LOW LEVEL DESIGN

QUEST-PICKS

Version<4.0>

Table of Content

1. Introduction 01
1.1 Purpose 01
1.2 Document Conventions 01
1.2.1 Terminology 01
1.2.2 Code snippets 01
1.2.3 Diagrams 01
1.3 Intended Audience and Reading Suggestions 01
1.4 References 01
2. System Use Cases 02
2.1 Customers 02
2.1.1 Registered Customers 02
2.1.2Unregistered Customers 02
2.2 Admin 02
2.3 Register 02
2.4 View items 02
2.5 Add to cart 02
2.6 Order items 02
2.7 Add products 02
2.8 Update products 02
3. Detailed System Design 02
3.1 Architecture 02
3.2 Data Structures 02
3.3 Algorithms 03
3.4 Interfaces 03
3.5 Class Diagram 03
3.6 Use Case Design 04
3.7 High Level Design 05
3.7.1 User Diagram 05
3.7.2 Admin Diagram 05
3.8 Activity Diagram 06
3.8.1 User Activity Diagram 06
3.8.2 Admin Activity Diagram 08
3.9 Navigation Diagram 09
3.10 ER Diagram 09
3.11 Sequence Diagram 10
3.11.1. Add Category Sequence Diagram 11
3.11.2 Edit Category Sequence Diagram 12

3.11.3 Delete Category Sequence Diagram 13
3.11.4 Add Product Sequence Diagram 14
3.11.5 Edit Product Sequence Diagram 16
3.11.6 Delete Product Sequence Diagram 15
3.11.7 Display orders list sequence diagram 16
4. Security 17
Appendix a Glossary 17

1. Introduction

1.1 Purpose:

The aim of this document is to gather and analyze and give an in-depth insight of the complete Online Shopping software system by defining the problem statement in detail. The project aims to develop a web-based application to improve the service to the customers and merchants which in turn increases the sales and profit in "online shopping". The detailed requirements of the Online Shopping System are provided in this document.

1.2 Document Conventions:

1.2.1 Terminology: The document uses standard software development terminology, with terms such as entities, repositories, services, and controllers defined and used consistently throughout the document.

1.2.2 Code snippets: Code snippets are included throughout the document that make it easier to enter repeating code patterns, such as loops or conditional statements.

1.2.3 Diagrams: Diagrams are used to help explain relationships and connections between different parts of the system.

1.3 Intended Audience and Reading Suggestions:

This LLD document is intended for developers, project managers and other technical stakeholders who will be involved in the design, development, and implementation of the Online Shopping web application. The document is organized in a way that allows readers to understand the system's architecture and implementation details, even if they are not familiar with all the technologies used.

1.4 References:

Spring Boot documentation (https://spring.io/projects/spring-boot)
Hibernate documentation (https://hibernate.org/orm/documentation/5.4/)
MySQL documentation (https://dev.mysql.com/doc/)
JSP documentation (https://docs.oracle.com/javaee/6/tutorial/doc/bnafd.html)

2. System Use Cases:

2.1 Customers: Customers are the ones who order the items in online shopping website. There are two types of customers. They are Registered and Unregistered Customers.

2.1.1. Registered Customer: Registered Customers can directly view the items, add to the cart and order items.

2.1.2. Unregistered Customer: Unregistered Customers need to register first and then can view and order items.

2.2 Admin: Admin can check all the details of customers' orders. Admin can also add new products and update the products on the website.

2.3 Seller: Seller can add new products and update the products on the website.

2.4 Register: Unregistered customers have to register in order to view and place orders.

2.5 View Items: Customers can view their desired item.

2.6 Add to cart: After viewing the item the customer can add the item to the cart.

2.7 Order items: Customers can place orders for their desired item.

2.8 Add Products: Admin and Seller can add new products to the website.

2.9 Update Products: Admin and Seller can update the product in case any changes are made to the product.

3. Detailed System Design

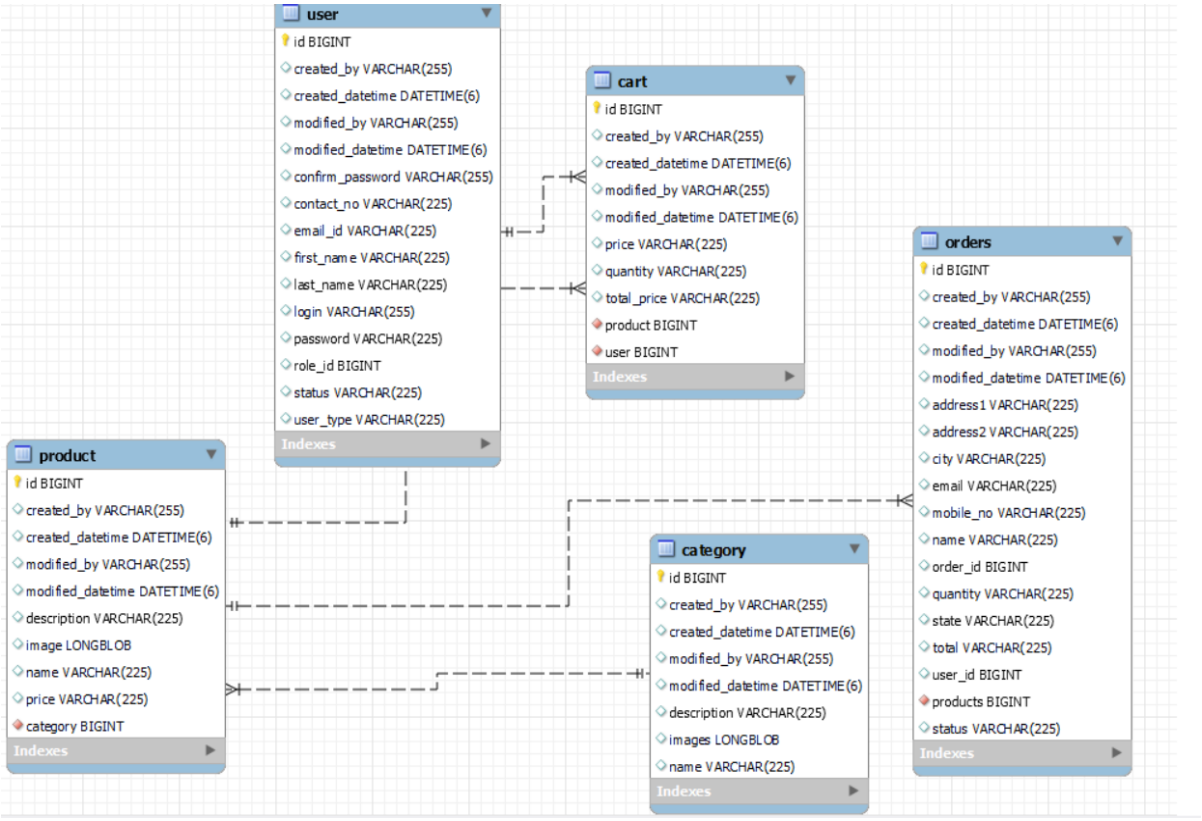
3.1 Architecture: The system will be a web-based application with a three-tier architecture: presentation, process, and data access layers. Spring Boot will be used as the foundation for the application, providing the web server, dependency injection, and other features. Hibernate will be used as the Object-Relational Mapping (ORM) framework for interacting with the MySQL database.

