**VIETNAM NATIONAL UNIVERSITY OF HO CHI MINH CITY**
**THE INTERNATIONAL UNIVERSITY**
**SCHOOL OF COMPUTER SCIENCE AND ENGINEERING**



# FINAL REPORT

# FRUIT SELLING WEBSITE

*Course:* Web Application Development

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# CHAPTER 1

# INTRODUCTION

## 1.1.  Background

Fresh fruits are a crucial part of a healthy lifestyle and their consumption has gained immense popularity in recent years. The increasing demand for fresh and high-quality fruits has led to the appearance of online fruit trading platforms. Nowadays, consumers prefer buying fruits online as it offers them convenience and a wide variety of choices. However, the lack of a reliable, efficient, and affordable fruit trading service has opened the opportunity for the new fruit-selling website - Greeny.

## 1.2.  Problem Statement

The online fruit store project will solve the problems associated with the traditional fruit store by providing customers with a convenient and reliable explanation to buy fruit online. First, customers can search and choose the fruits they want to buy right at home. This will help attract new customers and build customer loyalty leading to a push toward buying groceries online. Second, Online stores can offer detailed product information, such as nutritional value, origin, and ripeness. Customers can leave reviews about the store, product, and service. This information can help customers make informed purchases and build trust and confidence in the online store.

## 1.3.  Scope and Objectives

The primary objective of Greeny website is to provide consumers with a reliable online platform to order high-quality fruits. The website's scope consists of sourcing in-season and fresh fruits directly from farmers and providing an easy-to-use online ordering process. Furthermore, the website also offers affordable delivery options and guarantees that products are delivered to customers in optimal and fresh condition.

The website's goals are to:
- Provide a stable and user-friendly online platform for fruit orders.
- Ensure that all users are able to access a wide range of high-quality fruits at reasonable prices.
- Collaborate directly with local farmers to bring the freshest fruits to consumers.
- Supply fast and effective delivery services, and avoid delays in the shipping process.
- Offer comprehensive customer service and support.

## 1.4.  Assumption and Solution

Assumptions:

1. Customers are looking for convenient and accessible ways to purchase fresh fruits online: With busy lifestyles, customers always look for ways to save time and effort. This project can offer customers an easy and convenient way to purchase fresh fruits online, eliminating the need to visit traditional stores.

2. Customers value transparency and quality control in their fruit purchases: Customers are increasingly concerned about the quality and safety of their products. This project can offer customers detailed information about each fruit, including its origin, nutritional value, and ripeness. This transparency can help build trust and confidence in the platform.

3. Customers often pay a premium for unique and high-quality products. A fruit-selling web project can offer rare and exotic fruit varieties unavailable in local stores, providing customers with a unique and premium shopping experience.

4. Fruit sellers need help with inventory management, supply chain logistics, and online payment processing: Fruit sellers face various logistical challenges regarding inventory management, supply chain logistics, and online payment processing. This project can solve these challenges by implementing robust inventory management systems, partnering with reliable shipping and payment providers, and providing vendor training and support.

5. Fruit sellers need help to expand their market reach beyond their local area: Local fruit sellers often face limited market reach, which can restrict sales and revenue potential. This project can expand market reach beyond local areas, reaching customers from different regions and countries and increasing sales and revenue potential for vendors.

Solution:

1. Develop a user-friendly website with straightforward navigation and search functionality: It can help customers easily find their desired products, reducing disappointment and increasing customer satisfaction.

2. Provide detailed information about each fruit, including origin, nutritional value, and ripeness: Detailed information can help customers decide about their purchase, building trust and confidence in the platform.

3. Partnering with reliable shipping and payment providers can help to streamline the logistics and payment processing for vendors, reducing the administrative burden and increasing efficiency.

4. Offering competitive prices and promotions can help to attract new customers and retain existing ones, incentivizing them to make repeat purchases.

5. Building trust and credibility with customers is essential for the success of a fruit-selling web project. These can be achieved by implementing transparent policies, providing customer reviews and feedback, and offering responsive customer service.

6. Using analytics and customer feedback can help identify improvement areas and optimize the platform to meet customer needs and preferences better.

# CHAPTER 2

# METHODOLOGY

### 2. 2.1.   Overview

To develop the fruit-selling website effectively, it is necessary to have tools, software, and supporting technologies. Major programming languages used in this project include Java Spring Framework, HTML, CSS, JavaScript, MySQL, and Bootstrap.

### 3. 2.2.   User requirement analysis

- Based on the system description, customers can directly influence the system to make transactions on the website. Customers can use the following functions:
1. Search
2. Product information
3. Add to cart
4. Checkout
5. Payment processing
6. Shipping and tracking
7. Review and feedback

