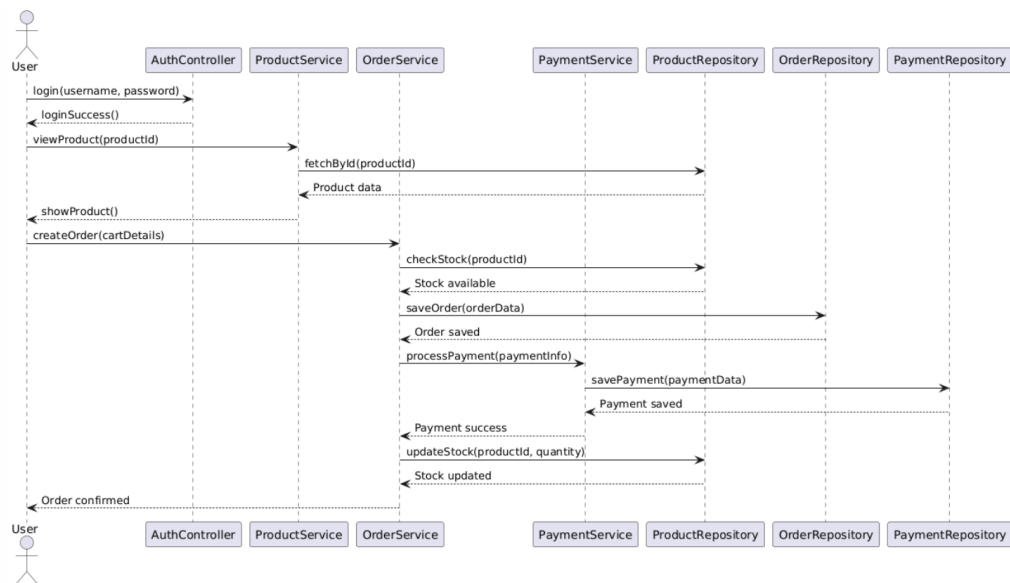


Figure 6: Sequence Diagram: Order Processing

5 Conclusion

This document includes all the required diagrams for Element 1 as per the assignment requirements. The sequence diagrams depict significant processes (payment, shop registration, adding products, and order processing), while the use case and class diagrams provide an overview of the system functionality and structure.