

**E-COMMERCE SYSTEM DESIGN**

**FOR**

**QUỲNH ANH QUÁN**

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# **CHAPTER 1. INTRODUCTION TO THE BUSINESS**

Expanding into a new market is a significant step for any business, especially for a well-established local eatery with a solid reputation. Quynh Anh Quan, an esteemed eatery based in Ben Tre, has enjoyed 15 years of success primarily through the personal connections of its founder and word-of-mouth recommendations within the local community. However, to sustain and enhance growth, the business aims to broaden its reach to the bustling metropolis of Ho Chi Minh City and transition into the digital marketplace by selling its products online. To successfully penetrate the Ho Chi Minh City market and cater to a broader audience, Quynh Anh Quan must establish a robust online presence by developing an e-commerce website. This website will serve not only as a digital storefront for connecting with new customers but also as a platform for reservations, ordering, and tracking orders.

## **1.1. About Quynh Anh Quan**

### **1.1.1. Enterprise information**

- Company Name: Quynh Anh Quan Co., Ltd.
- Head Office: 8C Phu Chau, Tam Phu, Thu Duc, Ho Chi Minh City, Vietnam.
- Physical Restaurant Address: 63 Dong Du, District 1, Ho Chi Minh City.
- Director: Nguyen Thi Cam Tu.
- Tax Code: 81303013578.
- Establishment Date: May 2, 2024.
- Field of Activity: Research, production, distribution, and business of herbal food products.
- Vision: To become the leading company in Vietnam in the production and business of premium nutritional products made from herbal stewed silky fowl and fertilized duck eggs. Our goal is to bring comprehensive health benefits and convenience to the community through the combination of traditional culinary essence and modern

technology. We aim to build a nationwide distribution supply chain and a chain of restaurants around the Ho Chi Minh City area.

- Mission: To provide high-quality, safe, and nutritious herbal stewed silky fowl and fertilized duck egg products with a 15-year traditional formula, enhancing the health and quality of life of consumers. We are committed to sustainable development, environmental protection, and continuous innovation to meet the growing needs of customers. At the same time, we aim to expand the market and establish the Vietnamese brand internationally.

## **1.2. Product**

### **1.2.1. Current market trends on consuming food**

According to Dr. Tran Minh Ngoc, Deputy Director of the Traditional Medicine Administration (Ministry of Health), the demand for medicinal herbs and herbal medicines in Vietnam is increasing. The trend of usage is also shifting towards traditional medicine, modernizing traditional medicine (in terms of formulation, usage, techniques, processing technology, packaging, preservation), functional foods, dietary supplements, and even cosmetics.<sup>1</sup>

However, medicinal dishes require elaborate preparation, and cooking them takes a considerable amount of time, as these dishes are often simmered or stewed for many hours to become tender and release numerous nutrients. Understanding the current dining trends and the challenge that not everyone has the time or skill to cook traditional medicinal dishes, Quynh Anh Quan, with its 15-year reputation in selling herbal stewed dishes, has seized

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<sup>1</sup> Người Việt ngày càng dùng nhiều thuốc từ dược liệu. Source: <https://laodong.vn/suc-khoe/nguoiviet-ngay-cang-dung-nhieu-thuoc-tu-duoc-lieu-875055.ldo>

the opportunity to research and can their most special dishes to distribute to many supermarkets and stores nationwide. Additionally, they are opening a store in Ho Chi Minh City so that people can experience these dishes directly.

### **1.2.2. Current canned food market**

To enter the canned food market, Quynh Anh Quan has researched several reports and surveys. The analysis results indicate that the canned and packaged food market in Vietnam is experiencing strong growth with a stable annual growth rate of approximately 12.9%. Among the products, canned meat holds the leading position with a market share of 50.5%, followed by canned fish at 28%, with the remaining share occupied by canned vegetables and fruits.<sup>2</sup>

The reason for this growth can be linked to the hectic lifestyle of the people, making meal preparation challenging. Consumers frequently opt for fast food to save time. Results from interviews with nearly 400 Vietnamese consumers show that up to 35% dine out more than three times a week, with the highest rate in Ho Chi Minh City (51.4%), and in Hanoi at 18.6%. Additionally, 50% of the interviewees reported that they have shifted to snacking throughout the day instead of focusing solely on the three main meals as before.<sup>3</sup>

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<sup>2</sup> Thị trường thực phẩm đóng hộp, đóng gói: Cuộc chiến trụ hạng.

Source: <https://www.brandsvietnam.com/6767-Thi-truong-thuc-pham-dong-hop-dong-goi-Cuoc-chien-tru-hang>

<sup>3</sup> Thói quen ăn uống của người Việt Nam.

Source: <https://www.takyfood.com.vn/vn/thoi-quen-an-uong-cua-nguo-i-viet-nam.html>

The pressure of time and the convenience of choosing quick food options are the main reasons driving the ready-to-eat food market in Vietnam.

Based on the above survey, Quynh Anh Quan has a stronger foundation for asserting that the current hectic lifestyle of urban residents leaves very few people capable of preparing medicinal dishes for themselves. Thus, the decision to enter the canned food market or open dining establishments is based on concrete data and practical considerations.

### 1.2.3. Product

Recognizing the market potential and existing reputation, Quynh Anh Quan has researched and created canned traditional Chinese medicine products using technology to reduce bad fats, reduce sugar, and sweeten with natural ingredients. The products at Quynh Anh Quan are divided into two categories: online and offline sales:

- Offline products:
  - + Stewed Black Chicken with Chinese Herbs:
    - Ingredients: 200g black chicken, carrot, tofu, coriander, broth bag (water, coconut water, sugar, salt, pepper, yam, raw Rehmannia, Codonopsis, Angelica, wolfberry, jujube, Polygonatum, Ligusticum, shiitake mushroom, Eucommia, Angelica Daurica, longan)
    - Nutritional value: 350 calories, 70 grams protein, 9 grams fat, vitamins A, B1, B2, E, iron, etc.
    - Presentation: Covered bowl, served with salt, pepper, lemon, and chili.
  - + Noodles with Stewed Black Chicken and Chinese Herbs:
    - Ingredients: 200g black chicken, 100g fresh noodles, carrot, tofu, coriander, broth bag (water, coconut water, sugar, salt, pepper, yam, raw Rehmannia, Codonopsis, Angelica, wolfberry, jujube, Polygonatum, Ligusticum, shiitake mushroom, Eucommia, Angelica Daurica, longan)
    - Nutritional value: 410 calories, 70 grams protein, 12 grams fat, vitamins A, B1, B2, E, iron, etc.
    - Presentation: Ceramic bowl, served with salt, pepper, lemon, and chili
  - + One Stewed Duck Egg with Chinese Herbs:

- Ingredients: 1 duck egg ~ 100 grams, carrot, tofu, coriander, broth bag (water, coconut water, sugar, salt, pepper, yam, raw Rehmannia, Codonopsis, Angelica, wolfberry, jujube, Polygonatum, Ligusticum, shiitake mushroom, Eucommia, Angelica Daurica, longan)
  - Nutritional value: 250 calories, 13 grams protein, 6 grams fat, vitamins A, B1, B2, E, iron, etc.
  - Presentation: Covered bowl, served with salt, pepper, lemon, and chili
- + Two Stewed Duck Eggs with Chinese Herbs:
  - Ingredients: 2 duck eggs ~ 200 grams, carrot, tofu, coriander, broth bag (water, coconut water, sugar, salt, pepper, yam, raw Rehmannia, Codonopsis, Angelica, wolfberry, jujube, Polygonatum, Ligusticum, shiitake mushroom, Eucommia, Angelica Daurica, longan)
  - Nutritional value: 350 calories, 19 grams protein, 8 grams fat, vitamins A, B1, B2, E, iron, etc.
  - Presentation: Covered bowl, served with salt, pepper, lemon, and chili
- + Three Stewed Duck Eggs with Chinese Herbs:
  - Ingredients: 3 duck eggs ~ 300 grams, carrot, tofu, coriander, broth bag (water, coconut water, sugar, salt, pepper, yam, raw Rehmannia, Codonopsis, Angelica, wolfberry, jujube, Polygonatum, Ligusticum, shiitake mushroom, Eucommia, Angelica Daurica, longan)
  - Nutritional value: 550 calories, 33 grams protein, 10 grams fat, vitamins A, B1, B2, E, iron, etc.
  - Presentation: Covered bowl, served with salt, pepper, lemon, and chili
- + Noodles with One Stewed Duck Egg and Chinese Herbs:
  - Ingredients: 1 duck egg ~ 100 grams, 100g fresh noodles, carrot, tofu, coriander, broth bag (water, coconut water, sugar, salt, pepper, yam, raw Rehmannia, Codonopsis, Angelica, wolfberry, jujube, Polygonatum, Ligusticum, shiitake mushroom, Eucommia, Angelica Daurica, longan)
  - Nutritional value: 250 calories, 13 grams protein, 6 grams fat, vitamins A, B1, B2, E, iron, etc.
  - Presentation: Covered ceramic bowl.
- + Noodles with Two Stewed Duck Eggs and Chinese Herbs:
  - Ingredients: 2 duck eggs ~ 200 grams, 100g fresh noodles, carrot, tofu, coriander, broth bag (water, coconut water, sugar, salt, pepper, yam, raw Rehmannia, Codonopsis, Angelica, wolfberry, jujube,

- Polygonatum, Ligusticum, shiitake mushroom, Eucommia, Angelica Dahurica, longan)
- Nutritional value: 450 calories, 23 grams protein, 16 grams fat, vitamins A, B1, B2, E, iron, etc.
  - Presentation: Covered ceramic bowl
- + Noodles with Three Stewed Duck Eggs and Chinese Herbs:
- Ingredients: 3 duck eggs ~ 300 grams, 100g fresh noodles, carrot, tofu, coriander, broth bag (water, coconut water, sugar, salt, pepper, yam, raw Rehmannia, Codonopsis, Angelica, wolfberry, jujube, Polygonatum, Ligusticum, shiitake mushroom, Eucommia, Angelica Dahurica, longan)
  - Nutritional value: 650 calories, 18 grams protein, 20 grams fat, vitamins A, B1, B2, E, iron, etc.
  - Presentation: Covered ceramic bowl
- + Coconut Jelly:
- Ingredients: Coconut water, sugar, jelly powder.
  - Nutritional value: 120 calories, 0 grams protein, 0 grams fat, carbohydrates, vitamins C, B1, B2, E.
  - Presentation: Served in a coconut shell
- + Ice Cream:
- Ingredients: Various flavors available.
  - Nutritional value: Varies by flavor, typically 150-250 calories per serving.
  - Presentation: Served in a cup.
- + Coconut:
- Ingredients: Fresh coconut water.
  - Nutritional value: 50 calories, 0 grams protein, 0 grams fat, carbohydrates, electrolytes.
  - Presentation: Served in a coconut shell.
- + Drinks:
- Various canned soft drinks
  - Presentation: Served with ice and a can
- + Bottle water:
- Glass bottle of water.
  - Presentation: Served with ice and a glass bottle.
- Online products:
- + Stewed Black Chicken with Chinese Herbs (350g can):

- Ingredients: 200g black chicken, carrot, tofu, coriander, broth bag (water, coconut water, sugar, salt, pepper, yam, raw Rehmannia, Codonopsis, Angelica, wolfberry, jujube, Polygonatum, Ligusticum, shiitake mushroom, Eucommia, Angelica Daurica, longan)
  - Nutritional Value: 375 calories, 70 grams of protein, 9 grams of fat, vitamins A, B1, B2, E, iron, etc.
  - Shelf Life: 14 months
  - Instructions: Pour into a bowl or pot, add water, and heat in the microwave for 2 minutes or on the stove. Eat directly or with bread, instant noodles, rice, etc.
  - Storage: Store at room temperature. After opening, keep in the fridge and use within 24 hours.
- + Stewed Duck Egg with Chinese Herbs (1 egg, 160g can):
- Ingredients: 200g black chicken, carrot, tofu, coriander, broth bag (water, coconut water, sugar, salt, pepper, yam, raw Rehmannia, Codonopsis, Angelica, wolfberry, jujube, Polygonatum, Ligusticum, shiitake mushroom, Eucommia, Angelica Daurica, longan)
  - Nutritional Value: 375 calories, 70 grams of protein, 9 grams of fat, vitamins A, B1, B2, E, iron, etc.
  - Shelf Life: 14 months
  - Instructions: Pour into a bowl or pot, add water, and heat in the microwave for 2 minutes or on the stove. Eat directly or with bread, instant noodles, rice, etc.
  - Storage: Store at room temperature. After opening, keep in the fridge and use within 24 hours.
- + Stewed Duck Eggs with Chinese Herbs (2 eggs, 320g can):
- Ingredients: 200g black chicken, carrot, tofu, coriander, broth bag (water, coconut water, sugar, salt, pepper, yam, raw Rehmannia, Codonopsis, Angelica, wolfberry, jujube, Polygonatum, Ligusticum, shiitake mushroom, Eucommia, Angelica Daurica, longan)
  - Nutritional Value: 375 calories, 70 grams of protein, 9 grams of fat, vitamins A, B1, B2, E, iron, etc.
  - Shelf Life: 14 months
  - Instructions: Pour into a bowl or pot, add water, and heat in the microwave for 2 minutes or on the stove. Eat directly or with bread, instant noodles, rice, etc.

- Storage: Store at room temperature. After opening, keep in the fridge and use within 24 hours.
- + Stewed Pig Brain with Chinese Herbs (350g can):
- Ingredients: 200g black chicken, carrot, tofu, coriander, broth bag (water, coconut water, sugar, salt, pepper, yam, raw Rehmannia, Codonopsis, Angelica, wolfberry, jujube, Polygonatum, Ligusticum, shiitake mushroom, Eucommia, Angelica Dahurica, longan)
  - Nutritional Value: 375 calories, 70 grams of protein, 9 grams of fat, vitamins A, B1, B2, E, iron, etc.
  - Shelf Life: 14 months
  - Instructions: Pour into a bowl or pot, add water, and heat in the microwave for 2 minutes or on the stove. Eat directly or with bread, instant noodles, rice, etc.
  - Storage: Store at room temperature. After opening, keep in the fridge and use within 24 hours.
- + Stewed Pork Leg with Chinese Herbs (250g can):
- Ingredients: 200g black chicken, carrot, tofu, coriander, broth bag (water, coconut water, sugar, salt, pepper, yam, raw Rehmannia, Codonopsis, Angelica, wolfberry, jujube, Polygonatum, Ligusticum, shiitake mushroom, Eucommia, Angelica Dahurica, longan)
  - Nutritional Value: 375 calories, 70 grams of protein, 9 grams of fat, vitamins A, B1, B2, E, iron, etc.
  - Shelf Life: 14 months
  - Instructions: Pour into a bowl or pot, add water, and heat in the microwave for 2 minutes or on the stove. Eat directly or with bread, instant noodles, rice, etc.
  - Storage: Store at room temperature. After opening, keep in the fridge and use within 24 hours.
- + Chinese Herbal Broth (300ml bag):
- Ingredients: 200g black chicken, carrot, tofu, coriander, broth bag (water, coconut water, sugar, salt, pepper, yam, raw Rehmannia, Codonopsis, Angelica, wolfberry, jujube, Polygonatum, Ligusticum, shiitake mushroom, Eucommia, Angelica Dahurica, longan)
  - Nutritional Value: 375 calories, 70 grams of protein, 9 grams of fat, vitamins A, B1, B2, E, iron, etc.
  - Shelf Life: 14 months

- Instructions: Pour into a bowl or pot, add water, and heat in the microwave for 2 minutes or on the stove. Eat directly or with bread, instant noodles, rice, etc.
- Storage: Store at room temperature. After opening, keep in the fridge and use within 24 hours.

# CHAPTER 2. MARKET ANALYSIS

## 2.1. Global market

### 2.1.1. The Variety of Black Chicken Dishes in Asia

At the beginning of the 7th century, traditional Chinese medicine believed that black chicken stew had healing properties. Healing foods were thought to both treat and cure illnesses. The Chinese used healing foods as a form of diet or food therapy.



*Figure 2.1. Famous Chinese medicinal chicken soup*

Black chicken herbal soup is considered a healing food in China. The methods of preparing black chicken include stewing, braising, and boiling. However, most people cook black chicken similarly to how they cook other types of chicken. Black chicken is just a little different.



Figure 2.2. Korean ginseng stewed chicken

Unlike in China, Korea has lighter preparations that still offer similar nutritional value, such as ginseng-stewed black chicken.

### 2.1.2. Market potential

#### 2.1.2.1. *High Interest in Nutritional Foods*

In Asia, diet is essential for maintaining good health because Asians believe that eating well is the best way to ensure their well-being. Most Asian soups are made with bones or vegetables, making them rich in vitamins and minerals. The Asian diet emphasizes the importance of eating three times more vegetables than meat.

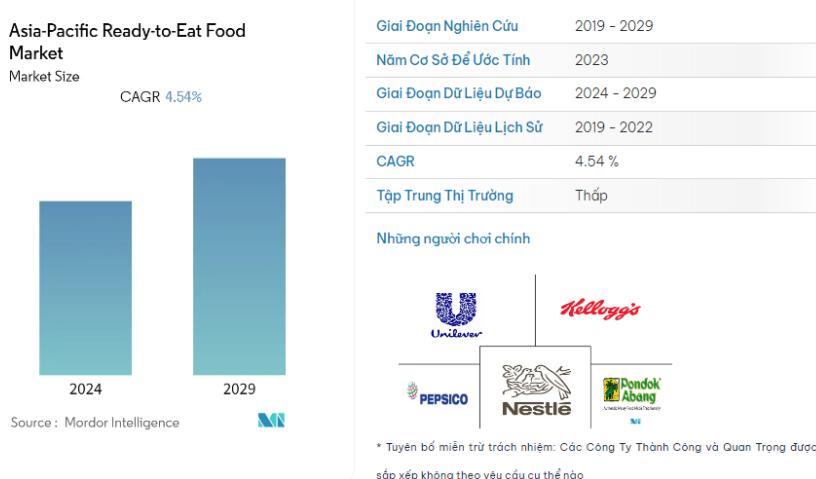
The focus on eating for better health starts from an early age. Parents always provide nutritious meals for their children, and the younger generation often gifts their elders with health-boosting foods.

Black chicken stewed with medicinal herbs is a dish with exceptionally high nutritional value. The main ingredient of this dish is black chicken, a type of chicken with black feathers that has much higher nutritional content compared to regular chicken.

Black chicken meat is low in fat, rich in protein, and contains many vitamins such as A, B1, B2, and E. The iron content in black chicken meat is very high, at 7.9%, while it is only 3.9% in regular chicken. Additionally, black chicken meat boosts resistance and enhances the body's immune system. When prepared with traditional medicinal herbs, this dish provides both sufficient nutrition and great taste.

#### **2.1.2.2. Special Preference for Convenient Foods**

Asia is indeed a promising market for health food products. If these products are also ready-made, they cater to the convenience often seen with instant noodles, boxed meals, and similar items, fitting well with the hardworking lifestyle of Asians.



*Figure 2.3. The Instant Food Market in the Asia-Pacific Region (2021 - 2029)*

The instant food market in Asia-Pacific is valued at \$126.87 billion this year and is expected to achieve a CAGR of 4.54% over the next five years. The instant food market is experiencing significant growth. The result of new hybrid working models and consumers' busy lifestyles is expected to lead to a substantial increase in the consumption of ready-made frozen meals in the near future. Due to the fast-paced lifestyle, the demand for quick or light meals among adults has driven the need for healthy and convenient foods that can be consumed immediately. Frozen food products are considered beneficial as they can be cooked in a shorter time for consumption. These factors have driven the market's growth. The instant food market is propelled by the growing demand for convenient and healthy food options.

However, compared to packaged and widely distributed ginseng chicken soup in Asia, the canned black chicken with medicinal herbs dish has yet to make its presence known anywhere.

## **2.2. VietNam market**

There aren't many differences from the global market, but the special highlight in the Vietnamese market with this nutritious dish is that there are many companies producing canned black chicken with medicinal herbs meals packaged and distributed on various e-commerce platforms such as Tiki, Shopee, as well as e-commerce websites.



Figure 2.4. Cây Thị brand of canned black chicken with medicinal herbs on the Shopee platform.

Figure 2.5. Cây Thị brand of canned black chicken with medicinal herbs on the Tiki platform.

## Trang chủ » MÓN ĂN BÀI THUỐC » THUỐC BẮC TIỀM GÀ



### THUỐC BẮC TIỀM GÀ 100g

Gà tiềm thuốc bắc là món ăn hai trong một, vừa là món ăn vừa là phương thuốc chữa bệnh.

Mã SP:

TBTG100

Giá bán:

30,000 vnđ

Đặt mua

Figure 2.6. Black chicken with traditional Chinese medicine at the Vietnamese Herbal Medicine Store.

With nearly 200 products sold on each platform, it can be assessed that these products have not yet reached a wide range of customers.

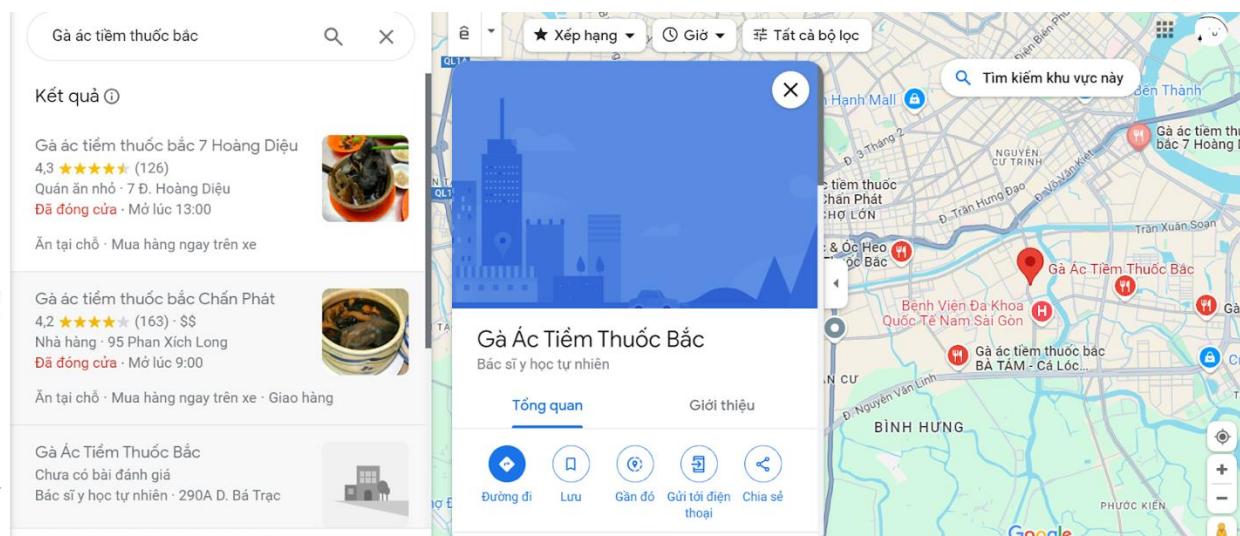


Figure 2.7. The purchase and reach of popular Chinese herbal chicken shops.

In addition, street food stalls selling herbal chicken soup are also quite common in Vietnam, partly meeting the demand for convenient food, which has become a major obstacle for canned herbal chicken products.

### **2.3. Microenvironment**

#### **2.3.1. Customer**

In today's context, consumers are undergoing a significant shift in shopping habits and product preferences. They are not only concerned about price but also increasingly focused on health and product quality. Growing awareness of the impact of food on health, along with advancements in medical and technology fields, has driven the demand for safe and health-beneficial functional food products.

Recognizing consumer trends, start-ups specializing in canned herbal food have emerged, aiming to provide high-quality products from natural and traditional ingredients of ethnic minorities. Our goal is not only to do business but also to create a reputable brand, contributing to improving the quality of life for consumers. We have decided to focus on the Ho Chi Minh City market, targeting health-conscious consumers, those who appreciate traditional cuisine, convenience seekers, and business customers (B2B). The brand will also be distributed through reputable supermarket chains nationwide, e-commerce websites, e-commerce trading platforms, as well as traditional restaurants and eateries.

#### **2.3.2. Competitor**

##### ***2.3.2.1. Bảo Long Functional Foods Manufacturing Company (Bảo Long Company)***

- Specializes in producing various types of functional foods consumed domestically and exported.
- Distribution channels:
  - + Domestic consumption and export.
  - + Various e-commerce platforms.

- Product portfolio:
  - + Quý Tú Nhân Sâm (Ginseng with Cordyceps) along with Acridium Chicken.
  - + Acridium Chicken Essence with Ginseng.
  - + Canned Acridium Chicken in Traditional Chinese Medicine.
  - + Five-Flavor Stewed Acridium Chicken.
  - + Beverages (Lingzhi Mushroom Essence, Chrysanthemum Ginseng Tea).
  - + Tiger Bone Ginseng Reishi Liquor.
- Price range: 89,000 to 154,000 VND/can (400g).
- Strengths: These products have been present in the market for a long time and are available on various e-commerce platforms. They have gained the trust of customers over the years.
- Brand scale and advertising:
  - + Quý Tú Nhân Sâm (Ginseng with Cordyceps) along with Acridium Chicken.
  - + Acridium Chicken Essence with Ginseng.
  - + Canned Acridium Chicken in Traditional Chinese Medicine.
  - + Five-Flavor Stewed Acridium Chicken.
  - + Beverages (Lingzhi Mushroom Essence, Chrysanthemum Ginseng Tea).
  - + Tiger Bone Ginseng Reishi Liquor.

Bảo Long Company is a reputable entity in the functional food market, trusted by customers for many years. However, the company needs to improve its communication to enhance its presence and reach new customers. The current product packaging is outdated and does not truly attract or make a strong impression on consumers.

### **2.3.2.2. *Cây Thị Company:***

- Logo:



Figure 2.8. Cây Thị Company's logo.

- General information:
  - + Official website: [caythi.com](http://caythi.com)
- Distribution channels:
  - + Various e-commerce platforms.
  - + Business franchise.
- Product portfolio:
  - + Nutritious porridge.
  - + Canned Acridium Chicken.
  - + Meatballs in sauce.
- Price range: Premium pricing: 58,000 to 158,000 VND/can (400g).
- Strengths:
  - + Over 25 years of providing "DELICIOUS - NUTRITIOUS - SAFE" food products to consumers.

- + Well-known brand deeply rooted with consumers since the 90s.
- + Located in an area of over 5,000 m<sup>2</sup>, with a dedicated and experienced production team.
- Brand scale and advertising:
  - + Products have been on the market for a long time and trusted by customers for many years.
  - + Presence on various e-commerce platforms.
  - + Extensive branch network.

Cây Thị Company has extensive experience with over 25 years of operation, renowned for high-quality products and attractive packaging. However, Cây Thị primarily focuses on nutritious porridge products rather than canned Acridium Chicken, and the pricing of their products is relatively high, catering to customers with medium to high income levels.

#### ***2.3.2.3. Eateries and restaurants offer chicken marinated with traditional herbs in Ho Chi Minh City***

- Popular eateries:
  - + Đại Dương Acridium Chicken Stew:
    - Facebook: Authentic Đại Dương Acridium Chicken Stew - 1981
    - Address: 14 Cao Thắng, Ward 5, District 3, Ho Chi Minh City
  - + Hiếu Ký Mì Gia Acridium Chicken Stew:
    - FB: Hiếu Ký Mì Gia Acridium Chicken Stew
    - Address: 5 Tô Ngọc Vân, Linh Tây Ward, Thủ Đức District, Ho Chi Minh City
  - + Kim Long Acridium Chicken Stew
    - Facebook: Kim Long Acridium Chicken Stew

- Address: Trần Phú Street, Vinh Long City, Ho Chi Minh City
- + Kim Long Acridium Chicken Stew:
  - Facebook: Kim Long Acridium Chicken Stew.
  - Address: Trần Phú Street, Vinh Long City, Ho Chi Minh City.
- Products and services:
  - + Products: Various Acridium Chicken Stew dishes and traditional dishes such as soup, Acridium Chicken Stew, braised pig brain with herbs, etc.
  - + Services: Providing delicious dine-in experiences combined with professional service and ambiance.
- Marketing strategy:
  - + Traditional marketing: Utilizing local media advertising such as TV, newspapers, and flyers. They also create promotional programs and events to attract customers.
  - + Word-of-mouth strategy: Creating memorable culinary experiences for customers to share on social media and recommend to friends and family, thus increasing the chance of attracting new customers.
- Pricing: Ranges from average to high due to operational costs and services.
- Distribution channels:
  - + Dine-in: Restaurants and eateries mainly focus on serving customers at their locations, usually at stores, eateries, or restaurants along main roads.
  - + Food delivery apps such as Shopee Food, Grab Food, with limited distance coverage.

These eateries and restaurants in Ho Chi Minh City have long-standing serving experience, establishing close relationships with the local community and committing to

delivering quality and diverse products. However, serving only within a close range may limit customer accessibility.

### **2.3.3. Vendors**

In the herbal food business, ensuring quality and stable supply plays an extremely important role. Therefore, we are committed to providing high-quality ingredients that meet all food safety standards and strictly adhere to legal regulations. To ensure the final products meet the highest quality standards and reasonable prices, we have chosen suppliers in Ho Chi Minh City based on our criteria to ensure that the products meet quality and pricing standards. We also conduct quality checks and evaluations of products before purchase/payment. Choosing suppliers in Ho Chi Minh City is prioritized due to its convenient location and the development of the food industry here. Ho Chi Minh City is home to many leading enterprises and factories with moderate costs, capable of providing diverse and quality products to businesses, thereby optimizing our capital expenditure. Furthermore, selecting suppliers from Ho Chi Minh City also helps minimize transportation costs and delivery time, optimizing the supply chain process and enhancing flexibility in our business operations. All these efforts aim to provide the highest quality products to our customers, while ensuring safety and compliance with all food regulations.

During our operations, selecting and maintaining relationships with suppliers plays a crucial role in our supply chain at Quỳnh Anh Quán. Our success is built on strategic partnerships and cooperation with reliable suppliers and intermediaries who share our commitment to quality and professionalism. Below is a report on the suppliers we have collaborated with and our plans for further expansion.

## **2.4. Macroenvironment**

### **2.4.1. Politics**

Vietnam is renowned for its political stability and stringent legal and regulatory framework that upholds consumer rights and fosters a healthy competitive environment.

In addition, the Vietnamese government has been putting laws into place to encourage the growth of the food industry, giving support to small and medium-sized businesses and startups particular priority. Additionally, the government offers start-ups financial help, advisory services, and training.

In summary, government policies that are helpful and stable play a major role in assisting us in growing and developing our firm. However, because of the need for inspections, food regulations—particularly those pertaining to standards, quality, safety, and labeling—also provide significant difficulties for companies operating in this industry. and follow it very closely.

#### **2.4.2. Economics**

In recent years, Vietnam has demonstrated its ability to achieve consistent economic growth, fostering favorable conditions for the expansion of various industries, including the food sector. Notably, the average monthly salary of workers in Vietnam rose to 7.6 million VND in the first quarter of 2024 compared to the previous quarter and the same period the prior year. This increase in average income indicates that people have more purchasing power, potentially leading to a higher demand for plant-based foods and other healthier food products, such as those rooted in traditional Chinese medicine. Consequently, companies in the medicinal food sector in northern Vietnam might find opportunities for growth and customer attraction by capitalizing on this market trend.

#### **2.4.3. Culture – Society**

Vietnamese society seamlessly blends modern influences with a deep respect for tradition. This is reflected in the food industry, where there's a strong desire for natural products that preserve both taste and cultural heritage.

While technology and engineering are advancing significantly at this time, environmental problems like pollution and climate change are posing a threat to society and causing a host of health disorders. Therefore, the community now ranks health and food safety among its top priorities. In addition, Vietnam's population is going through a special stage where a vibrant younger age group and a steadily aging population coexist. This opens up markets for herbal food products in cans, which can serve older consumers who value traditional flavors as well as younger consumers looking for convenience.

#### **2.4.4. Technology**

The food business has benefited greatly from today's notable scientific and technological advancements, particularly with regard to products including traditional Chinese medicine. When it comes to product distribution, processing, packaging, and preservation, technology is crucial.

Artificial intelligence (AI), machine learning, cloud computing, and data analytics are examples of technologies that can help automate activities based on demand forecast, streamlining the operating process to manage inventory and making business management easier.

- Businesses can preserve flavor, medications, and traditional medicine with the use of preservation technologies.
- Packaging process: Using automated equipment to boost productivity and guarantee product quality for storage for a long time.

While technology offers numerous benefits, it also establishes baseline calculations for initial investment expenses, necessitating rigorous technical analysis to guarantee investment effectiveness.

#### **2.4.5. Law**

Government economic policies have facilitated the flourishing of businesses and restaurants across the nation. Within this context, obtaining a business license and adhering to legal procedures is mandatory. Notably, enterprises must strictly comply with food safety regulations to guarantee their products are free from harm to consumers. Additionally, providing detailed and clear product labeling, including ingredients, expiration dates, and usage instructions, is essential.

### **2.5. SWOT Analysis**

#### **2.5.1. Strengths:**

- Long-standing brand (over 15 years) built and developed within the local community in Ben Tre province. The brand's longevity and reputation have established trust and loyalty among customers.
- Experienced human resource management and supply chain systems. The close and dynamic coordination between departments within the business allows us to quickly respond to emergencies and maintain product quality.
- Strategic business location, convenient for attracting customers from both urban and rural areas.
- Diverse service styles, from traditional to modern, with a variety of dishes to suit different customer groups.
- Unique cuisine, not common in the South, attracts interest and curiosity from customers.
- Diverse, high-quality and nutritious menu suitable for all customers, especially large families. For example, in a large family, the dishes will be suitable for children, the elderly, and even pregnant women.
- Significant number of loyal customers, providing a stable source of income for the business.

### **2.5.2. Weakness**

- Only selling offline, only 1 facility, not enough to meet customer needs on crowded days such as holidays and Tet.
- Not taking advantage of online channel resources to expand revenue.
- No marketing strategy, known mainly through word of mouth from customers.
- Full basic facilities but nothing special
- Regarding technology, you only need to use a POS machine to manage orders by desk, without a database to store
- Depends on the ingredients, most of the ingredients are fresh ingredients, very often there is a shortage of ingredients, or prices are charged on holidays and Tet.

### **2.5.3. Opportunites**

- The e-commerce channel is growing strongly, expanding products into online channels such as boxed products can increase sales and reach new customers.
- Potential in developing nutritional supplement products to meet the needs of modern consumers.
- Ability to expand branches into new schools such as HCM City and My Tho City.
- Use food installation apps to reach new customers.
- Enhance marketing strategy based on positive comments from loyal customer feedback. Seize the opportunity to develop specialty dishes such as chicken wings, duck eggs stewed with herbal medicine, coconut jelly, and ice cream to diversify the menu and attract more customers.

### **2.5.4. Threats**

- Challenges in developing canned products include ecological protection, food safety, and production costs.
- The risk of losing customers due to negative reactions if the product does not meet their expectations.
- Branch management risks involve capital, personnel, and local market acceptance.
- Difficulty in finding quality raw materials and operating costs when operations expand.
- The challenge of putting a business on a marketing platform, when faced with conflicting opinions,...

# **CHAPTER 3. MARKET ENTRY STRATEGY AND STP ANALYSIS**

## **3.1. STP**

With a diverse range of products, we have chosen segmentation based on the criteria of Demographic, Psychographic, and Behavioral factors, as analyzed in the following table. This analysis is based on three representative customer groups for the food market combined with traditional medicinal ingredients.

<b>GROUP</b>	<b>FACTORS</b>	<b>GROUP 1 CHOOSE FOR HEALTH</b>	<b>GROUP 2 TRADITIONAL CUISINE ENTHUSIAST</b>	<b>GROUP 3 SEEKING CONVENIENCE</b>
Prerestent	Overview	This group includes individuals who choose to consume foods combined with traditional medicinal ingredients to protect their health and prevent nutrition-related issues.	This group includes individuals who have developed a habit of consuming foods combined with traditional medicinal ingredients in their daily lives without any specific motivation.	This group includes individuals who are busy with their current lifestyle and are looking for convenient, nutritious meals.