- Administrator can use the following functions:
1. Category management
2. Product management
3. Customer management
4. Order management
5. Revenue statistics
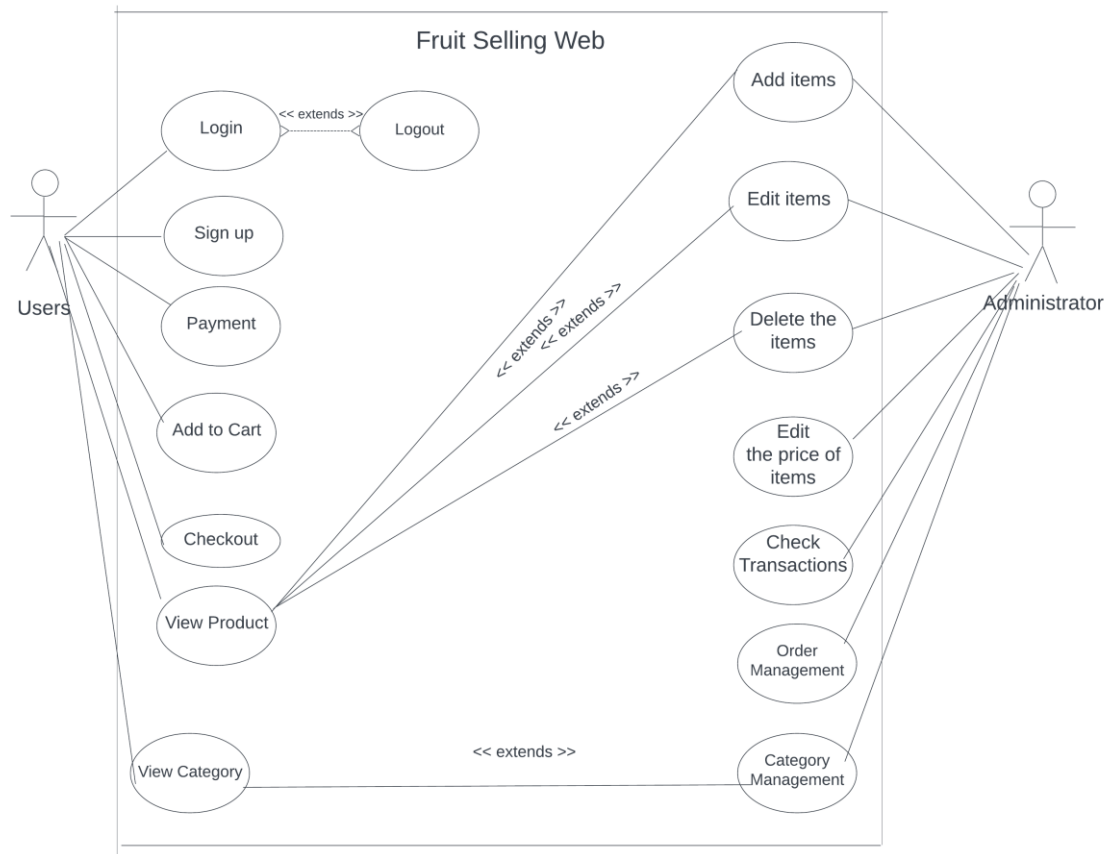
*Figure 1*. Use Case diagram overview of the fruit-selling website.