3.2 Data Structures: The system will use a set of entities that will be used to model the various elements of the system, such as item names, details and description. The entities will be represented as Java classes, and Hibernate will be used to map them to database tables. The system will use a set of repositories that will be used to interact with the database and perform CRUD operations on the library entities.

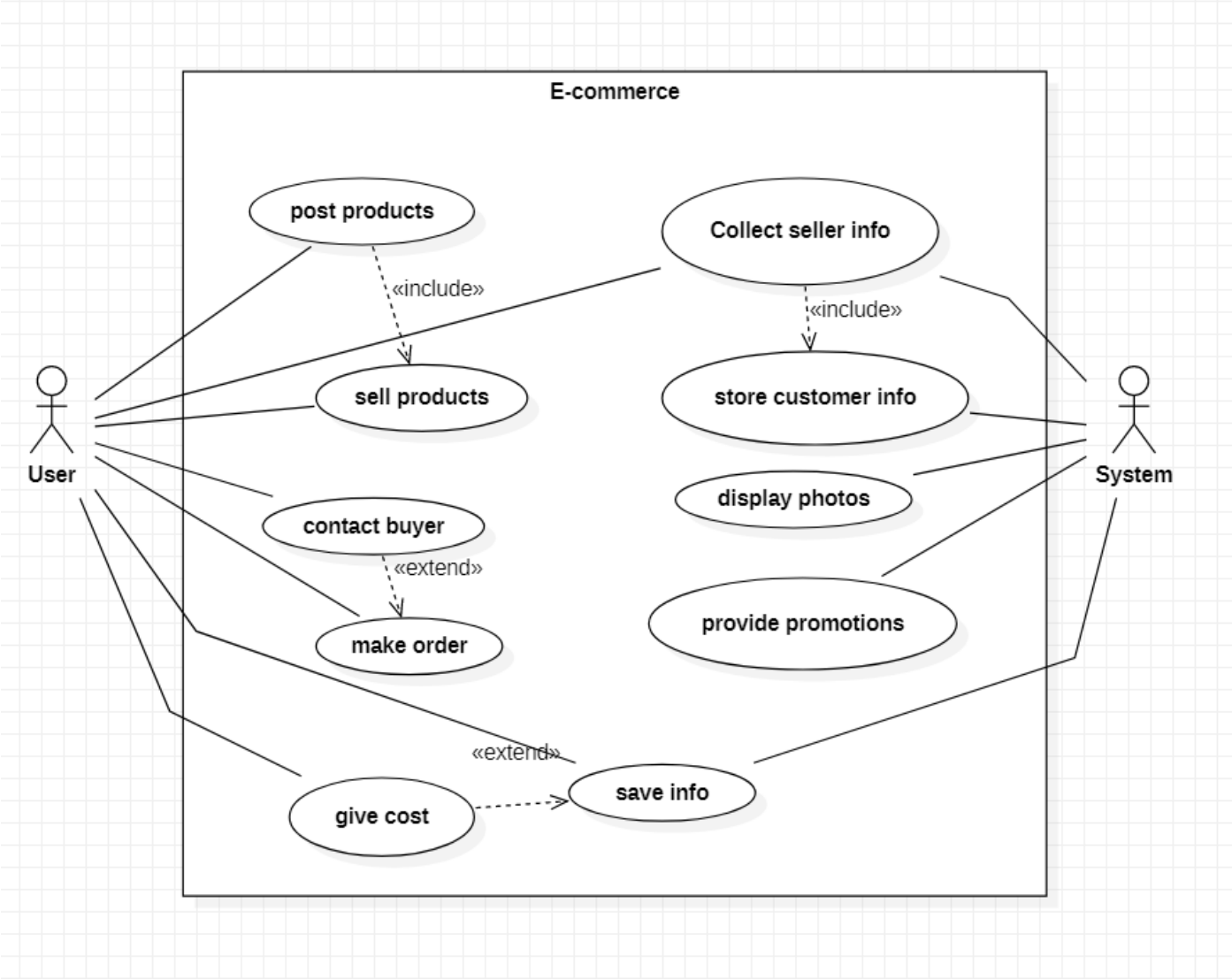
3.3 Algorithms: The system will use several algorithms for searching items and other shopping item-related information. The system will implement the algorithm to calculate bills. The system will implement the algorithm to check the availability of items before adding it to the cart.

3.4 Interfaces: The system will use a set of services that will handle the business logic of the application, such as adding, updating, and deleting orders, and other shopping item-related information. The system will use JSP for the front-end, which will provide the user interface for the application.