Demo graphic	Age Occupation	All ages, mainly 20-60 years old.	All ages, mainly 25-60 years old.	All ages, mainly 20-40 years old.
	Residence	Diverse	Diverse	Students, New employee
	Occupation	Nationwide, mainly in major cities.	Nationwide, mainly in major cities.	Urban areas, major cities like HCM City, Hanoi, Da Nang, etc.
	Income	Diverse	Diverse	Above 5 million VND/month
	Marital Status	Single or married with a healthy lifestyle.	Single or married with a healthy lifestyle.	Mostly single.
	Characteristic	Focus on health and self- improvement.	Comfortable with a healthy lifestyle and see it as a natural part of daily life.	Quickly adapt to changes in eating habits.
Psycho graphic		-Positive Health Mindset: Often have a positive and proactive attitude towards personal health, showing particular	Adaptable and Flexible: Have a flexible and adaptive personality towards the habit of consuming foods combined	Creative and Modern: Often like to experiment with new trends.  Time-saving and Seeking Convenience:

		<p>attention to maintaining a healthy lifestyle.</p> <p><b>Knowledge Seeking:</b> Interested in medical knowledge and often seek information to better understand the benefits of dietary regimes for health.</p> <p><b>Positive Lifestyle:</b> Likely to have a positive and optimistic mindset, showing autonomy and</p>	<p>with traditional medicinal ingredients, not feeling much pressure in changing eating lifestyles.</p> <p><b>Natural Trait:</b> Often see the habit of consuming foods combined with traditional medicinal ingredients as a natural part of daily life, not feeling it is special or necessary to maintain.</p>	<p>Prioritize choosing quick, convenient meals to save time and effort.</p> <p><b>Dynamic Personality:</b> Often have a dynamic personality and are ready to renew their experiences.</p>
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		decisiveness in self-care.		
Behavioral	Loyalty	Quite high, can be more flexible in adjusting based on medical information.	Stable with habits and no sudden changes.	Low and likely to change due to many choices.
	Frequency of use	Frequent	Frequent	Infrequent
	Benefits Sought	Seeking balance in diet to maintain health, focusing on disease prevention and improving overall health condition.	Looking for healthy dishes that can satisfy preferences and tastes.	Looking for convenience and peace of mind in dietary habits, not paying much attention to other issues.

*Table 3.1. Market Segmentation Table.*

### 3.2. Target Market

Based on the market segmentation table, Quynh Anh Quan has decided to target the following three customer groups:

- Individual Customers: These are consumers who have the need and are willing to pay for safe and high-quality food products combined with

traditional medicinal ingredients. Additionally, the frequency of use for this customer group is relatively high and can increase significantly during holidays, festivals, and special occasions. This group has relatively diverse product needs and represents a significant portion of the market. Furthermore, due to the different approaches required, we have divided them into three main customer segments, each with a unique marketing approach:

- + Health-Conscious Customers.
- + Traditional Cuisine Enthusiasts.
- + Customers Seeking Convenience.
- Organizational Customers: These include distributors, wholesalers, retailers, stores, and supermarkets that are willing to distribute the company's products. This group has specific requirements regarding discounts, sales bonuses, and timely order fulfillment related to product distribution.

### **3.3. Market Entry Strategy**

#### **3.3.1. Positioning Strategy**

In the increasingly complex and diverse competitive landscape, product positioning has become crucial for businesses. Each company must create a distinct impression in the minds of customers to stand out among competitors.

The brand positioning strategy for our convenience canned balut and silky fowl products is built on two main factors:

- Product Quality: Product quality is the key factor determining the survival of the brand. We are committed to providing high-quality balut and silky fowl products, carefully selected from reliable sources. Our products not only meet hygiene and food safety standards but also bring an excellent culinary experience for consumers.

- Convenience and Variety: The products are canned, offering convenience for consumers to enjoy delicious dishes without spending time and effort on preparation. At the same time, we offer a variety of products and flavor variations to meet the diverse needs of our customers.

Thus, our convenience canned balut and silky fowl products are positioned not only on the foundation of high quality but also as a perfect combination of convenience and variety, creating a unique and appealing position in the packaged food market.

### 3.3.2. Positioning map

Criteria		Bao Long	Cay Thi	Quynh Anh Quan
Price		High price, ranging from 89,000 VND to 154,000 VND per can (400g)	High price, ranging from 58,000 VND to 158,000 VND per can (400g)	Low price, high quality, 32,000 VND to 78,000 VND per can (350g - 400g)
Quality		Products have been on the market for a long time, available on all major e-commerce platforms. Trusted by customers for many years.		Product quality is guaranteed. Serves the majority of consumers, with a wide reach.
Weakness		High price -> targets only mid- to high-income customers. Weak in terms of media presence.		New to the market, incurring high costs to build the brand.

Table 3.2. Positioning map

- Brand Positioning Map of Quynh Anh Quan.



Figure 3.1. Brand Positioning Map of Quynh Anh Quan.

# CHAPTER 4. WEBSITE REQUIREMENTS ANALYSIS

## 4.1. Performance

### 4.1.1. Current Performance

- Desktop version

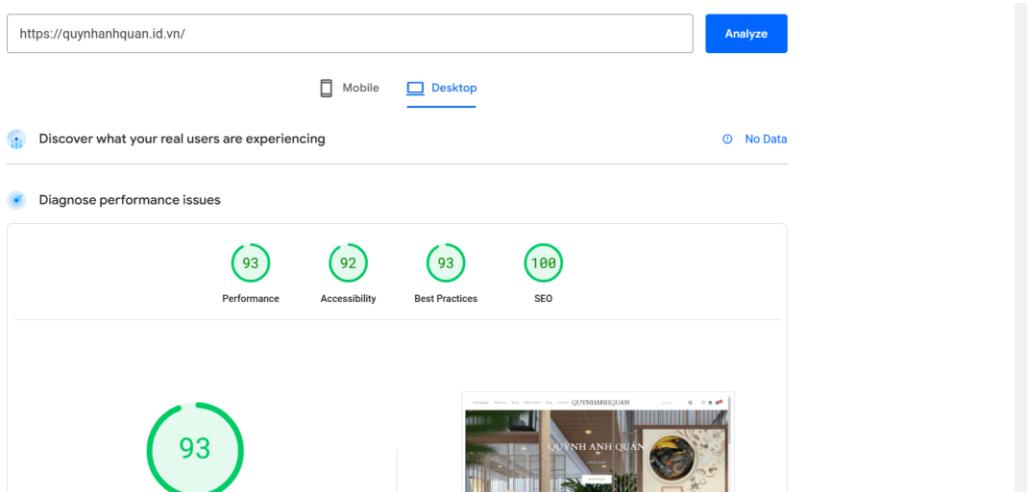


Figure 2. Performance on laptop

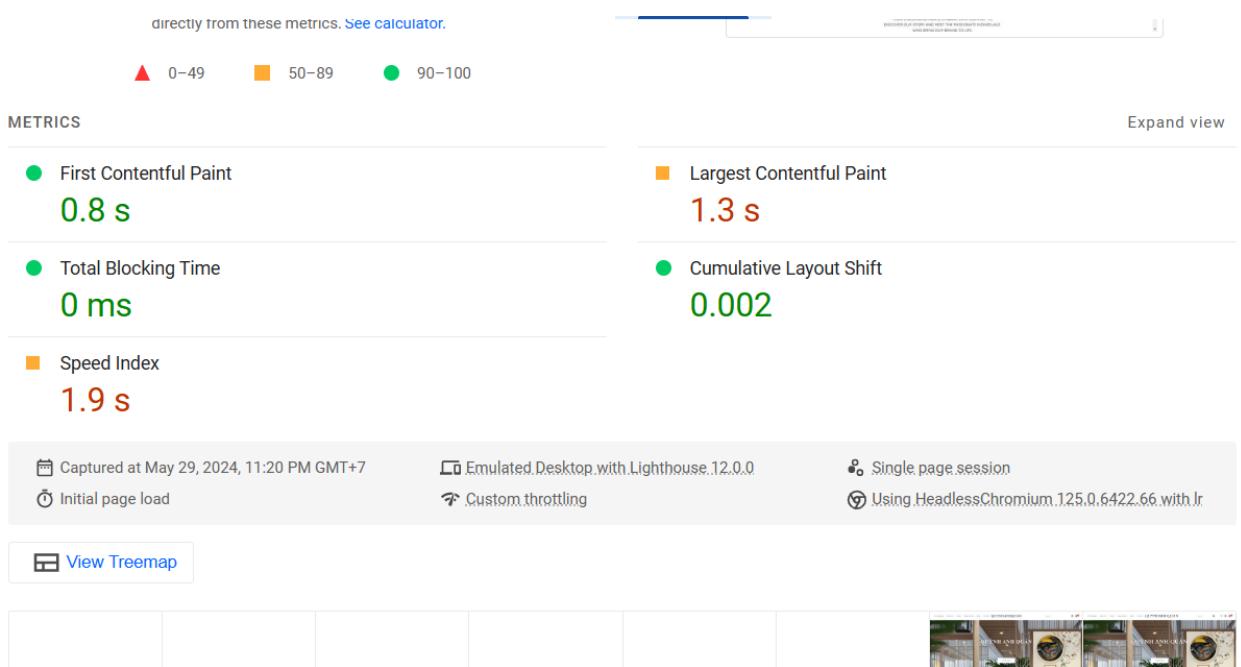


Figure 3. Insight

The image shows performance metrics for a webpage, including First Contentful Paint (0.8s), Total Blocking Time (0ms), Largest Contentful Paint (1.3s), Cumulative Layout Shift (0.002), and Speed Index (1.9s). It also provides information about the testing environment, such as the emulated desktop version, throttling settings, and the user agent used. The metrics are categorized into three color-coded ranges: 0-49 (red), 50-89 (yellow), and 90-100 (green). A thumbnail of the webpage being tested is displayed at the bottom.

First Contentful Paint (FCP): The time it takes for the first text or image to be rendered on the screen after navigation.

Total Blocking Time (TBT): The total time spent by the main thread being blocked from responding to user inputs, rendering, etc. Lower is better.

Largest Contentful Paint (LCP): The time it takes for the largest text or image element to be rendered on the screen.

Cumulative Layout Shift (CLS): A measure of how much visible content shifted during loading, impacting user experience.

Speed Index: A metric that shows how quickly the contents of a page are visually populated. It considers the visual progression from start to finish.

These metrics help evaluate the real-world performance and user experience of a website across different dimensions like load speed, interactivity, visual stability, etc.

#### **4.1.2. Mobile Friendly**

While Quynh Anh Quan's website performs well on desktop, its mobile version faces performance issues.

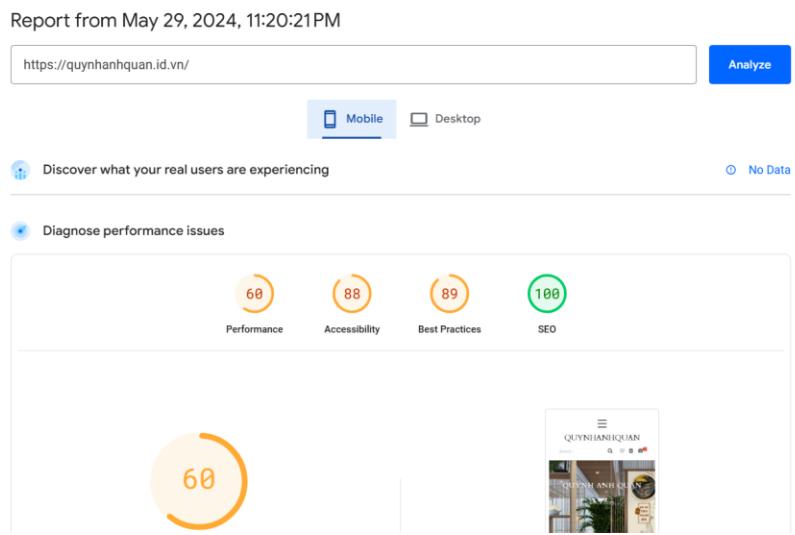
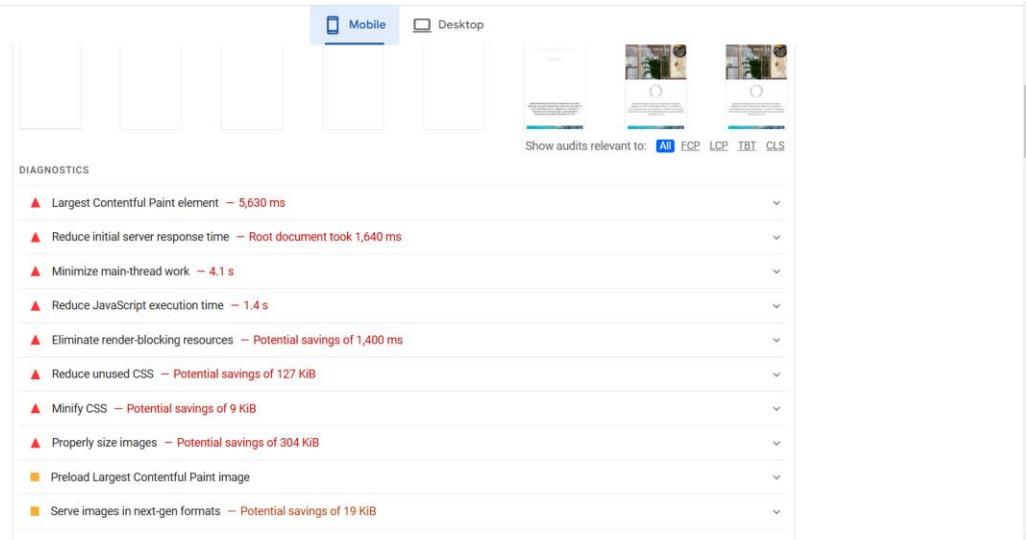


Figure 4. Performance on mobile

To enhance the performance of the Quynh Anh Quan website on mobile devices, optimizing the code and addressing other contributing factors is the solution. This involves improving responsiveness, optimizing images and assets, enhancing mobile-specific user experience elements, and ensuring compatibility across various mobile devices and browsers.



*Figure 5. Improvement Suggestion*

#### 4.1.3. SEO Analysis

##### 4.1.3.1. Google Search Console

Submitting your site to Google Search Console is crucial for effective SEO (Search Engine Optimization) strategy. It provides valuable insights into how Google perceives and indexes your website, allowing you to monitor its performance in search results. By submitting your site, you gain access to vital data such as indexing status, search queries driving traffic to your site, crawl errors, and mobile usability issues. This information empowers you to optimize your site's visibility and ranking in Google search results by identifying and addressing any issues that may hinder its performance. Additionally, Google Search Console enables you to submit sitemaps, request URL indexing, and receive notifications about security issues or penalties, ensuring your site remains visible and accessible to your target audience.

The screenshot shows the Google Search Console interface. On the left, there's a sidebar with navigation links like 'Tổng quan', 'Hiệu suất', 'Kiểm tra URL', etc. The main area is titled 'Kiểm tra URL' and shows a result for the URL <https://quynhanhquan.id.vn/2024/05/29/rau-cau-dua-giai-phap-cho-nhung-ngay-he/>. A tooltip for 'Yêu cầu lập chỉ mục' is visible, explaining that it helps Google index the page.

Figure 6. Google Search Console on post

Choose “Yêu cầu lập chỉ mục”

This screenshot shows a modal dialog box in the Google Search Console. It asks if you want to check if the URL has been indexed. The 'Request Index' button is highlighted with a blue oval. The background shows the same search results as Figure 6.

Figure 7. Request for Index on Google Search Console

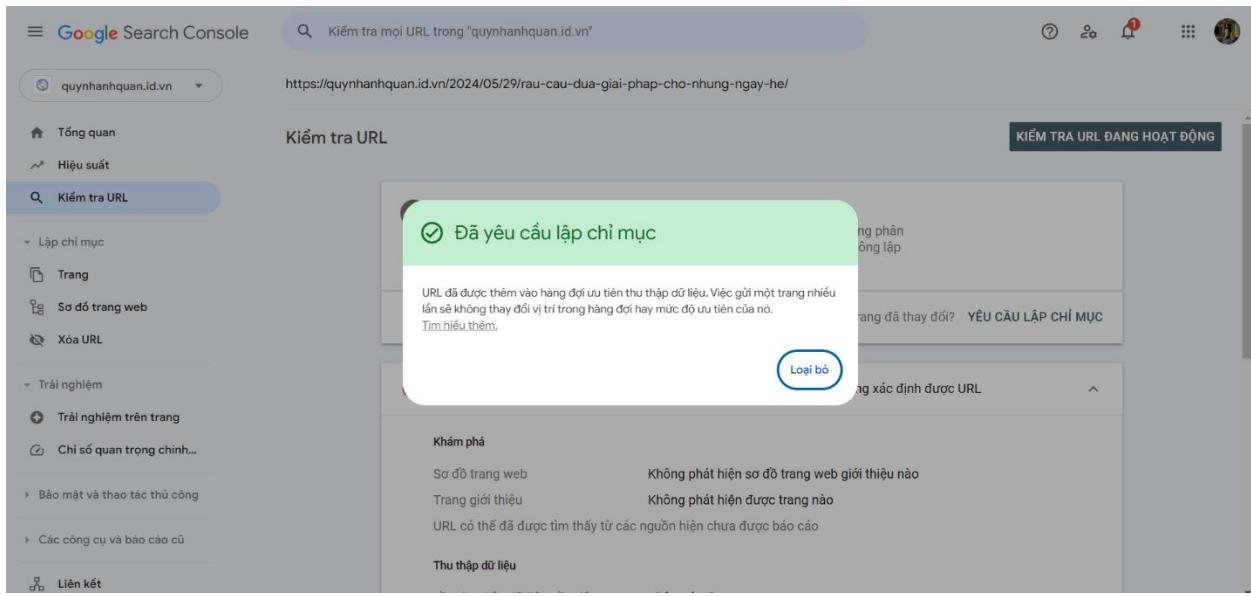


Figure 8. Google Search Console message if your request is sent successfully

#### 4.1.3.2. Writing SEO Content

Optimizing a website for search engines typically starts with keyword research using tools like Keyword Tool or Ahrefs. Once keywords are identified, an outline is crafted to guide content creation. Content is then written, strategically incorporating chosen keywords. Finally, on-page optimization involves implementing SEO best practices. This systematic approach helps create high-quality, optimized content that ranks well in search results and attracts organic traffic.

## On-Page SEO Checklist

- Your keyword is in the <title> tag, ideally at the front (or close to the front) of the tag
- Your keyword is close to the beginning of the <title> tag (ideally the first words)
- The title tag contains less than the viewable limit of 65 characters (optional but recommended)
- Your keyword is in the first <h1> tag (and your page has an <h1> tag)
- If your page contains additional header tags (<h2>, <h3>, etc) your keyword or synonyms are in most of them
- Any images on the page have an <alt> tag that contain your chosen keyword
- Your keyword is in the meta description (and there is a meta description)
- There is at least 300 words of text on the page
- Your keyword appears in the URL (if not the homepage)
- Your keyword appears in the first paragraph of the copy
- Your keyword (or synonyms — Google recognizes them now) is used other times throughout the page
- Your keyword density is between .5% and 2.5%
- The page contains dofollow links to other pages (this just means you're not using nofollow links to every other page)
- The page is original content not taken from another page and dissimilar from other pages on your site

*Figure 9. SEO checklist*

After publishing a post, it's important to go to Google Search Console and submit the URL to ensure it's indexed by Google's search engine. The SEO process typically takes 3-5 months for a website to appear in top search results. This involves configuring sitemaps, building backlinks, and optimizing internal links across thousands of posts. It's a gradual process that requires consistent effort and monitoring to improve the website's visibility and rankings over time.

#### 4.1.3.3. SEO Framework Plugin

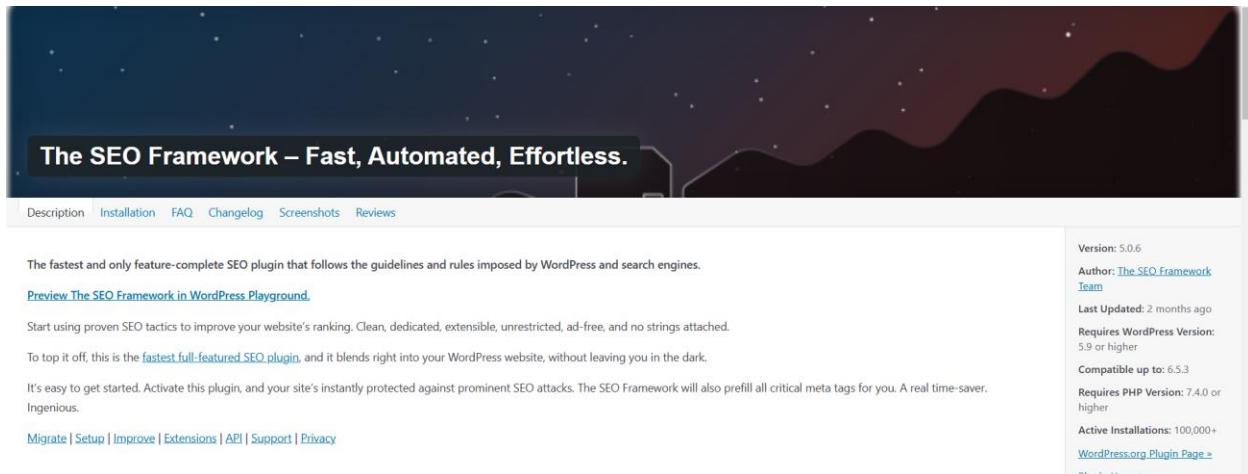


Figure 10. The SEO Framework Plugin

Support SEO analytics while editing the post.

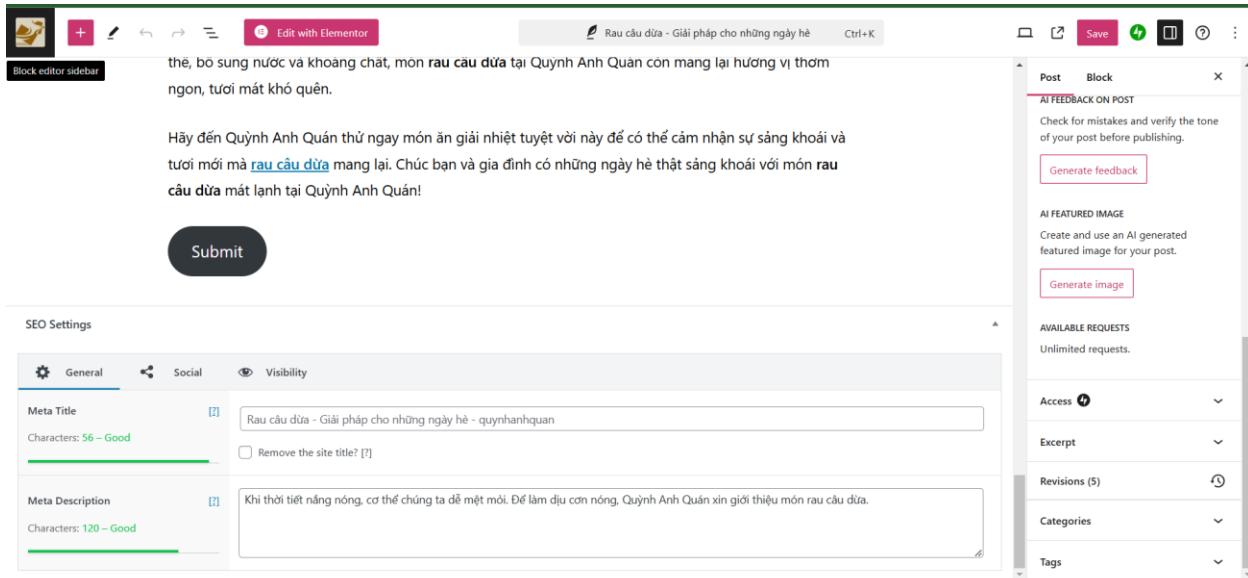


Figure 11. SEO Framework Plugin support

## 4.2. Security

Website has the SSL certificate:

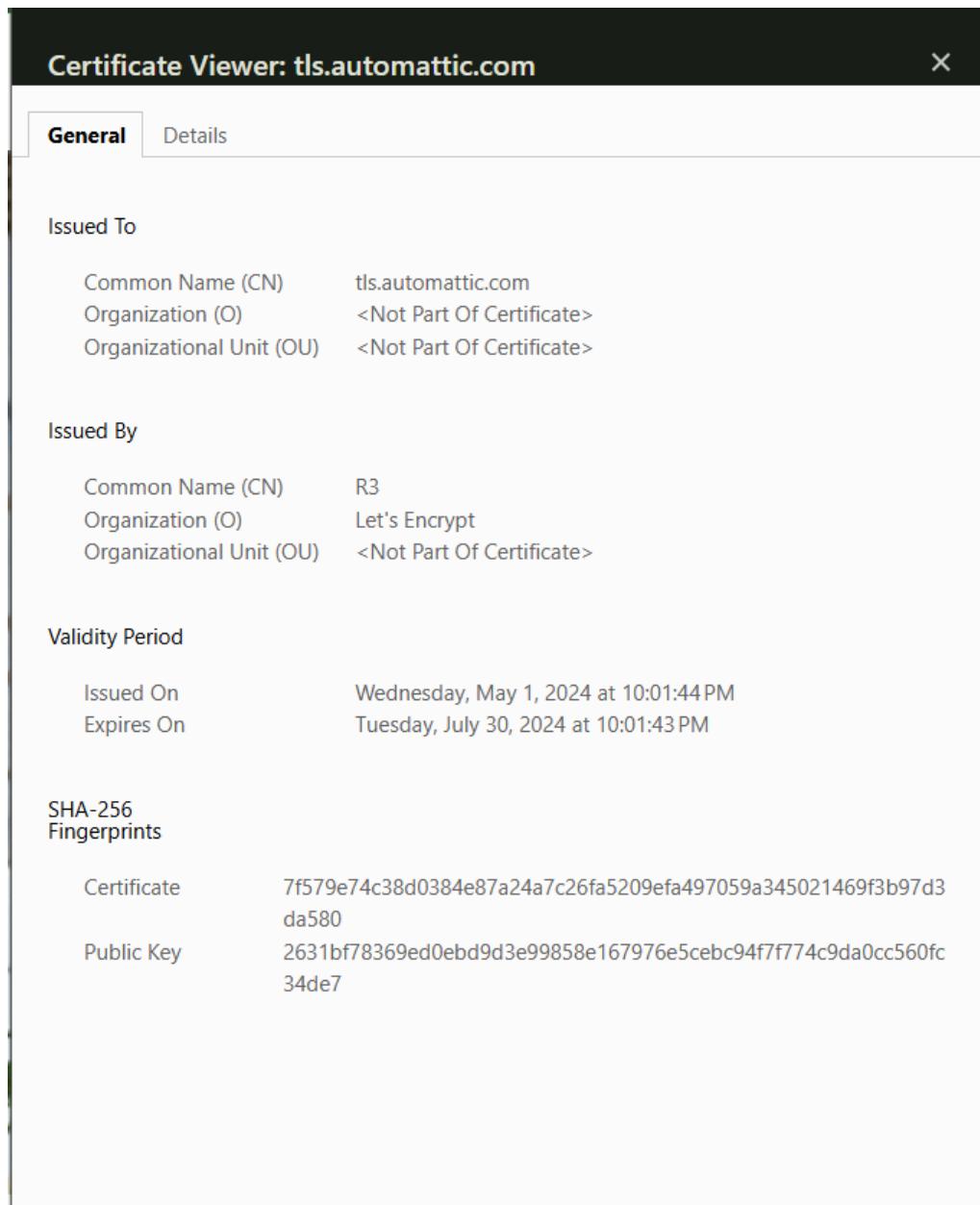


Figure 12. SSL Certificate

### 4.3. Requirement

#### 4.3.1. High Level Diagram

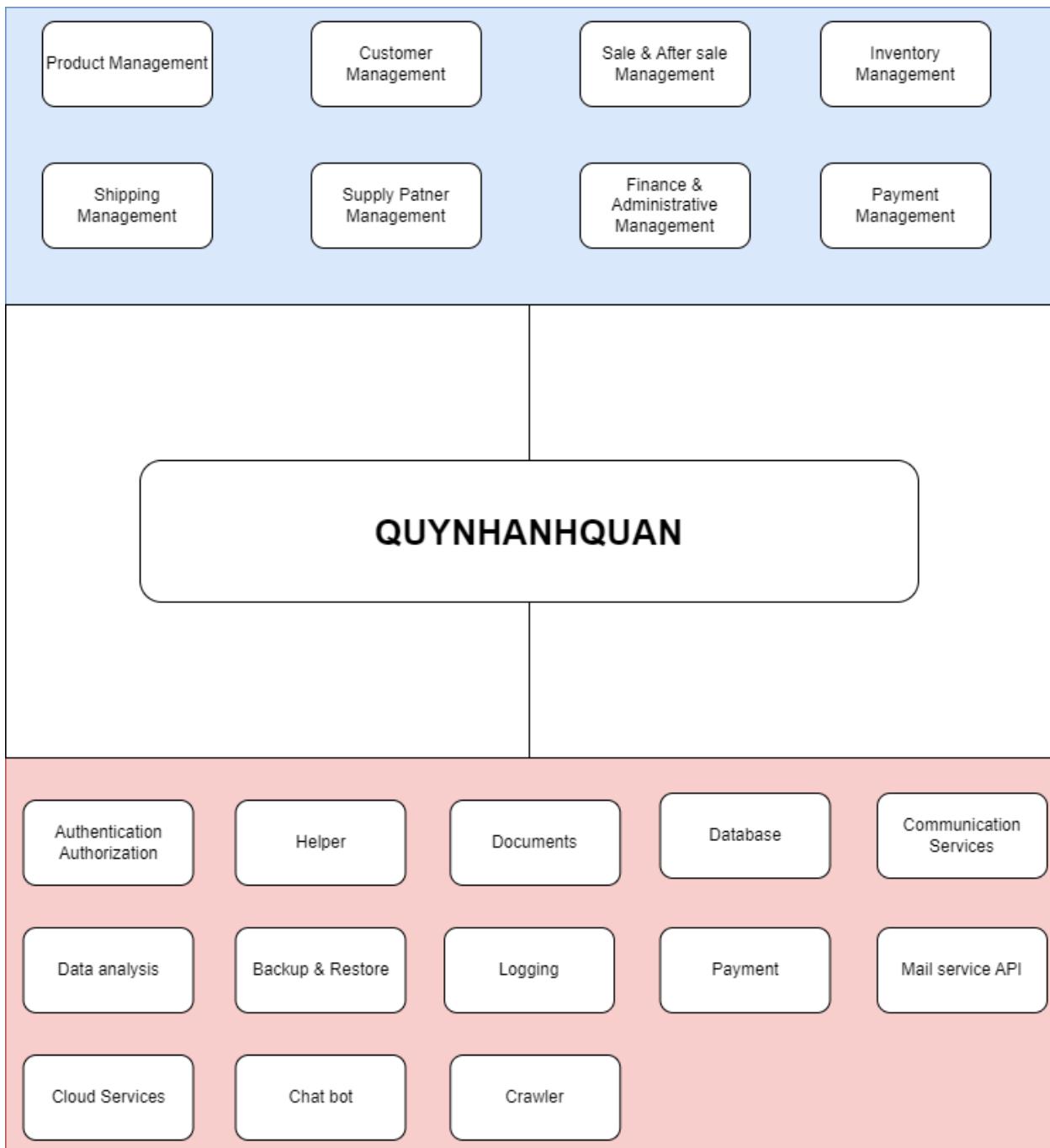


Figure 13. High level diagram of Quynh Anh Quan E-commerce Website

#### 4.3.2. BPMN:

#### 4.3.2.1. Marketing Process:

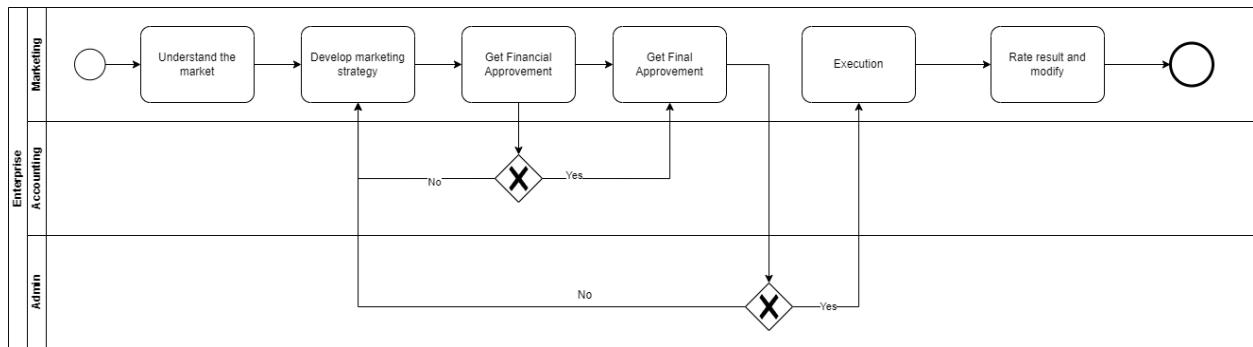


Figure 4.14. BPMN Marketing Process

Description:

- Initiation: Receive marketing request.
- Details:
  - + Conduct market research to identify target audience and opportunities.
  - + Develop marketing strategy based on research findings.
  - + Propose strategy to the Accounting department to ensure financial feasibility.
  - + If not approved, return to the marketing strategy development step; if approved, proceed to the next step.
  - + Seek approval from the Administration department to execute the strategy.
  - + If not approved, return to the marketing strategy development step; if approved, proceed to the implementation step.
- Departments involved: Marketing, Accounting, Administration.

#### 4.3.2.2. Warehouse Checking Process

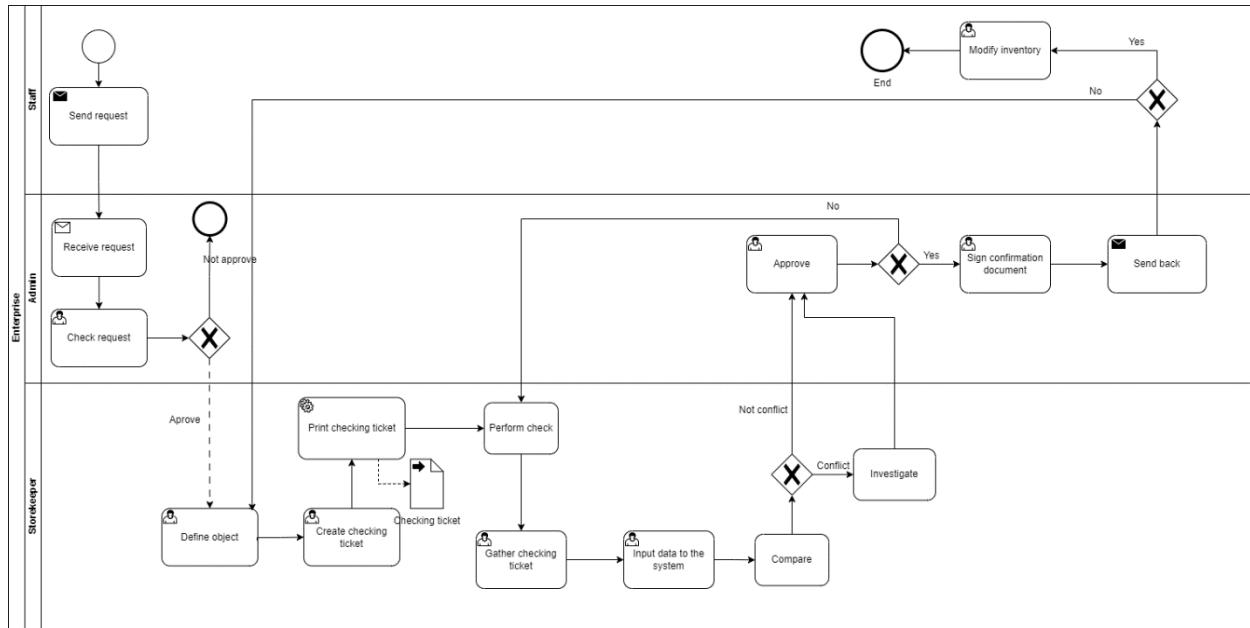


Figure 4.15. BPMN Warehouse Checking Process

Description:

- Initiation: Staff submits a checking request.
- Details:
  - + Admin receives and verifies the validity of the request.
  - + If the request is invalid, it is rejected, and the process ends.
  - + If the request is valid, it is forwarded to the Storekeeper to identify the object of the check.
  - + Storekeeper creates a checking ticket, prints it, and performs the check.
  - + Storekeeper retrieves the checking ticket and enters data into the system.
  - + Comparison of check results is conducted.

- + If there is a conflict, an investigation is initiated, and the findings are sent to Admin.
- + If Admin disagrees, the Storekeeper is instructed to revisit data entry. If Admin agrees, the next step is executed.
- + In case of no conflict, Admin approves and signs the confirmation document.
- + The document is sent back to the staff for review.
- + If the staff agrees, warehouse adjustments are made, and the process ends.
- + If the staff disagrees, the process returns to identifying the object of the check.
- Departments involved: Staff, Admin, Storekeeper.