## 4. 2.3    System Design
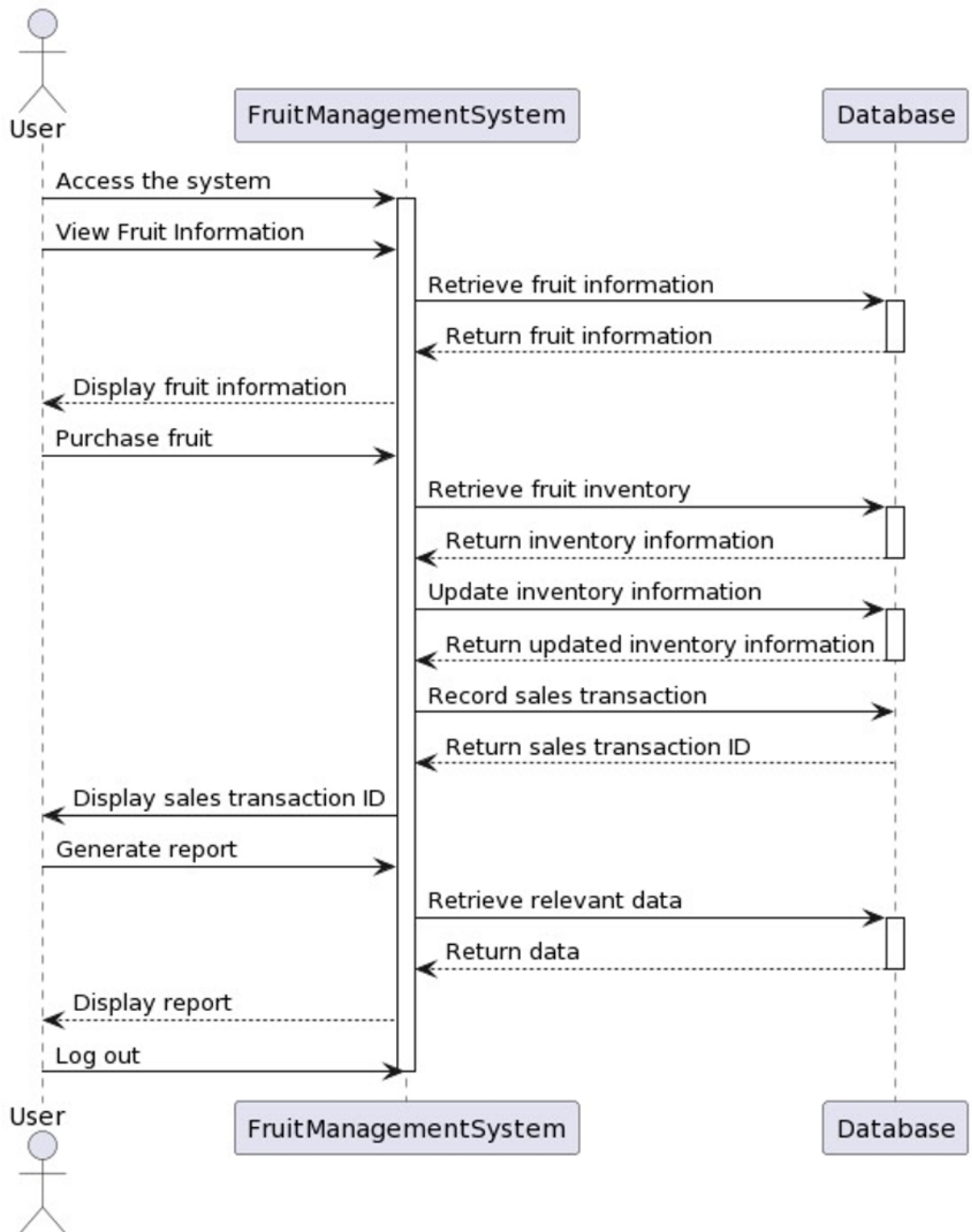


*Figure 2*. Sequence diagram of fruit-selling website.
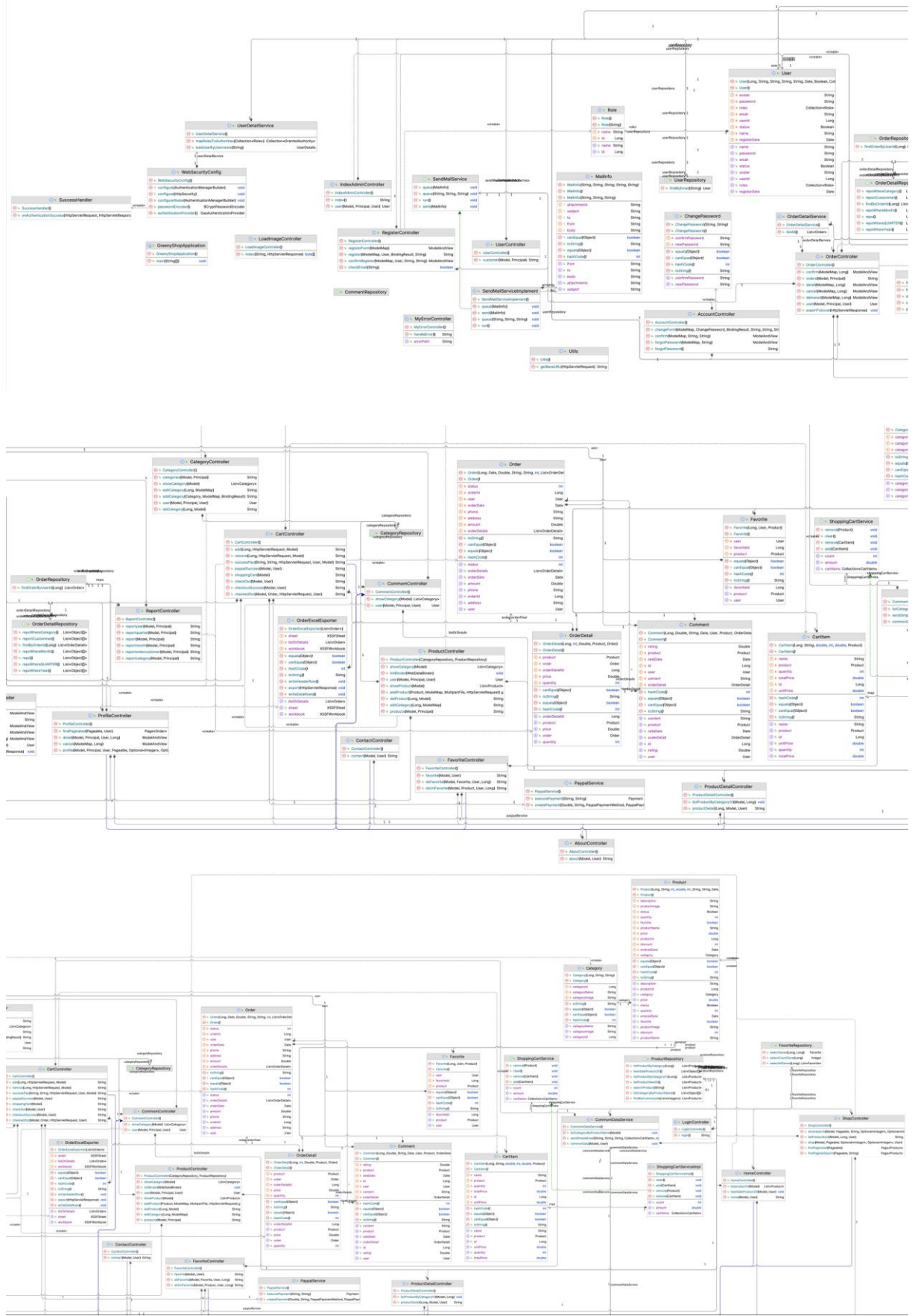