3.5 Class Diagram

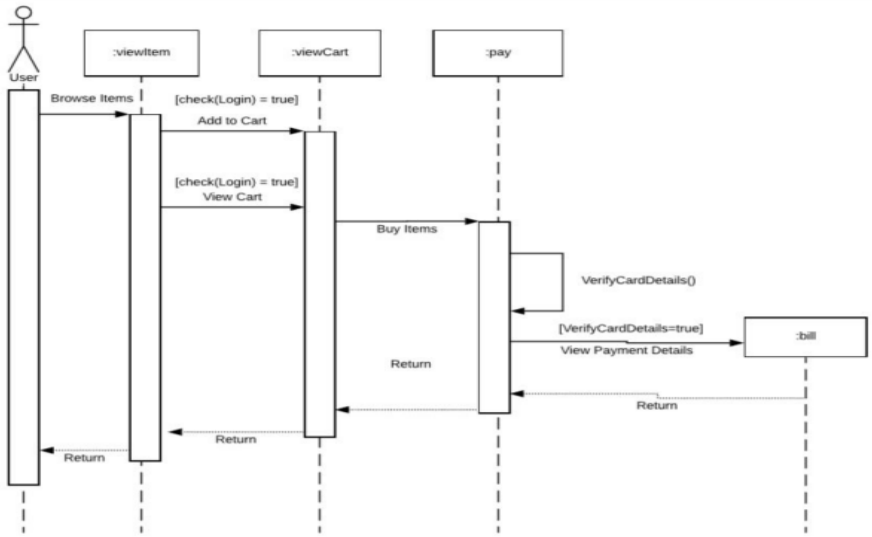


3.6 Use case Design

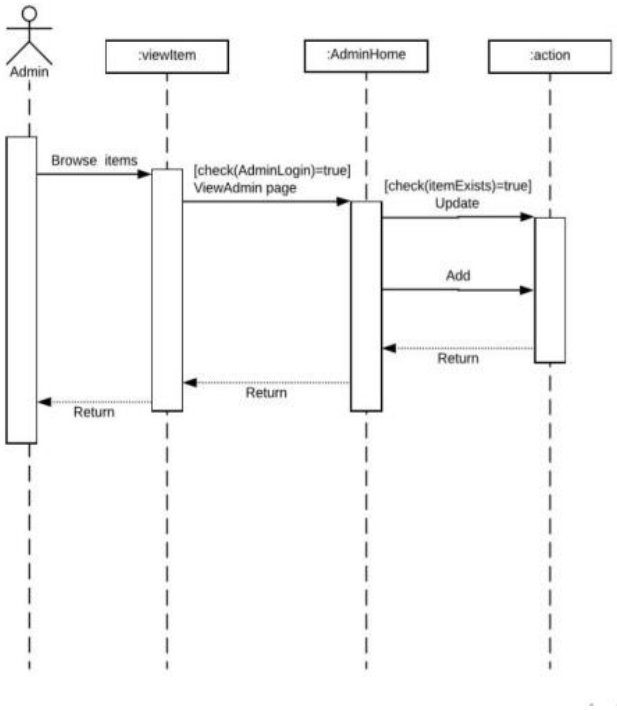


3.7 High Level Design

3.7.1. User Design

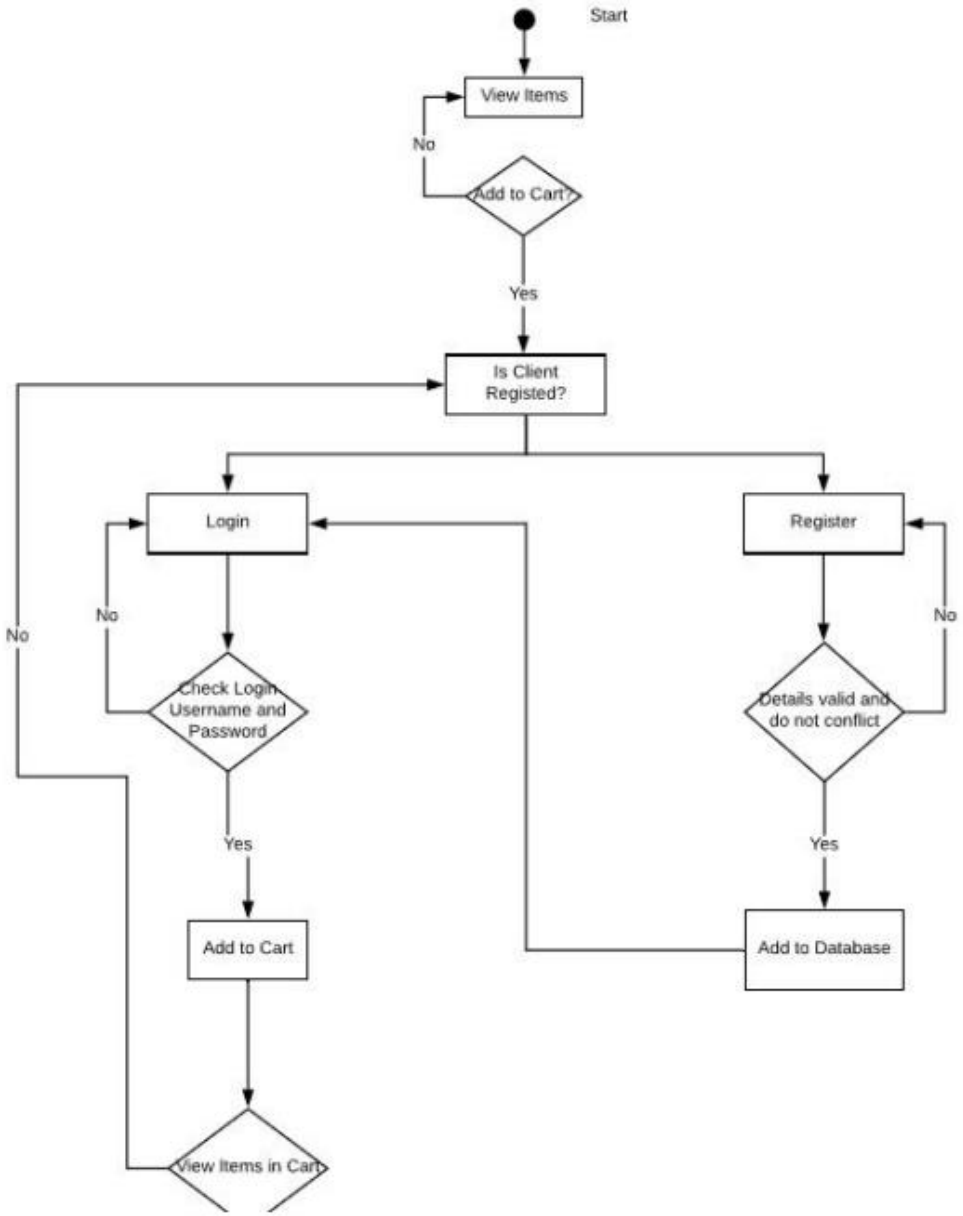


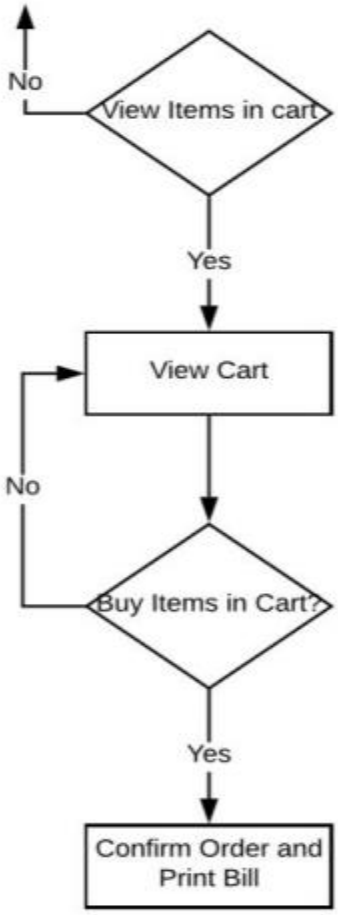