#### **4.3.2.3. *Online Sale Process***

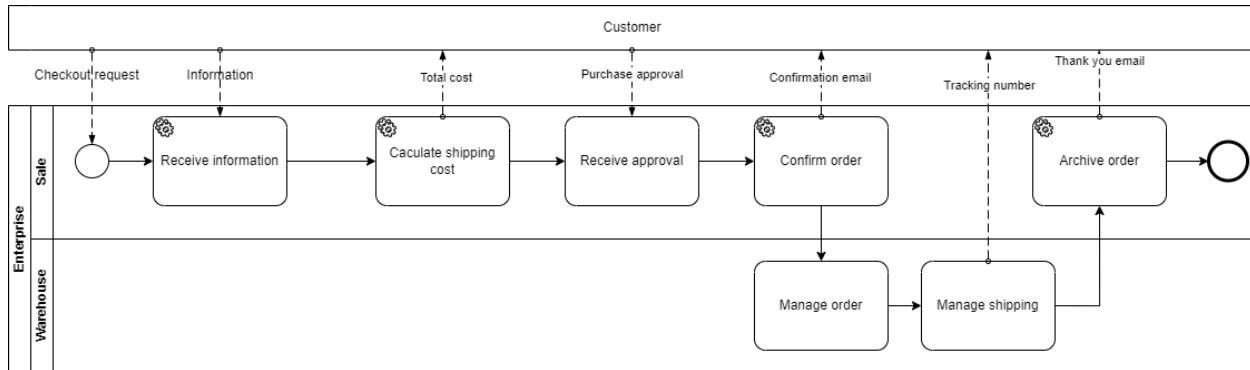


Figure 4.16. BPMN Online Sale Process

Description:

- Initiation: Customer initiates checkout request.
- Detail:

- + Sales department receives the request and calculates shipping costs. They then seek approval from the customer for the purchase.
- + Upon receiving approval from the customer, the sales department confirms the order and sends an email confirmation to the customer.
- + Simultaneously, the warehouse department receives the order details, manages inventory, and arranges for shipping. They provide the customer with a tracking number.
- + Once the order is shipped, the sales department archives the order and sends a thank-you email to the customer.
- Departments involved: Customer, Sale department, warehouse department.

#### **4.3.2.4. Offline Sale Process**

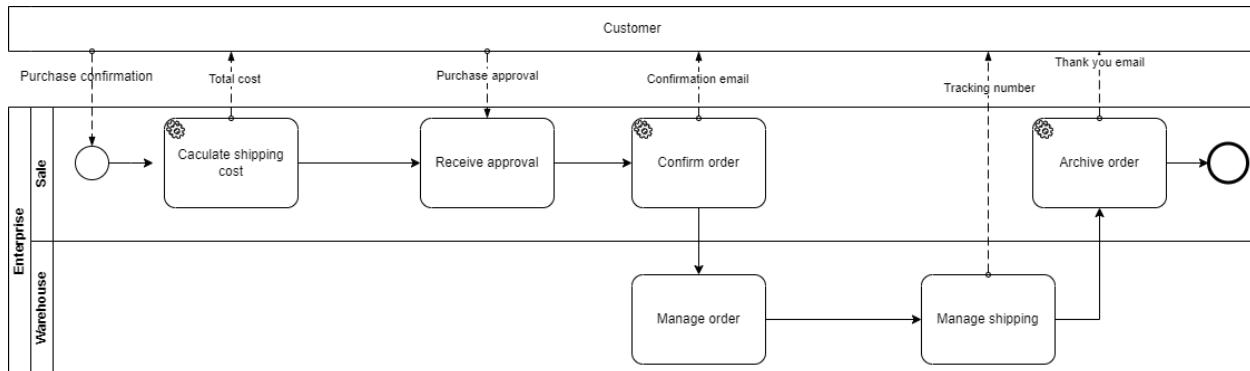


Figure 4.17.3BPMN Offline Sale process

Description:

- Initiation: Customer sends purchase confirmation to the sales department.
- Detail:
  - + Upon receiving the purchase confirmation from the customer, the sales department calculates the shipping cost and sends the total cost to the customer for confirmation.

- + Once the customer approves the purchase, the sales department receives and confirms the order.
- + The sales department sends a confirmation email to the customer.
- + Simultaneously, the warehouse department receives the order details, manages inventory, and arranges for shipping. They provide the customer with a tracking number.
- + After the order is shipped, the sales department archives the order and sends a thank-you email to the customer.
- Departments involved: Customer, Sale department, warehouse department.

#### **4.3.2.5. Customer service process**

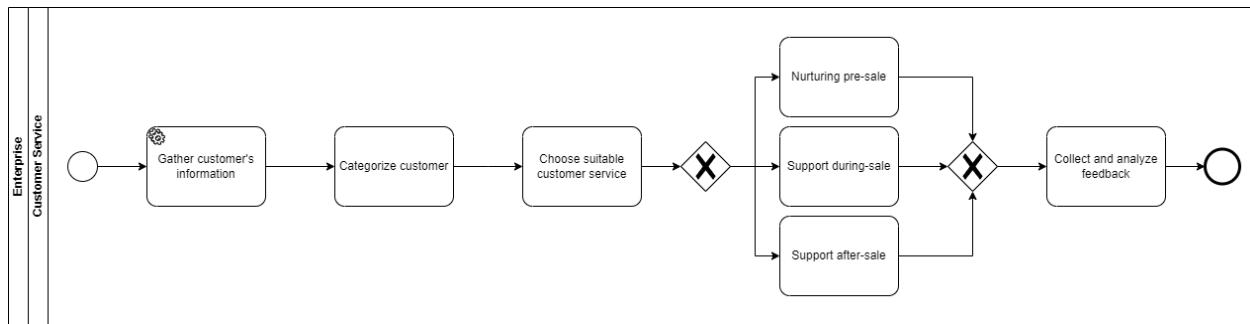


Figure 4.18. BPMN Customer service process

Description:

- Initiation: Customer initiates contact with the customer service department.
- Detail:
  - + Customer service department gathers customer information upon contact initiation.
  - + The department categorizes the customer based on their needs into one of three options: pre-sale nurturing, support during-sale, or support after-sale.

- + The appropriate customer service is provided based on the categorization.
- + Finally, feedback is collected and analyzed to improve the overall customer service experience.
- Departments involved: Customer service.

#### **4.3.2.6. Internal process**

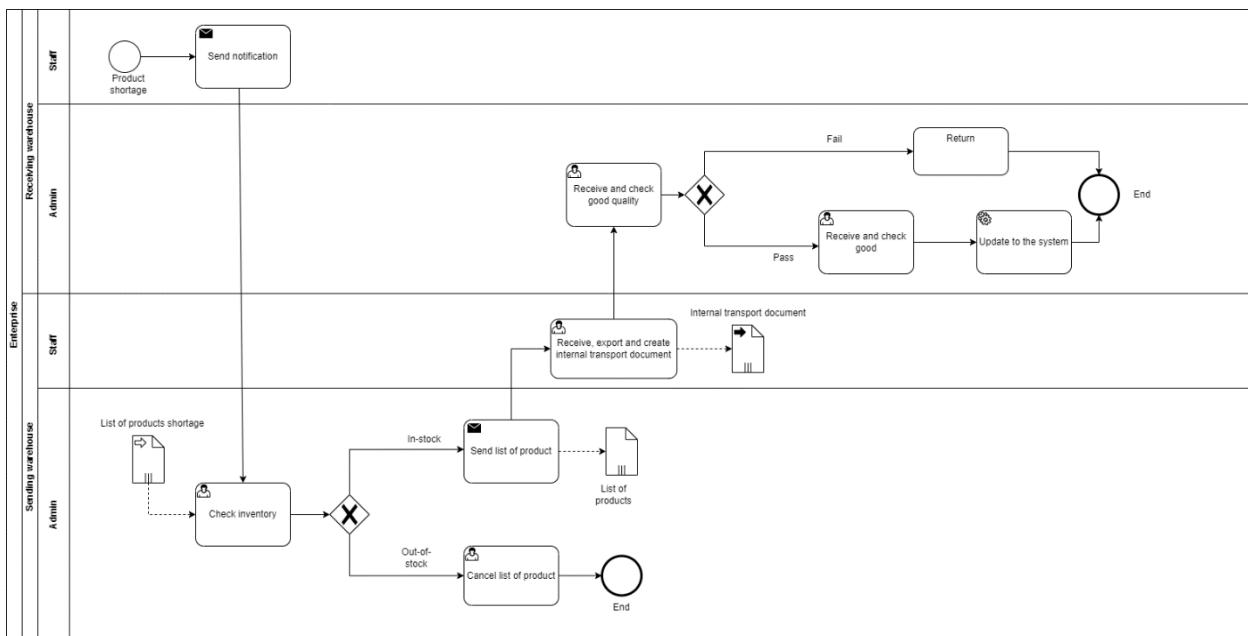


Figure 4.19. BPMN Internal process

Description:

- Initiation: Notification of product shortage.
- Detail:
  - + Staff sends a notification to the admin regarding the product shortage.
  - + Admin checks the inventory against the document list of products in shortage.
  - + If the products are in stock, the admin sends the list of products to the staff along with the attached document.

- + If the products are out of stock, the admin cancels the list of products and informs the staff.
- + Upon receiving the list of products from the admin, the staff receives, exports, and creates an internal transport document with the attached document.
- + The staff sends the document to the admin for quality checking.
- + If the products pass the quality check, the admin updates the system.
- + If the products do not pass the quality check, they are returned to the sender for further action.
- Departments involved: Admin, staff

#### 4.3.2.7. Warehouse export process

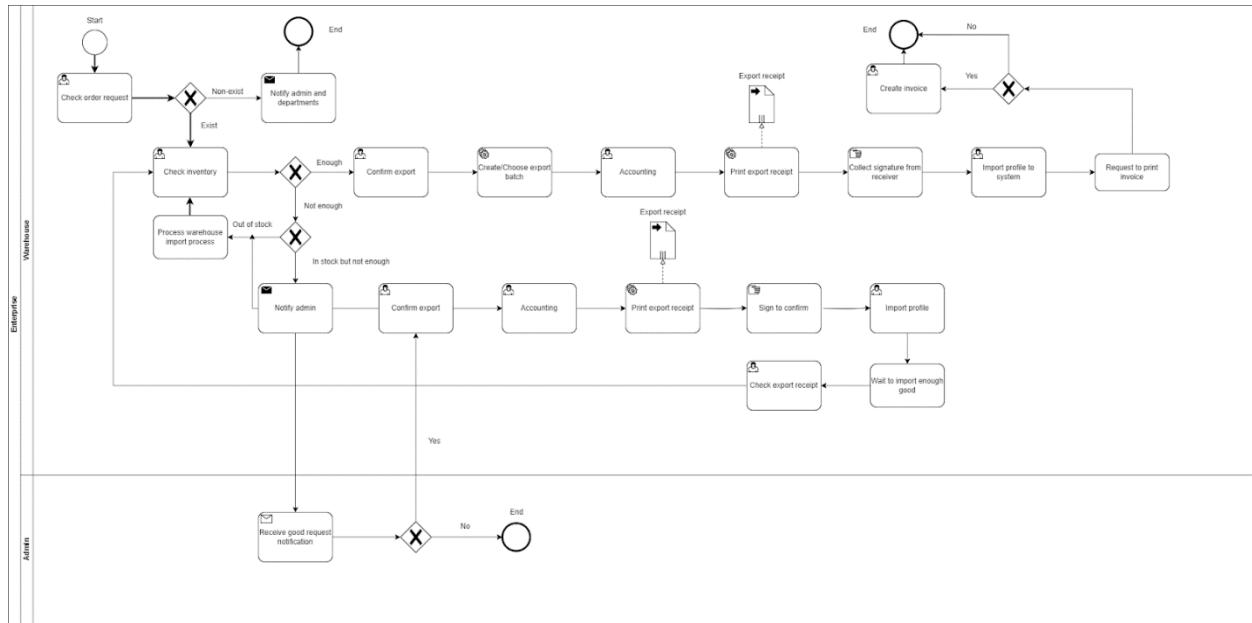


Figure 4.20. BPMN Warehouse export process

Description:

- Initiation: Receipt of order requests.
- Detail:

- + The warehouse department checks for order requests. If there are none, they notify both the admin and the relevant department.
  - + If orders exist, the inventory is checked.
  - + If there is insufficient inventory: a. If the reason is due to being out of stock, the warehouse initiates the warehouse import process and returns to the inventory check step. b. If the reason is insufficient but still in stock, the warehouse notifies the admin and initiates the warehouse import process. Meanwhile, the admin receives the goods request notification.
  - + Upon confirmation from the admin, the warehouse confirms the export, conducts accounting procedures, prints an export receipt with attached documents, and obtains necessary signatures for confirmation.
  - + The import profile is updated, and the warehouse waits until there are enough goods for export. They then check the export receipt and return to check inventory.
  - + If the inventory is sufficient, the warehouse confirms the export and creates/chooses an export batch.
  - + Accounting prints the export receipt, collects signatures from the receiver, updates the import profile in the system, and requests to print the invoice.
  - + If the request is approved, the invoice is created, and the process ends. If not, the process ends without generating an invoice.
- Departments involved: Admin, warehouse

#### 4.3.2.8. Warehouse import process

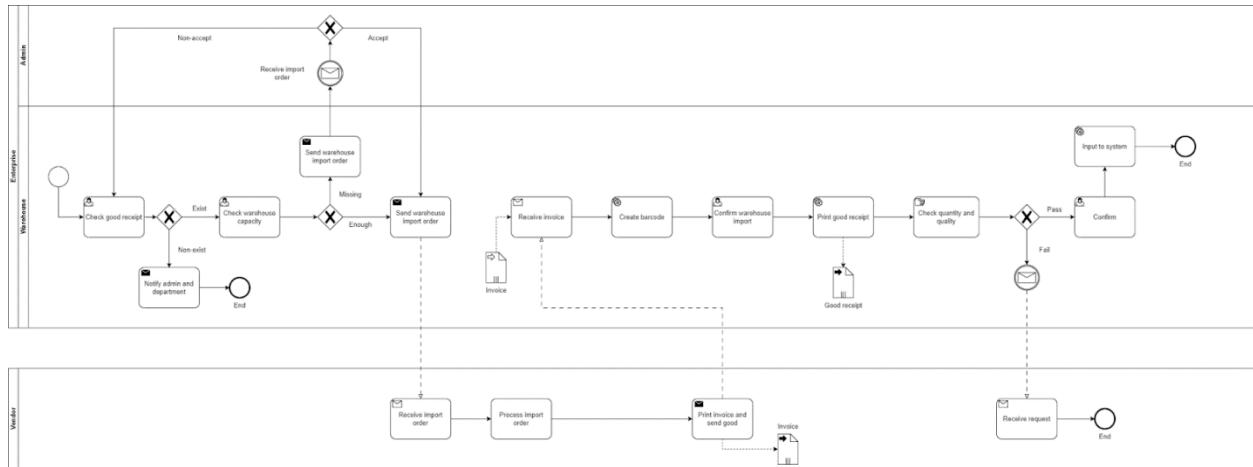


Figure 4.21. Warehouse import process

Description:

- Initiation: Upon receiving goods at the warehouse.
- Detail:
  - + The warehouse checks for the goods receipt. If it doesn't exist, they notify the admin and the relevant department.
  - + If the goods receipt exists, the warehouse checks its capacity. If there is insufficient capacity, they send a warehouse import order to the admin.
  - + The admin receives the import order. If the admin does not accept it, they return to check the goods receipt. If the admin accepts the import order, the warehouse checks if there are enough goods and sends the warehouse import order.
  - + The warehouse sends the import order to the vendor. The vendor receives the import order, processes it, prints the invoice, and sends the goods along with the attached invoice document.

- + Upon receiving the goods and invoice, the warehouse creates barcodes, confirms the warehouse import, prints the goods receipt, and checks the quality and quantity.
- + If the goods pass the inspection, the warehouse confirms receipt, inputs the information into the system, and ends the process.
- + If the goods fail inspection, the warehouse sends a request to the vendor for resolution and ends the process.
- Departments involved: Admin, warehouse, vendor.

#### **4.3.2.9. Purchase process**

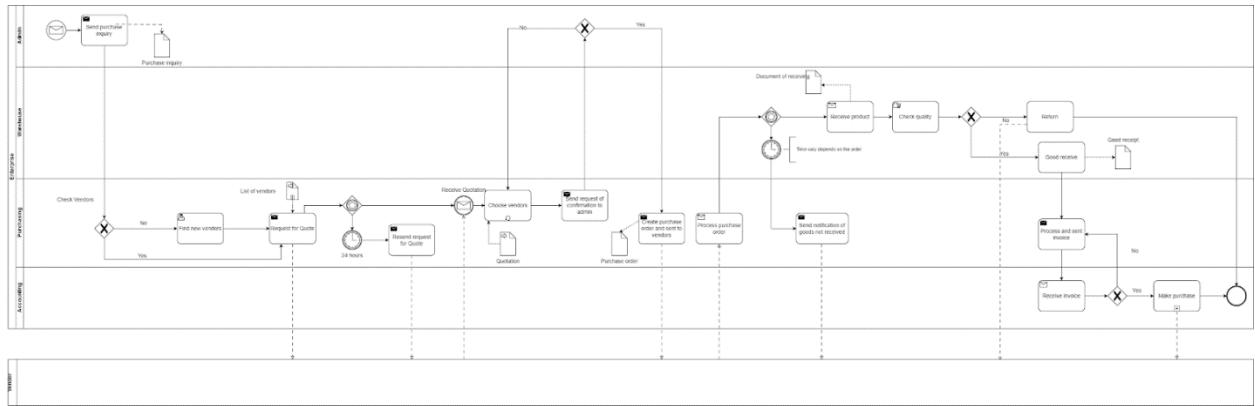


Figure 4.22. BPMN Purchase process

Description:

- Initiation: Admin receives an email.
- Detail:
  - + Upon receiving the email, the admin sends a purchase inquiry to the purchasing department.
  - + Purchasing checks with vendors. If none are available, purchasing seeks out new vendors and proceeds to the next step. If vendors are available, purchasing requests quotes, attaching a document list of vendors.

- + Purchasing waits for 24 hours for vendor responses. If no responses are received, they resend the request for quotes.
- + Upon receiving quotations, purchasing chooses vendors and sends a request for confirmation to the admin.
- + If the admin rejects, purchasing chooses vendors again. If the admin approves, they create a purchase order and send it to the vendors, proceeding to process the purchase order.
- + The warehouse waits for the specified time (varies depending on the order).
- + If goods are not received within the specified time, a notification of goods not received is sent.
- + If goods are received, they are checked for quality. If the quality meets standards, the goods are received, and purchasing processes the receipt, sends the invoice, forwards the invoice to accounting, completes the purchase, and ends the process.
- Departments involved: Admin, warehouse, purchasing, accounting.

#### **4.3.3. Roles in the system**

ID	Roles	Definition
1	Customer	Registered user
2	Subscriber	Web user who subscribes to become a subscriber.
3	Admin	The admin of the website, in charge of development.
4	User	User of the website in general.

#### **4.3.4. Functional Requirements**

ID	Name of requirement	Priority	Diagram

1	The user shall have authorization right		
1.1	The user shall be able to login to access their personalized information	Critical	UC-1, AD-1, SD-1
1.2	The user shall be able to logout of their account	Critical	UC-1, AD-2, SD-2
1.3	The user shall be able to register	Critical	UC-1, AD-3, SD-3
1.4	The user shall be able to forgot password	Critical	UC-1, AD-4, SD-1
2	The user shall be able to manage wishlist		
2.1	The user shall be able to view their wishlist	Low	UC-2, AD-6, SD-4
2.2	The user shall be able to add product to their wishlist	Low	UC-2, AD-5, SD-4
2.3	The user shall be able to remove product from their wishlist	Low	UC-2, AD-6. SD-4
3	The user shall be able to manage shopping cart		
3.1	The user shall be able to view their shopping cart	Critical	UC-3,AD-7, SD-6
3.2	The user shall be able to add product to their shopping cart	Critical	UC-3, AD-8, SD-6

3.3	The user shall be able to remove product from their shopping cart	Critical	UC-3, AD-9, SD-6
3.4	The user shall be able to modify the product quantity	Critical	UC-3, AD-10, SD-6
4	The user shall be able to manage profile		
4.1	The user shall be able to view their profile information	Critical	UC-4, AD-11, SD-7
4.2	The user shall be able to update their profile/ password	Medium	UC-4, AD-12, SD-7
4.3	The user shall be able to delete their account	Low	UC-4, AD-13, SD-7
5	The user shall be able to manage reservation		
5.1	The user shall be able to make reservation	Medium	UC-5, AD-15, SD-5
5.2	The user shall be able to cancel reservation	Medium	UC-5, AD-16, SD-5
6	The user shall be able to comment and rating on posts/products	High	UC-6, AD-17, SD-11
7	The user shall be able to checkout	Critical	UC-7,AD-14, SD-11
8	The user shall be able to contact admin	Medium	UC-8, AD-18, SD-9
9	The user shall be able to manage product as customer/guest		
9.1	The user shall be able to view product	Critical	UC-9, AD-19, SD-16

9.2	The user shall be able to view product details	Critical	UC-9, AD-20, SD-16
9.3	The user shall be able to search for product	High	UC-9, AD-21, SD-16
10	The user shall be able to manage message		
10.1	The user shall be able to view message	Medium	UC-10, AD-22, SD-10
10.2	The user shall be able to delete message	Low	UC-10, AD-23, SD-10
10.3	The user shall be able to reply to message	Low	UC-10, AD-24, SD-10
11	The user shall be able to manage order		
11.1	The user shall be able to view all orders	Critical	UC-11, AD-25, SD-12
11.2	The user shall be able to view order details	Critical	UC-11, AD-26, SD-12
11.3	The user shall be able to update order status	Critical	UC-11, AD-27, SD-12
12	The user shall be able to manage category		
12.1	The user shall be able to create category	Critical	UC-12, AD-28, SD-14
12.2	The user shall be able to view category	Critical	UC-12, AD-29, SD-14
12.3	The user shall be able to delete category	Critical	UC-12, UC-30, SD-14

12.4	The user shall be able to edit category	Critical	UC-12, AD-31, SD-14
13	The user shall be able to manage product		
13.1	The user shall be able to create product	Critical	UC-13, AD-32, SD-15
13.2	The user shall be able to view product	Critical	UC-13, AD-33, SD-15
13.3	The user shall be able to delete product	Critical	UC-13, AD-34, SD-15
13.4	The user shall be able to edit product	Critical	UC-13, AD-35, SD-15
14	The user shall be able to manage customer account		
14.1	The user shall be able to view all customer accounts	Medium	UC-14, AD-36, SD-17
14.2	The user shall be able to view customer account's details	Low	UC-14, AD-37, SD-17
14.3	The user shall be able to create customer account	High	UC-14, AD-38, SD-17
14.3	The user shall be able to delete customer account	High	UC-14, AD-39, SD-17
14.5	The user shall be able to edit customer account's status	Low	UC-14, AD-40, SD-17
15	The user shall be able to view web store information	Critical	UC-15
16	The user shall be able to view statistic	High	UC-16, AD-41

16.1	The user shall be able to view total customers	High	UC-16, AD-41, SD-13
16.2	The user shall be able to view total products	High	UC-16, AD-41, SD-13
16.3	The user shall be able to view total revenue	Medium	UC-16, AD-41, SD-13
16.4	The user shall be able to view total categories	High	UC-16, AD-41, SD-13
16.5	The user shall be able to view total active products	High	UC-16, AD-41, SD-13
16.6	The user shall be able to view total deactived products	High	UC-16, AD-41, SD-13
16.7	The user shall be able to view total trending products	Medium	UC-16, AD-41, SD-13
16.8	The user shall be able to view total cancelled orders	High	UC-16, AD-41, SD-13
16.9	The user shall be able to view total completed orders	High	UC-16, AD-41, SD-13
17	The user shall be able to manage reservation	Critical	
17.1	The user shall be able to view reservation	Critical	UC-17, AD-42, SD-5
17.2	The user shall be able to update reservation	Critical	UC-17, AD-43, SD-5

*Table 4.1. List of requirements*

# CHAPTER 5. DIAGRAM AND DESCRIPTION

## 5.1. Use Case Diagram

### 5.1.1. UC-1. User Authentication

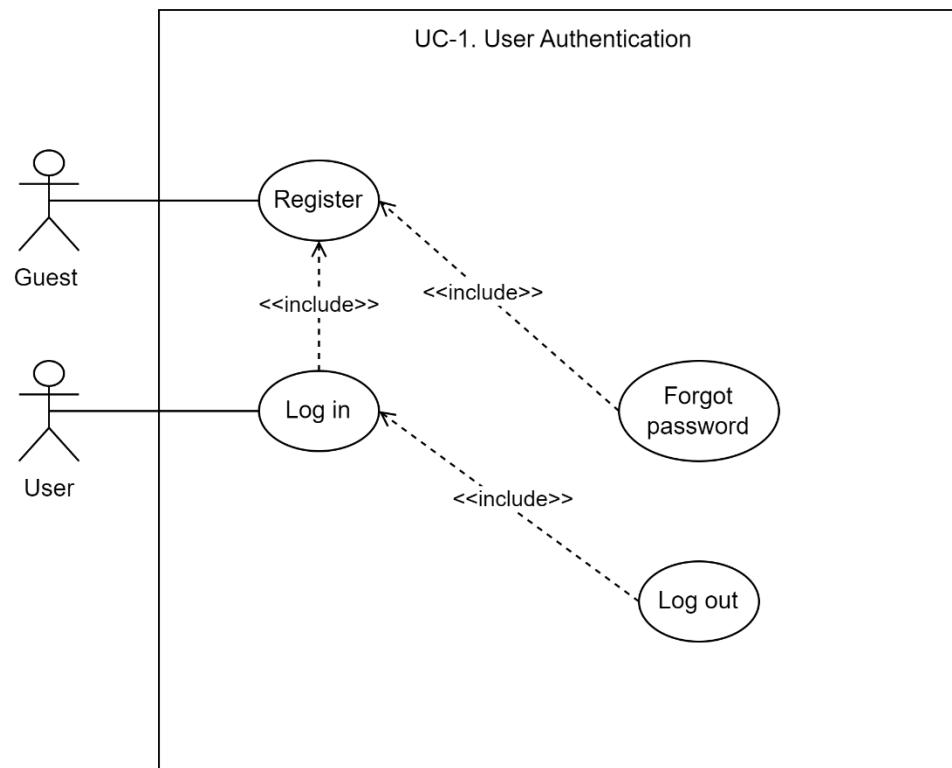


Figure 5.1. UC-1. User Authentication

#### 5.1.1.1. Login:

UC Name	Login	
UC #	UC-1	
Primary Actor	Registered Online User	
Use Case Story	This use case enables the user to login and access the accounts online	
Trigger	User enters User ID	

Precondition	1. User needs to be a registered online user 2. User account must be active (not locked)													
Post-Condition	User is able to view account summary page													
Primary Flow (PF)	<p>Title: User is able to login without any errors</p> <table border="1"> <thead> <tr> <th>Actor Action</th> <th>System Response</th> </tr> </thead> <tbody> <tr> <td>1) User enters User Name or Email address</td> <td></td></tr> <tr> <td>2) User enters Password</td> <td></td></tr> <tr> <td>3) User clicks on 'Remember me' if want</td> <td></td></tr> <tr> <td>4) User clicks 'Login' button If there is no error, go to the next step. If there is an error, go to EF1</td> <td> 5) System validates User Name and Password.  + If valid, go to next step  + If user name is not exist, go to Alternate Flow 1 (AF1)  + If the password is wrong, go to AF2 </td></tr> <tr> <td></td> <td>6) System dispalys Account Summary page</td></tr> </tbody> </table>		Actor Action	System Response	1) User enters User Name or Email address		2) User enters Password		3) User clicks on 'Remember me' if want		4) User clicks 'Login' button If there is no error, go to the next step. If there is an error, go to EF1	5) System validates User Name and Password. + If valid, go to next step + If user name is not exist, go to Alternate Flow 1 (AF1) + If the password is wrong, go to AF2		6) System dispalys Account Summary page
Actor Action	System Response													
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2) User enters Password														
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	6) System dispalys Account Summary page													
Alternate Flow 1(AF1)	<p>Title: Invalid User Name or Email address</p> <table border="1"> <thead> <tr> <th>Actor Action</th> <th>System Response</th> </tr> </thead> <tbody> <tr> <td></td> <td>1) System displays the following error message: Unknown email address. Check again or try your username.</td></tr> <tr> <td>2) Go to Step 1 of PF</td> <td></td></tr> </tbody> </table>		Actor Action	System Response		1) System displays the following error message: Unknown email address. Check again or try your username.	2) Go to Step 1 of PF							
Actor Action	System Response													
	1) System displays the following error message: Unknown email address. Check again or try your username.													
2) Go to Step 1 of PF														
Alternate Flow 2 (AF2)	<p>Title: Invalid Password</p> <table border="1"> <thead> <tr> <th>Actor Action</th> <th>System Response</th> </tr> </thead> <tbody> <tr> <td></td> <td>1) System displays the following error message: The password you entered for the email address ..... is incorrect. Lost your password?</td></tr> <tr> <td>2) Go to step 2 of PF</td> <td></td></tr> </tbody> </table>		Actor Action	System Response		1) System displays the following error message: The password you entered for the email address ..... is incorrect. Lost your password?	2) Go to step 2 of PF							
Actor Action	System Response													
	1) System displays the following error message: The password you entered for the email address ..... is incorrect. Lost your password?													
2) Go to step 2 of PF														

Exception Flow 1 (EF1)	Title: Technical Error	
	Actor Action	System Response
		1) The system will stop clearing, error messages, logs, and a temporary solution may be applied.

Table 5.1. DS-I.1: Login

### 5.1.1.2. Logout:

UC Name	Log out	
UC #	UC-1	
Primary Actor	Registered Online User	
Use Case Story	This use case enables the user to log out	
Trigger	User want to log out	
Pre-Condition	1. The user is currently logged in to the system. 2. The user has access to an internet connection and a device to access the system	
Post-Condition	1. The user's session is successfully terminated. 2. The user is redirected to the system's login page.	

	3. The user's personalized information is no longer accessible until they log in again	
Primary Flow (PF)	Title: User is able to logout without any errors	
	Actor Action	System Response
	1) User clicks on account icon on header	2) The system display the 'My Account' Page
	3) User clicks on 'log out' If there is no error, go to the next step. If there is an error, go to EF1	4) The system invalidates the user's current session token.
		5) The system redirects the user to the system's login page
Exception Flow 1 (EF1)	Title: Technical Error	
	Actor Action	System Response
		1) The system will stop clearing, error messages, logs, and a temporary solution may be applied.

Table 5.2. DS-1.2: Log out.

#### 5.1.1.3. Register:

UC Name	User Registration	
UC #	UC-1	
Primary Actor	Guest	

Use Case Story	This use case enables the user to log out	
Trigger	The new guest initiates the registration process to create a new account and gain access to the system's features and functionalities.	
Pre-Condition	<p>1. The guest has access to an internet connection and a device to access the system.</p> <p>2. The guest has a valid email address that they can access.</p>	
Post-Condition	<p>1. The guest successfully creates a new account in the system.</p> <p>2. The guest can log in to the system using their newly created credentials.</p>	
Primary Flow (PF)		Title: User is able to register without any errors
		Actor Action      System Response
		1) The guest navigates to the system's registration page      2) The system displays the registration form with required information
		3) User enters 'Email address'
		4) Users enters 'Password'

	<p>5) User clicks on 'Register' button If there is no error, go to the next step. If there is an error, go to EF1</p>	<p>6) The system validates the entered data for accuracy, completeness, and adherence to constraints: + If the email address is already registered, go to AF1. + If the data is valid, go to step 7.</p>
		<p>7) The system creates a new user record in the database with the provided registration information.</p>
Alternate Flow 1(AF1)	Title: The email address is already registered	
	Actor Action	System Response
		<p>1) The system informs that "Email address already registered. Please use a different email address or login to your existing account."</p>
Exception Flow 1 (EF1)	Title: Technical Error	
	Actor Action	System Response
		<p>1) The system will stop clearing, error messages, logs, and a temporary solution may be applied.</p>

Table 5.3. DS-1.3: Register.

#### 5.1.1.4. *Forgot password:*

UC Name	Forgot password	
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UC #	UC-1	
Primary Actor	Registered Online User	
Use Case Story	This use case enables the user to reset the password.	
Trigger	The user forgets their password and initiates the password reset process.	
Pre-Condition	1. The user has a registered account in the system with a valid email address.	
Post-Condition	1. The user successfully initiates the password reset process. 2. The user receives a password reset instructions sent to their registered email address. 3. The user can follow the instructions in the email to reset their password and regain access to their account.	
Primary Flow (PF)	Title: User is able to reset the password without any errors	
	Actor Action	System Response
	1) The user clicks on a "Lost your password?" link on the login page	2) The system displays the 'lost your password' page
	3) The user enters their registered email address in the designated field.	

	<p>4) Users clicks on 'Reset Password' button</p>	<p>5) The system verifies the entered email address:</p> <ul style="list-style-type: none"> <li>+ If the email address is found, go to step 6.</li> <li>+ If the email address is not found, go to AF1</li> </ul>
		<p>6) The system generates a unique password reset token.</p>
		<p>7) The system sends an email to the user's registered email address. The email contains a password reset link that includes the generated token.</p> <p>If there is no error, go to the next step.</p> <p>If there is an error, go to EF1</p>
	<p>8) The user checks their email inbox for the password reset email from the system. (check spam)</p>	
	<p>9) The user clicks on the password reset link provided in the email.</p> <p>If there is no error, go to the next step.</p> <p>If there is an error, go to EF1</p>	<p>10) The link redirects the user to a password reset page on the system.</p> <p>If there is no error, go to the next step.</p> <p>If there is an error, go to EF1</p>

	11) The user enters 'New Password'	
	12) The user re-enters the new password	14) The system validates the new password: + if the repeating passwords is not matched, go to AF2. + if the repeating password is matched, go to step 14.
	13) User clicks on 'Save' button If there is no error, go to the next step. If there is an error, go to EF1	15) The system updates the user's account in the database with the newly chosen password.
		16) The system redirect the user to the login page
Alternate Flow 1(AF1)		Title: The email address is not found.
	Actor Action	System Response
		1) The system displays an error message indicating that the email address is not associated with an account.
Alternate Flow 2 (AF2)	2) The user can try entering the correct email address	
	Title: the repeating passwords is not matched	
	Actor Action	System Response
		1) The system displays an error message indicating the password does not match.

	2) The user can correct the password and try again at step 11	
Exception Flow 1 (EF1)	Title: Technical Error	
	Actor Action	System Response
		1) The system will stop clearing, error messages, logs, and a temporary solution may be applied.

Table 5.4. DS-1.4. Forgot password.

### 5.1.2. UC-2. Manage wishlist

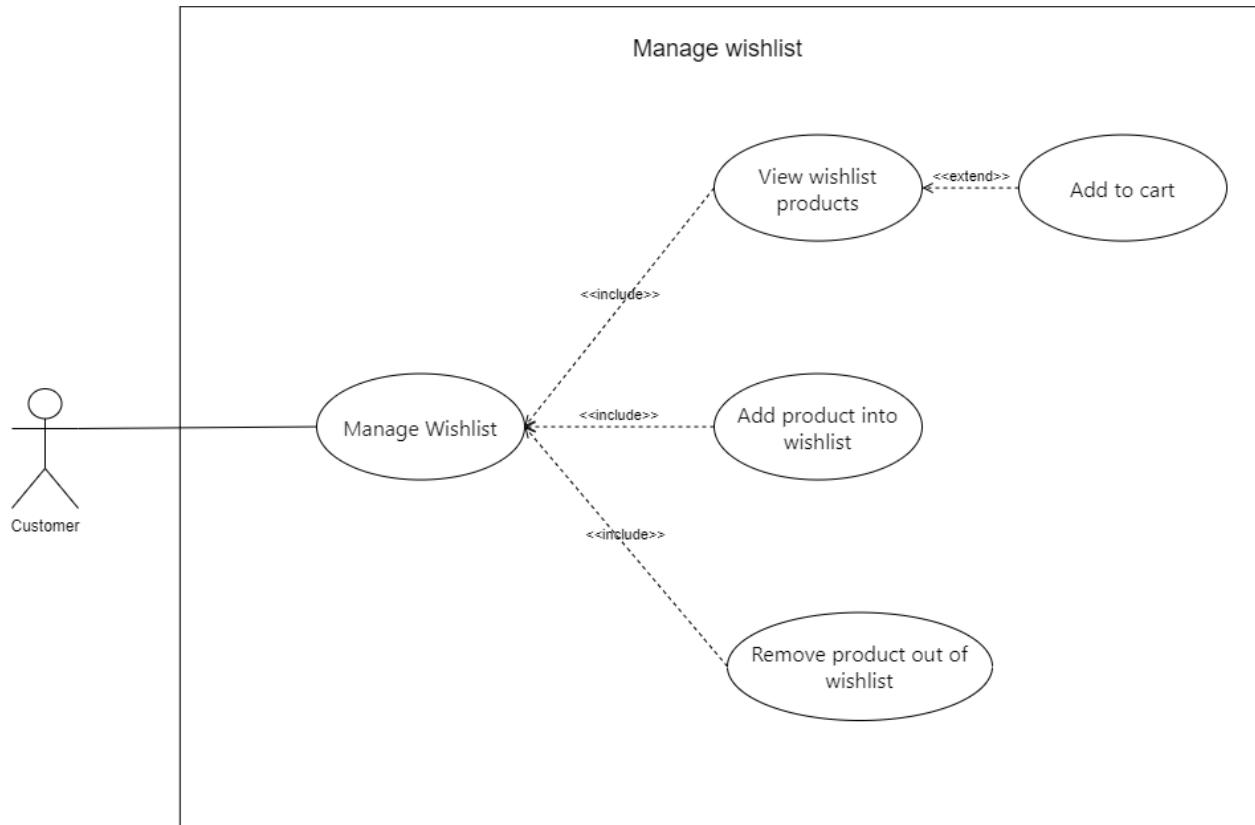


Figure 5.2. UC-2. Manage wishlist.