*Figure 3*. Class diagram of fruit-selling website.
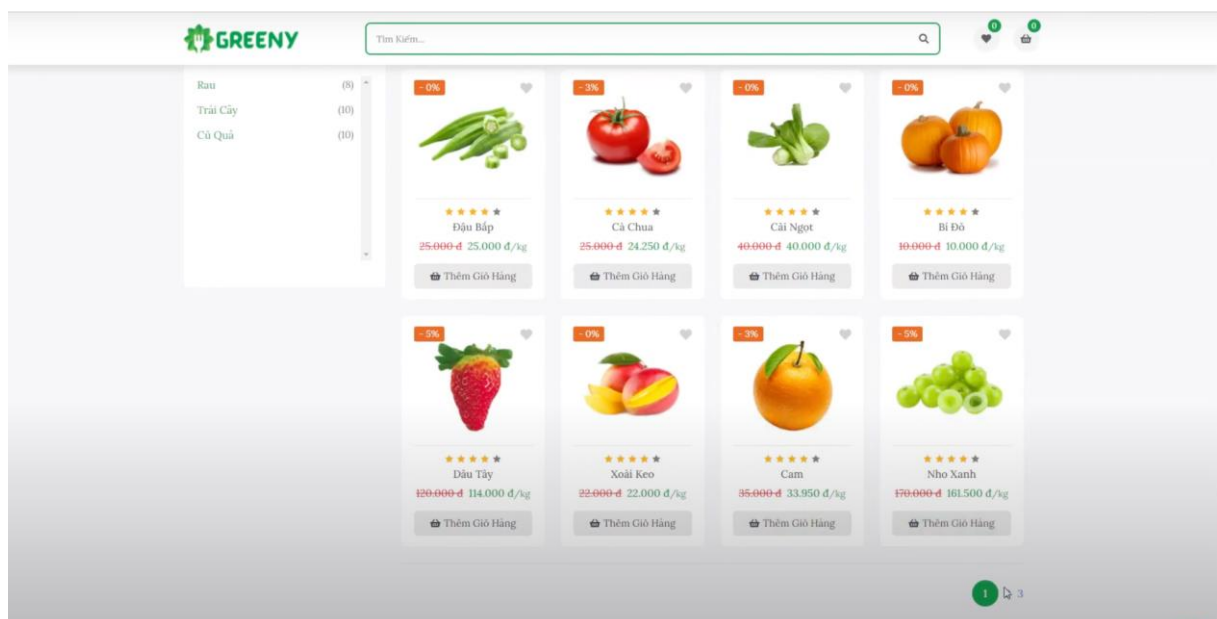
# 1. 2.1.1 Database design
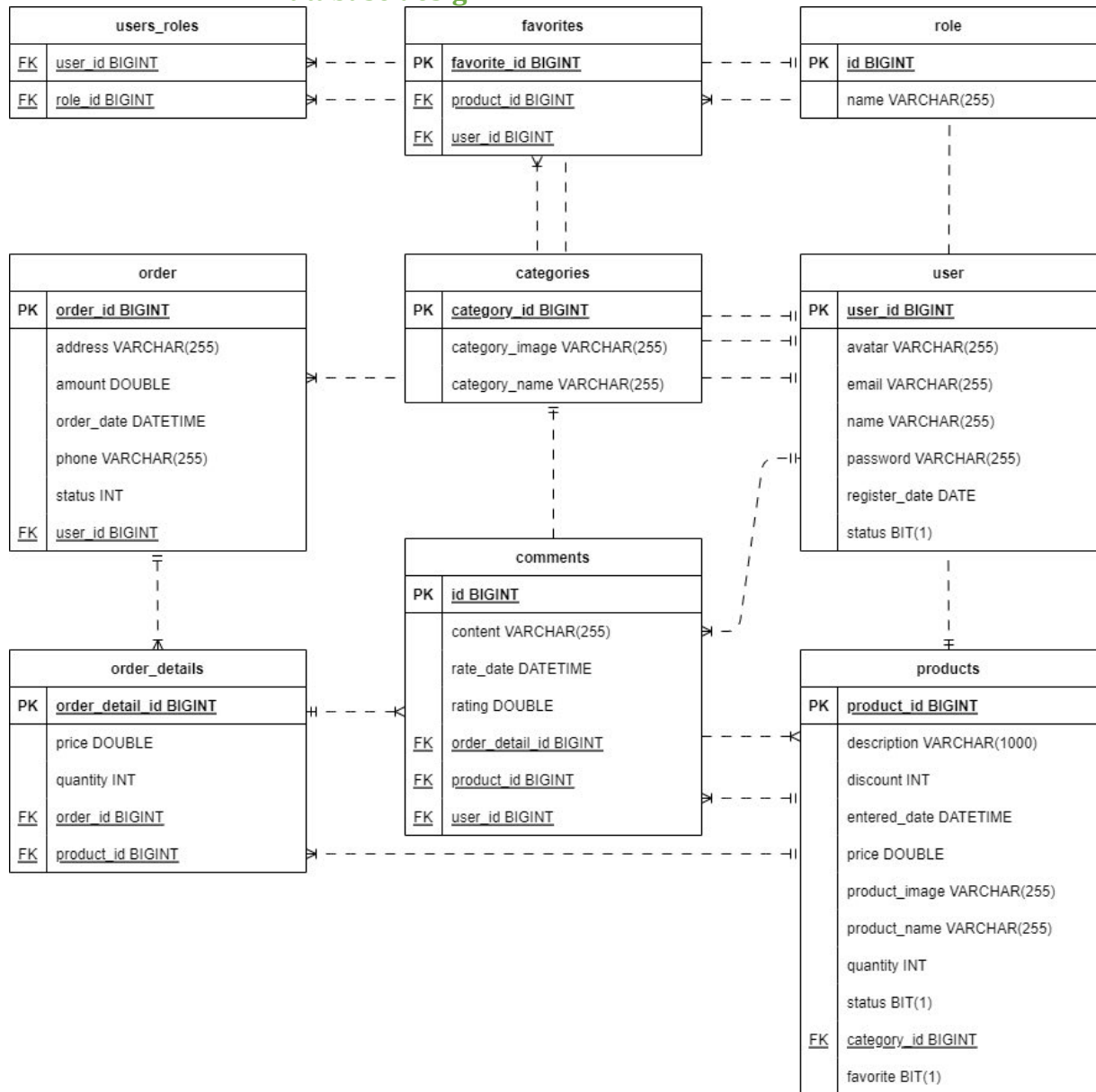