3.7.2. Admin Design



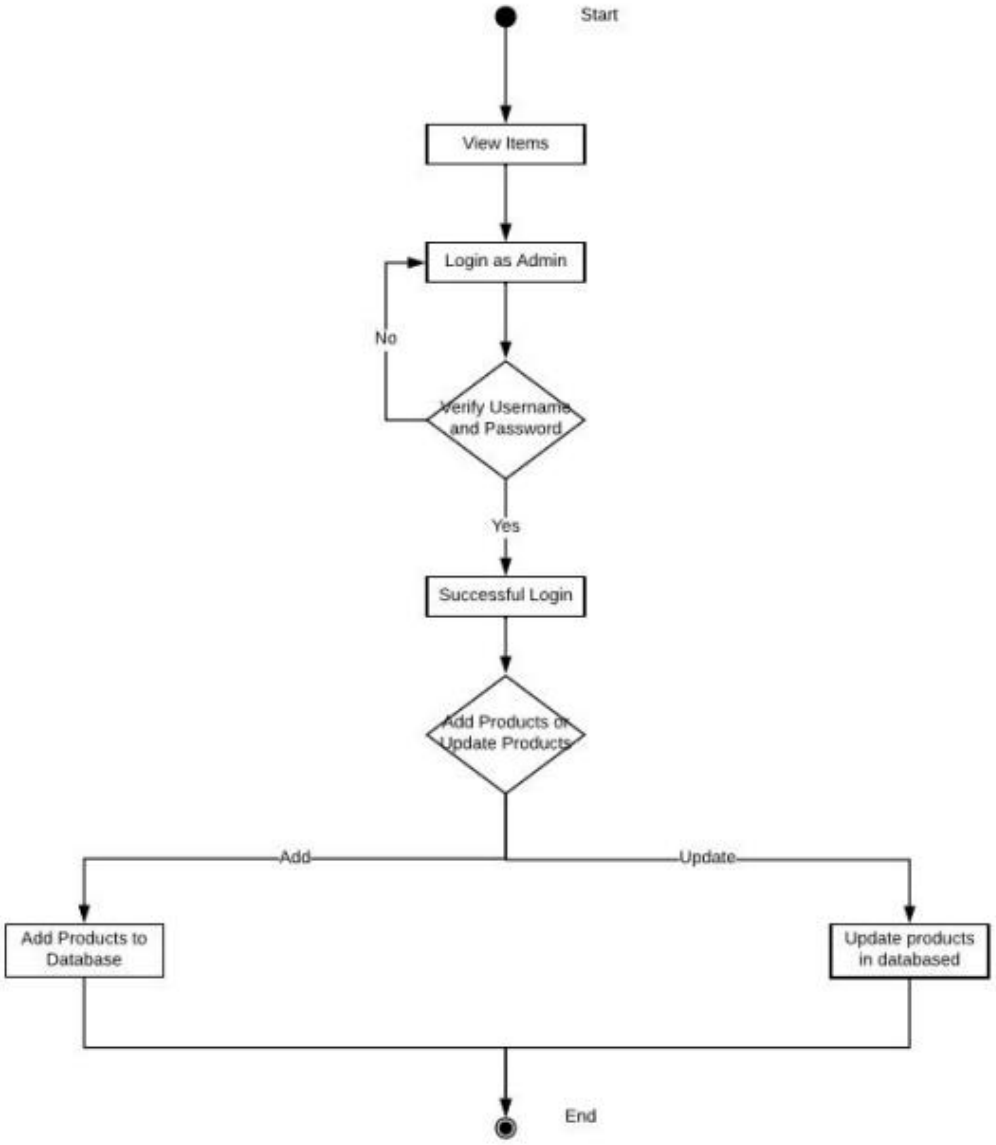
3.8 Activity Diagram

3.8.1 User Activity Diagram:

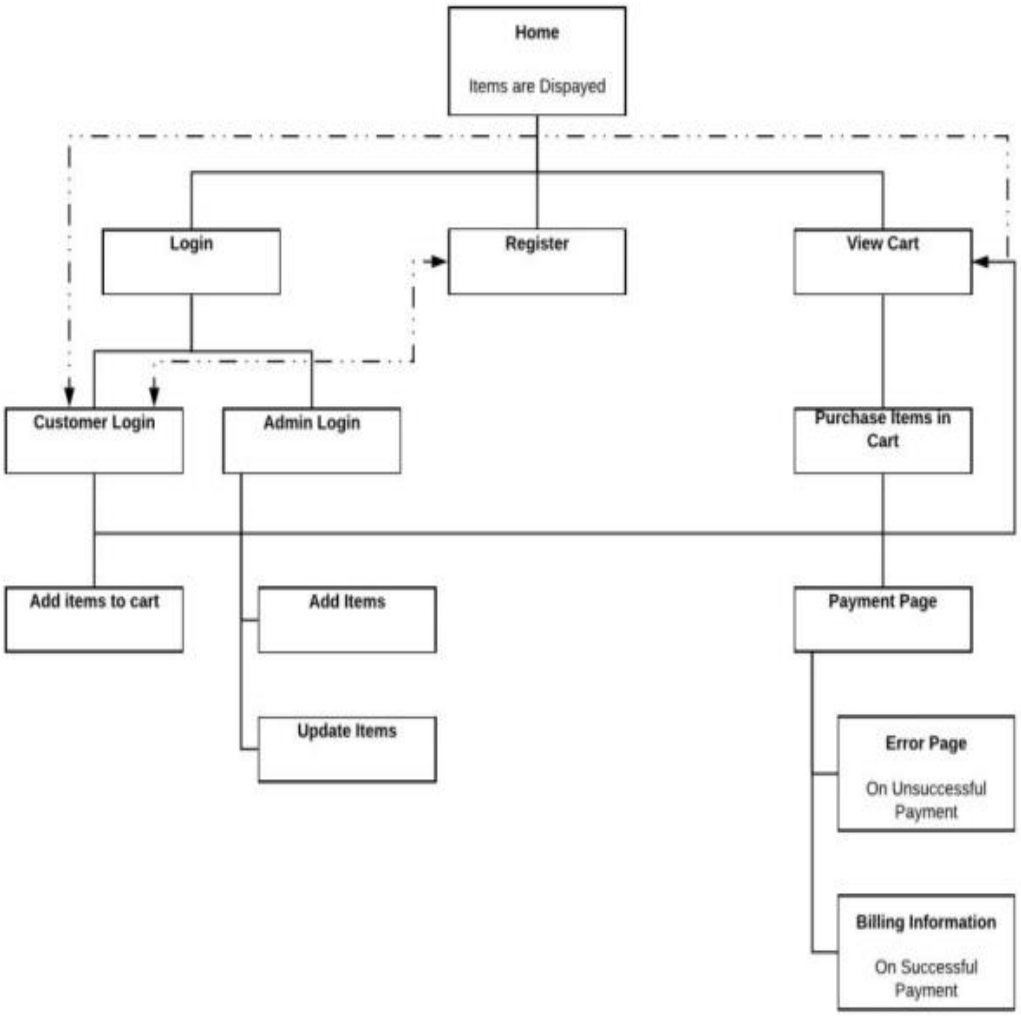



No
View Items in cart
Yes
View Cart
No
Buy Items in Cart?
Yes
Confirm Order and Print Bill