### **5.1.2.1. Add product into wishlist:**

UC Name	Add product into wishlist	
UC #	UC-2	
Primary Actor	Logged in customer	
Use Case Story	This use case occurs when the user wants to add a product to their wishlist	
Trigger	User clicks Add to Wishlist button on a product page or a product listing page	
Pre-Condition	The user login to the website	
Post-Condition	The product is successfully added to the user's wishlist and a confirmation message is shown.	
Primary Flow (PF)	Title: User can add product into wishlist without any errors	
	Actor action	System Response
	1. User login to the website.	2. Show Homepage Quynh Anh Quan.
	3. Search product in the search bar or click on "Product" on header to navigate Product page.	4. Show products.

	5. Clicks on the product image, title to access the product details page.	6. Displays the product details page showcasing information such as description, price, and images.
	7. Click on the button label "Add to Wishlist".	8. System checks if the product is already in the user's wishlist or not.  If not exist, go to next step.  If exist, go to AF1.
		9. If there is no error, add product to the wishlist.  If there is error, go to AF1.
Alternate Flow 1(AF1)		Title: Product already exist wishlist page.
	Actor action	System Response
		1. Show “remove to wishlist” option

Table 5.5. DS-2.1: Add product into wishlist.

### 5.1.2.2. View wishlist:

UC Name	View Wishlist	
UC #	WLV01	
Primary Actor	Logged in customer	

Use Case Story	This use case occurs when the user wants to view the items in their wishlist.									
Trigger	User clicks the heart icon on the header.									
Pre-Condition	The user is logged into the system's website.									
Post-Condition	The wishlist items are displayed and user can view wishlist									
Primary Flow (PF)	<p>Title: User can view the wishlist without any errors</p> <table border="1"> <thead> <tr> <th>Actor action</th> <th>System Response</th> </tr> </thead> <tbody> <tr> <td>1. User logs into the website.</td> <td>2. Show Homepage.</td> </tr> <tr> <td>3. User clicks the heart icon on the header.</td> <td>4. System navigates the user to the wishlist page.</td> </tr> <tr> <td>5. User views the wishlist page.</td> <td>           6. System check wishlist page            If there are items, go to next step            If there are no items, go to AF1.         </td> </tr> </tbody> </table>		Actor action	System Response	1. User logs into the website.	2. Show Homepage.	3. User clicks the heart icon on the header.	4. System navigates the user to the wishlist page.	5. User views the wishlist page.	6. System check wishlist page If there are items, go to next step If there are no items, go to AF1.
Actor action	System Response									
1. User logs into the website.	2. Show Homepage.									
3. User clicks the heart icon on the header.	4. System navigates the user to the wishlist page.									
5. User views the wishlist page.	6. System check wishlist page If there are items, go to next step If there are no items, go to AF1.									

		<p>7. System displays the wishlist items with the following information for each item:</p> <p>Product Name</p> <p>Unit Price</p> <p>Date Added</p> <p>Stock Status</p> <p>An 'X' icon to remove the product</p>
Alternate Flow 1(AF1)		Title: Missing product in wishlist page
	Actor action	System Response
	1. The system displays: "Your Wishlist is currently empty." and a "Return to Shop" button.	

Table 5.6. DS-2.2: View wishlist.

### 5.1.3. UC-3. Manage Shopping Cart

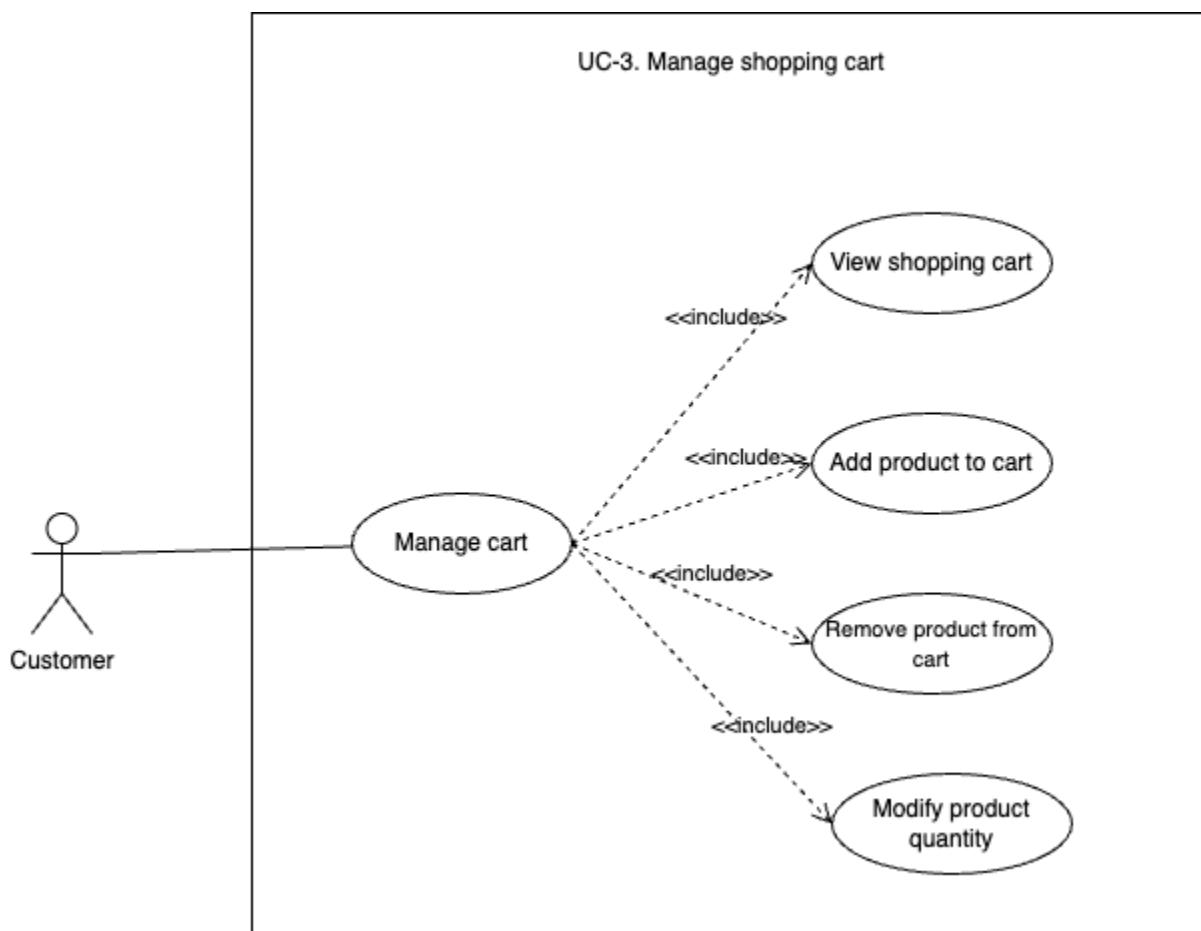


Figure 5.3. UC-3. Manage Shopping Cart

#### 5.1.3.1. *View shopping cart*

UC Name	View shopping cart	
UC #	03	
Primary Actor	Customer	
Use Case Story	Allows the customer to view their shopping cart.	
Trigger	User clicks the cart button on a navigation bar.	
Precondition	None.	
Post-Condition	Users are able to view the shopping cart.	
	Title: Users can view their shopping cart without any errors.	

Primary Flow (PF)	Actor action	System Response
	1. Users click on the cart button on the navigation bar. If there is no error, go to the next step. If there is an error, go to EF1.	2. Show Cart page.
	3. Users are able to view the shopping cart.	
Exception Flow 1 (EF1)	Title: An error occurred during the process.	
	Actor action	System Response
		1. System display fail notification.

Table 5.7. DS3.1: View shopping cart

### 5.1.3.2. Add product to shopping cart

UC Name	Add product into cart	
UC #	03	
Primary Actor	Customer	
Use Case Story	This use case occurs when the user wants to add a product to their cart.	
Trigger	User clicks the “Add to cart” button on a product page or a product listing page.	
Pre-Condition	None.	
Post-Condition	The product is successfully added to the user's cart and a confirmation message is shown.	
Primary Flow (PF)	Title: User can add product into cart without any errors. Actor action      System Response 1. User access to the website.      2. Show Homepage Quynh Anh Quan. 3. Search product in the search bar or click on "Product" on header to navigate Product page.	

	5. Clicks on the product image, title to access the product details page.	6. Displays the product details page showcasing information such as description, price, and images.
	7. Click on the button label "Add to Cart". If there is no error, go to the next step. If there is an error, go to EF1.	8. Add product into cart.
Exception Flow 1(EF1)	Title: An error occurred during the process.	
	Actor action	System Response
		1. Send an error notification.

Table 5.8. DS-3.2: Add product to shopping cart

### 5.1.3.3. Remove product from shopping cart

UC Name	Remove product from cart	
UC #	03	
Primary Actor	Customer	
Use Case Story	This use case occurs when the user wants to delete a product from their shopping cart.	
Trigger	User clicks the remove button on a Cart page.	
Pre-Condition	The shopping cart contains items.	
Post-Condition	The product is successfully deleted from the user's cart and a confirmation message is shown.	
Primary Flow (PF)	Title: User can remove product from their cart without any errors	
	Actor action	System Response
	1. User clicks on the Cart icon on the navigation bar.	2. Show Cart page.
	3. User clicks on the Remove icon on the Cart page. If there is no error, go to the next step. If there is an error, go to EF1.	4. Remove items from the shopping cart.
	Title: An error occurred during the process.	
	Actor action	System Response

Exception Flow 1 (EF1)		1. Send an error notification.
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Table 5.9. DS-3.3: Remove product from shopping cart

#### 5.1.3.4. *Modify product quantity*

UC Name	Modify the product quantity											
UC #	03											
Primary Actor	Customer											
Use Case Story	This use case occurs when the user wants to modify the product quantity of their shopping cart.											
Trigger	User clicks on the button to change the number on the cart page.											
Pre-Condition	The shopping cart contains items.											
Post-Condition	User successfully changes the number of products in the shopping cart.											
Primary Flow (PF)	Title: Users can modify the product quantity in their cart without any errors. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center; padding: 2px;">Actor action</th> <th style="text-align: center; padding: 2px;">System Response</th> </tr> </thead> <tbody> <tr> <td style="padding: 2px;">1. User access to the website.</td> <td style="padding: 2px;">2. Show Homepage Quynh Anh Quan.</td> </tr> <tr> <td style="padding: 2px;">3. User clicks on the cart icon on the navigation bar.</td> <td style="padding: 2px;">4. Show Cart page.</td> </tr> <tr> <td style="padding: 2px;">5. Click the arrow next to the quantity box: -The up arrow increases by 1. -The down arrow decreases by 1.</td> <td style="padding: 2px;"></td> </tr> <tr> <td style="padding: 2px;">7. Click on the "Update cart" button.</td> <td style="padding: 2px;">8. Modify the product quantity.</td> </tr> </tbody> </table>		Actor action	System Response	1. User access to the website.	2. Show Homepage Quynh Anh Quan.	3. User clicks on the cart icon on the navigation bar.	4. Show Cart page.	5. Click the arrow next to the quantity box: -The up arrow increases by 1. -The down arrow decreases by 1.		7. Click on the "Update cart" button.	8. Modify the product quantity.
Actor action	System Response											
1. User access to the website.	2. Show Homepage Quynh Anh Quan.											
3. User clicks on the cart icon on the navigation bar.	4. Show Cart page.											
5. Click the arrow next to the quantity box: -The up arrow increases by 1. -The down arrow decreases by 1.												
7. Click on the "Update cart" button.	8. Modify the product quantity.											

	If there is no error, go to the next step. If there is an error, go to EF1.	
Exception Flow 1 (EF1)	Title: An error occurred during the process. Actor action	System Response 1. Send an error notification.

Table 5.10. DS-3.4: Modify product quantity

#### 5.1.4. UC-4. Manage profile

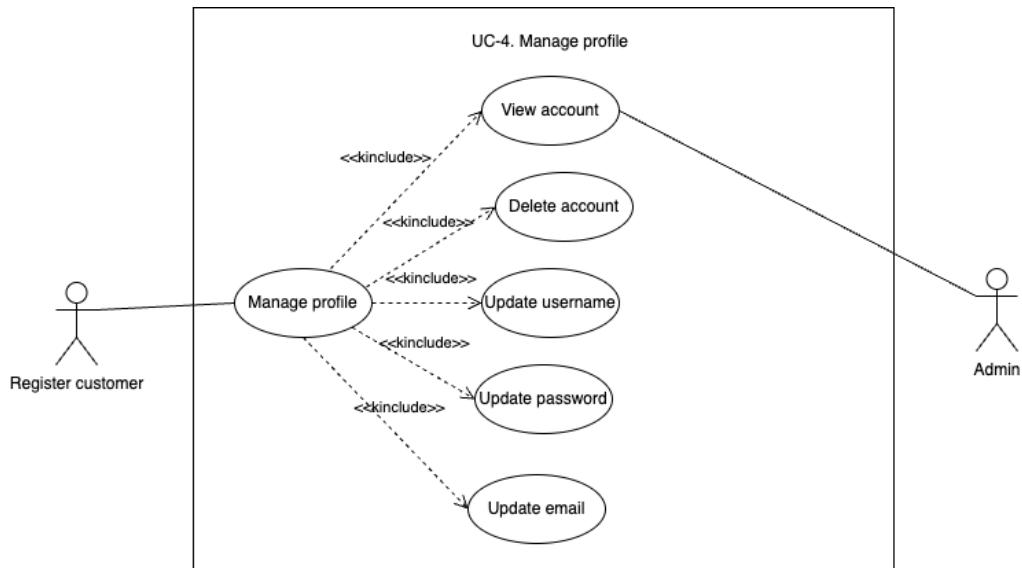


Figure 5.4. UC-4. Manage profile

##### 5.1.4.1. View profile

UC Name	View profile	
UC #	UC-4	
Primary Actor	Register customer	
Use Case Story	This use case occurs when the user wants to view their profile.	
Trigger	User clicks on the account button on a navigation bar.	
Pre-Condition	The user login to the website	

Post-Condition	The user successfully views their profile.	
Primary Flow (PF)	Title: User can view their profile without any errors	
	Actor action	System Response
	1. User login to the website.	2. Show Homepage Quynh Anh Quan.
	3. Click on the account button on the navigation bar.	4. Show My account page.
	5. Click on the "Account details" button. If there is no error, go to the next step. If there is an error, go to EF1.	6. Display user account.
	Title: An error occurred during the process.	
Exception Flow 1 (EF1)	Actor action	System Response
	1. Send an error notification.	

Table 5.11. DS-4.1: View profile

#### 5.1.4.2. Update profile/password

UC Name	Update profile	
UC #	UC-4	
Primary Actor	Register customer	
Use Case Story	This use case occurs when the customer wants to update their profile.	
Trigger	The user clicks on "Account details" button on the My account page.	
Pre-Condition	The users login the system.	
Post-Condition	The customer profile is successfully updated, and a confirmation message is shown.	
Primary Flow (PF)	Title: User can update profile without any errors.	
	Actor action	System Response
	1. User access website.	2. Show Homepage.
	3. User clicks on the account button on the navigation bar.	4. Show My account page.

	5. User clicks on the "Account details" button on My account page.	6. Display Account details page.
	7. User updates the profile details (e.g., username, email, name, address, etc). If there is no error, go to the next step. If there is an error, go to EF1.	
	8. Click on the "Save change" button.	9. Update profile.
		10. Show a confirmation message: "Account details changed successfully".
Exception Flow 1 (EF1)	Title: Customer information changed incorrectly.	
	Actor action	System Response
		1. Show an error message and ask the user to enter the correct information.

Table 5.12. DS-4.2: Update profile

#### 5.1.4.3. Delete account

UC Name	Delete Account	
UC #	UC-4	
Primary Actor	Registered Online User	
Use Case Story	This use case enables the user delete their account	
Trigger	The user wants to delete the account	

Pre-Condition	1. The user is logged in to the system.									
Post-Condition	1. The user's account is successfully deleted from the system.									
Primary Flow (PF)	<p>Title: Admin is able to delete account without any errors</p> <table border="1"> <thead> <tr> <th>Actor Action</th> <th>System Response</th> </tr> </thead> <tbody> <tr> <td>1) The user clicks on account icon</td> <td>2) System displays the 'My account' page</td> </tr> <tr> <td>3) The user clicks on 'Delete Account' links</td> <td>3) The system presents a clear warming message to the user, explicitly stating that account deletion is irreversible and will result in the loss of all associated data.</td> </tr> <tr> <td>4) + If user clicks on 'Ok', go to step 5  If there is no error, go to the next step.  If there is an error, go to EF1 + If user clicks on 'Cancel', go to AF1.</td> <td>5) The system deletes the user account record from the database.</td> </tr> </tbody> </table>		Actor Action	System Response	1) The user clicks on account icon	2) System displays the 'My account' page	3) The user clicks on 'Delete Account' links	3) The system presents a clear warming message to the user, explicitly stating that account deletion is irreversible and will result in the loss of all associated data.	4) + If user clicks on 'Ok', go to step 5  If there is no error, go to the next step.  If there is an error, go to EF1 + If user clicks on 'Cancel', go to AF1.	5) The system deletes the user account record from the database.
Actor Action	System Response									
1) The user clicks on account icon	2) System displays the 'My account' page									
3) The user clicks on 'Delete Account' links	3) The system presents a clear warming message to the user, explicitly stating that account deletion is irreversible and will result in the loss of all associated data.									
4) + If user clicks on 'Ok', go to step 5  If there is no error, go to the next step.  If there is an error, go to EF1 + If user clicks on 'Cancel', go to AF1.	5) The system deletes the user account record from the database.									
Alternate Flow 1(AF1)	<p>Title: User clicks on 'Cancel'</p> <table border="1"> <thead> <tr> <th>Actor Action</th> <th>System Response</th> </tr> </thead> </table>		Actor Action	System Response						
Actor Action	System Response									

		1) The system returns the user to the my account page
Exception Flow 1 (EF1)	Title: Technical Error	
	Actor Action	System Response
		1) In case of a technical error during category creation, the system logs the error and displays an appropriate message to the admin: "An error occurred. Please try again later"

Table 5.13. DS-4.3: Delete account

### 5.1.5. UC-5. Manage reservation

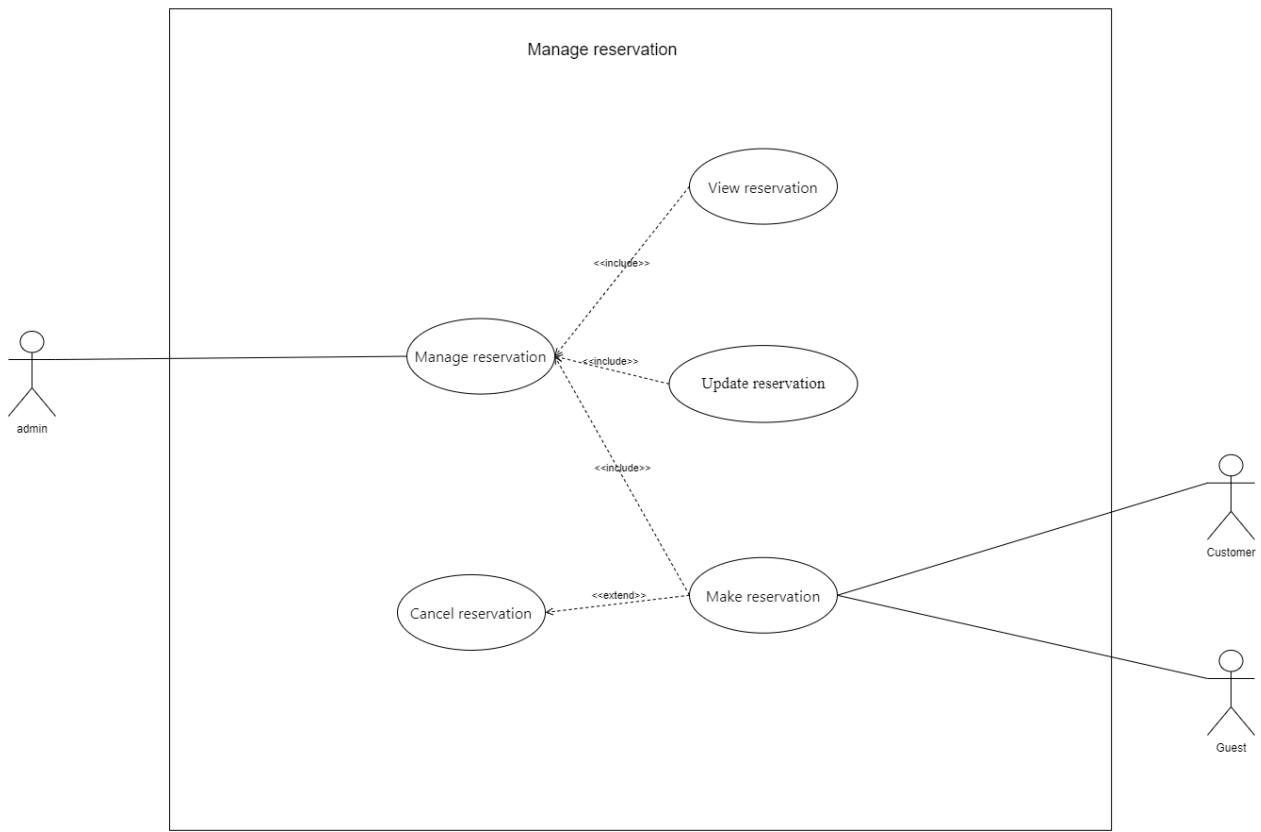


Figure 5.5. UC Manage Reservation

#### 5.1.5.1. View reservation

UC Name	Make Reservation	
UC #	UC-5	
Primary Actor	User	
Use Case Story	This use case occurs when the user wants to make a reservation.	
Trigger	User clicks the "Reservation" link on the header.	
Pre-Condition	The user accesses the system's website.	
Post-Condition	The reservation is successfully made, and a confirmation message is shown.	
Primary Flow (PF)	Title: User can make a reservation without any errors	Actor action      System Response

	<p>1. User clicks the "Reservation" link on the header.</p> <p>3. User selects guests, date, and time.</p>	<p>2. System navigates the user to the reservation page.</p> <p>4. System checks if there are available seats for the selected date, time, and number of guests.</p> <ul style="list-style-type: none"> <li>• If available, go to next step.</li> <li>• If not available, go to AF1.</li> </ul>
	<p>5. User provides reservation details (name, phone, email, and message (optional)).</p>	<p>6. System checks if name, phone, and email are provided.</p> <ul style="list-style-type: none"> <li>• If all are provided, go to next step.</li> <li>• If not, go to AF2.</li> </ul>
	<p>7. User clicks the "Make Reservation" button.</p>	<p>8. System makes the reservation.</p>
		<p>9. System shows a confirmation message: "Thank you for your reservation. A confirmation email has been sent to you. Should you not receive it, please rest assured that your booking has been received and is confirmed. If you wish, you may contact us by phone to confirm. Your reservation number for reference: xxxxxxxx."</p>
Alternate Flow 1(AF1)	Title: No available seats for the selected date and time	
	Actor action	System Response
		<p>1. System shows a message informing that there are no available</p>

		seats for the selected date and time.
		2. Asks the user to select a different date and/or time.
Alternate Flow 2 (AF2)	Title: Missing required reservation details	
Actor action	System Response	
	1. System shows an error message. - If name is missing: "Name can't be empty." - If the phone is missing: "Phone can't be empty." - If email is missing: "Email can't be empty."	

Table 5.14. DS-5.1: View reservation

### 5.1.5.2. Cancel reservation

UC Name	Cancel Reservation	
UC #	CR01	
Primary Actor	User	
Use Case Story	This use case occurs when the user wants to cancel an existing reservation.	
Trigger	User clicks the "Cancel Reservation" link on the reservation page.	
Pre-Condition	The user has made the reservation	
Post-Condition	The reservation is successfully canceled, and a confirmation message is shown.	

Primary Flow (PF)	Title: User can cancel a reservation without any errors	
	Actor action	System Response
	1. User clicks the "Reservation" link on the header.	2. System navigates the user to the reservation page.
	3. User clicks the "Cancel Reservation" link.	4. System displays the cancel reservation form with fields: Reservation number, Phone, Name, Email, Reason.
	5. User fills in the form. Required fields: Reservation number, Reason.	6. System validates the form data. <ul style="list-style-type: none"> <li>If Reservation number and Reason are filled, go to next step.</li> <li>If any required field is missing, go to AF1.</li> </ul>
	7. User clicks the "Cancel Reservation" button.	8. System processes the cancellation.
		9. System shows a confirmation message: "Your reservation has been successfully canceled."
Alternate Flow 1(AF1)	Title: Missing required cancellation details	
	Actor action	System Response
		1. System shows an error message indicating which fields are missing: <ul style="list-style-type: none"> <li>If Reservation number is missing: "Reservation number can't be empty."</li> <li>If Reason is missing: "Reason can't be empty."</li> </ul>

Table 5.15. DS-5.2. Cancel reservation

### 5.1.5.3. View reservation (admin)

UC Name	View Reservation		
UC #	VR01		
Primary Actor	Admin		
Use Case Story	This use case occurs when the admin wants to view reservation details.		
Trigger	Admin clicks on the "ReDi Reservations" module in the dashboard and then selects the "Reservation" section.		
Pre-Condition	The admin login the system		
Post-Condition	The admin can view reservation details filtered by date and status.		
Primary Flow (PF)	Title: Admin can view reservation details without any errors		
	Actor action	System Response	
	1. Admin accesses the system's dashboard.	2. Show Dashboard.	
	3. Admin clicks on the "ReDi Reservations" module.	4. System navigates the admin to the "Reservation" section.	
	5. Admin views the reservation page.	6. System displays the reservation page with the following: <ul style="list-style-type: none"> <li>• Date filter on the left side to track reservations for the selected week.</li> <li>• Buttons on the right side for filtering by status: All, Pending, Confirmed, Rejected, Canceled.</li> </ul>	

		<ul style="list-style-type: none"> <li>• A table showing reservations with the fields: Date, Party Size, Name, Email, Phone, Visited, Comment, Status.</li> </ul>
	7. Admin uses the date filter to select a specific date/week.	8. System checks if reservations availability <ul style="list-style-type: none"> <li>• If exist, go to next step.</li> <li>• If not, go to AF1</li> </ul>
		9. System updates the reservation table to show reservations for the selected date/week.
Alternate Flow 1(AF1)	Title: No available reservations for the selected date and time	
	Actor action	System Response
		1. The system shows "No data available in table".

Table 5.16. DS-3: View reservation (admin)

### 5.1.6. UC-6. Comment and rating on posts/ products

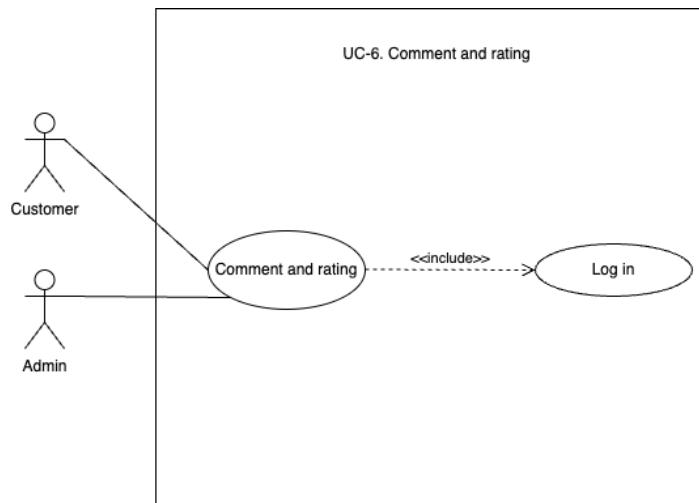


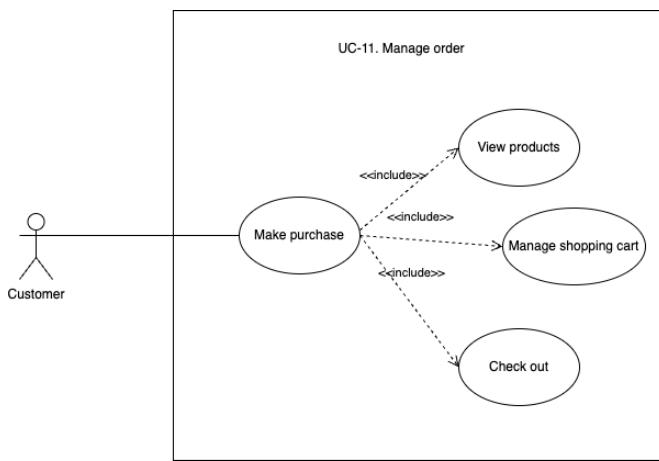
Figure 5-5.6. UC-6. Comment and rating on posts/products

UC Name	Comment and rating on posts/products							
UC #	UC-6							
Primary Actor	Customer							
Use Case Story	This use case occurs when the user wants to comment and rating on a post/product.							
Trigger	User clicks the “Add to cart” button on a product page or a product listing page.							
Pre-Condition	User login account.							
Post-Condition	Users successfully comment/rating on a post/product.							
Primary Flow (PF)	Title: User can leave the comment and rating without any errors. <table border="1"> <thead> <tr> <th>Actor action</th> <th>System Response</th> </tr> </thead> <tbody> <tr> <td>1. User login account.</td> <td>2. Show Homepage Quynh Anh Quan.</td> </tr> <tr> <td>3. Search product in the search bar or click on "Product" on header to navigate Product page.</td> <td>4. Show products.</td> </tr> </tbody> </table>		Actor action	System Response	1. User login account.	2. Show Homepage Quynh Anh Quan.	3. Search product in the search bar or click on "Product" on header to navigate Product page.	4. Show products.
Actor action	System Response							
1. User login account.	2. Show Homepage Quynh Anh Quan.							
3. Search product in the search bar or click on "Product" on header to navigate Product page.	4. Show products.							

	5. Clicks on the product image, title to access the product details page.	6. Displays the product details page showcasing information such as description, price, and images.
	7. Click on the Review button.	8. Show comment/rating form.
	9. Enter the comment/ rating and click on the "Submit" button. If there is no error, go to the next step. - If there is an error, go to EF1. - If there is no error, go to the next step. If there is an error, go to EF1.	10. Show comment and successful notification.
Exception Flow 1(EF1)		Title: An error occurred during the process.
	Actor action	System Response
		1. Send an error notification.

*Table 5.17. DS-6: Comment and rating on posts/products*

### **5.1.7. UC-7. Checkout**



*Figure 5.7. UC-7. Checkout*

UC Name	Checkout
UC #	UC-6

Primary Actor	User																	
Use Case Story	This use case occurs when the user wants to checkout their order.																	
Trigger	User clicks the "Proceed to checkout" on the Cart page.																	
Pre-Condition	The shopping cart contains items.																	
Post-Condition	Users successfully check out the order.																	
Primary Flow (PF)	<p>Title: Users successfully check out the order without any errors</p> <table border="1"> <thead> <tr> <th>Actor action</th> <th>System Response</th> </tr> </thead> <tbody> <tr> <td>1. User access to the website.</td> <td>2. Show Homepage.</td> </tr> <tr> <td>3. Click on the Cart button on the navigation bar.</td> <td>4. Navigate to the Cart page.</td> </tr> <tr> <td>5. Click on the "Proceed to checkout" on the Cart page.</td> <td>6. Show checkout form.</td> </tr> <tr> <td>7. Fill out the information.</td> <td>8. Show payment method.</td> </tr> <tr> <td>9. Select payment method.</td> <td>10. Show order details.</td> </tr> <tr> <td>11. Enter discount code.</td> <td>12. Check the discount code + If invalid, go to EF1. + If valid, go to the next step</td> </tr> <tr> <td></td> <td>13. Update and display the order with the changed cost.</td> </tr> </tbody> </table>	Actor action	System Response	1. User access to the website.	2. Show Homepage.	3. Click on the Cart button on the navigation bar.	4. Navigate to the Cart page.	5. Click on the "Proceed to checkout" on the Cart page.	6. Show checkout form.	7. Fill out the information.	8. Show payment method.	9. Select payment method.	10. Show order details.	11. Enter discount code.	12. Check the discount code + If invalid, go to EF1. + If valid, go to the next step		13. Update and display the order with the changed cost.	
Actor action	System Response																	
1. User access to the website.	2. Show Homepage.																	
3. Click on the Cart button on the navigation bar.	4. Navigate to the Cart page.																	
5. Click on the "Proceed to checkout" on the Cart page.	6. Show checkout form.																	
7. Fill out the information.	8. Show payment method.																	
9. Select payment method.	10. Show order details.																	
11. Enter discount code.	12. Check the discount code + If invalid, go to EF1. + If valid, go to the next step																	
	13. Update and display the order with the changed cost.																	
	14. Confirm order. +If there is no error, go to the next step. +If there is an error, go to EF2. +If the user cancels checkout, go to EF3.	15. Save order and show successful notification.																
Exception Flow 1 (EF1)	<p>Title: User enters invalid discount code.</p> <table border="1"> <thead> <tr> <th>Actor action</th> <th>System Response</th> </tr> </thead> <tbody> <tr> <td></td> <td>1. Show error notification and ask the</td> </tr> </tbody> </table>		Actor action	System Response		1. Show error notification and ask the												
Actor action	System Response																	
	1. Show error notification and ask the																	

		user to enter the right code.
Exception Flow 2 (EF2)	Title: An error occurred during the process. Actor action	System Response • Show error notification.
Exception Flow 3 (EF3)	Title: The user cancels check out. Actor action • User clicks on "Return to cart".	• Navigate to the Cart page.

Table 5.18. DS-7: Checkout

### 5.1.8. UC-8. Contact admin

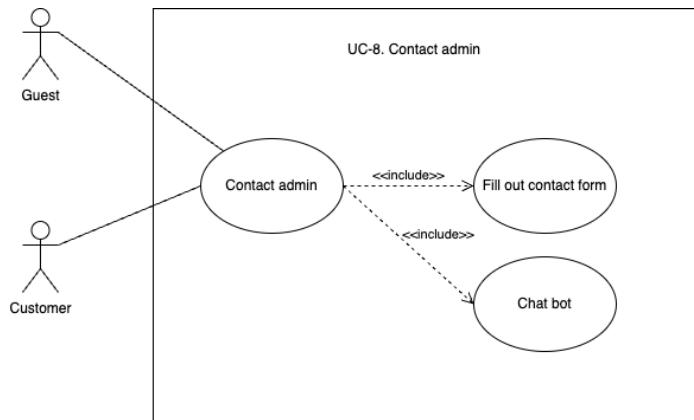


Figure 5.8. UC-8. Contact admin

UC Name	Contact admin	
UC #	UC-8	
Primary Actor	Customer	
Use Case Story	This use case occurs when the user wants to contact the admin.	
Trigger	User access to the website.	
Pre-Condition	User access to the website.	
Post-Condition	User successfully sends the message to the admin.	
	Title: Users can send the message without any errors.	

Primary Flow (PF)	Actor action	System Response
	1. User access to the website.	2. Show Homepage Quynh Anh Quan.
	3. User selects the method. + User clicks on the "Contact" button on the navigation bar, go to the next step. +User chooses chat with bot chat, go to AF1.	4. Show Contact page.
	5. Enter the content and click on the submit button. +If there is no error, go to the next step. +If there is an error, go to EF1.	6. Receive message and show successful notification.
Alternative Flow 1 (AF1)	Title: User select chat with chatbot method.	
	Actor action	System Response
	1. Enter and send a message.	Reply the message directly.
Exception Flow 1 (EF1)	Title: An error occurred during the process.	
	Actor action	System Response
		1. Send an error notification.

Table 5.19. DS-8: Contact us

### 5.1.9. UC-9. View product

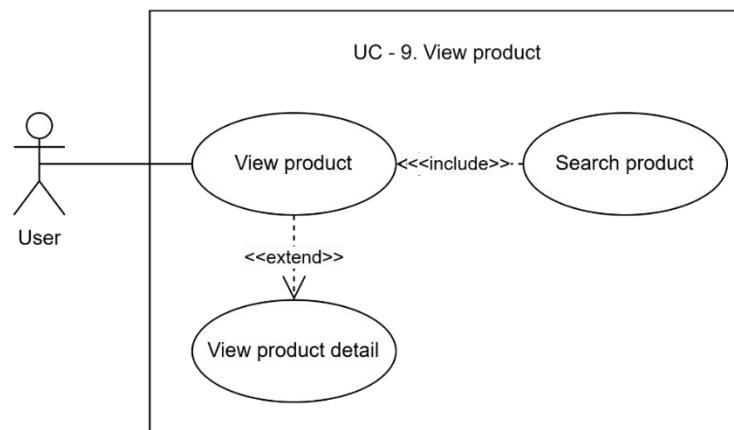


Figure 5.9. UC-9: View product

### 5.1.9.1. *View product*

UC Name	View product	
UC #	UC-9	
Primary Actor	User	
Use Case Story	This use case occurs when the user wants to view product.	
Trigger	User clicks on “Shop” on navbar.	
Pre-Condition	N/A	
Post-Condition	The user successfully views product.	
Primary Flow (PF)	Title: User can view their profile without any errors.	
	Actor action	System Response
	1. User click on “Shop” on the navbar	2. If there is no error, show the “Shop” page. If there is error, go to EF1.
Exception Flow 1 (EF1)	Title: An error occurred during the process.	
	Actor action	System Response
		1. If there is system error, show a message notify the user “It’s not you, it’s us. Please try again.”