*Figure 4*. Database Schema Design of fruit-selling website.

# 2. 2.3.2. User Interface Design

Home page
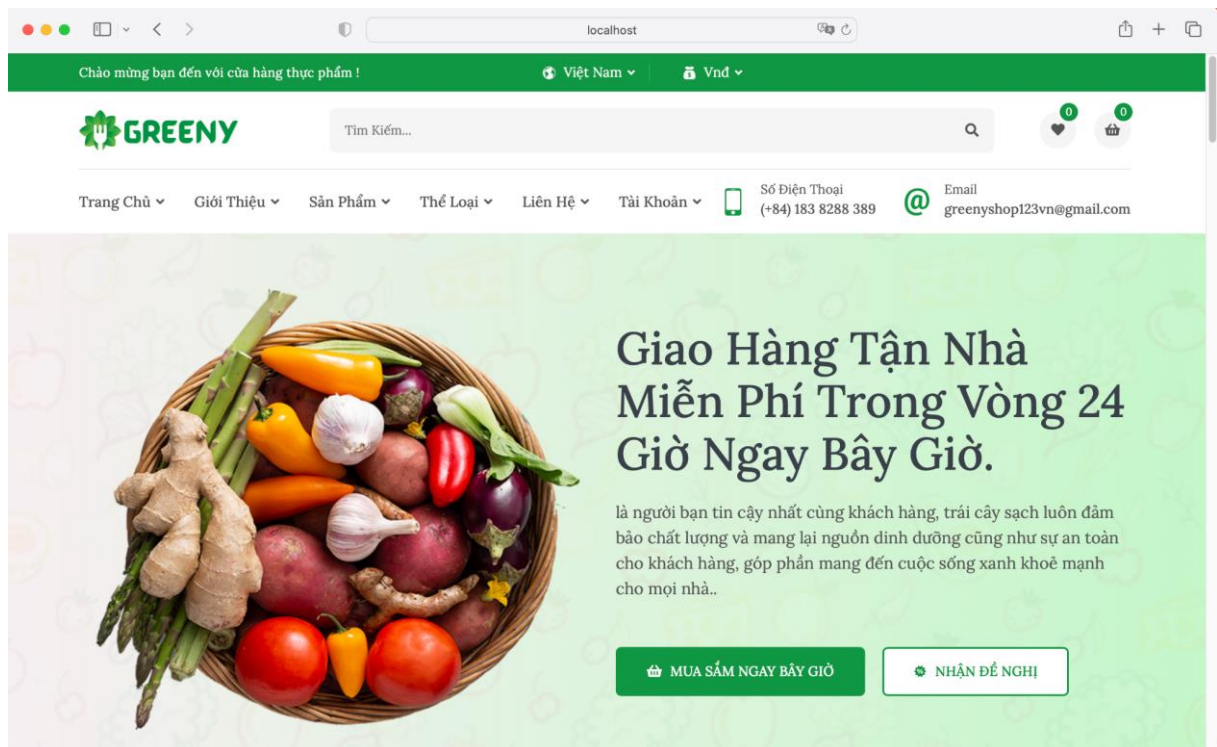
Product page



Login page

Order page



Admin page

## ORGANE

Tên : Admin Greeny Shop
Administrator

**Trang chủ**

CÁC THÀNH PHẦN

Hệ Thống Quản Lý

Thống Kê Doanh Số

**Quản lý thể loại**    ⌂ > Trang chủ > Quản lý thể loại

### Quản lý thể loại

**+ Thêm mới**

Show [ ] entries                                          Search: [          ]

| ID ↑↓ | Name ↑↓ | Action ↑↓ |
|-------|---------|-----------|
| 4 | Rau | ✎  ✕ |
| 5 | Trái cây | ✎  ✕ |
| 6 | Củ quả | ✎  ✕ |
| ID | Name | Action |

Showing 1 to 3 of 3 entries

Previous  **1**  Next

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## ORGANE

Tên : Admin Greeny Shop
Administrator

**Trang chủ**

CÁC THÀNH PHẦN

Hệ Thống Quản Lý

Thống Kê Doanh Số

**Quản Lý Thống Kê**    ⌂ > Trang chủ > Quản Lý Thống Kê

### Quản Lý Thống Kê

Show [ ] entries                                          Search: [          ]

| # ↑↓ | Nhóm ↑↓ | Số lượng bán ra ↑↓ | Doanh thu ↑↓ | Giá trung bình ↑↓ | Giá thấp nhất ↑↓ | Giá cao nhất ↑↓ |
|------|---------|--------------------|--------------|-------------------|------------------|-----------------|
| 1 | Rau | 5 | 200.000 đ | 40.000 đ | 40.000 đ | 40.000 đ |
| 2 | Trái cây | 27 | 1.764.000 đ | 61.579 đ | 22.000 đ | 170.000 đ |
| 3 | Củ quả | 55 | 1.121.885 đ | 24.937 đ | 2.222 đ | 39.000 đ |
| # | Nhóm | Số lượng bán ra | Doanh thu | Giá trung bình | Giá thấp nhất | Giá cao nhất |

Showing 1 to 3 of 3 entries

Previous  **1**  Next

# CHAPTER 3

# IMPLEMENT AND RESULTS

## 5. 3.1.   Implement

Structure of this project
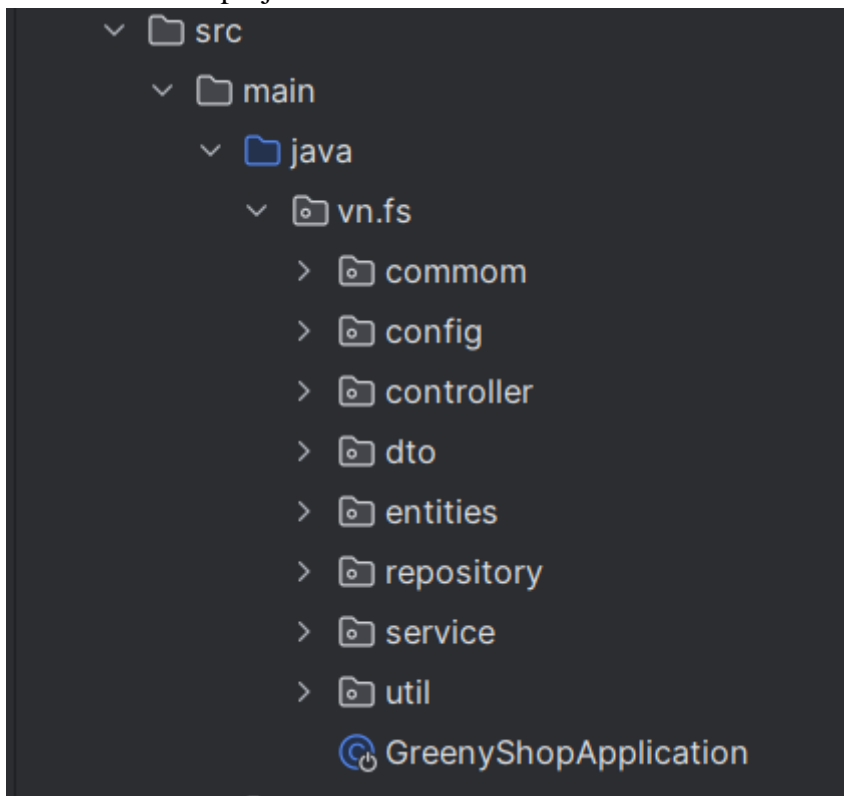


There are three main primary components that utilized are Controller, Service, and Repository. Each plays a critical role in the application:

- Controller

The Controller layer is responsible for handling incoming HTTP requests and mapping them to appropriate service calls. Controllers are annotated with @RestController or @Controller and define request mappings using annotations like @RequestMapping, @GetMapping, @PostMapping, etc. This layer acts as an interface between the client and the server-side logic.
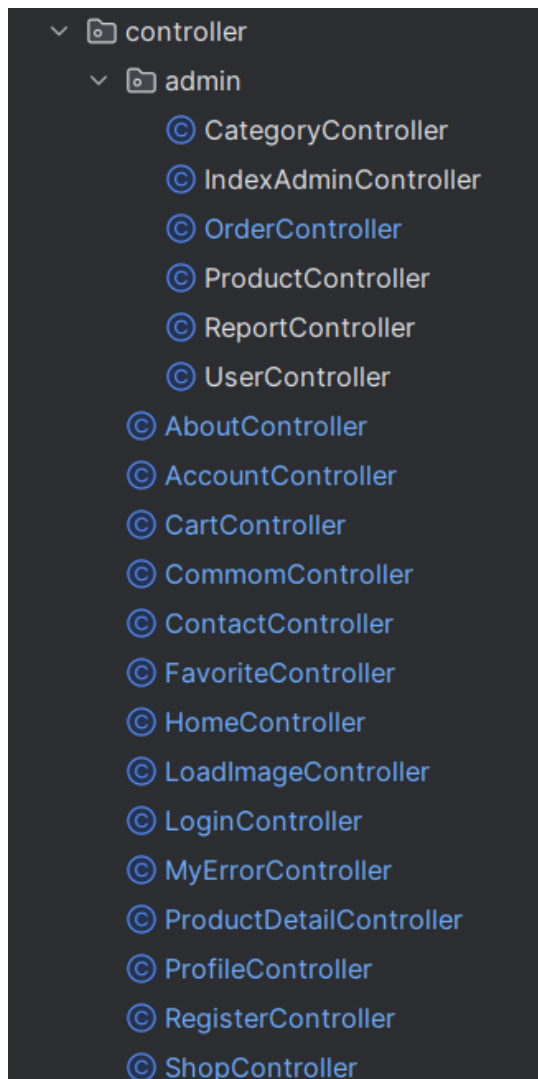
- Service

The Service layer in our application contains business logic. Services are annotated with @Service, indicating that they hold the business logic and interact with the Repository layer to retrieve, process, and return data.
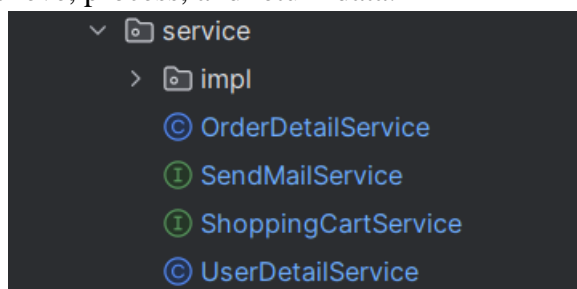


- Repository

The Repository layer is responsible for data access. In Spring, Repositories are annotated with @Repository and are typically interfaces that extend JpaRepository or other Spring Data repository interfaces. This layer interacts directly with the database, providing CRUD (Create, Read, Update, Delete) operations.

.
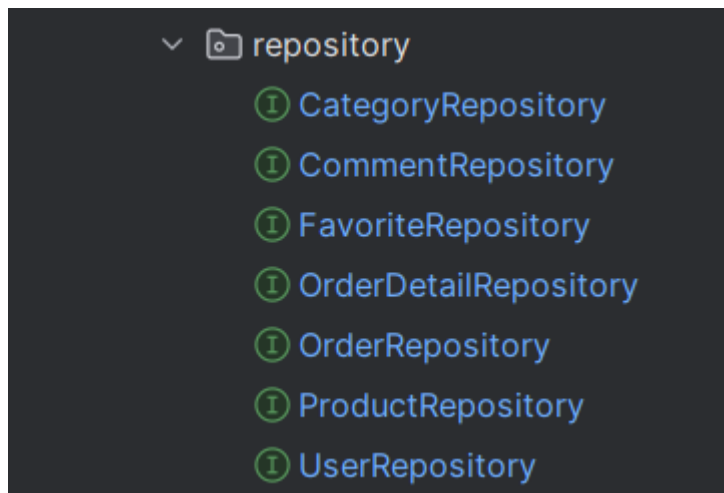
### 3. 3.1.1. Database

Table 'categories'



Table 'comments'



Table 'favorites'



Table 'order_details'

| order_detail_id | price | quantity | order_id | product_id |
|---|---|---|---|---|
| 1 | 3333 | 11 | 1 | 8 |
| 2 | 2222 | 1 | 2 | 8 |
| 3 | 120000 | 1 | 3 | 16 |
| 4 | 39000 | 1 | 3 | 9 |
| 5 | 25000 | 1 | 3 | 10 |
| 6 | 39000 | 1 | 4 | 9 |
| 7 | 25000 | 1 | 4 | 10 |
| 9 | 39000 | 1 | 6 | 9 |
| 10 | 25000 | 1 | 6 | 12 |
| 11 | 40000 | 1 | 6 | 14 |
| 12 | 35000 | 2 | 7 | 18 |
| 13 | 35000 | 2 | 8 | 18 |
| 14 | 25000 | 1 | 8 | 20 |
| 15 | 16000 | 1 | 8 | 8 |
| 16 | 39000 | 1 | 8 | 9 |
| 17 | 25000 | 1 | 8 | 10 |
| 18 | 22000 | 3 | 9 | 17 |
| 19 | 35000 | 1 | 9 | 18 |
| 20 | 16000 | 1 | 9 | 8 |
| 21 | 16000 | 1 | 10 | 8 |
| 22 | 39000 | 1 | 10 | 9 |
| 23 | 16000 | 1 | 11 | 8 |
| 24 | 39000 | 1 | 11 | 9 |
| 25 | 16000 | 1 | 12 | 8 |
| 26 | 25000 | 1 | 12 | 10 |