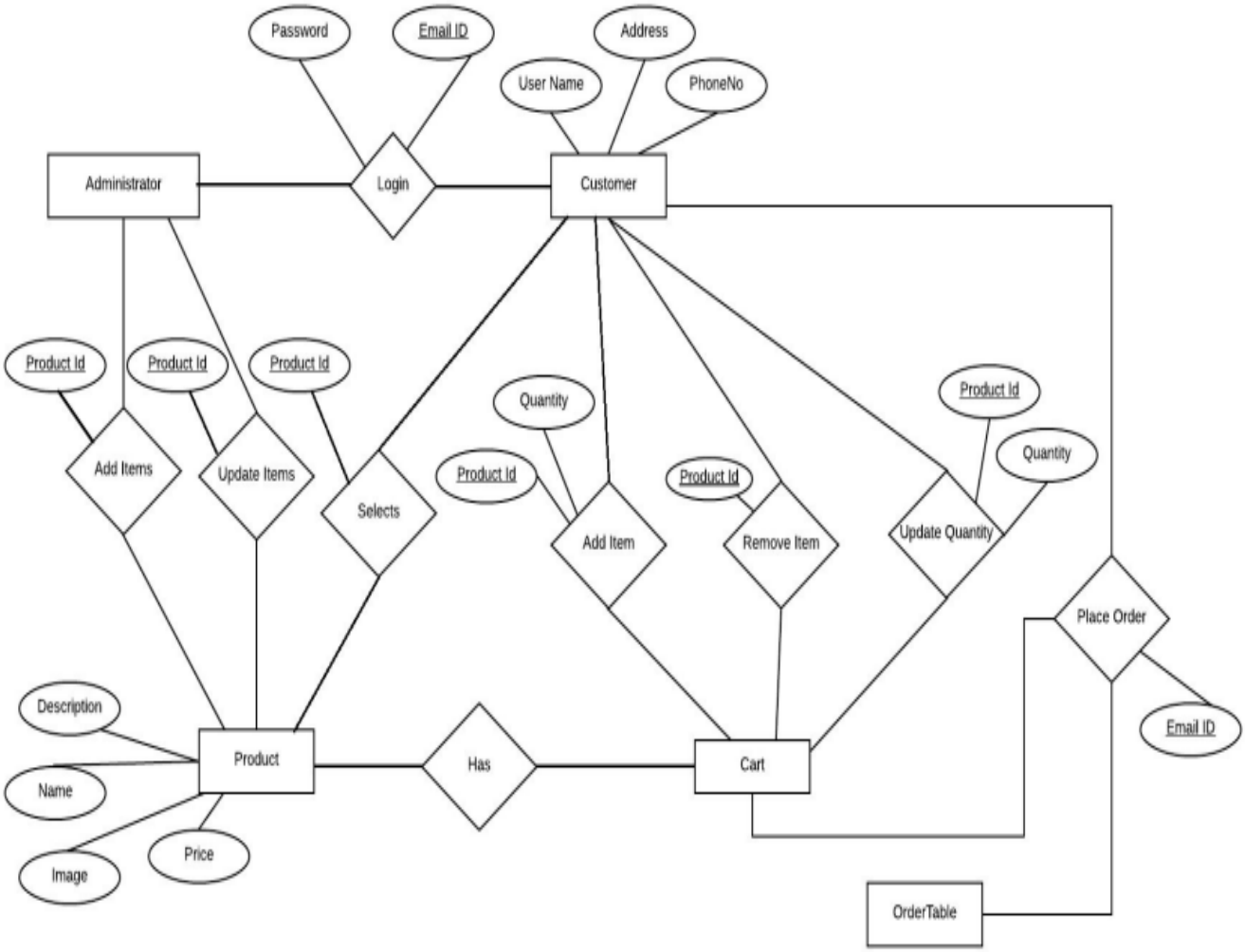
3.8.2 Admin Activity Diagram:



3.9 Navigation Diagram

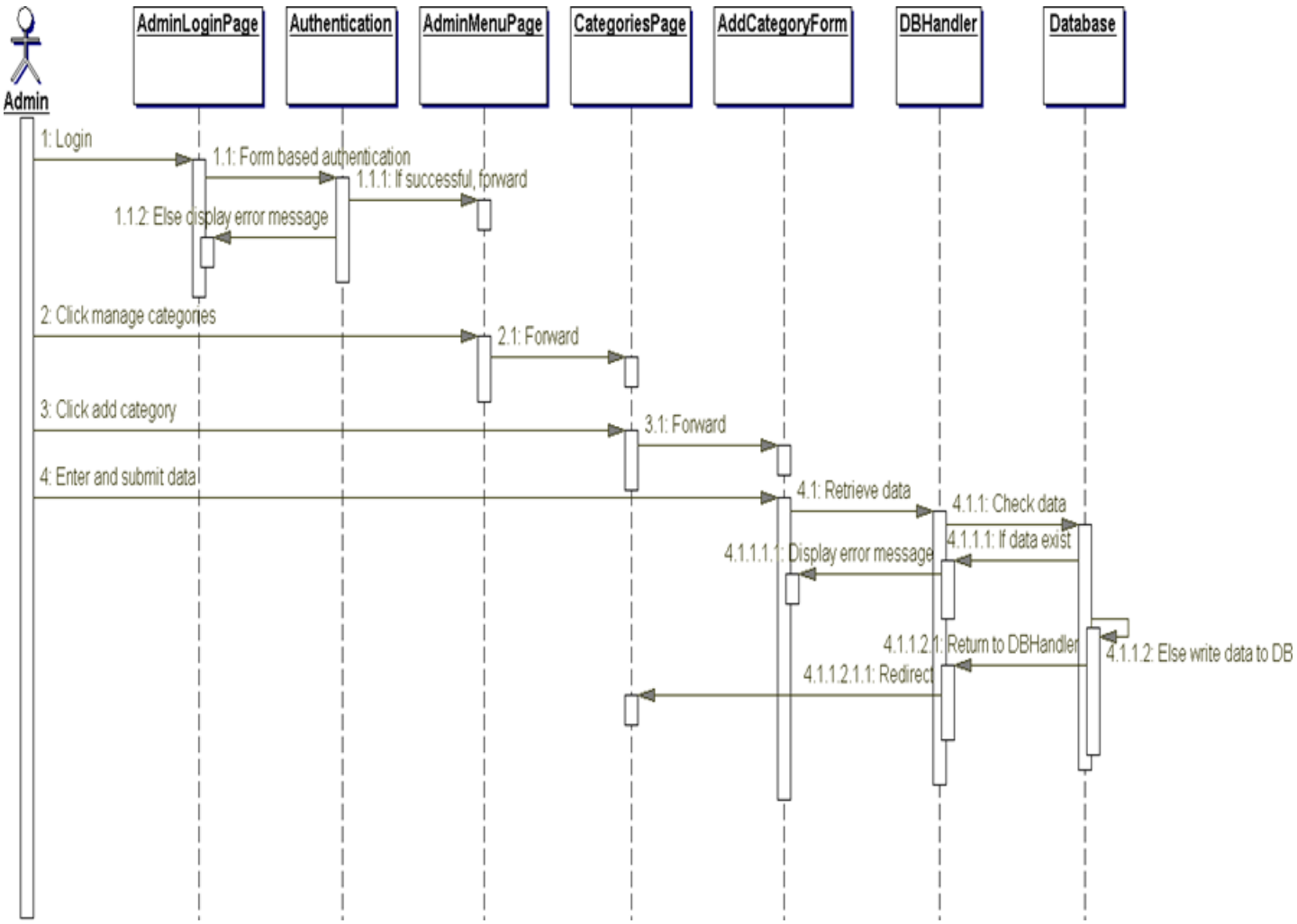


3.10 ER-Diagram

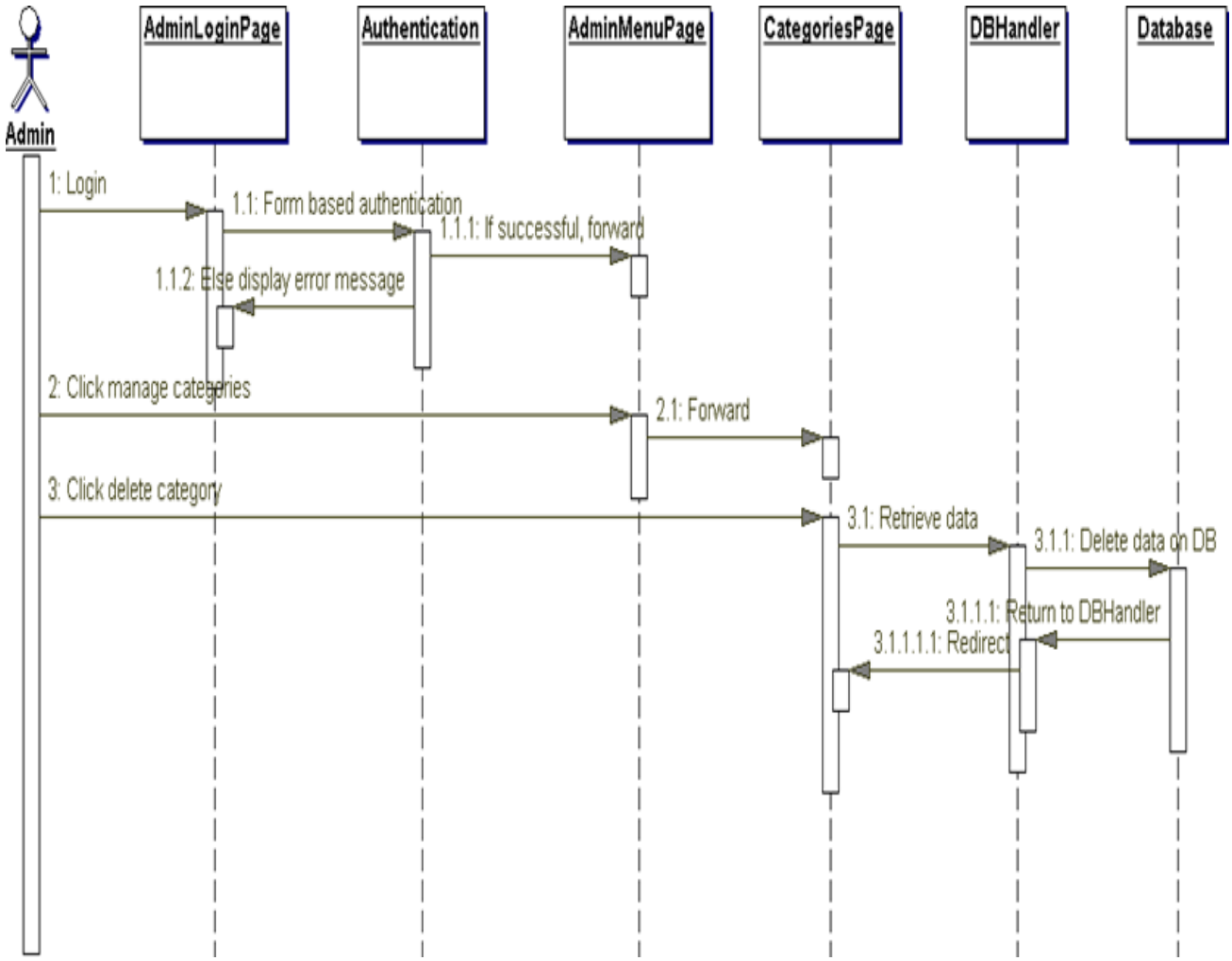


3.11 Sequence Diagram

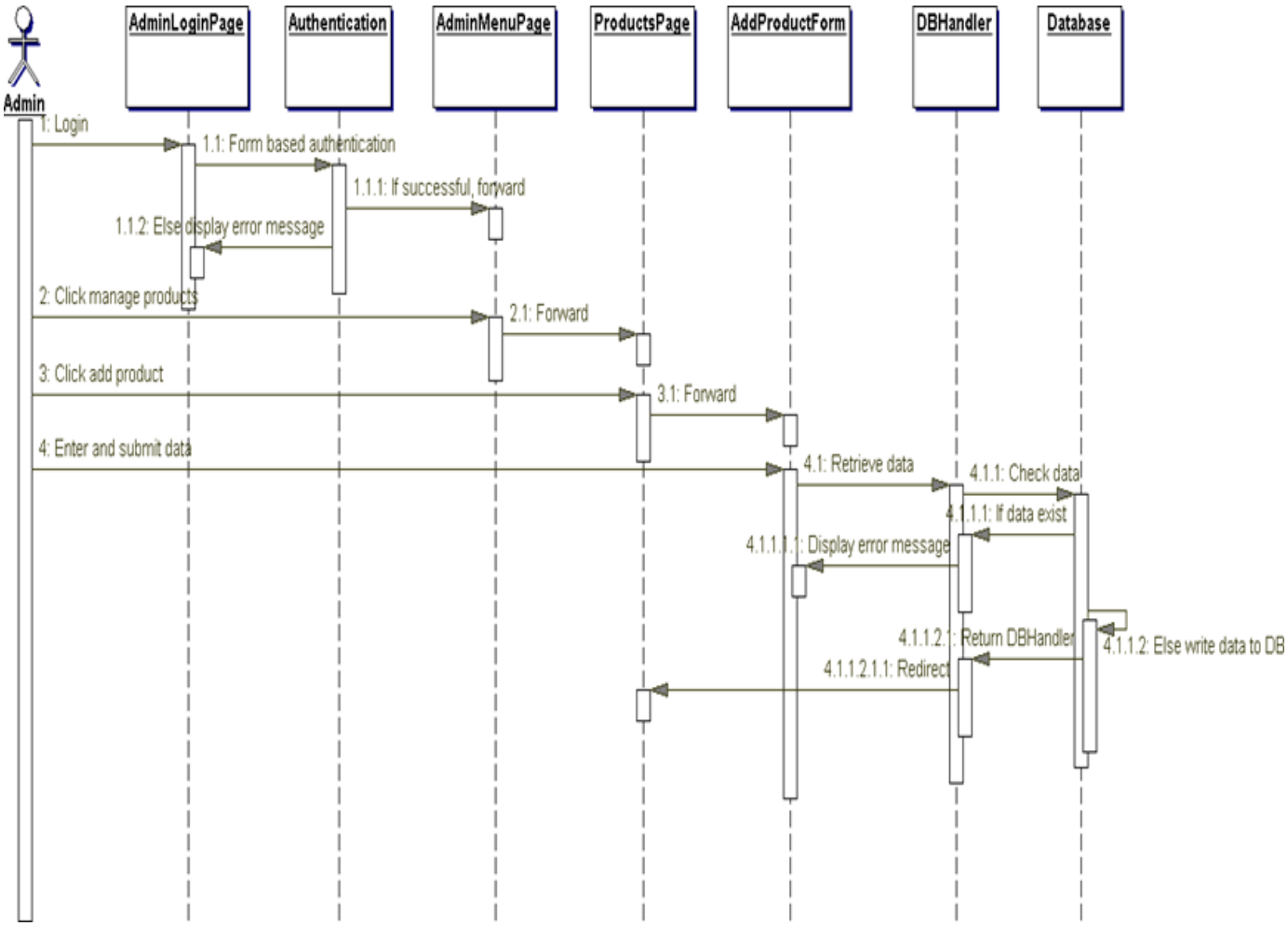
3.11.1 Add Category Sequence Diagram



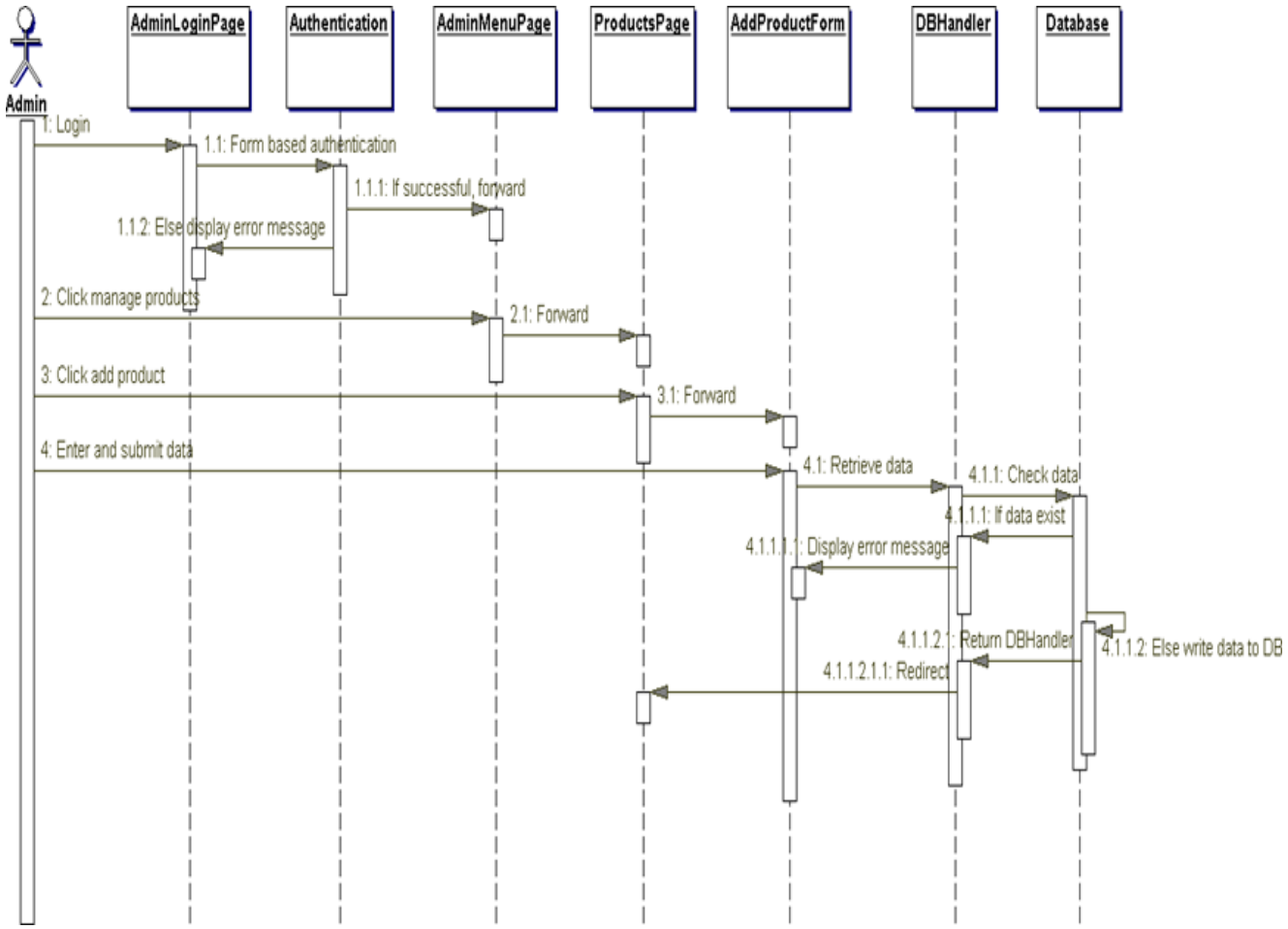
3.11.2 Edit Category Sequence Diagram