Table 5.20. DS-9.1. View Product

### 5.1.9.2. *View product detail*

UC Name	View product detail						
UC #	UC-9						
Primary Actor	User						
Use Case Story	This use case occurs when the user wants to view product detail.						
Trigger	User clicks on product.						
Pre-Condition	N/A						
Post-Condition	The user successfully views product detail.						
Primary Flow (PF)	Title: User can view their profile without any errors.						
	<table border="1"> <thead> <tr> <th>Actor action</th> <th>System Response</th> </tr> </thead> <tbody> <tr> <td>1. If user click on “Product” page, go to next step. 1. If user search for a product, go to AF1. 2. If there is an error, go to EF1.</td> <td>3. Show product page.</td> </tr> <tr> <td>4. User click on a specific product 5. If there is an error, go to EF1.</td> <td>6. Show product’s detail page</td> </tr> </tbody> </table>		Actor action	System Response	1. If user click on “Product” page, go to next step. 1. If user search for a product, go to AF1. 2. If there is an error, go to EF1.	3. Show product page.	4. User click on a specific product 5. If there is an error, go to EF1.
Actor action	System Response						
1. If user click on “Product” page, go to next step. 1. If user search for a product, go to AF1. 2. If there is an error, go to EF1.	3. Show product page.						
4. User click on a specific product 5. If there is an error, go to EF1.	6. Show product’s detail page						
<table border="1"> <thead> <tr> <th>Actor action</th> <th>System Response</th> </tr> </thead> <tbody> <tr> <td>1. If user click on “Product” page, go to next step. 1. If user search for a product, go to AF1. 2. If there is an error, go to EF1.</td> <td>3. Show product page.</td> </tr> <tr> <td>4. User click on a specific product 5. If there is an error, go to EF1.</td> <td>6. Show product’s detail page</td> </tr> </tbody> </table>		Actor action	System Response	1. If user click on “Product” page, go to next step. 1. If user search for a product, go to AF1. 2. If there is an error, go to EF1.	3. Show product page.	4. User click on a specific product 5. If there is an error, go to EF1.	6. Show product’s detail page
Actor action	System Response						
1. If user click on “Product” page, go to next step. 1. If user search for a product, go to AF1. 2. If there is an error, go to EF1.	3. Show product page.						
4. User click on a specific product 5. If there is an error, go to EF1.	6. Show product’s detail page						
<table border="1"> <thead> <tr> <th>Actor action</th> <th>System Response</th> </tr> </thead> <tbody> <tr> <td>1. If there is a matching product, show the product card. 7. If there is no matching product, show message “Sorry, but nothing matched your search terms.</td> <td>1. If there is a matching product, show the product card. 7. If there is no matching product, show message “Sorry, but nothing matched your search terms.</td> </tr> </tbody> </table>		Actor action	System Response	1. If there is a matching product, show the product card. 7. If there is no matching product, show message “Sorry, but nothing matched your search terms.	1. If there is a matching product, show the product card. 7. If there is no matching product, show message “Sorry, but nothing matched your search terms.		
Actor action	System Response						
1. If there is a matching product, show the product card. 7. If there is no matching product, show message “Sorry, but nothing matched your search terms.	1. If there is a matching product, show the product card. 7. If there is no matching product, show message “Sorry, but nothing matched your search terms.						
<table border="1"> <thead> <tr> <th>Actor action</th> <th>System Response</th> </tr> </thead> <tbody> <tr> <td>1. If there is a matching product, show the product card. 7. If there is no matching product, show message “Sorry, but nothing matched your search terms.</td> <td>1. If there is a matching product, show the product card. 7. If there is no matching product, show message “Sorry, but nothing matched your search terms.</td> </tr> </tbody> </table>		Actor action	System Response	1. If there is a matching product, show the product card. 7. If there is no matching product, show message “Sorry, but nothing matched your search terms.	1. If there is a matching product, show the product card. 7. If there is no matching product, show message “Sorry, but nothing matched your search terms.		
Actor action	System Response						
1. If there is a matching product, show the product card. 7. If there is no matching product, show message “Sorry, but nothing matched your search terms.	1. If there is a matching product, show the product card. 7. If there is no matching product, show message “Sorry, but nothing matched your search terms.						
<table border="1"> <thead> <tr> <th>Actor action</th> <th>System Response</th> </tr> </thead> <tbody> <tr> <td>1. If there is a matching product, show the product card. 7. If there is no matching product, show message “Sorry, but nothing matched your search terms.</td> <td>1. If there is a matching product, show the product card. 7. If there is no matching product, show message “Sorry, but nothing matched your search terms.</td> </tr> </tbody> </table>		Actor action	System Response	1. If there is a matching product, show the product card. 7. If there is no matching product, show message “Sorry, but nothing matched your search terms.	1. If there is a matching product, show the product card. 7. If there is no matching product, show message “Sorry, but nothing matched your search terms.		
Actor action	System Response						
1. If there is a matching product, show the product card. 7. If there is no matching product, show message “Sorry, but nothing matched your search terms.	1. If there is a matching product, show the product card. 7. If there is no matching product, show message “Sorry, but nothing matched your search terms.						
Alternative Flow 1 (AF1)	<table border="1"> <thead> <tr> <th>Actor action</th> <th>System Response</th> </tr> </thead> <tbody> <tr> <td>1. If there is a matching product, show the product card. 7. If there is no matching product, show message “Sorry, but nothing matched your search terms.</td> <td>1. If there is a matching product, show the product card. 7. If there is no matching product, show message “Sorry, but nothing matched your search terms.</td> </tr> </tbody> </table>		Actor action	System Response	1. If there is a matching product, show the product card. 7. If there is no matching product, show message “Sorry, but nothing matched your search terms.	1. If there is a matching product, show the product card. 7. If there is no matching product, show message “Sorry, but nothing matched your search terms.	
Actor action	System Response						
1. If there is a matching product, show the product card. 7. If there is no matching product, show message “Sorry, but nothing matched your search terms.	1. If there is a matching product, show the product card. 7. If there is no matching product, show message “Sorry, but nothing matched your search terms.						

		Please try again with some different keywords.”
Exception	Title: An error occurred during the process.	
Flow 1 (EF1)	Actor action	System Response

Table 5.21. DS-9.2. View Product Detail

### 5.1.9.3. Search product

UC Name	Search product	
UC #	UC-9	
Primary Actor	User	
Use Case Story	This use case occurs when the user wants to search for a product.	
Trigger	User clicks on product.	
Pre-Condition	N/A	
Post-Condition	The product is successfully being display.	
Primary Flow (PF)	Title: User search without any errors.	
	Actor action	System Response
	1. User type a keyword on the search bar and hit enter.	2. If there is a matching product, show the product card. If there is no matching product,

		show message “Sorry, but nothing matched your search terms. Please try again with some different keywords.” If there is an error occur, go to EF1.
Exception Flow 1 (EF1)	Title: An error occurred during the process. Actor action	System Response  1. If there is system error, show a message notify the user “It’s not you, it’s us. Please try again.”

Table 5.22. DS-9.3: Search Product

### 5.1.10. UC-10. Manage message

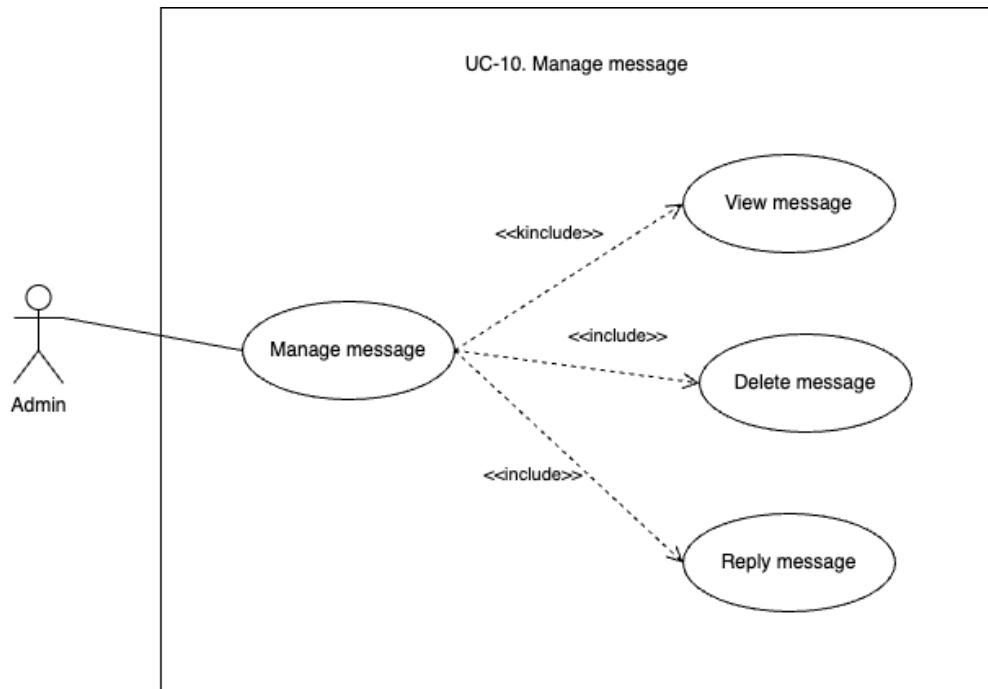


Figure 5.10. UC-10. Manage message

### 5.1.10.1. *View message*

UC Name	View message		
UC #	UC-10		
Primary Actor	Admin		
Use Case Story	This use case occurs when the admin wants to view message.		
Trigger	User clicks on “WPForms” on dashboard.		
Pre-Condition	The admin login to the website.		
Post-Condition	The admin successfully views messages.		
Primary Flow (PF)	Title: Admin can view their profile without any errors.		
	Actor action		System Response
	1. Admin login to the website.		2. Show Quynh Anh Quan dashboard.
	3. Click on “WPForms” button on the dashboard. If there is no error, go to the next step. If there is an error, go to EF1.		4. Show the dropdown menu.
	5. Click on the “Entries” button. If there is no error, go to the next step. If there is an error, go to EF1.		6. Display entries dashboard.
	7. Click on View button. If there is no error, go to the next step. If there is an error, go to EF1.		8. Display message.
	Title: An error occurred during the process.		
	Actor action		System Response
Exception Flow 1 (EF1)	1. Send an error notification.		

Table 5.23. DS-10.1: *View message*

### 5.1.10.2. *Delete message*

UC Name	Delete message	
UC #	UC-10	

Primary Actor	Admin					
Use Case Story	This use case occurs when the admin wants to delete message.					
Trigger	User clicks on “WPForms” on dashboard.					
Pre-Condition	The admin login to the website.					
Post-Condition	The admin successfully views messages.					
Primary Flow (PF)	Title: Admin can view their profile without any errors.					
	<table border="1"> <thead> <tr> <th>Actor action</th> <th>System Response</th> </tr> </thead> <tbody> <tr> <td>1. Admin login to the website.</td> <td>2. Show Quynh Anh Quan dashboard.</td> </tr> </tbody> </table>		Actor action	System Response	1. Admin login to the website.	2. Show Quynh Anh Quan dashboard.
Actor action	System Response					
1. Admin login to the website.	2. Show Quynh Anh Quan dashboard.					
<p>3. Click on “WPForms” button on the dashboard.            If there is no error, go to the next step.            If there is an error, go to EF1.</p>		4. Show the dropdown menu.				
<p>5. Click on the “Entries” button.            If there is no error, go to the next step.            If there is an error, go to EF1.</p>		6. Display entries dashboard.				
<p>7. Click on Remove button.            If there is no error, go to the next step.            If there is an error, go to EF1.</p>		8. Delete message.				
<table border="1"> <thead> <tr> <th>Actor action</th> <th>System Response</th> </tr> </thead> <tbody> <tr> <td></td> <td>1. Send an error notification.</td> </tr> </tbody> </table>		Actor action	System Response		1. Send an error notification.	
Actor action	System Response					
	1. Send an error notification.					
Exception Flow 1 (EF1)	Title: An error occurred during the process.					
	<table border="1"> <thead> <tr> <th>Actor action</th> <th>System Response</th> </tr> </thead> <tbody> <tr> <td></td> <td>1. Send an error notification.</td> </tr> </tbody> </table>		Actor action	System Response		1. Send an error notification.
Actor action	System Response					
	1. Send an error notification.					

Table 5.24. DS-10.2: Delete message

### 5.1.10.3. Reply message

UC Name	Reply message	
UC #	UC-10	
Primary Actor	Admin	
Use Case Story	This use case occurs when the admin wants to reply message.	

Trigger	User clicks on “WPForms” on dashboard.	
Pre-Condition	The admin login to the website.	
Post-Condition	The admin successfully reply the messages.	
Primary Flow (PF)	Title: Admin can view their profile without any errors.	
	Actor action	System Response
	1. Admin login to the website.	2. Show Quynh Anh Quan dashboard.
	3. Click on “WPForms” button on the dashboard. If there is no error, go to the next step. If there is an error, go to EF1.	4. Show the dropdown menu.
	5. Click on the “Entries” button. If there is no error, go to the next step. If there is an error, go to EF1.	6. Display entries dashboard.
	7. Click on View button. If there is no error, go to the next step. If there is an error, go to EF1.	8. Display message.
	9. Click on Reply button. If there is no error, go to the next step. If there is an error, go to EF1.	10. Display form reply
	11. Enter the reply.	
	12. Click on submit button. If there is no error, go to the next step. If there is an error, go to EF1.	13. Send reply and show notification.
	Title: An error occurred during the process.	
Exception Flow 1 (EF1)	Actor action	System Response
		1. Send an error notification.

### 5.1.11. Manage order

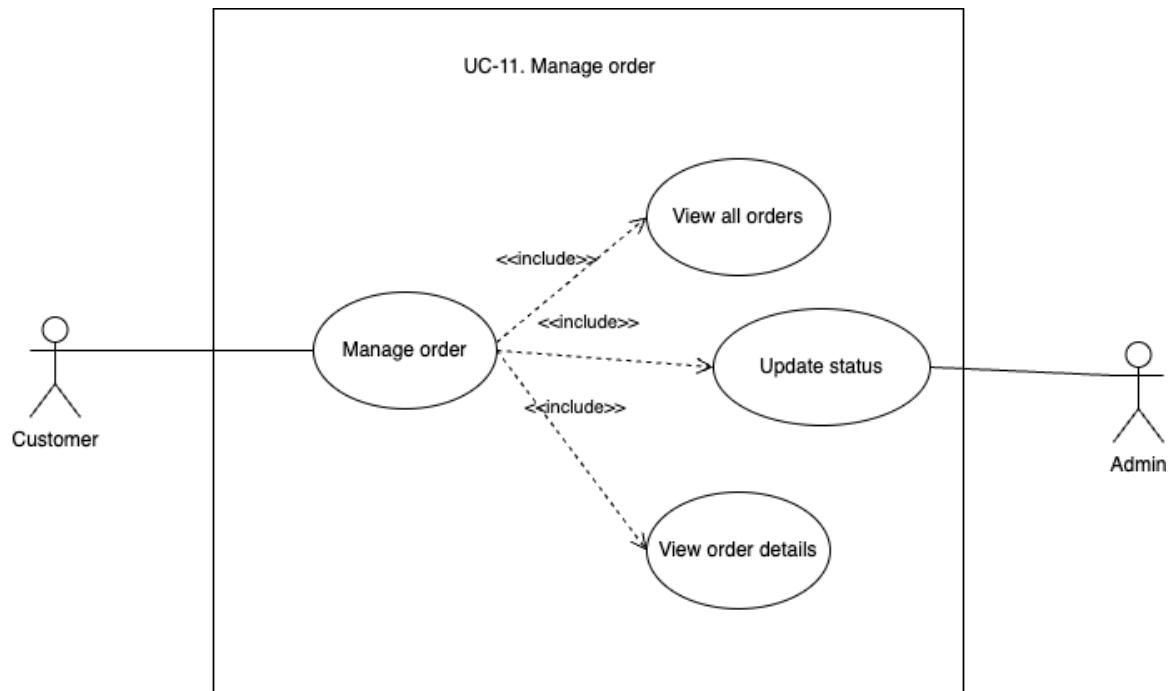


Figure 5.11. UC-11. Manage order

### 5.1.11.1. *View all orders*

UC Name	View all orders	
UC #	UC-11	
Primary Actor	Customer	
Use Case Story	This use case occurs when the user wants to view all orders.	
Trigger	User clicks on the account button on a navigation bar.	
Pre-Condition	The user login to the website.	
Post-Condition	The user successfully views their orders.	
Primary Flow (PF)	Title: User can view their orders without any errors	
	Actor action	
	1. User login to the website.	2. Show Homepage Quynh Anh Quan.
	3. Click on the account button on the navigation bar.	4. Show My account page.

	5. Click on the “Orders” button. If there is no error, go to the next step. If there is an error, go to EF1.	6. Display all orders.
Exception Flow 1 (EF1)	Title: An error occurred during the process.	
	Actor action	System Response
		1. Send an error notification.

Table 5.25. DS-II.1: View all orders

### 5.1.11.2. View order details

UC Name	View order details	
UC #	UC-11	
Primary Actor	Customer	
Use Case Story	This use case occurs when the user wants to view orders details.	
Trigger	User clicks on the “Orders” button on My account page.	
Pre-Condition	The user has order.	
Post-Condition	The user successfully views their order details.	
Primary Flow (PF)	Title: User can view their order details without any errors	
	Actor action	System Response
	1. User login to the website.	2. Show Homepage Quynh Anh Quan.
	3. Click on the account button on the navigation bar.	4. Show My account page.
	5. Click on the “Orders” button. If there is no error, go to the next step. If there is an error, go to EF1.	6. Display all orders.
	7. Select order. If there is no error, go to the next step. If there is an error, go to EF1.	8. Display its details.
Exception Flow 1 (EF1)	Title: An error occurred during the process.	
	Actor action	System Response

		1. Send an error notification.
--	--	--------------------------------

Table 5.26. DS-11.2: View order details

### 5.1.11.3. Update the status

UC Name	Update status															
UC #	UC-11															
Primary Actor	Admin															
Use Case Story	This use case occurs when the admin wants to update status of the order.															
Trigger	User clicks on “Orders” on dashboard.															
Pre-Condition	The admin login to the website.															
Post-Condition	The admin successfully updates the status.															
Primary Flow (PF)	Title: Admin can update the status without any errors. <table border="1"> <thead> <tr> <th>Actor action</th> <th>System Response</th> </tr> </thead> <tbody> <tr> <td>1. Admin login to the website.</td> <td>2. Show Quynh Anh Quan dashboard.</td> </tr> <tr> <td>3. Click on “Orders” button on the dashboard. If there is no error, go to the next step. If there is an error, go to EF1.</td> <td>4. Show the dropdown menu.</td> </tr> <tr> <td>5. Click on the “All orders” button. If there is no error, go to the next step. If there is an error, go to EF1.</td> <td>6. Display all orders.</td> </tr> <tr> <td>7. Select an order. If there is no error, go to the next step. If there is an error, go to EF1.</td> <td>8. Show edit order option.</td> </tr> <tr> <td>9. Change the status.</td> <td></td> </tr> <tr> <td>10. Click on submit button. If there is no error, go to the next step. If there is an error, go to EF1.</td> <td>11. Update and show notification.</td> </tr> </tbody> </table>		Actor action	System Response	1. Admin login to the website.	2. Show Quynh Anh Quan dashboard.	3. Click on “Orders” button on the dashboard. If there is no error, go to the next step. If there is an error, go to EF1.	4. Show the dropdown menu.	5. Click on the “All orders” button. If there is no error, go to the next step. If there is an error, go to EF1.	6. Display all orders.	7. Select an order. If there is no error, go to the next step. If there is an error, go to EF1.	8. Show edit order option.	9. Change the status.		10. Click on submit button. If there is no error, go to the next step. If there is an error, go to EF1.	11. Update and show notification.
Actor action	System Response															
1. Admin login to the website.	2. Show Quynh Anh Quan dashboard.															
3. Click on “Orders” button on the dashboard. If there is no error, go to the next step. If there is an error, go to EF1.	4. Show the dropdown menu.															
5. Click on the “All orders” button. If there is no error, go to the next step. If there is an error, go to EF1.	6. Display all orders.															
7. Select an order. If there is no error, go to the next step. If there is an error, go to EF1.	8. Show edit order option.															
9. Change the status.																
10. Click on submit button. If there is no error, go to the next step. If there is an error, go to EF1.	11. Update and show notification.															
Exception Flow 1 (EF1)	Title: An error occurred during the process. <table border="1"> <thead> <tr> <th>Actor action</th> <th>System Response</th> </tr> </thead> <tbody> <tr> <td></td> <td>1. Send an error notification.</td> </tr> </tbody> </table>		Actor action	System Response		1. Send an error notification.										
Actor action	System Response															
	1. Send an error notification.															

Table 5.27. DS-11.3: Update the status

### 5.1.12. UC-12: Manage Category

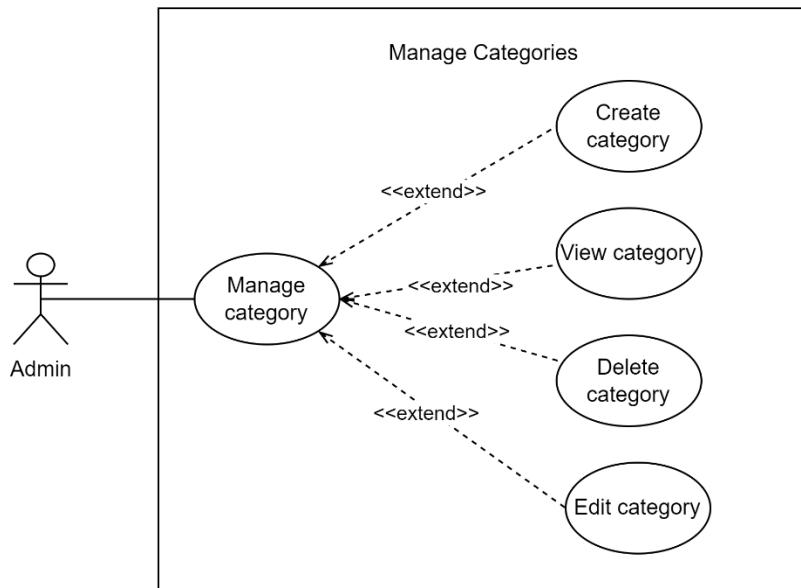


Figure 5.12. UC-12: Manage category

#### 5.1.12.1. Create category

UC Name	Create Category	
UC #	UC-12	
Primary Actor	Only Admin	
Use Case Story	This use case allows admins to create new categories for menu items. It helps organize the menu by grouping related items, improving user experience.	
Trigger	Admin initiates the category creation process by accessing	

	the designated category management section.	
Pre-Condition	1. The user is logged in to the system as an admin. 2. Admin has navigated to the "Product" section on the sidebar	
Post-Condition	1. The new category is successfully created and stored in the system's database. 2. The newly created category may be reflected in the system's category list and on the site	
Primary Flow (PF)		Title: Admin is able to create category without any errors
	Actor Action	System Response

	<p>1) Admin click on "Categories" to create a new category</p>	<p>2) System presents a form for entering new category details. This form includes fields for:</p> <ul style="list-style-type: none"> <li>+ Name: A unique and descriptive name for the category.</li> <li>+ Slug: is the URL-friendly version of the name. It is usually all lowercase and contains only letters, numbers, and hyphens.</li> <li>+ Parent Category.</li> <li>+ Description.</li> <li>+ Group of: a value to require customers to purchase products from this category in multiples.</li> <li>+ Single ajax add to cart: enable or disable.</li> <li>+ Enable thumbnail for page header BG: enable or disable</li> <li>+ Display type: there are 4 options: default, products, subcategories or both.</li> <li>+ Thumbnail: image of the category.</li> <li>+ Image.</li> <li>+ Parent Category</li> <li>+ Status</li> <li>+ Popular (checkbox)</li> </ul>
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	3) Admin enters 'Name' field.	
	4) Admin enters 'Slug' field.	
	5) Admin selects the parent category.	
	6) Admin enters 'Description' field.	
	7) Admin enters 'Group of' field.	
	8) Admin selects 'Display type' field.	
	9) Admin choose picture in 'Thumbnail' field.	
	10) Admin clicks on "Add new category" button to create a new category  If there is no error, go to the next step.  If there is an error, go to EF1	11) System validates the provided information (checking for a unique category name). If successful validation, the system creates the new category and stores it in the database, else go to AF1
Alternate Flow 1(AF1)	Title: Duplicate Category Name	
	Actor Action	System Response
Exception Flow 1 (EF1)	2) Go to PF 3	1) System returns the original page.
Exception Flow 1 (EF1)	Title: Technical Error	
	Actor Action	System Response
		1) In case of a technical error during category creation, the system logs the error and displays an appropriate

		message to the admin: "An error occurred. Please try again later".
--	--	--

Table 5.28. DS-12.1. Create Category

### 5.1.12.2. View Categories

UC Name	View Category	
UC #	UC-12	
Primary Actor	Only Admin	
Use Case Story	This use case allows admins to view categories.	
Trigger	Admin initiates the category creation process by accessing the designated category management section.	
Pre-Condition	<ol style="list-style-type: none"> <li>1. The user is logged in to the system as an admin.</li> <li>2. Admin has navigated to the "Product" section on the sidebar</li> </ol>	
Post-Condition	<ol style="list-style-type: none"> <li>1. Admin successfully views the details of the selected category and its associated products.</li> <li>2. System provides clear and organized information about the category and its products.</li> </ol>	

Primary Flow (PF)	Title: Admin is able to view category without any errors	
	Actor Action	System Response
	1) Admins click on "Categories"	2) System displays the list of categories
	3) Admins click on "view" under the category they want to view  If there is no error, go to the next step.  If there is an error, go to EF1	4) System displays category page on the website, includes all products in its category
Exception Flow 1 (EF1)	Title: Technical Error	
	Actor Action	System Response
		1) In case of a technical error during category creation, the system logs the error and displays an appropriate message to the admin: "An error occurred. Please try again later"

Table 5.29. DS-12.2. View Categories

### 5.1.12.3. Delete Categories

UC Name	Delete Category	
UC #	UC-12	
Primary Actor	Only Admin	
Use Case Story	This use case allows admins to delete categories.	

Trigger	The administrator initiates the category deletion process by accessing the designated category management section and selecting the category to be deleted.						
Pre-Condition	<ol style="list-style-type: none"> <li>1. The user is logged in to the system as an admin.</li> <li>2. The category to be deleted exists in the system's database.</li> <li>3. The category does not contain any associated products.</li> </ol>						
Post-Condition	<ol style="list-style-type: none"> <li>1. The selected category is successfully removed from the system's database.</li> <li>2. Any references to the deleted category in other parts of the system are appropriately updated or removed.</li> </ol>						
Primary Flow (PF)		Title: Admin is able to delete category without any errors					
<table border="1"> <thead> <tr> <th>Actor Action</th> <th>System Response</th> </tr> </thead> <tbody> <tr> <td>1) Admins click on "Categories"</td> <td>2) System displays the list of categories</td> </tr> <tr> <td>3) The administrator identifies and selects the category they want to delete by clicking on the checkboxes</td> <td></td> </tr> </tbody> </table>		Actor Action	System Response	1) Admins click on "Categories"	2) System displays the list of categories	3) The administrator identifies and selects the category they want to delete by clicking on the checkboxes	
Actor Action	System Response						
1) Admins click on "Categories"	2) System displays the list of categories						
3) The administrator identifies and selects the category they want to delete by clicking on the checkboxes							

	<p>4) The administrator confirms the deletion by selecting "Delete" and clicking "Apply".</p> <p>If there is no error, go to the next step.</p> <p>If there is an error, go to EF1</p>	<p>5) The system checks if the selected category has any associated products:</p> <ul style="list-style-type: none"> <li>+ If the category has no associated products, the system proceeds to step 6.</li> <li>+ If the category has associated products, go to the AF1</li> </ul>
		<p>6) The system initiates the deletion process by removing the category record from the system's database.</p>
		<p>7) The system deletes any associated data related to the category, such as category attributes or custom fields.</p>
		<p>8) System updates category references</p>
Alternate Flow 1(AF1)	Title: The category has associated products	
	Actor Action	System Response
		<p>1) The system displays a message informing the administrator that the category cannot be deleted.</p>
	Title: Technical Error	
	Actor Action	System Response

Exception Flow 1 (EF1)		1) In case of a technical error during category creation, the system logs the error and displays an appropriate message to the admin: "An error occurred. Please try again later"
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Table 5.30. DS-12.3. Delete Categories

#### 5.1.12.4. Edit Category

UC Name	Update Category	
UC #	UC01	
Primary Actor	Only Admin	
Use Case Story	This use case allows admin to edit an existing menu categories.	
Trigger	Admin needs to modify the features of the existing category.	
Pre-Condition	1. Admin has logged in 2. Admin has navigated to the "Product" section on the sidebar 3. The category to be edited exists in the system's database.	
Post-Condition	1. The selected category's details are successfully updated in the system's database. 2. Any associated references to the edited category in other parts of the system are appropriately updated.	
	Title: Admin is able to edit category without any errors	

Primary Flow (PF)	Actor Action	System Response
	1) Admins click on "Categories" to create a new category	2) System displays the list of categories
	3) Admins click on "Edit" under the category they want to edit	4) The system displays the category form pre-populated with the current category's details.
	5) Administrator reviews category details	
	6) The administrator edits the category details as needed.	
	<p>7) Once the administrator is satisfied with the changes, they click on a "Update" button.</p> <p>If there is no error, go to the next step.</p> <p>If there is an error, go to EF1</p> <p>+ If admin stop editing, go to AF1</p>	<p>8) The system validates the input data to ensure it meets the required format and constraints.</p> <p>+ If the data is valid, go to step 9.</p> <p>+ If the data is invalid, go to AF2</p>
		9) the system updates the category's record in the database with the new information.
		10) The system updates any associated references to the category in other parts of the system
Alternate Flow 1(AF1)	Title: Admin Cancels Edit	
	Actor Action	System Response

		1) System discards unsaved changes and return to the previous version of the category details.
Alternate Flow 2 (AF2)	Title: The data is invalid	
	Actor Action	System Response
		1) The system displays clear and informative error messages next to the corresponding input fields.
Exception Flow 1 (EF1)	Title: Technical Error	
	Actor Action	System Response
		1) The system will stop clearing, error messages, logs, and a temporary solution may be applied.

Table 5.31. DS-12.4. Edit Category

### 5.1.13. UC-13. Manage Product

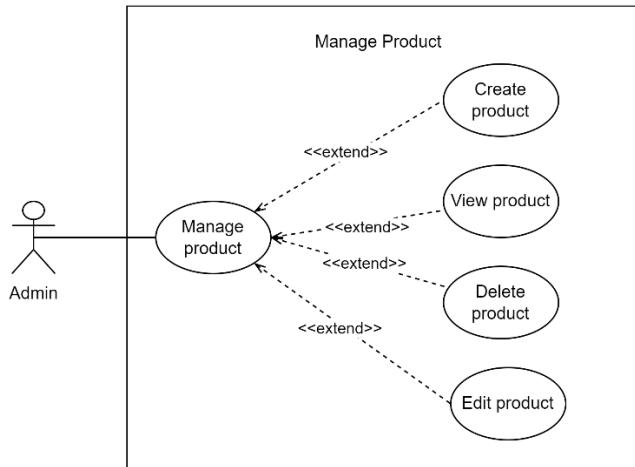


Figure 5.13. UC-13. Manage product

### **5.1.13.1. *Create product***

UC Name	Create Product	
UC #	UC-13	
Primary Actor	Only Admin	
Use Case Story	This use case allows admin to edit an existing menu categories.	
Trigger	The administrator initiates the product creation process by accessing the designated product management section	
Pre-Condition	1. Admin has logged in 2. Admin has navigated to the "Product" section on the sidebar	
Post-Condition	1. The new product is successfully created and added to the system's database. 2. The product is assigned a unique product identifier (SKU or ID)	
Primary Flow (PF)	Title: Admin is able to create product without any errors	
	Actor Action	System Response

	<p>1) Admins click on "Add New" to create a new product</p>	<p>2) The system displays the product creation page with default values or empty fields. It includes:</p> <ul style="list-style-type: none"> <li>+ Product Name</li> <li>+ Product description</li> <li>+ Regular Price</li> <li>+ Sale Price</li> <li>+ Tax status</li> <li>+ Tax class</li> <li>+ Minimum quantity</li> <li>+ Maximum quantity</li> <li>+ Group of</li> <li>+ Exclude from</li> <li>+ Product short description</li> <li>+ Product image</li> <li>+ Product gallery</li> <li>+ Product categories</li> <li>+ Product tags</li> <li>+ Brands</li> <li>+ Like and Share</li> </ul>
	<p>3) Admin enters 'Product Name' field</p>	
	<p>4) Admin enters 'Product Description' field</p>	
	<p>5) Admin enters 'Regular Price' field</p>	

	6) Admin enters 'Sale Price' field	
	7) Admin selects the tax status (Taxable, Shipping only or None)	
	8) Admin selects the tax class (Standard, Reduced rate or Zero rate)	
	9) Admin chooses or enters 'Maximum quantity' field	
	10) Admin chooses or enters 'Maximum quantity' field	
	11) Admin chooses or enters 'Group of' field	
	12) Admin select 'Exclude from' (Order rules or category rules)	
	13) Admin enters 'Product short description' field	
	14) Admin sets 'Product image'	
	15) Admin chooses 'Product categories'	
	16) Admin adds 'Product tag'	
	17) Admin chooses 'Product Brand'	

	<p>18) Admin click 'Save Draft', go to AF1</p> <p>If there is no error, go to the next step.</p> <p>If there is an error, go to EF1</p>	
	<p>19) Admin click 'Preview', go to AF2</p> <p>If there is no error, go to the next step.</p> <p>If there is an error, go to EF1</p>	
	<p>18) Admin click 'Publish'</p> <p>If there is no error, go to the next step.</p> <p>If there is an error, go to EF1</p>	<p>19) System processes product creation:</p> <ul style="list-style-type: none"> <li>+ If the data is valid, go to step 20.</li> <li>+ If the data is invalid, go to AF3</li> </ul>
		<p>20) The system creates a new product record in the database with the provided information</p>
		<p>21) The system generates a unique product identifier (SKU or ID) for the new product.</p>
		<p>22) The system stores the uploaded product images in the appropriate location.</p>
	Title: Admin click on 'Save Draft'	

Alternate Flow 1(AF1)	Actor Action	System Response
		1) The product is saved as a draft in the system's database, and the user is redirected to the product edit page.
Alternate Flow 2 (AF2)	Title: Admin click on 'Preview'	
	Actor Action	System Response
Alternate Flow 3 (AF2)		1) A temporary preview of the product page is displayed to the user, simulating the product's appearance on the live website.
	Title: The data is invalid	
Exception Flow 1 (EF1)	Actor Action	System Response
		1) The system displays clear and informative error messages next to the corresponding input fields.
Exception Flow 1 (EF1)	Title: Technical Error	
	Actor Action	System Response
		1) In case of a technical error during category creation, the system logs the error and displays an appropriate message to the admin: "An error occurred. Please try again later".