Table 'orders'

| order_id | address | amount | order_date | phone | status | user_id |
|---|---|---|---|---|---|---|
| 1 | ha tinh | 2 | 2022-01-29 00:00:00 | 0917291997 | 2 | 1 |
| 2 | da nang | 20000 | 2022-01-29 00:00:00 | 0615856985 | 2 | 2 |
| 3 | ha tinh | 0 | 2022-02-12 00:00:00 | 0915762565 | 3 | 1 |
| 4 | ha tinh | 0 | 2022-02-12 00:00:00 | 0915762565 | 3 | 1 |
| 6 | 68,Đà Nẵng | 0 | 2022-02-12 00:00:00 | 0915762565 | 3 | 1 |
| 7 | 266 Dũng Sĩ Thanh Khê - TP. Đà Nẵng | 67900 | 2022-02-12 00:00:00 | 0915746525 | 2 | 2 |
| 8 | 266 Dũng Sĩ Thanh Khê - TP. Đà Nẵng | 169450 | 2022-02-12 00:00:00 | 0915291997 | 1 | 2 |
| 9 | 268 Dũng Sĩ Thanh Khê - TP. Đà Nẵng | 115950 | 2022-02-12 00:00:00 | 0915291997 | 3 | 2 |
| 10 | 168-Hà Nội | 53050 | 2022-02-12 00:00:00 | 0916829635 | 1 | 1 |
| 11 | 266 Dũng Sĩ Thanh Khê - TP. Đà Nẵng | 123 | 2022-02-13 00:00:00 | 0915291997 | 2 | 2 |
| 12 | Đà Nẵng | 40500 | 2022-02-13 00:00:00 | 0915291997 | 0 | 2 |
| 13 | Đà Nẵng | 116050 | 2022-02-13 00:00:00 | 0915762565 | 3 | 2 |
| 14 | 268 Dũng Sĩ Thanh Khê - TP. Đà Nẵng | 130750 | 2022-02-13 00:00:00 | 0915291997 | 3 | 2 |
| 15 | 266 Dũng Sĩ Thanh Khê - TP. Đà Nẵng | 362000 | 2022-02-13 00:00:00 | 0915291997 | 2 | 2 |
| 16 | Đà Nẵng | 83550 | 2022-02-13 00:00:00 | 0915762565 | 3 | 2 |
| 17 | Hà Tĩnh | 362000 | 2022-02-13 00:00:00 | 0915291997 | 0 | 1 |
| 18 | Đà Nẵng | 24500 | 2022-02-15 00:00:00 | 0915291997 | 0 | 2 |
| 19 | 268 Dũng Sĩ Thanh Khê - TP. Đà Nẵng | 24250 | 2022-02-15 00:00:00 | 0915762565 | 2 | 2 |
| 20 | 268 Dũng Sĩ Thanh Khê - TP. Đà Nẵng | 54500 | 2022-02-15 00:00:00 | 0915746525 | 2 | 2 |
| 21 | 268 Dũng Sĩ Thanh Khê - TP. Đà Nẵng | 244550 | 2022-02-15 00:00:00 | 0915291997 | 0 | 2 |
| 22 | 168 Hà Nội | 228000 | 2022-02-15 00:00:00 | 0915762565 | 3 | 2 |
| 23 | 68,Đà Nẵng | 40000 | 2022-02-16 00:00:00 | 0915762565 | 2 | 2 |
| 24 | Liên Chiểu - Đà Nẵng | 55950 | 2022-02-16 00:00:00 | 0915762565 | 0 | 2 |
| 25 | 268 Dũng Sĩ Thanh Khê - TP. Đà Nẵng | 32000 | 2022-02-17 00:00:00 | 0915762565 | 2 | 2 |
| 26 | 268 Dũng Sĩ Thanh Khê - TP. Đà Nẵng | 73750 | 2022-02-17 00:00:00 | 0915291997 | 2 | 2 |

Table 'products'

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: IA

| product_id | description | discount | entered_date | price | product_image | product_name | quantity | status | category |
|---|---|---|---|---|---|---|---|---|---|
| 8 | Bell peppers are a plant with high antioxidant co... | 0 | 2022-01-30 00:00:00 | 16000 | 01.jpg | Bell Pepper | 24 | NULL | 6 |
| 9 | Carrots are not only a familiar root in family dish... | 5 | 2022-01-30 00:00:00 | 39000 | 02.jpg | Carrot | 49 | NULL | 6 |
| 10 | Cucumbers are widely grown in many different ... | 2 | 2022-01-30 00:00:00 | 25000 | 03.jpg | Cucumber | 30 | NULL | 6 |
| 11 | Eggplant is a fruit that can be processed into m... | 0 | 2022-01-30 00:00:00 | 30000 | 04.jpg | Eggplant | 40 | NULL | 6 |
| 12 | Okra is a extremely healthy vegetable, especiall... | 0 | 2022-01-30 00:00:00 | 25000 | 05.jpg | Okra | 30 | NULL | 6 |
| 13 | Tomato is a fruit that is very good for human he... | 3 | 2022-01-30 00:00:00 | 25000 | 06.jpg | Tomato | 58 | NULL | 6 |
| 14 | Due to its cool, aromatic, sweet, and high-fiber ... | 0 | 2022-01-31 00:00:00 | 40000 | 09.jpg | Choy Sum | 50 | NULL | 4 |
| 15 | Pumpkin is a relatively low-calorie fruit, as it is 9... | 0 | 2022-01-31 00:00:00 | 10000 | 12.jpg | Pumpkin | 40 | NULL | 6 |
| 16 | Strawberries are the beautiful red fruit, extrem... | 5 | 2022-01-31 00:00:00 | 120000 | 13.jpg | Strawberry | 90 | NULL | 5 |
| 17 | Acacia mango is a popular tropical fruit in Vietna... | 0 | 2022-01-31 00:00:00 | 22000 | 14.jpg | Acacia Mango | 60 | NULL | 5 |
| 18 | King oranges originate from Vietnam and are gr... | 3 | 2022-01-31 00:00:00 | 35000 | 16.jpg | King Orange | 98 | NULL | 5 |
| 19 | Green grapes are the domestic fruit of Vietnam.... | 5 | 2022-01-31 00:00:00 | 170000 | 17.jpg | Green Grape | 60 | NULL | 5 |
| 20 | When bananas become ready, their hues transf... | 4 | 2022-01-31 00:00:00 | 25000 | 18.jpg | Banana | 79 | NULL | 5 |
| 22 | Cauliflower has tightly-packed white florets, whi... | 0 | 2022-02-16 00:00:00 | 10000 | suplotrang.jpg | Cauliflower | 30 | NULL | 4 |
| 23 | Lettuce is a highly nutritious vegetable that is w... | 2 | 2022-02-16 00:00:00 | 10000 | rauxalach.jpg | Lettuce | 100 | NULL | 4 |
| 24 | Scallions, which are also referred to as green o... | 0 | 2022-02-16 00:00:00 | 10000 | hanhla.jpg | Scallion | 500 | NULL | 4 |
| 25 | Amaranth is recognized as one of the most nutri... | 0 | 2022-02-17 00:00:00 | 15000 | rauden.jpg | Amaranth | 200 | NULL | 4 |
| 26 | Coriander, also known as cilantro, not just a ve... | 0 | 2022-02-10 00:00:00 | 3500 | raungori.jpg | Coriander | 500 | NULL | 4 |
| 27 | Gotu kola, a vegetable with numerous health be... | 1 | 2022-02-17 00:00:00 | 3000 | rauma.jpg | Gotu Kola | 2000 | NULL | 4 |
| 28 | Apart from its ability to act as an anti-inflammat... | 2 | 2022-02-16 00:00:00 | 23000 | suploxanh.jpg | Broccoli | 500 | NULL | 4 |
| 29 | We are all accustomed to seeing potatoes on o... | 3 | 2022-02-16 00:00:00 | 10000 | khoaitay.png | Potato | 500 | NULL | 6 |
| 30 | Like most fruits and vegetables that are orange... | 5 | 2022-02-16 00:00:00 | 40000 | quagat.jpg | Gac Fruit | 1000 | NULL | 6 |
| 31 | Rambutan is a typical tropical fruit of summer, k... | 6 | 2022-02-17 00:00:00 | 50000 | quachomchom... | Rambutan | 1000 | NULL | 5 |
| 32 | One of the specialty fruits of Vietnam, star appl... | 5 | 2022-02-15 00:00:00 | 70000 | quavusua.jpg | Star Apple | 1000 | NULL | 5 |