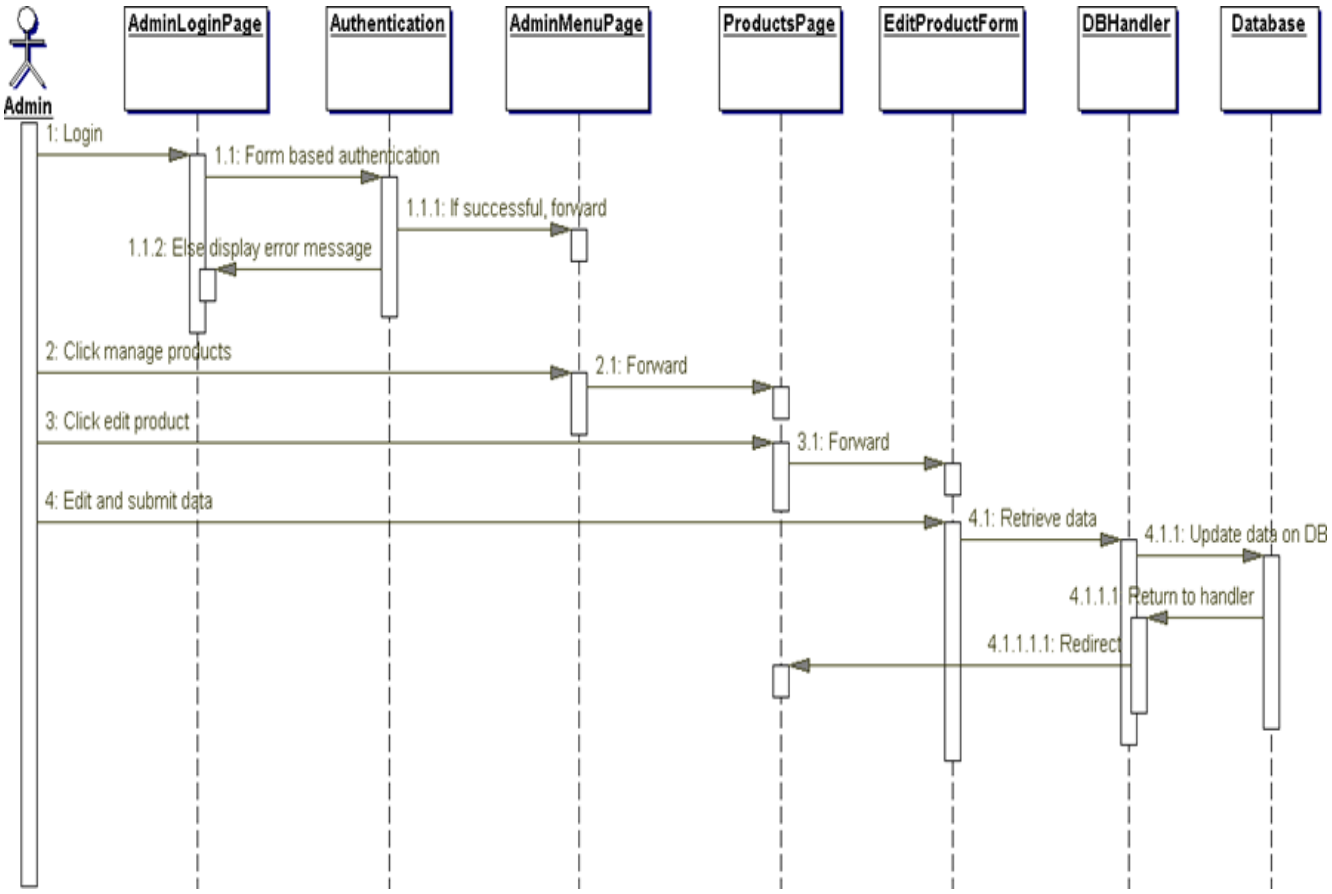
3.11.3 Delete Category Sequence Diagram



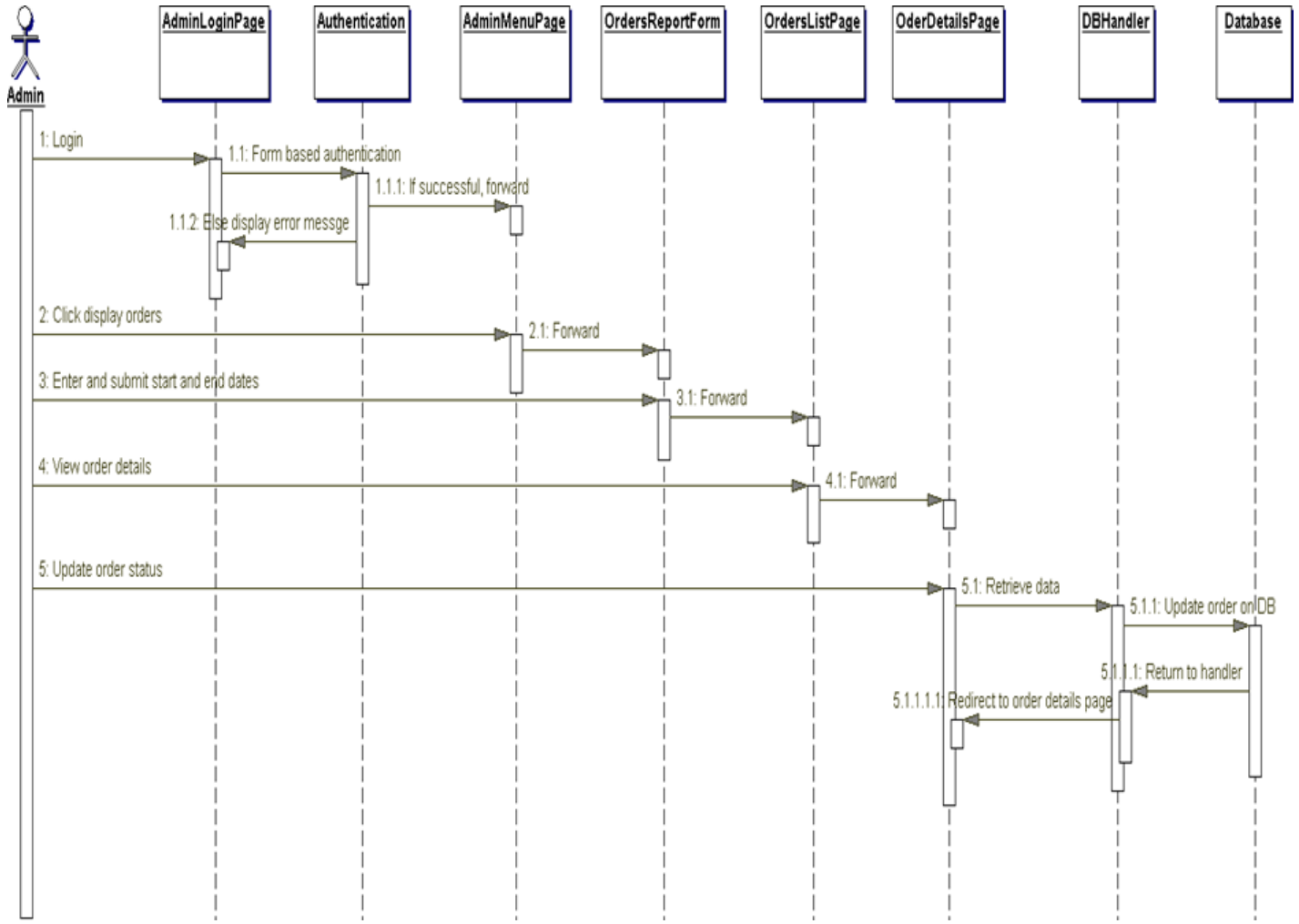
3.11.4 Add Product Sequence Diagram



3.11.5 Edit Product Sequence Diagram



3.11.6 Display orders list sequence diagram



4. Security

The system will implement security measures such as user authentication and authorization, and encrypting sensitive data stored in the database. The system will also follow best practices for protecting against common web applications.

Appendix a:

Glossary
HTTP: Hypertext Transfer Protocol
SQL: Structured Query Language
JSP: Java Server Pages