Table 5.32. DS-13.1.Create Product

### 5.1.13.2. View Products

UC Name	View Product	
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UC #	VP14							
Primary Actor	Only Admin							
Use Case Story	This use case allows admins to view product.							
Trigger	The administrator navigates to the product management section of the system							
Pre-Condition	1. The user is logged in to the system as an admin. 2. Admin has navigated to the "Product" section on the sidebar							
Post-Condition	1. Admin successfully views the details of the selected product.							
Primary Flow (PF)	Title: Admin is able to view product without any errors <table border="1"> <tr> <td>Actor Action</td> <td>System Response</td> </tr> <tr> <td>1) Admins click on "All Product"</td> <td>2) System displays the list of products</td> </tr> <tr> <td>3) Admins click on "view" under the product they want to view If there is no error, go to the next step.  If there is an error, go to EF1</td> <td>4) System displays product's detail page on the website.</td> </tr> </table>		Actor Action	System Response	1) Admins click on "All Product"	2) System displays the list of products	3) Admins click on "view" under the product they want to view If there is no error, go to the next step.  If there is an error, go to EF1	4) System displays product's detail page on the website.
Actor Action	System Response							
1) Admins click on "All Product"	2) System displays the list of products							
3) Admins click on "view" under the product they want to view If there is no error, go to the next step.  If there is an error, go to EF1	4) System displays product's detail page on the website.							
	Title: Technical Error							
	Actor Action	System Response						

Exception Flow 1 (EF1)		1) In case of a technical error during category creation, the system logs the error and displays an appropriate message to the admin: "An error occurred. Please try again later"
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Table 5.33. DS-13.2. View Products

### 5.1.13.3. Delete Products

UC Name	Delete Product	
UC #	DP01	
Primary Actor	Only Admin	
Use Case Story	This use case allows admins to delete products.	
Trigger	The administrator or authorized user initiates the product deletion process by accessing the product list page, selecting the product to be deleted, selecting 'Delete' and clicking 'Apply'.	
Pre-Condition	1. The user is logged in to the system as an admin. 2. The product to be deleted exists in the system's database	

Post-Condition	<p>1. The selected product is successfully removed from the system's database.</p> <p>2. Any associated references to the deleted product in other parts of the system are appropriately removed.</p>	
Primary Flow (PF)	Title: Admin is able to delete products without any errors	
	Actor Action	System Response
	1) Admins click on 'All Products'	2) System displays the list of products
	3) The administrator identifies the product they want to delete from the list. They can use filters, search, or sorting options to locate the specific product.	
	4) The administrator confirms the deletion by selecting "Delete" and clicking "Apply".  If there is no error, go to the next step.  If there is an error, go to EF1	5) The system deletes the product record from the database.
		6) The system removes any associated product images or files from the storage system.
		7) The system updates any relevant indexes or search

		mechanisms to remove references to the deleted product.
Exception Flow 1 (EF1)	Title: Technical Error	
		System Response
	Actor Action	1) In case of a technical error during category creation, the system logs the error and displays an appropriate message to the admin: "An error occurred. Please try again later"

Table 5.34. DS-13.3. Delete Products

#### 5.1.13.4. Edit Product

UC Name	Update Product	
UC #	UP01	
Primary Actor	Only Admin	
Use Case Story	This use case allows admin to edit an existing products.	
Trigger	Admin needs to modify the features of the existing products.	
Pre-Condition	1. Admin has logged in 2. Admin has navigated to the "Product" section on the sidebar 3. The product to be edited exists in the system's database.	

Post-Condition	<p>1. The selected product's details are successfully updated in the system's database.</p> <p>2. Any associated references to the edited products in other parts of the system are appropriately updated.</p>													
Primary Flow (PF)	<p>Title: Admin is able to edit product without any errors</p> <table border="1"> <tr> <td>Actor Action</td><td>System Response</td></tr> <tr> <td>1) Admins click on "All Products" to create a new category</td><td>2) System displays the list of products</td></tr> <tr> <td>3) Admins click on "Edit" under the product they want to edit</td><td>4) The system displays the product form pre-populated with the current product's details.</td></tr> <tr> <td>5) Administrator reviews product details</td><td></td></tr> <tr> <td>6) The administrator edits the product details as needed.</td><td></td></tr> <tr> <td>7) Once the administrator is satisfied with the changes, they click on a "Update" button. If there is no error, go to the next step.  If there is an error, go to EF1 Or if admin is dissatisfied, go to AF1</td><td> <p>8) The system validates the input data to ensure it meets the required format and constraints.</p> <ul style="list-style-type: none"> <li>+ If the data is valid, go to step 9.</li> <li>+ If the data is invalid, go to AF2</li> </ul> </td></tr> </table>		Actor Action	System Response	1) Admins click on "All Products" to create a new category	2) System displays the list of products	3) Admins click on "Edit" under the product they want to edit	4) The system displays the product form pre-populated with the current product's details.	5) Administrator reviews product details		6) The administrator edits the product details as needed.		7) Once the administrator is satisfied with the changes, they click on a "Update" button. If there is no error, go to the next step.  If there is an error, go to EF1 Or if admin is dissatisfied, go to AF1	<p>8) The system validates the input data to ensure it meets the required format and constraints.</p> <ul style="list-style-type: none"> <li>+ If the data is valid, go to step 9.</li> <li>+ If the data is invalid, go to AF2</li> </ul>
Actor Action	System Response													
1) Admins click on "All Products" to create a new category	2) System displays the list of products													
3) Admins click on "Edit" under the product they want to edit	4) The system displays the product form pre-populated with the current product's details.													
5) Administrator reviews product details														
6) The administrator edits the product details as needed.														
7) Once the administrator is satisfied with the changes, they click on a "Update" button. If there is no error, go to the next step.  If there is an error, go to EF1 Or if admin is dissatisfied, go to AF1	<p>8) The system validates the input data to ensure it meets the required format and constraints.</p> <ul style="list-style-type: none"> <li>+ If the data is valid, go to step 9.</li> <li>+ If the data is invalid, go to AF2</li> </ul>													

		9) the system updates the product's record in the database with the new information.
		10) The system updates any associated references to the product in other parts of the system
Alternate Flow 1(AF1)	Title: Admin Cancels Edit	
	Actor Action	System Response
		1) System discards unsaved changes and return to the previous version of the product details.
Alternate Flow 2 (AF2)	Title: The data is invalid	
	Actor Action	System Response
		1) The system displays clear and informative error messages next to the corresponding input fields.
Exception Flow 1 (EF1)	Title: Technical Error	
	Actor Action	System Response
		1) The system will stop clearing, error messages, logs, and a temporary solution may be applied.

Table 5.35. DS-13.4. Edit product

### 5.1.14. UC-14. Manage User Account

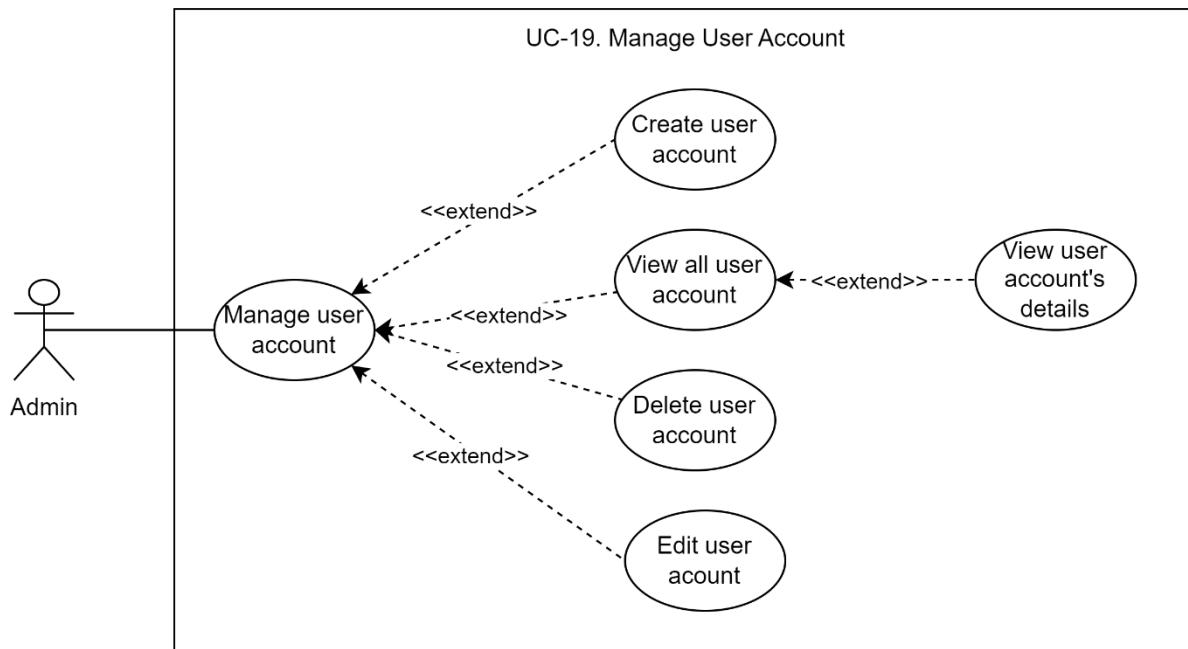


Figure 5.14. UC-14. Manage User Account

#### 5.1.14.1. View all user

UC Name	View All Users	
UC #	UC-15	
Primary Actor	Only Admin	
Use Case Story	This use case allows admins to view all users	
Trigger	The administrator navigates to the user management section of the system	
Pre-Condition	1. Admin has logged in 2. Admin has navigated to	

	the "Users" section on the sidebar	
Post-Condition	<p>1. Admin successfully views a list of all registered users in the system.</p> <p>2. The list displays relevant user information, such as username, name, email address, role, tag and post.</p>	
Primary Flow (PF)		Title: Admin is able to view all users without any errors
	Actor Action	System Response
	<p>1) Admins click on "All Users"</p> <p>If there is no error, go to the next step.</p> <p>If there is an error, go to EF1</p>	2) System displays the list of users
Exception Flow 1 (EF1)		Title: Technical Error
	Actor Action	System Response
		<p>1) In case of a technical error during category creation, the system logs the error and displays an appropriate message to the admin: "An error occurred. Please try again later".</p>

Table 5.36. DS-14.1. View All Users

### **5.1.14.2. View User Account Detail**

UC Name	View User Detail	
UC #	VUD01	
Primary Actor	Only Admin	
Use Case Story	This use case allows admins to view user's detail.	
Trigger	The administrator navigates to the user management section of the system	
Pre-Condition	1. Admin has logged in 2. Admin has navigated to the "Users" section on the sidebar	
Post-Condition	1. Admin successfully views the details of the selected users. 2. System provides clear information about user.	
Primary Flow (PF)	Title: Admin is able to view user's detail without any errors	
	Actor Action	System Response
	1) Admins click on "All Users"	2) System displays the list of users

	<p>3) Admins click on "view" under the user they want to view</p> <p>If there is no error, go to the next step.</p> <p>If there is an error, go to EF1</p>	4) System displays user's detail page
Exception Flow 1 (EF1)	<p>Title: Technical Error</p> <p>Actor Action</p>	<p>System Response</p> <p>1) In case of a technical error during category creation, the system logs the error and displays an appropriate message to the admin: "An error occurred. Please try again later".</p>

Table 5.37. DS-14.2. View User Account Detail

#### 5.1.14.3. Create User Account

UC Name	Create User Account	
UC #	CUA01	
Primary Actor	Only Admin	
Use Case Story	This use case allows admin to create a new user account	
Trigger	The administrator initiates the user account creation process by accessing the designated user management section	

Pre-Condition	1. Admin has logged in 2. Admin has navigated to the "Users" section on the sidebar	
Post-Condition	1. The new user account is successfully created and added to the system's database.  2. The user receives a confirmation message indicating successful account creation.  3. The new user can log in to the system using their credentials.	
Primary Flow (PF)	Title: Admin is able to create user account without any errors	
	Actor Action	System Response
	1) Admins click on "Add New User" to create a new user account	2) The system presents a form for the administrator to enter the required user information.. It includes:  + User Name  + Email  + First Name  + Last Name  + Website  + Password  + Send User Notification  + Role  + Invite User

	3) Admin enters 'User Name' field	
	4) Admin enters 'Email' field	
	5) Admin enters 'First Name' field	
	6) Admin enters 'Last Name' field	
	7) Admin enters 'Website' field	
	8) Admin clicks on auto generate password or enters 'Password' field	
	9) Admin selects 'Role' (Booking manager, Shop manager, Customer, Subscriber, Contributor, Author, Editor or Administrator)	
	10) Admin chooses or enters 'Maximum quantity' field	
	11) Admin clicks on invite user if want	
	12) Admin clicks on 'Add New User' button  If there is no error, go to the next step.  If there is an error, go to EF1	

		13) The system validates the input data to ensure it meets the required format: + if the data is valid, go to step 14. + if the data is invalid, go to AF1
		14) The system creates a new user record in the database with the provided information.
		15) The system sends a welcome email or notification to the new user with their login credentials (if configured).
Alternate Flow 1(AF1)	Title: The data is invalid	
	Actor Action	System Response
		1) The system displays clear and informative error messages next to the corresponding input fields.
	2) The administrator remains on the user creation page to make corrections and resubmit the form.	
Exception Flow 1 (EF1)	Title: Technical Error	
	Actor Action	System Response
		1) In case of a technical error during category creation, the system logs the error and displays an appropriate message to the admin: "An error occurred. Please try again later".

Table 5.38. DS-14.3. Create User Account

#### **5.1.14.4. Delete User Account**

UC Name	Delete User Account	
UC #	UC-15	
Primary Actor	Only Admin	
Use Case Story	This use case allows admins to delete user account.	
Trigger	The administrator or authorized user initiates the user account deletion process by accessing the user account list page, selecting the user account to be deleted, selecting 'Delete' and clicking 'Apply'.	
Pre-Condition	1. The user is logged in to the system as an admin. 2. The user account to be deleted exists in the system's database	
Post-Condition	1. The selected user account is successfully removed from the system's database.	
Primary Flow (PF)	Title: Admin is able to delete user account without any errors	
	Actor Action	System Response
	1) Admins click on 'All Users'	2) System displays the list of products

	<p>3) The administrator identifies the user account they want to delete from the list. They can use filters, search, or sorting options to locate the specific user account.</p>	
	<p>4) The administrator confirms the deletion by selecting "Delete" and clicking "Apply".</p> <p>If there is no error, go to the next step.</p> <p>If there is an error, go to EF1</p>	<p>5) The system deletes the user account record from the database.</p>
Exception Flow 1 (EF1)	Title: Technical Error	
	Actor Action	System Response
		<p>1) In case of a technical error during category creation, the system logs the error and displays an appropriate message to the admin: "An error occurred. Please try again later"</p>

Table 5.39. DS-14.4. Delete User Account

#### 5.1.14.5. Edit User Account

UC Name	Edit User Account	
UC #	EDU01	
Primary Actor	Only Admin	
Use Case Story	This use case allows admin to edit an existing user account.	

Trigger	Admin needs to modify the features of the existing user.	
Pre-Condition	1. Admin has logged in 2. Admin has navigated to the "User" section on the sidebar 3. The user account to be edited exists in the system's database.	
Post-Condition	1. The selected user account's details are successfully updated in the system's database. 2. Any associated references to the edited products in other parts of the system are appropriately updated.	
Primary Flow (PF)		Title: Admin is able to edit user account without any errors
Actor Action		System Response
1) Admins click on "All Users"		2) System displays the list of products
3) Admins click on "Edit" under the user they want to edit		4) The system displays the user account form pre-populated with the current user account's details.
5) Administrator reviews user account's details		
6) The administrator edits the user account's details as needed.		
7) Once the administrator is satisfied with the changes, they click on a "Update" button.		8) The system validates the input data to ensure it meets the required format and constraints.

	If there is no error, go to the next step.  If there is an error, go to EF1	+ If the data is valid, go to step 9.  + If the data is invalid, go to AF2
		9) The system updates the user's record in the database with the new information.
		10) The system updates any associated references to the user in other parts of the system
Alternate Flow 1(AF1)	Title: Admin Cancels Edit	
	Actor Action	System Response
		1) System discards unsaved changes and return to the previous version of the user's details.
Alternate Flow 2 (AF2)	Title: The data is invalid	
	Actor Action	System Response
		1) The system displays clear and informative error messages next to the corresponding input fields.
Exception Flow 1 (EF1)	Title: Technical Error	
	Actor Action	System Response
		1) The system will stop clearing, error messages, logs, and a temporary solution may be applied.