Table 'role'

| id | name |
|----|------|
| 1 | ROLE_USER |
| 2 | ROLE_USER |
| 4 | ROLE_ADMIN |
| 5 | ROLE_ADMIN |
| 6 | ROLE_USER |
| 7 | ROLE_USER |
| 8 | ROLE_USER |
| 9 | ROLE_USER |
| 10 | ROLE_USER |
| NULL | NULL |

Table 'user'

| user_id | avatar | email | name | password | register_date | status |
|---------|--------|-------|------|----------|---------------|--------|
| 1 | user.png | thaochi6402@gmail.com | Trần Thảo Chi | $2a$10$NNFj7.bICFpxqYTsCswbe.BNGHGicL0L... | 2022-01-29 | 1 |
| 2 | user.png | huudong297@gmail.com | Trần Hữu Đồng | $2a$10$.XOXsgTmumdrVdQc74mqUO180lLS0O... | 2022-01-29 | 1 |
| 3 | user.png | dongthd@fpt.edu.vn | user | $2a$10$UtRFor3y5PqxHKFEt1HgAOOaX7tlQs1... | 2022-01-30 | 1 |
| 4 | user.png | greenyshop123vn@gmail.com | Admin Greeny Shop | $2a$10$Hd54fYSXGv6Pqve.WjeLO.DyNv2gGIq... | 2022-02-15 | 1 |
| 5 | user.png | demo@gmail.com | user1 | $2a$10$GtfloNhLVXQaKdXvmueUfu14h6ijuwFH... | 2022-02-17 | 1 |
| 6 | user.png | demo2@gmail.com | user2 | $2a$10$PUWkbGnEa1OdKmxiQfvw/u3oh3I09n... | 2022-02-17 | 1 |
| 7 | user.png | demo3@gmail.com | user3 | $2a$10$ePg/cUabs6dShg4hC4Buv.QaVFx6Vqq... | 2022-02-17 | 1 |
| 8 | user.png | greenyshop.adm@gmail.com | demo tên | $2a$10$zBgbGqKnEPFiMOceXhqwIem4e/JFMYF... | 2022-02-17 | 1 |
| 9 | user.png | silverbullet2609@gmail.com | Nguyễn Gia Bảo | $2a$10$WdlfosO6YSG81mJt6IJnbOn9ezuQ0zgl... | 2023-05-13 | 1 |
| NULL | NULL | NULL | NULL | NULL | NULL | NULL |

Table 'users_roles'

| user_id | role_id |
|---------|---------|
| 1 | 1 |
| 2 | 2 |
| 3 | 4 |
| 4 | 5 |
| 5 | 6 |
| 6 | 7 |
| 7 | 8 |
| 8 | 9 |
| 9 | 10 |

### 6. 3.2.   Results

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# CHAPTER 4

# CONCLUSION AND FUTURE WORK

## 7. 4.1. Conclusion

Based on the analysis of the Greeny fruit-selling website, it can be concluded that the website covers several features of a basic trading platform, such as: searching for products, filtering products, seeing product details, adding products to favorite list, add the product to the shopping cart, order products, comments, and feedback,... However, the website needs various improvements to be commercialized, leading to an increase in revenue and popularity. These improvements include enhancing the user interface and design of the website, encrypting customer information, improving the SEO (Search Engine Optimization) of the site, and launching targeted advertising campaigns.

## 8. 4.2. Future work

As aforementioned, there are numerous future works that can be applied to enhance the website's performance:

- Integrating social media into the website can help promote the business and draw attention to many types of customers, which may grow the site's popularity.

- Implementing a recommendation engine that suggests products based on a customer's browsing behavior or purchase history can increase sales and improve customer's satisfaction.

- As more and more customers are using smartphones to go shopping online, comprehensive optimization for mobile devices is essential such as implementing a responsive design and easy-to-use navigation bar.

- Expanding the range of the products sold on the website may draw attention to many potential customers and increase revenue.

- Encouraging customers to leave their reviews, feedback and share to social platforms by awarding them discounts for future purchases.

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# APPENDIX