Table 5.40. DS-14.5. Edit User Account

## 5.2. Activity Diagram

### 5.2.1. AD-1: Login

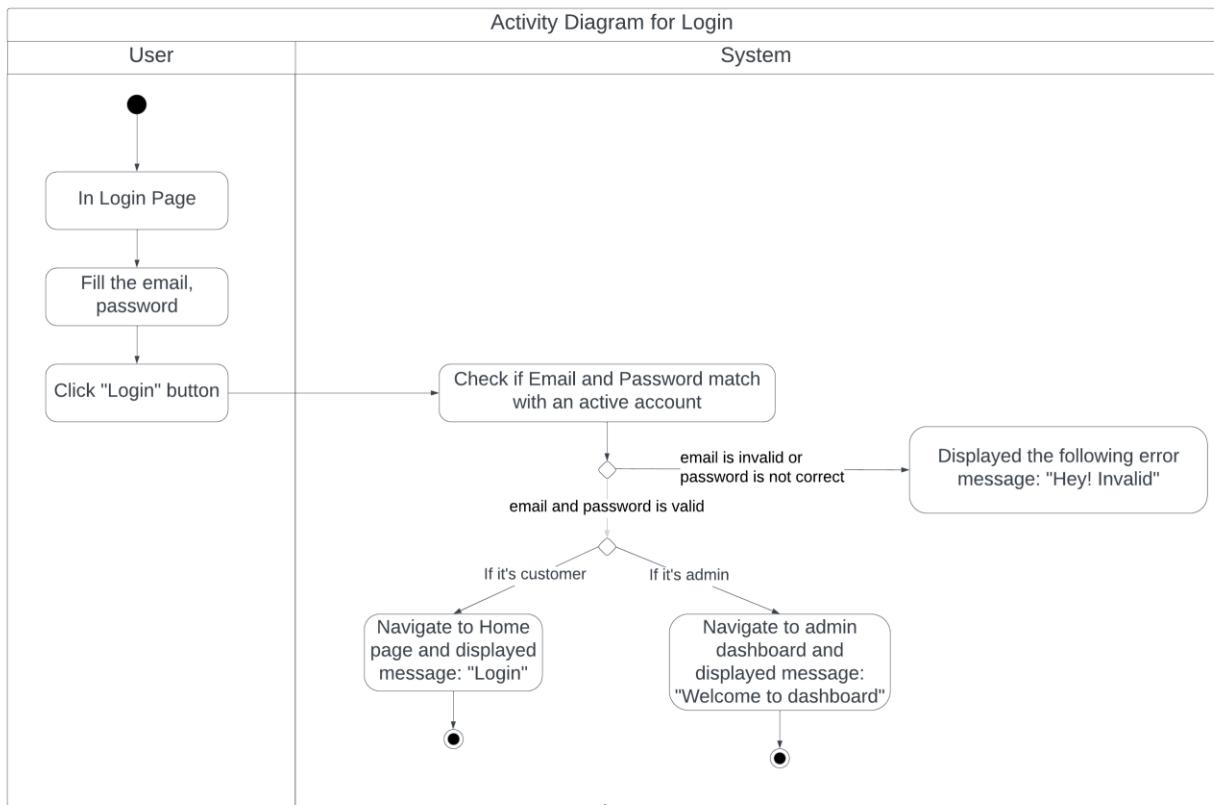


Figure 5.15. AD-1:Login

### 5.2.2. AD-2: Log out

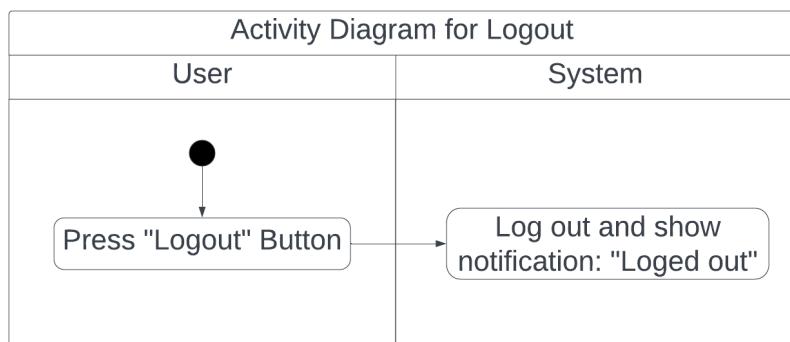


Figure 5.16. AD-2: Log out

### 5.2.3. AD-3: Register

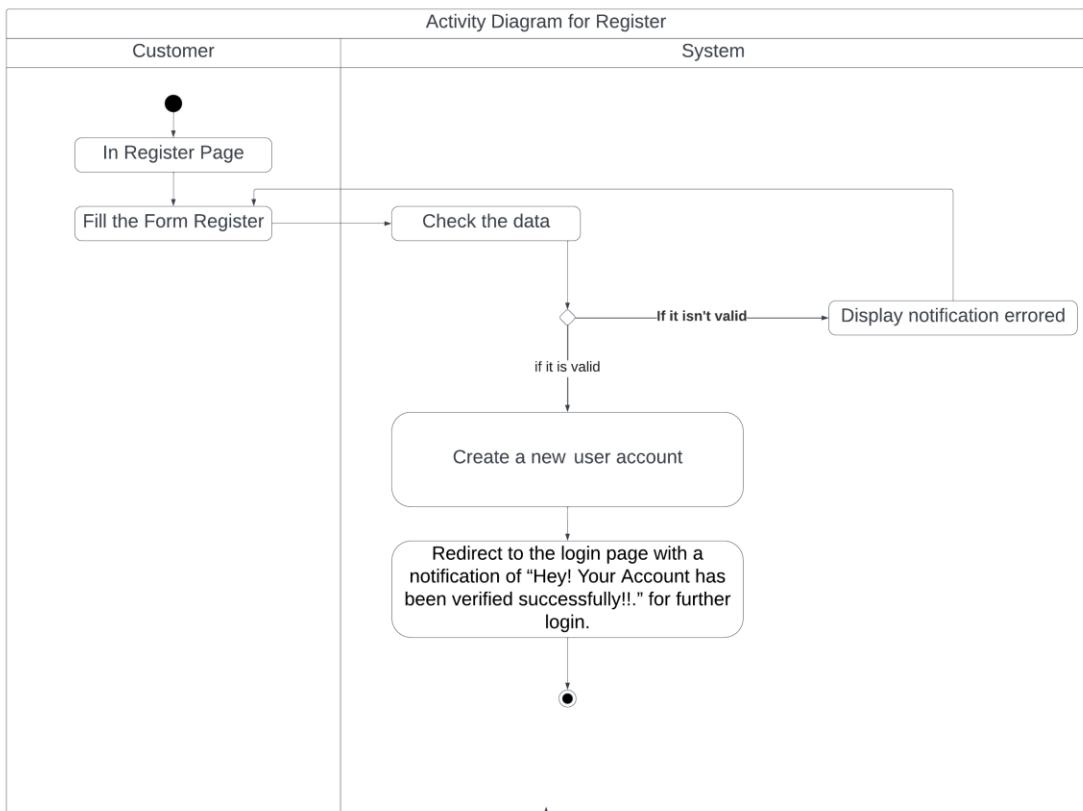


Figure 5.17. AD-3: Register

### 5.2.4. AD-4: Forgot password

### 5.2.5. AD-5: Add product to wishlist

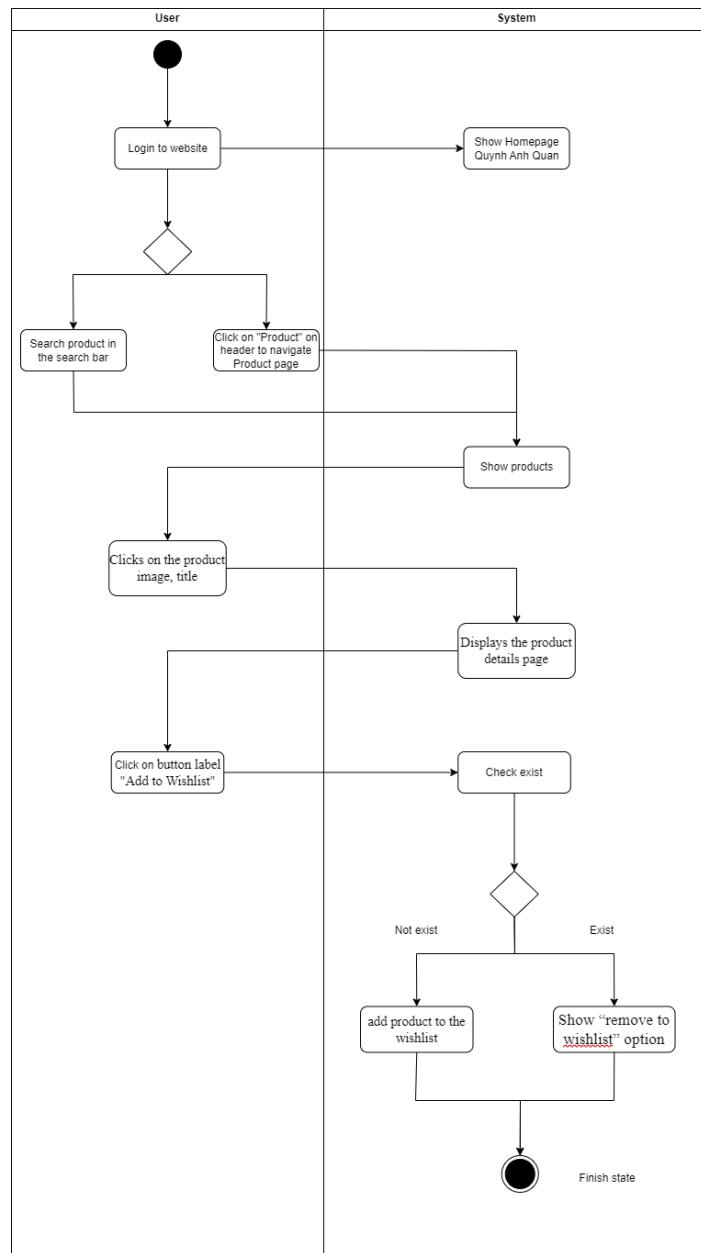


Figure 5.18. AD-5: Add product to wishlist

### 5.2.6. AD-6: View wishlist & remove product out of wishlist

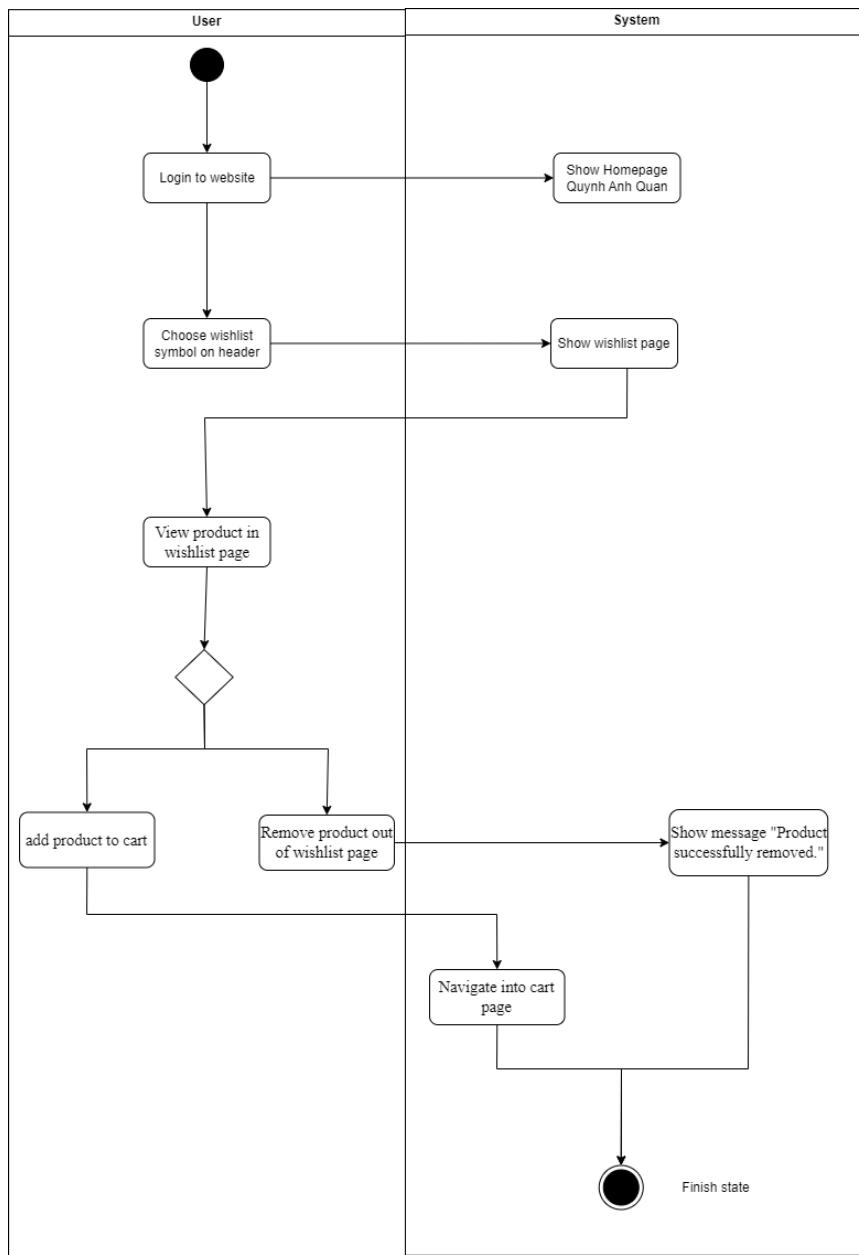


Figure 5.19. AD-6:View wishlist & remove product out of wishlist

### 5.2.7. AD-7: View shopping cart

AD for View shopping cart

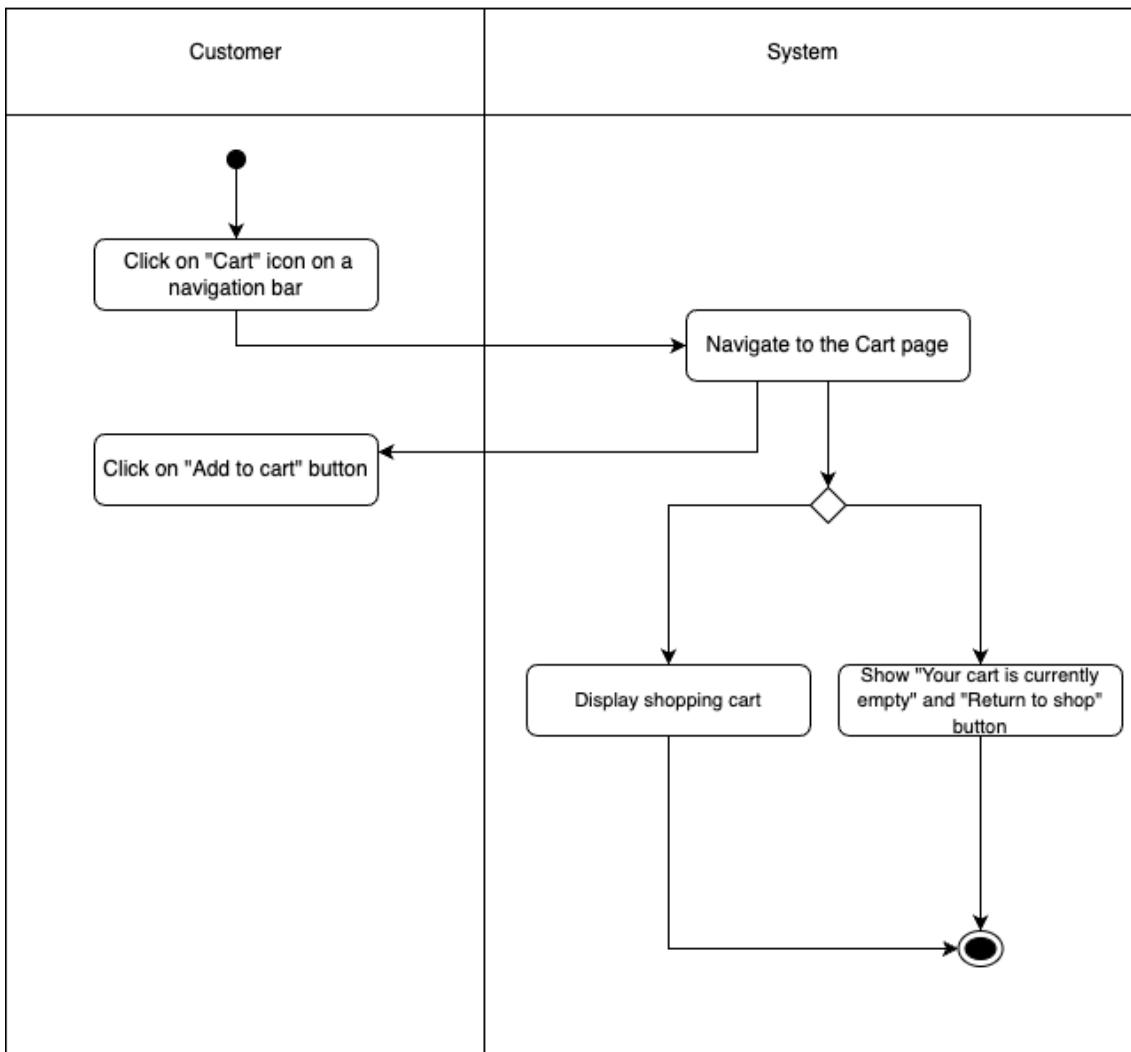


Figure 5.20. AD-7: View shopping cart

### 5.2.8. AD-8: Add product into shopping cart

Activity diagram for Add product into cart

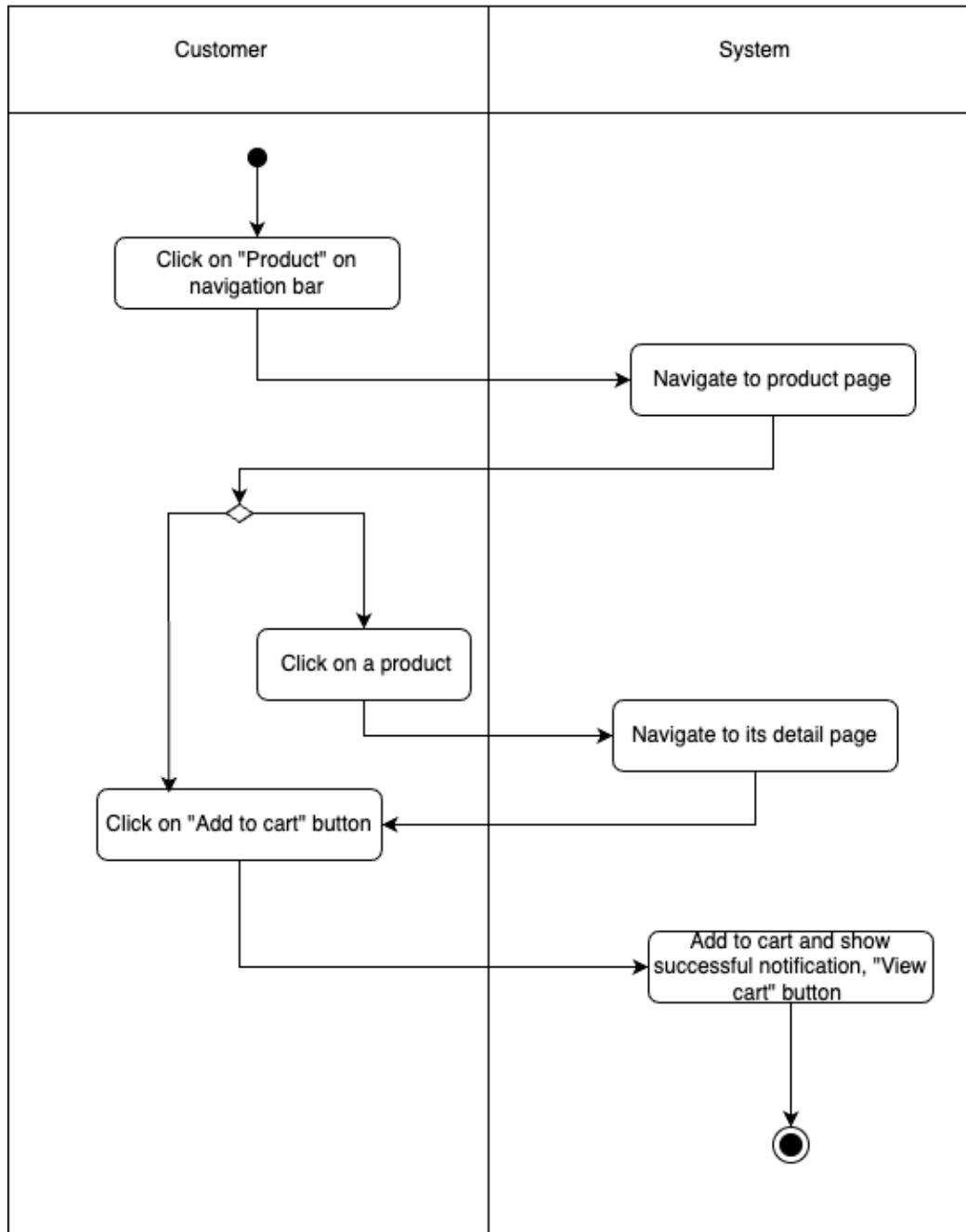


Figure 5.21. AD-8: Add product into shopping cart

### 5.2.9. AD-9: Remove product from shopping cart

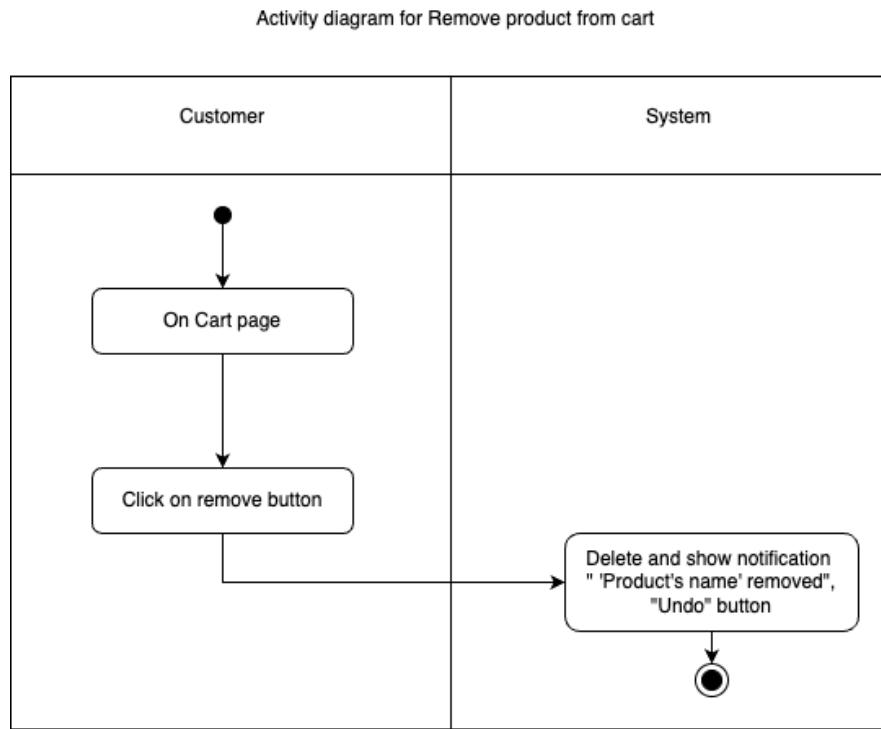


Figure 5.22. AD-9: Remove product from shopping cart

### 5.2.10. AD-10: Modify the product quantity

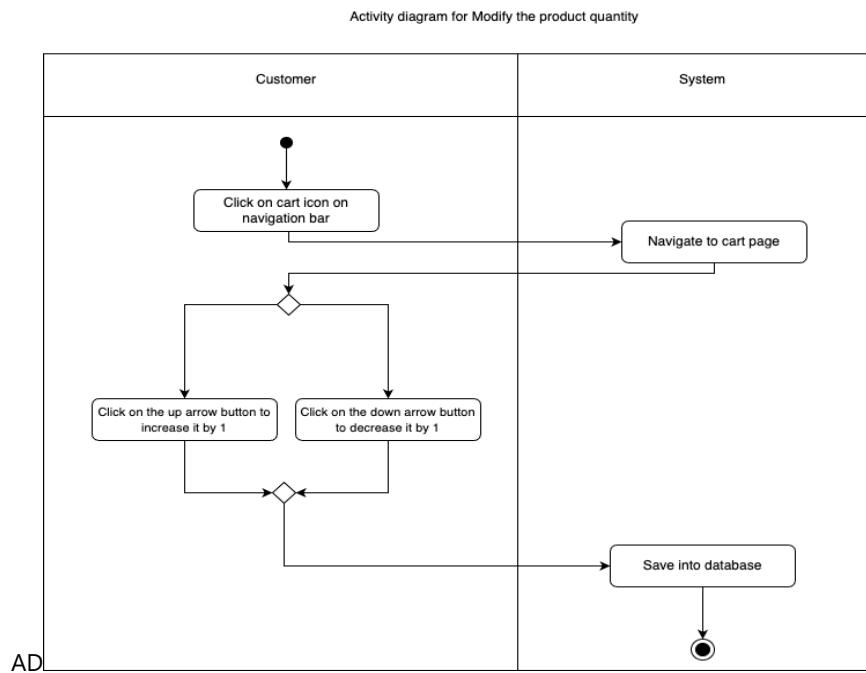


Figure 5.23. AD-10: Modify the product quantity

### 5.2.11. AD-11: View profile

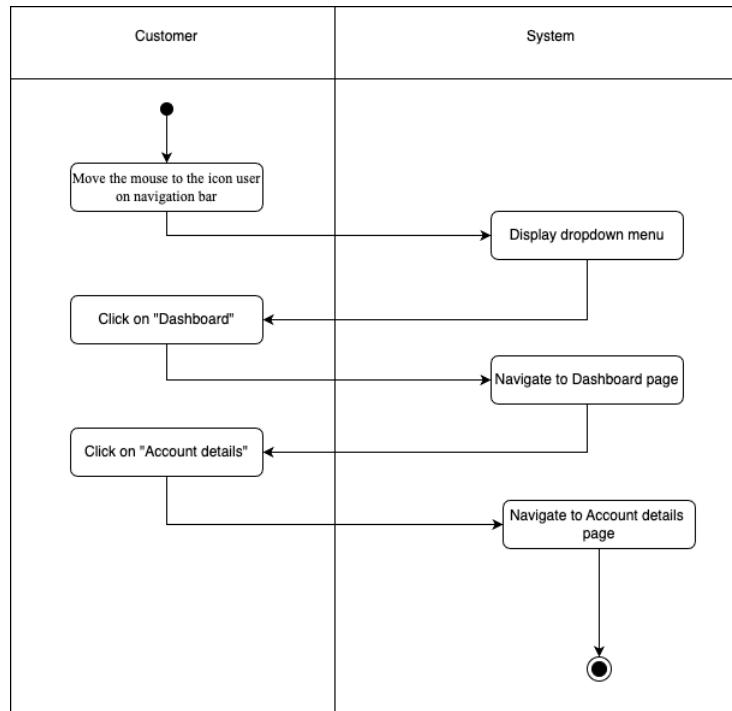


Figure 5.24. AD-11: View Profile

### 5.2.12. AD-12: Edit Profile

Activity diagram for Edit profile

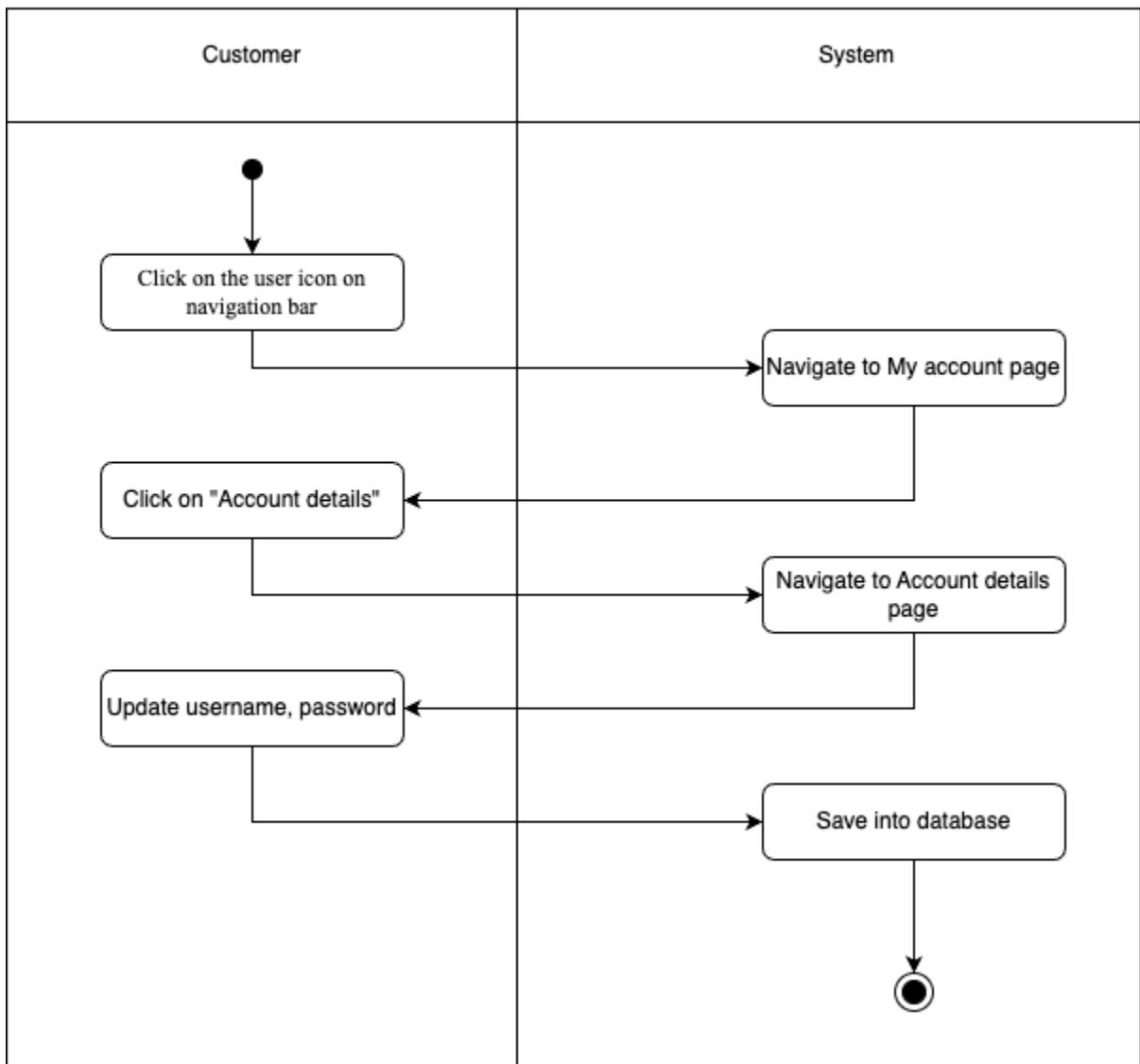
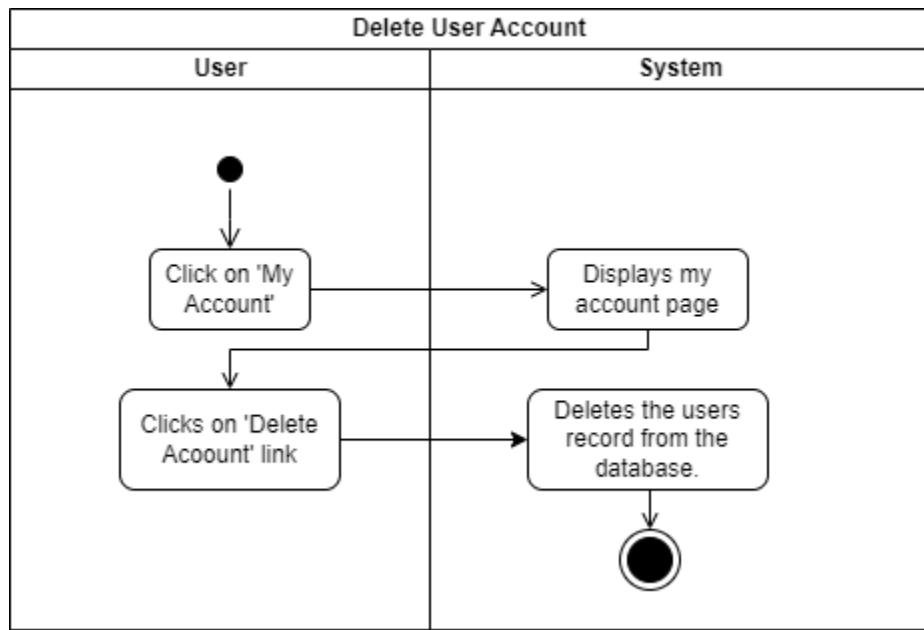


Figure 5.25. AD-12: Edit Profile

### 5.2.13. AC-13: Delete Profile:



*Figure 5.26. AD-13: Delete User Account*

#### 5.2.14. AD-14: Check out

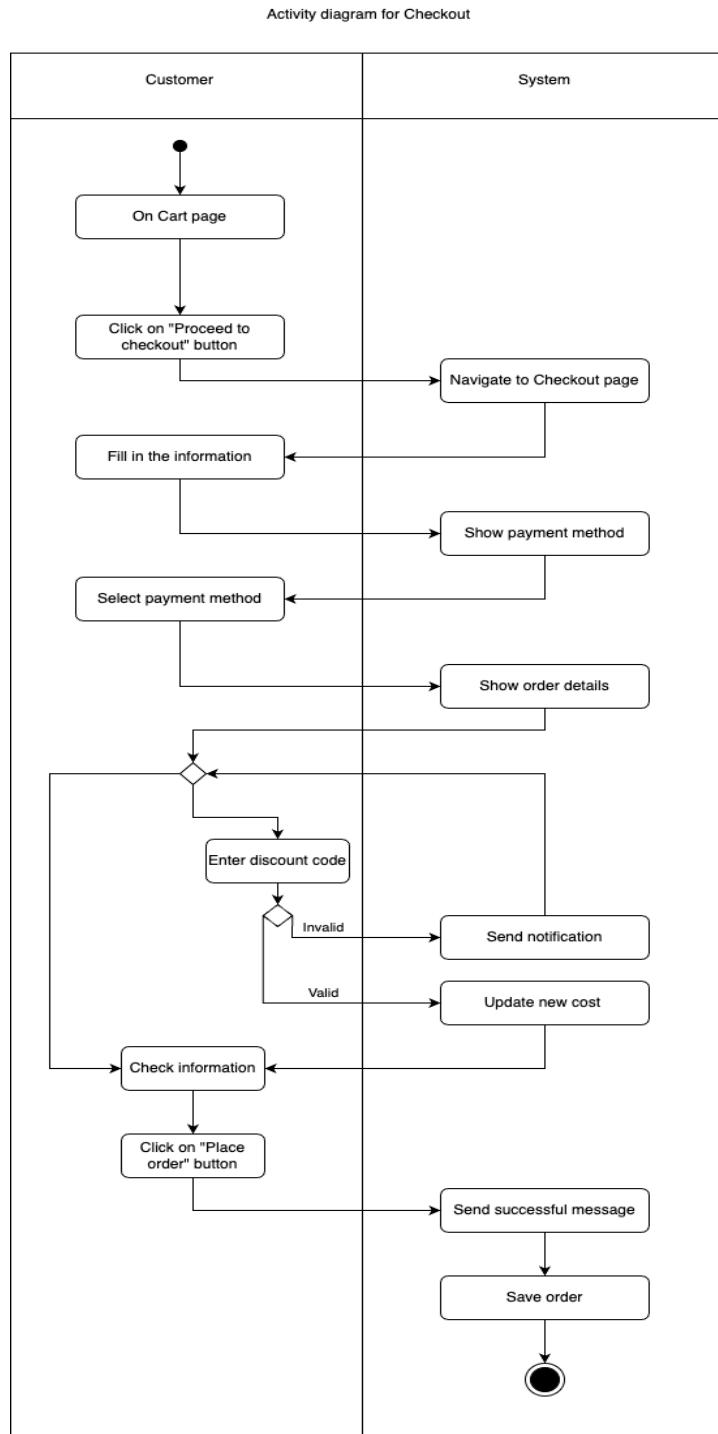


Figure 5.27. AD-14: Checkout

### 5.2.15. AD-15: Make Reservation

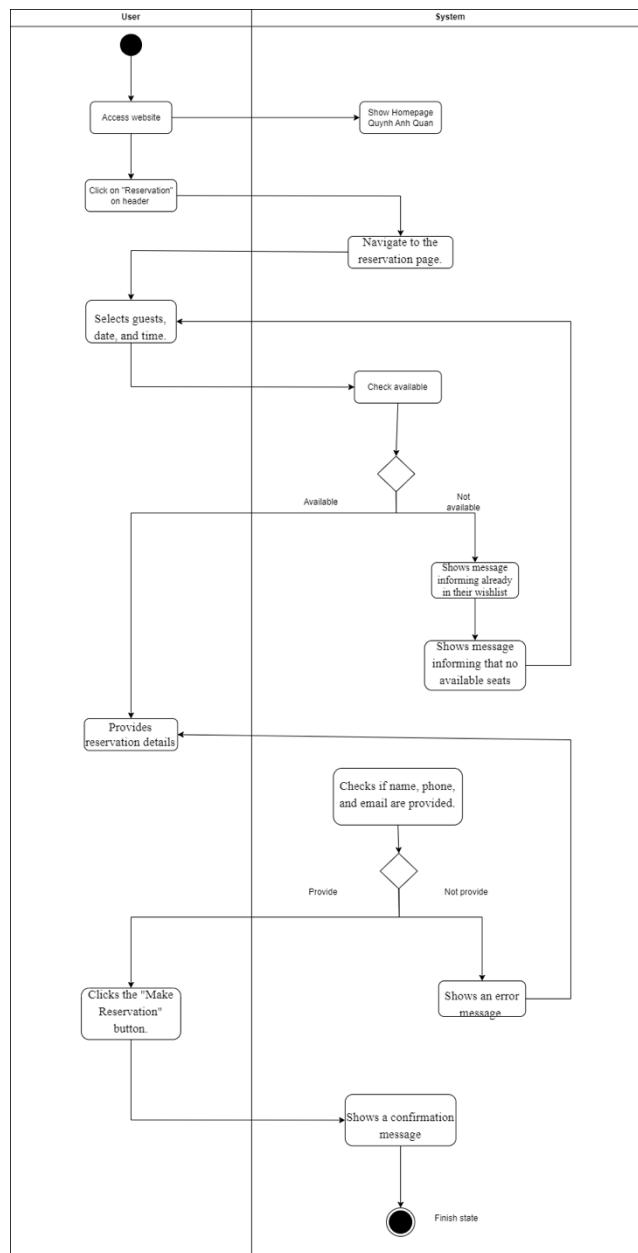


Figure 5.28. AD-15: Make Reservation

### 5.2.16. AD-16: Cancel Reservation

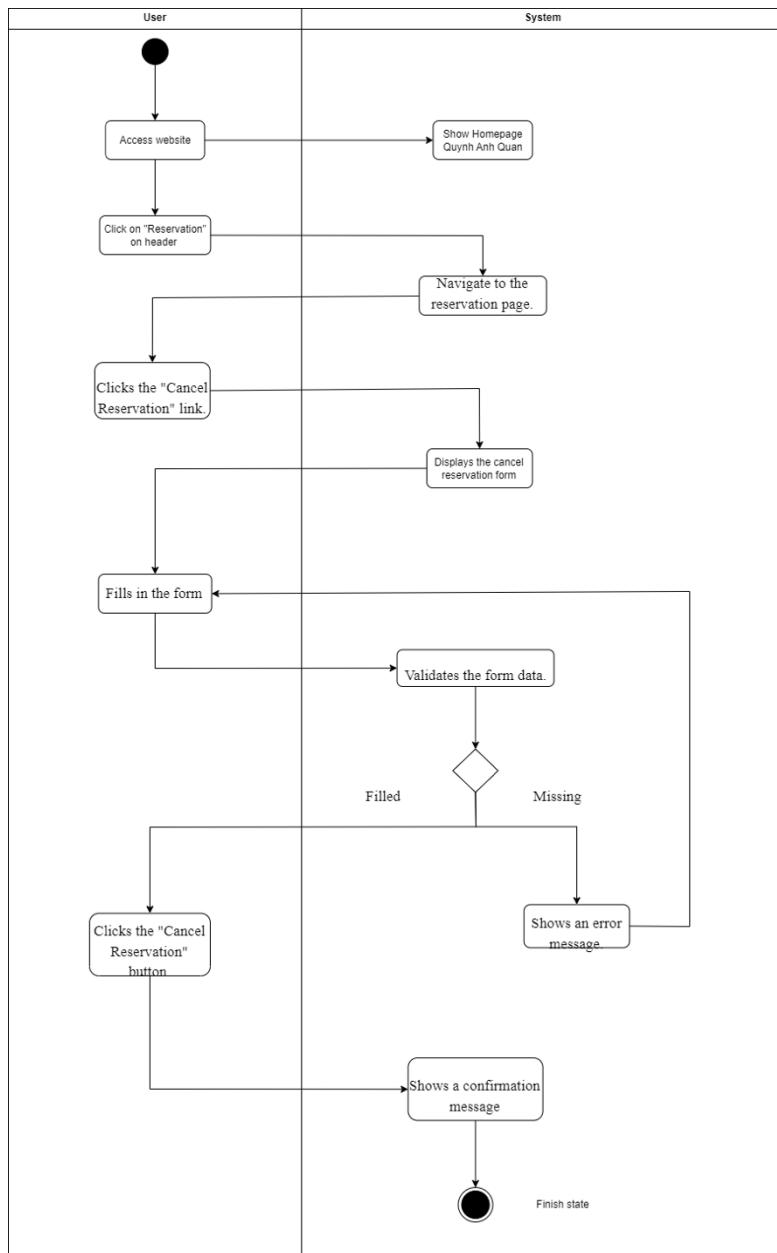


Figure 5.29. AD-16. Cancel Reservation

### 5.2.17. AD-17: Comment and rating on posts/products

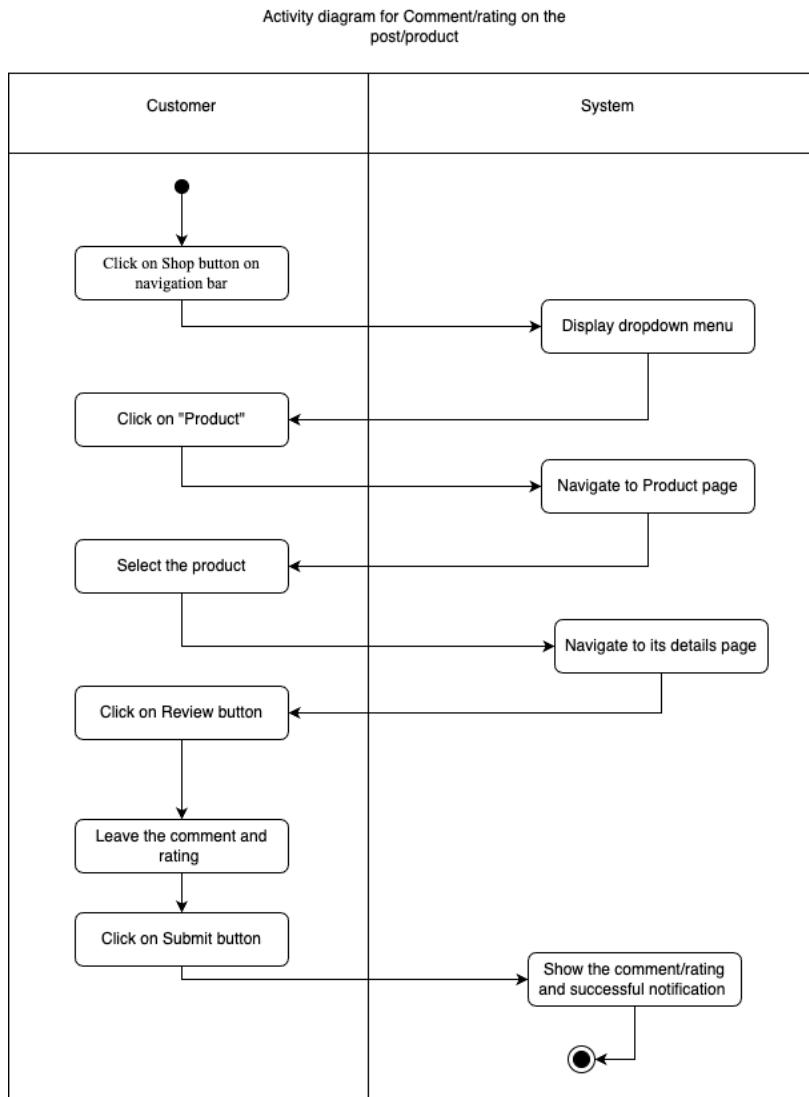


Figure 5.30. AD-17: Comment and rating on posts/products

### 5.2.18. AD-18: Contact

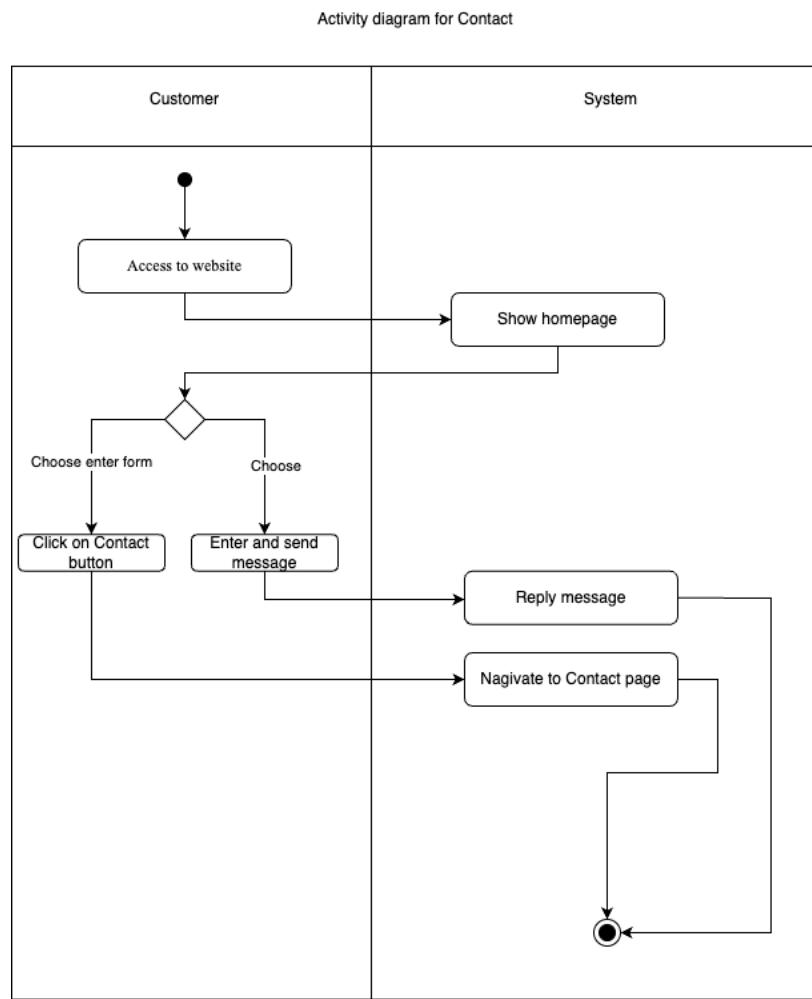
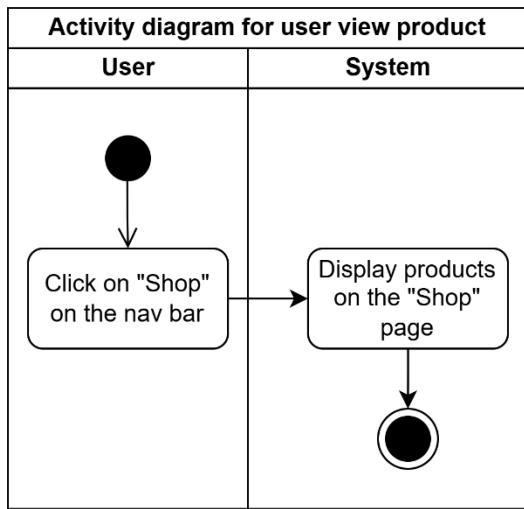
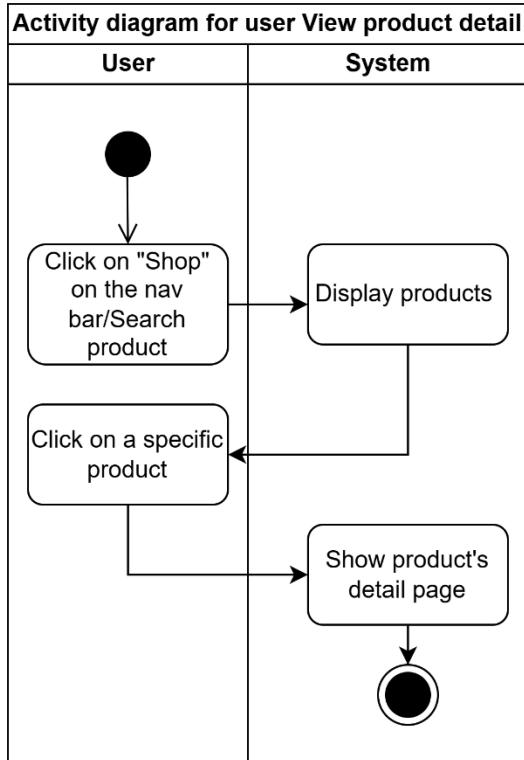


Figure 5.31. AD-18: Contact admin

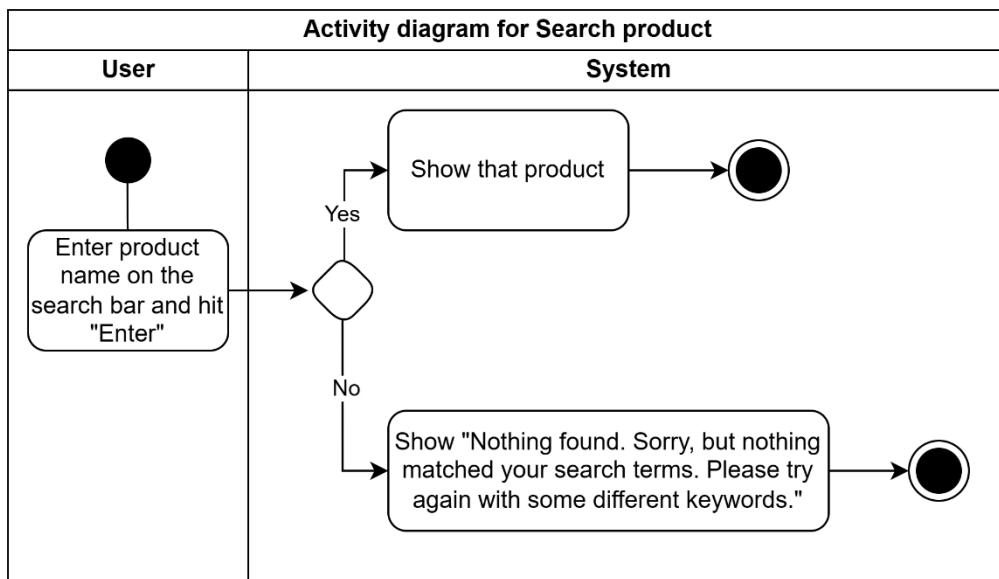
### 5.2.19. AD-19: User view product



### 5.2.20. AD-20: User view product's detail



### 5.2.21. AD-21: User search for product



### 5.2.23. AD-22: View message

Activity diagram for View message

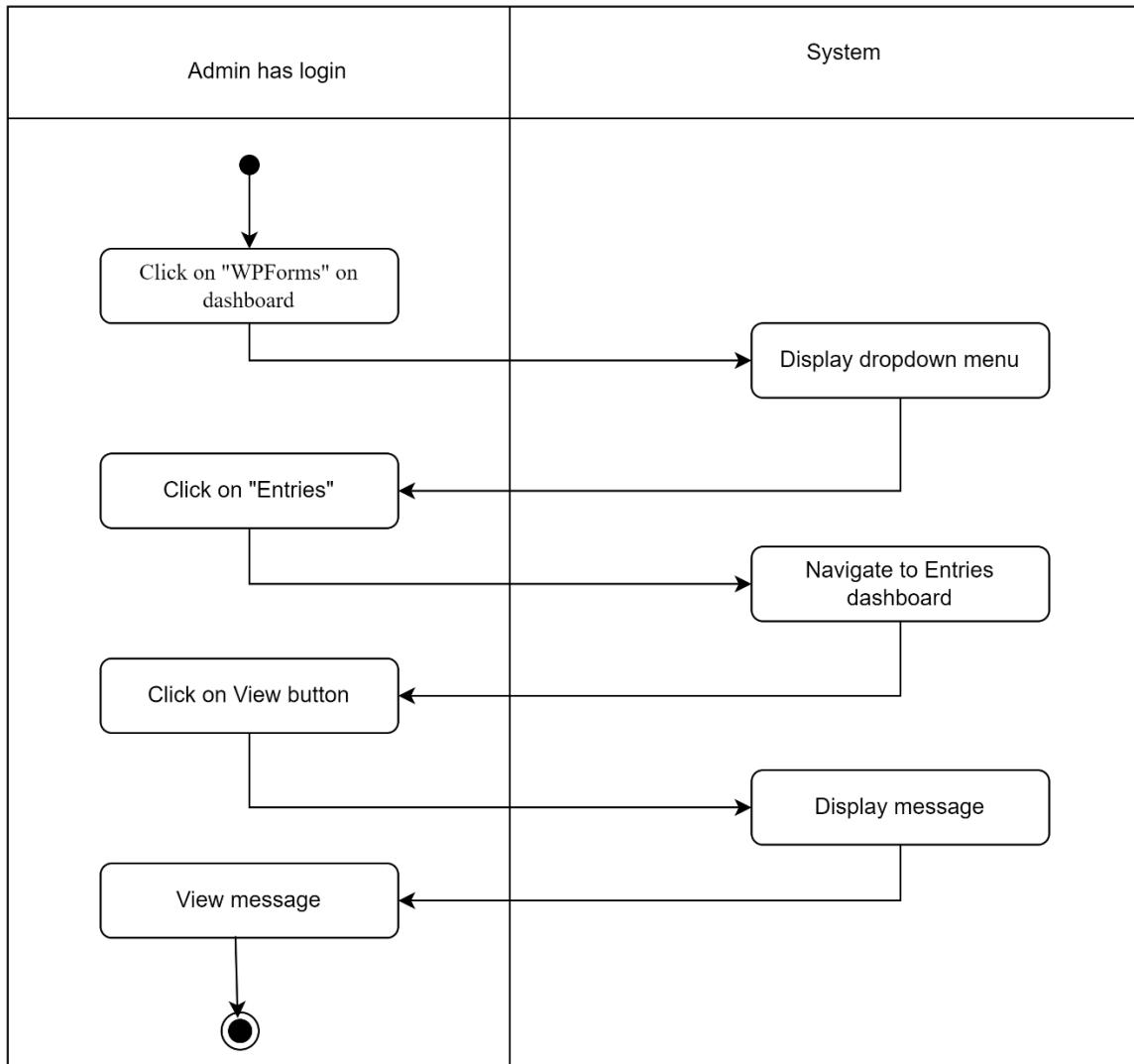


Figure 5.32. AD-22: View message

#### 5.2.24. AD-23: Delete message

Activity diagram for Delete message

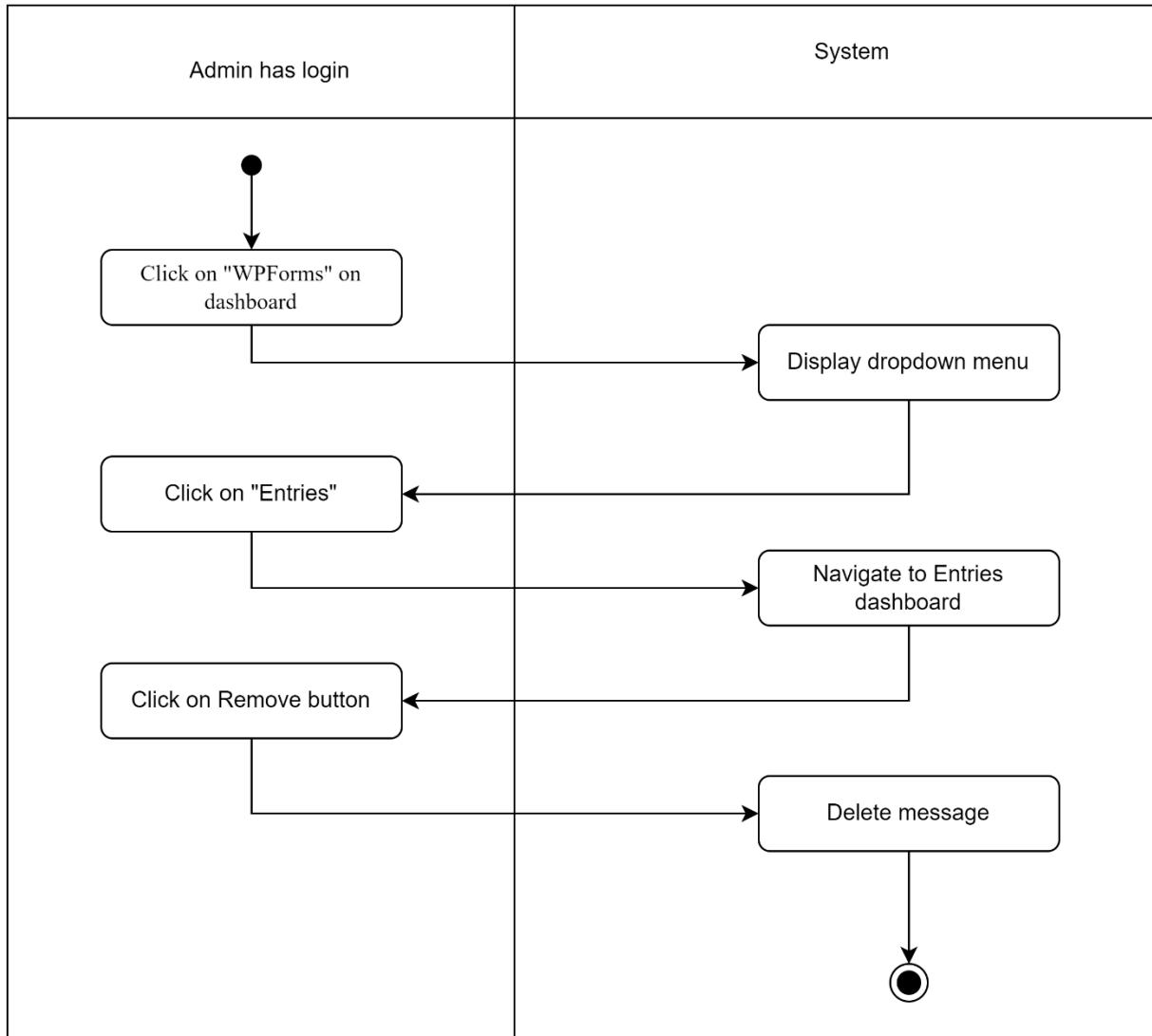


Figure 5.33. AD-23: Delete message

### 5.2.25. AD-24: Rely to message

Activity diagram for Reply message

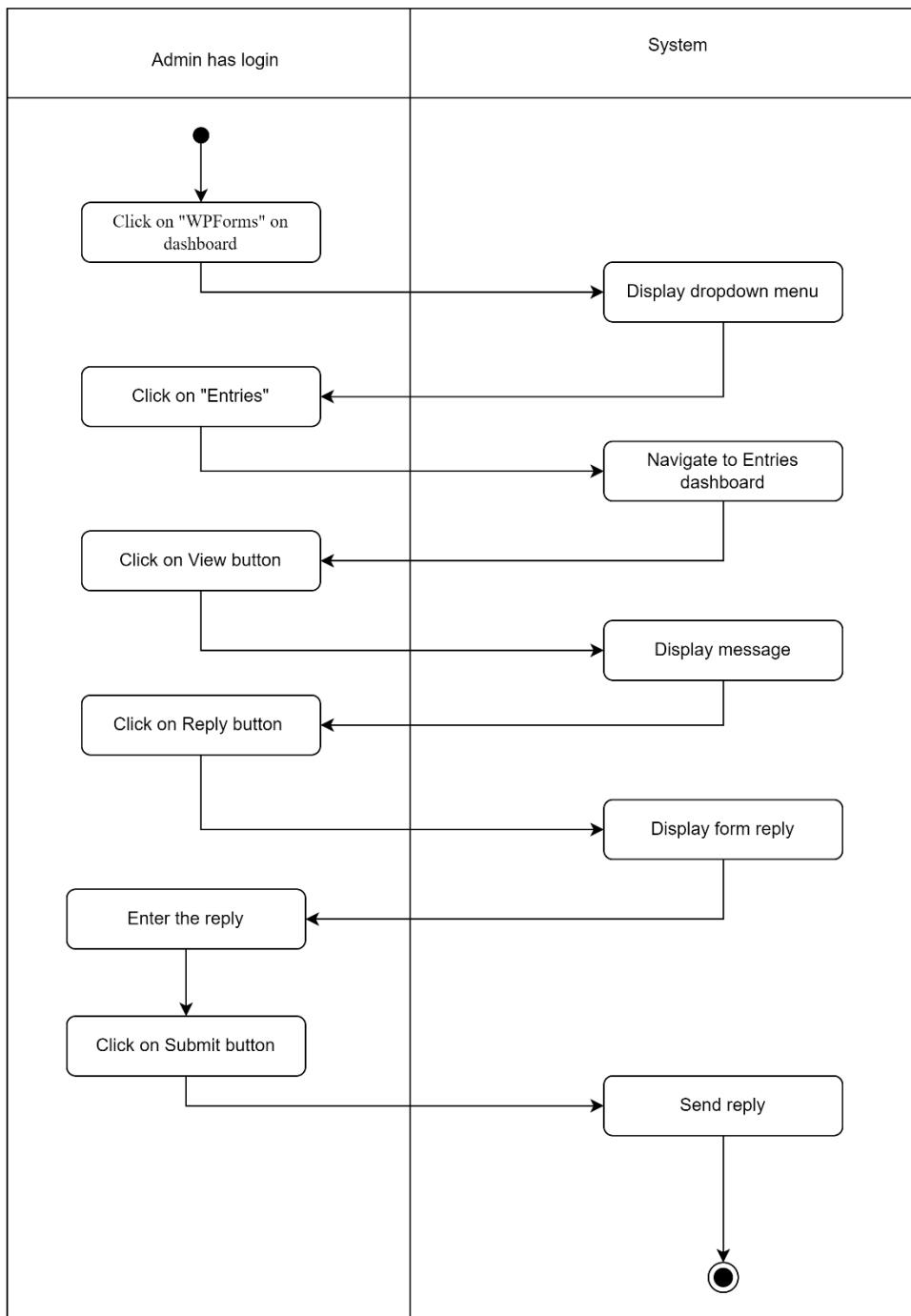


Figure 5.34. AD-24: Reply message

### 5.2.26. AD-25: View all orders

Activity diagram for View all orders

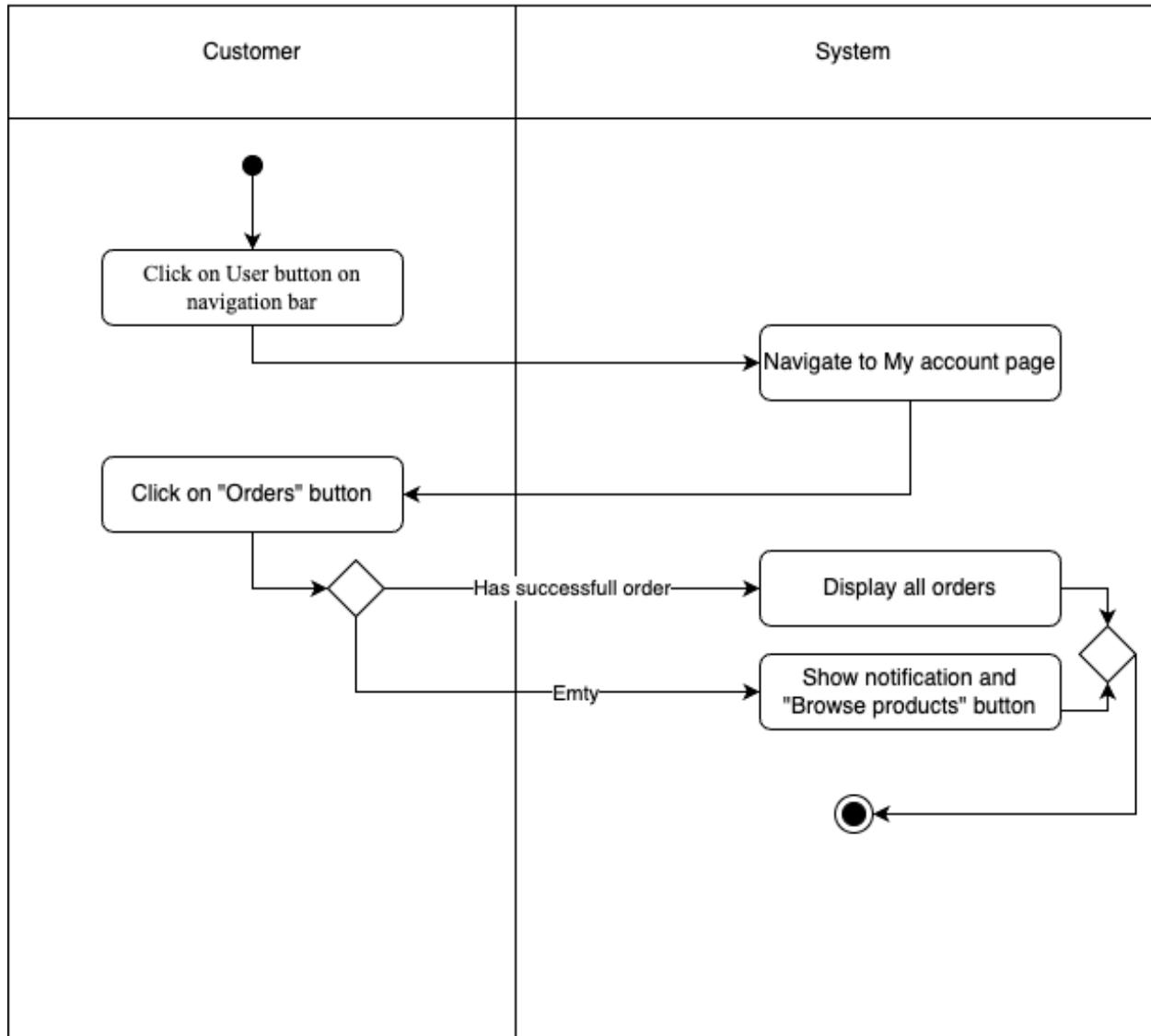


Figure 5.35. AD-25: View all orders

### 5.2.27. AD-26: View order's details

Activity diagram for View orders details

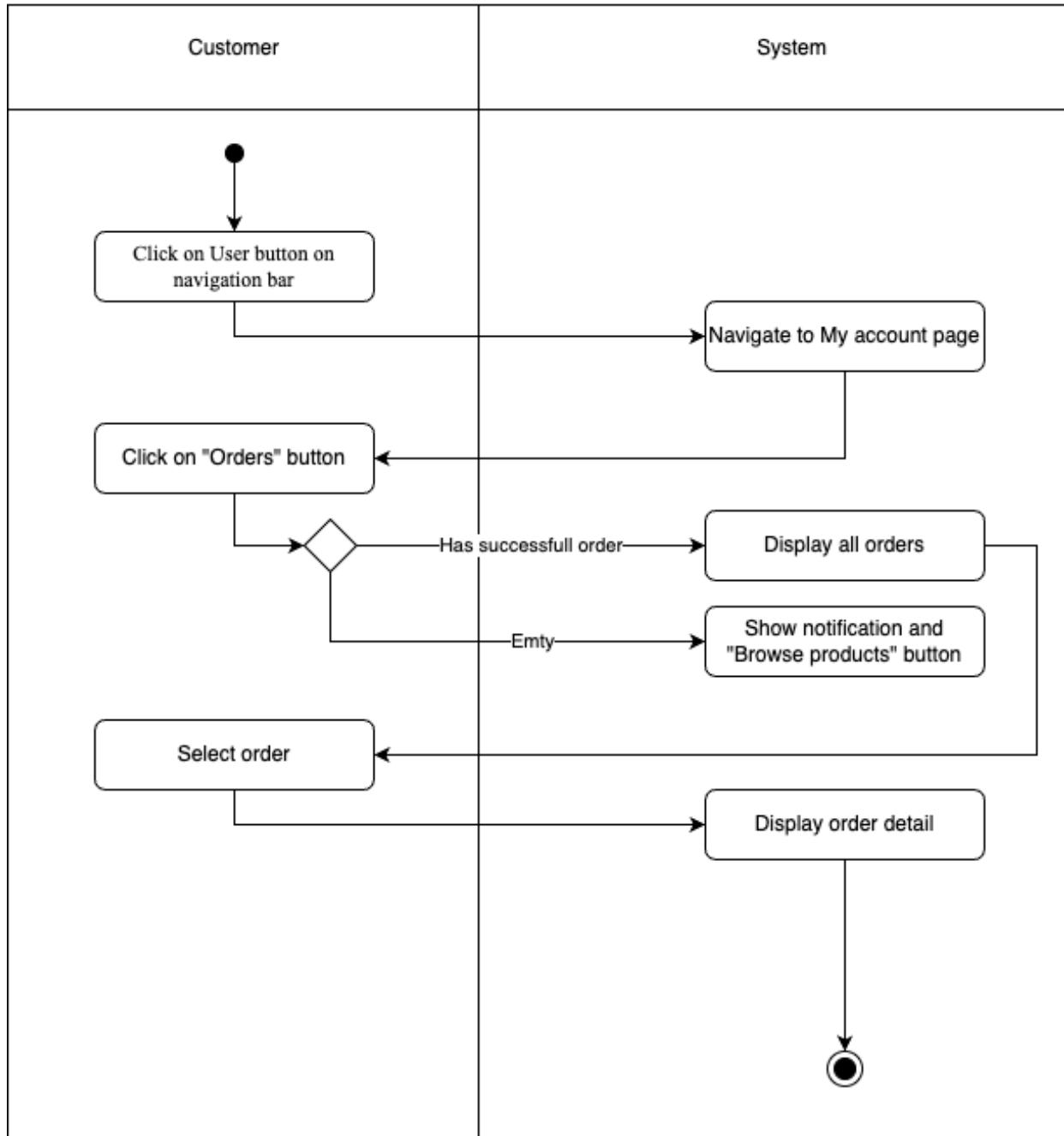


Figure 5.36. AD-26: View Order Details

### 5.2.28. AD-27: Update order status

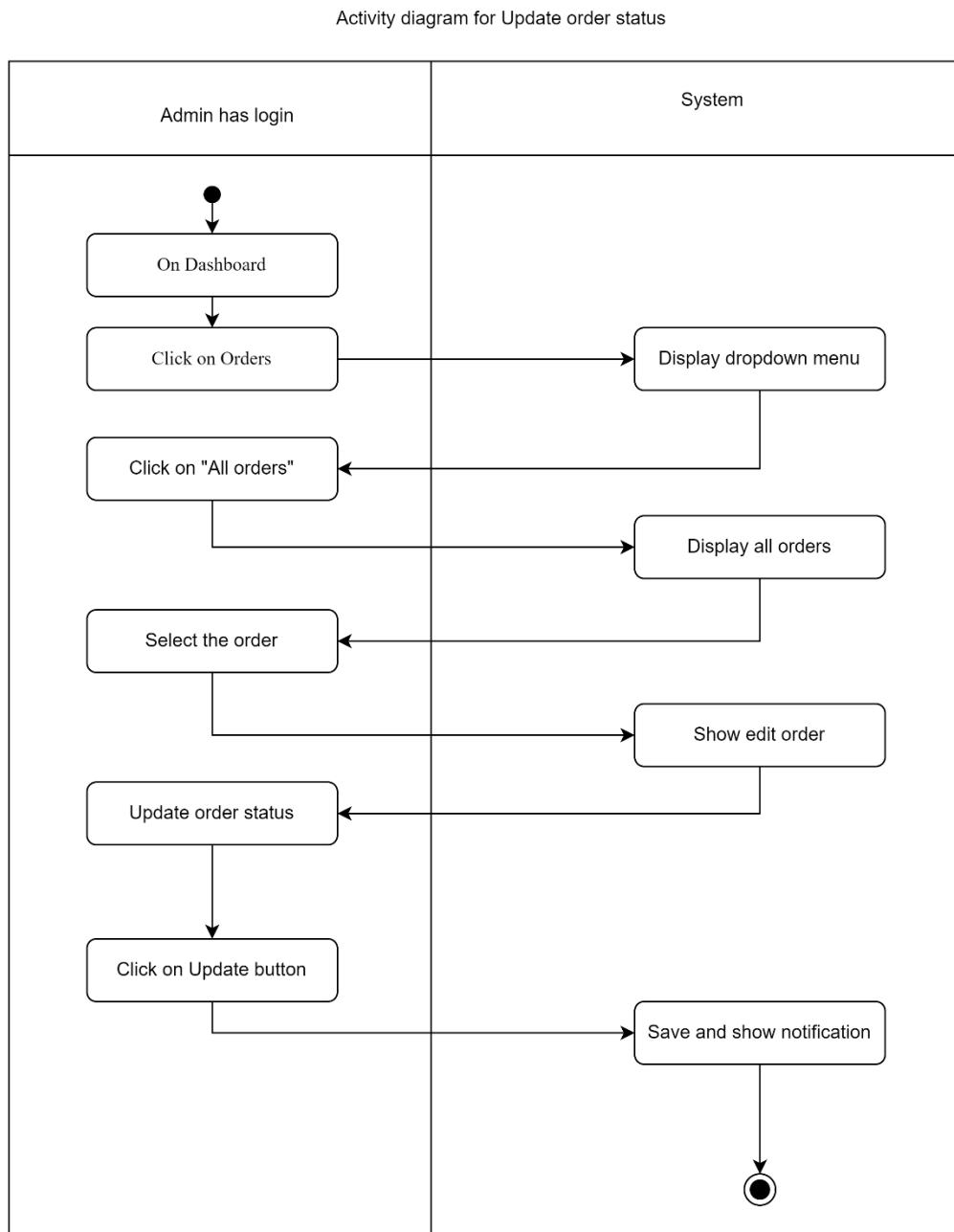


Figure 5.37. AD-27: Update Order Status

### 5.2.29. AD-28: Create category

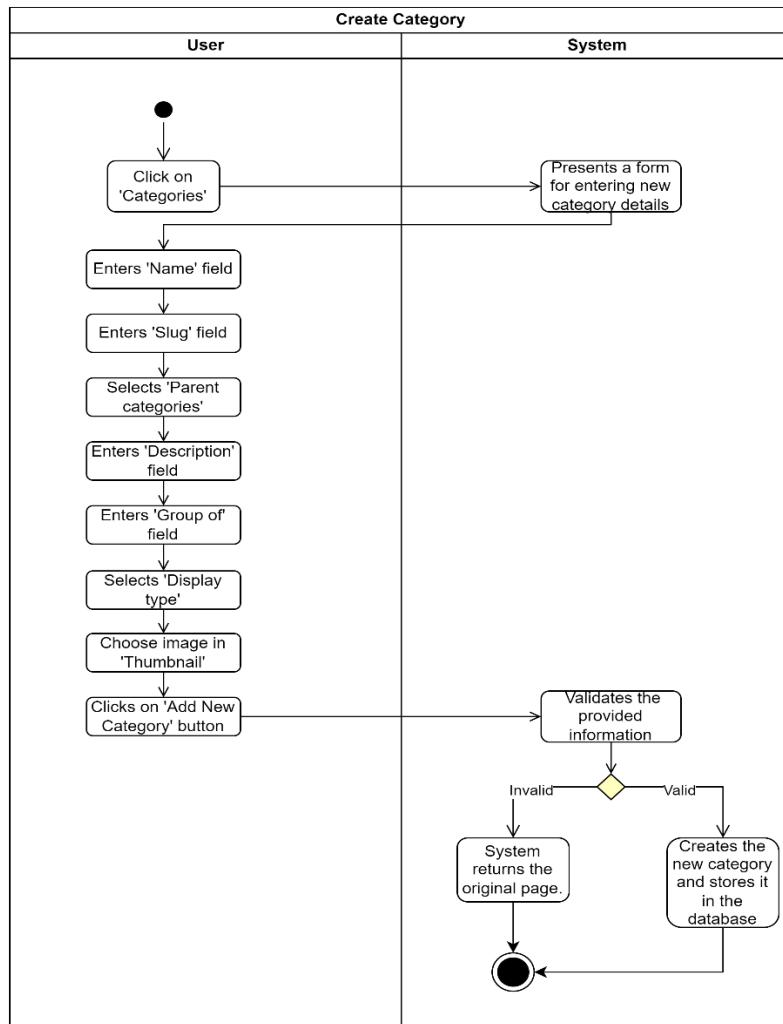


Figure 5.38. AD-28: Create Category

### 5.2.30. AD-29: Admin view category

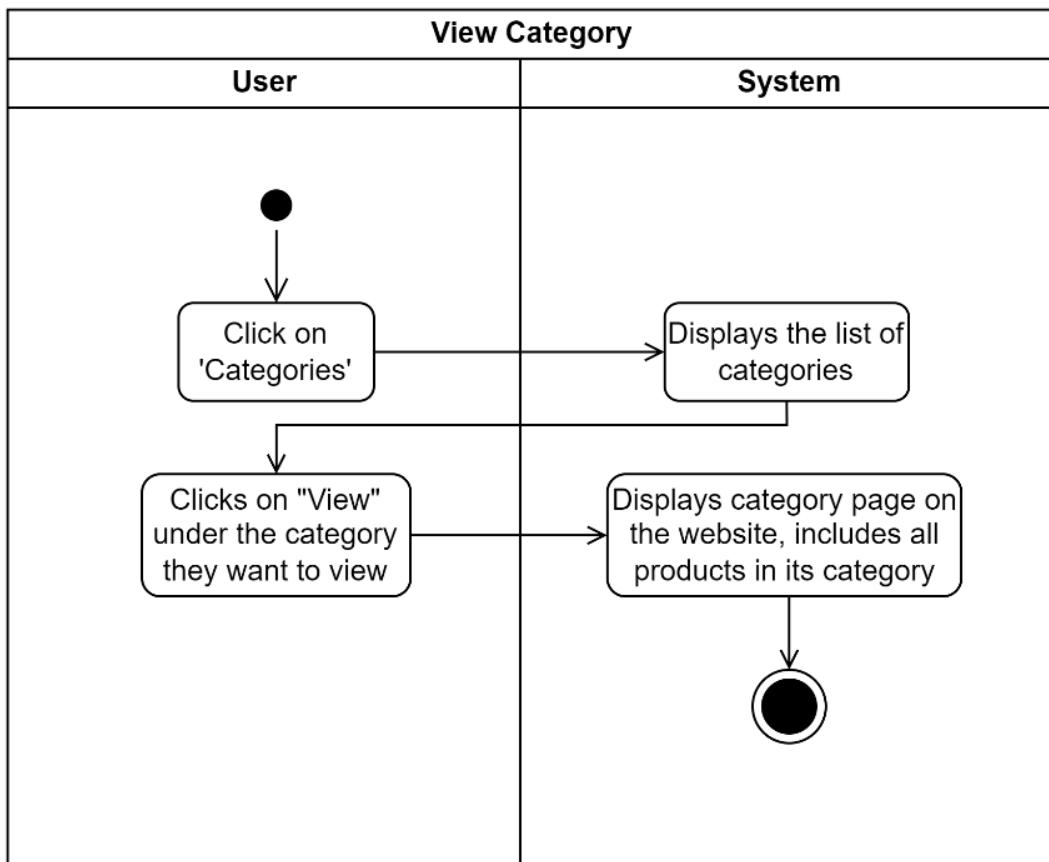


Figure 5.39. AD-29: Admin view category

### 5.2.31. AD-30: Admin delete category

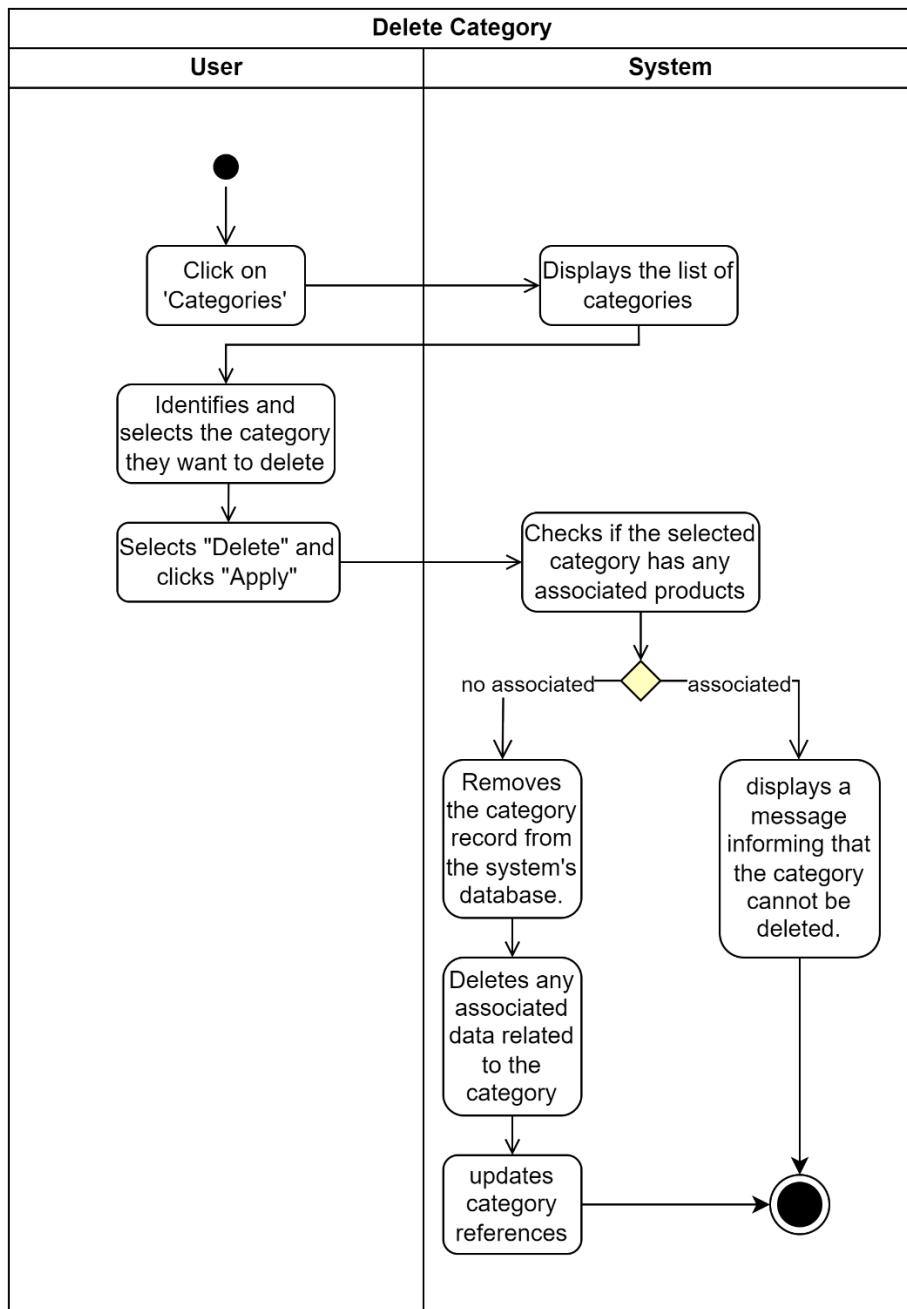


Figure 5.40. AD-30: Admin delete category

### 5.2.32. AD-31: Edit Category

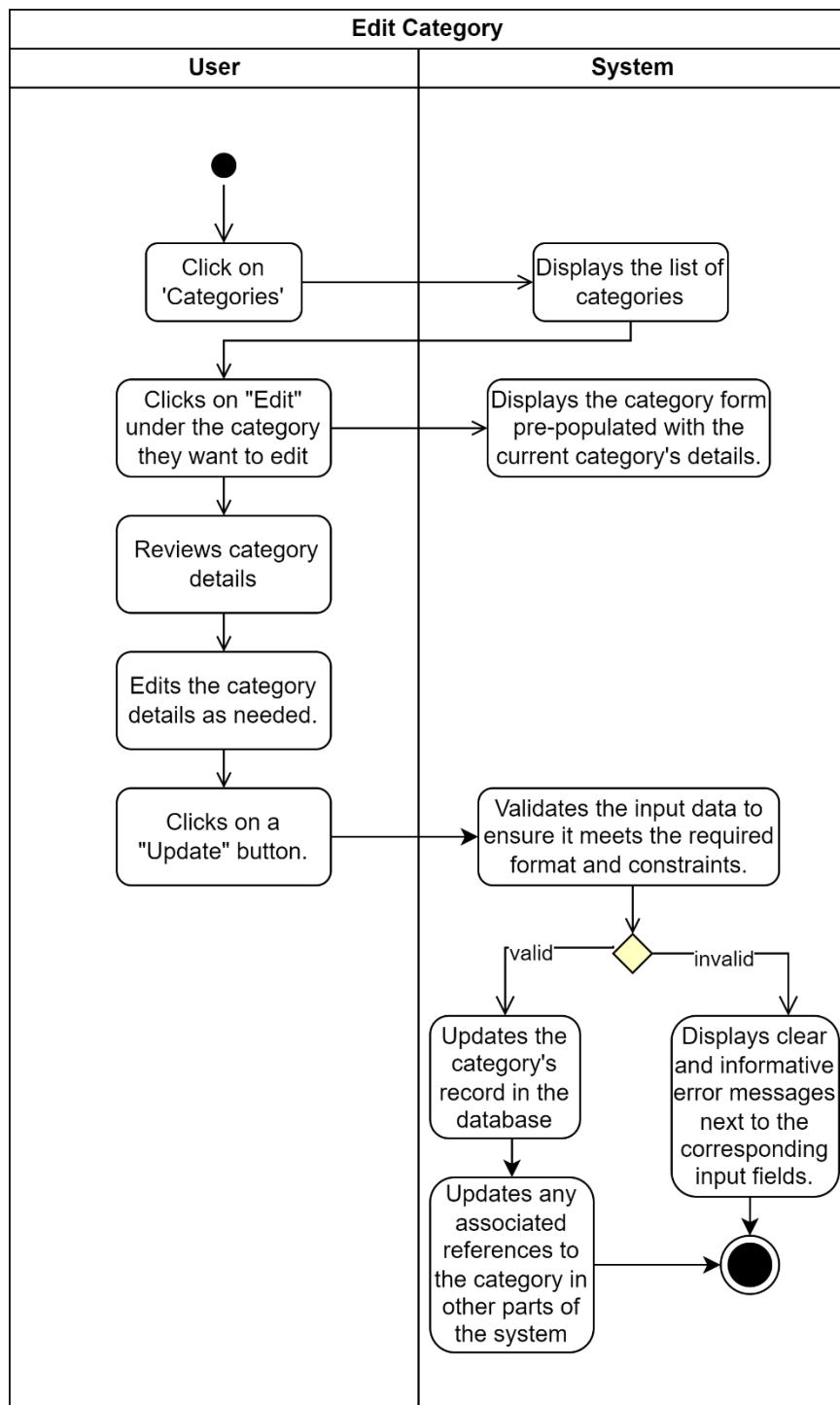


Figure 5.41. AD-31: Edit category

### 5.2.33. AD-32: Create product

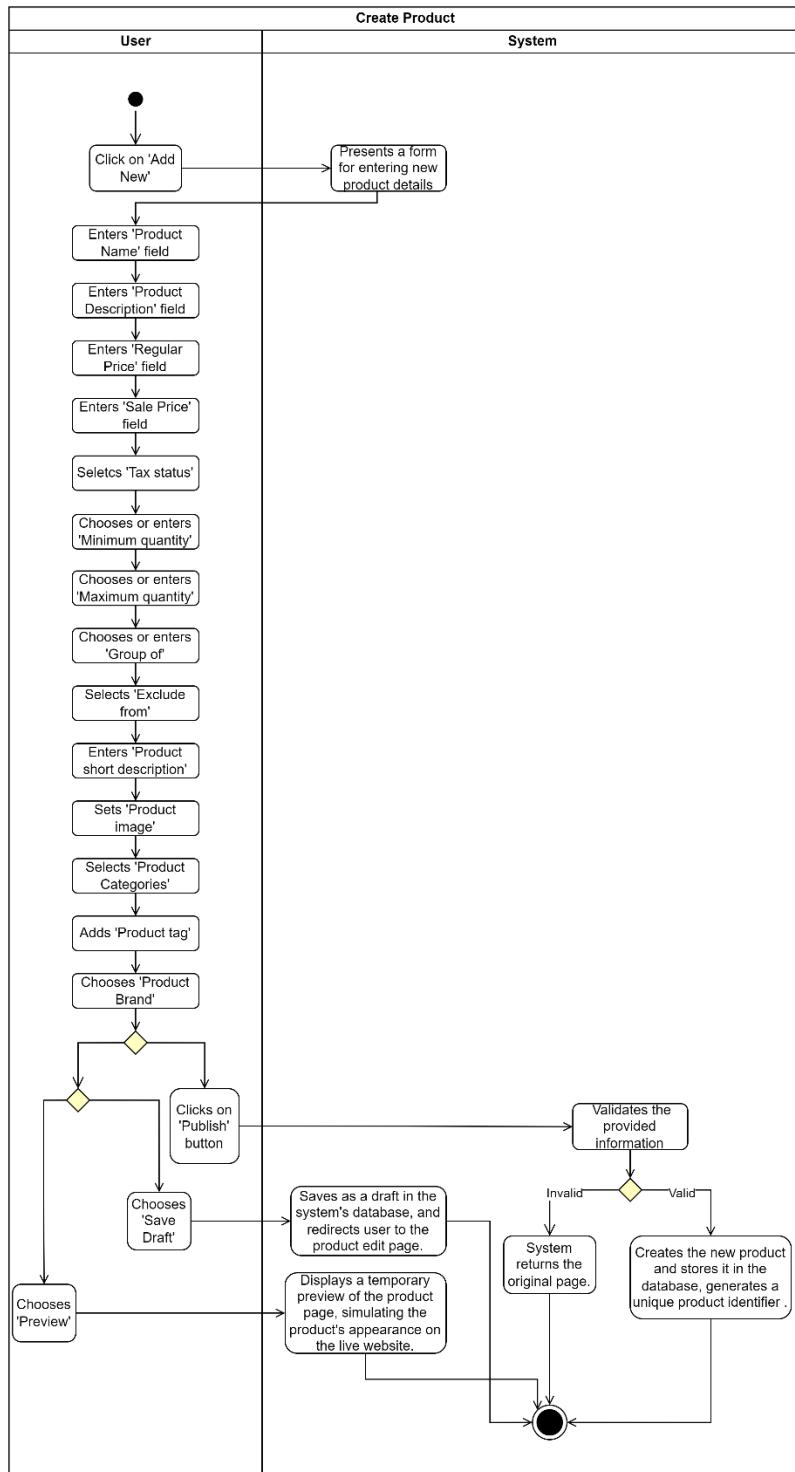


Figure 5.42. AD-32: Create product

#### 5.2.34. AD-33: Admin view product

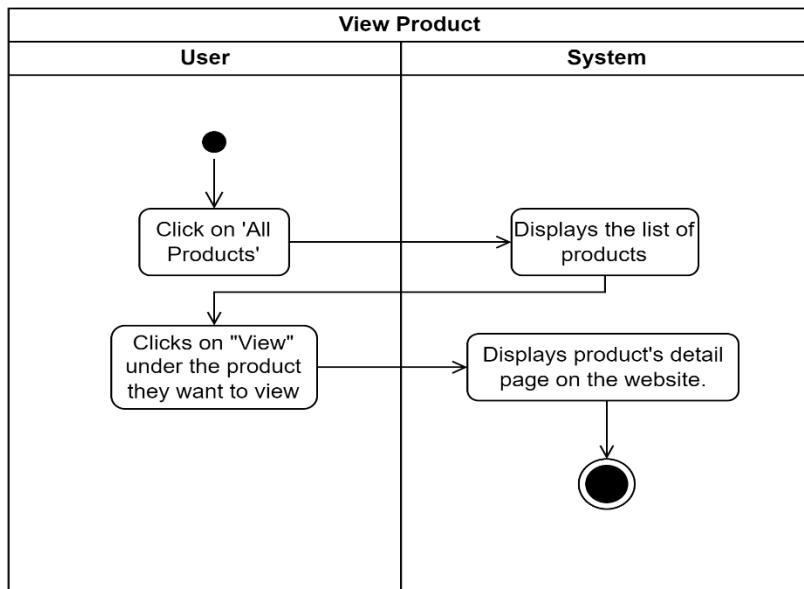


Figure 5.43. AD-33: Admin view product

### 5.2.35. AD-34: Admin delete product

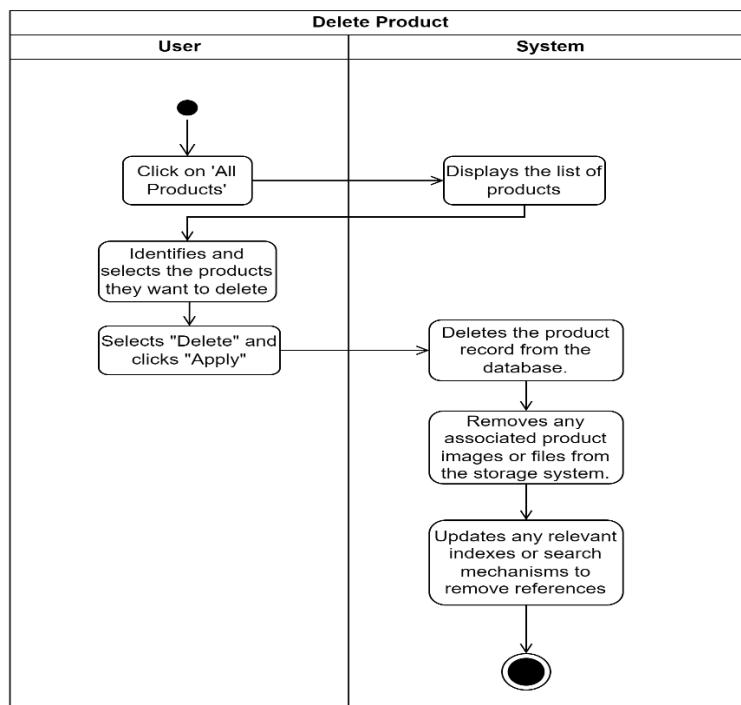


Figure 5.44. AD-34: Delete product

### 5.2.36. AD-35: Edit product

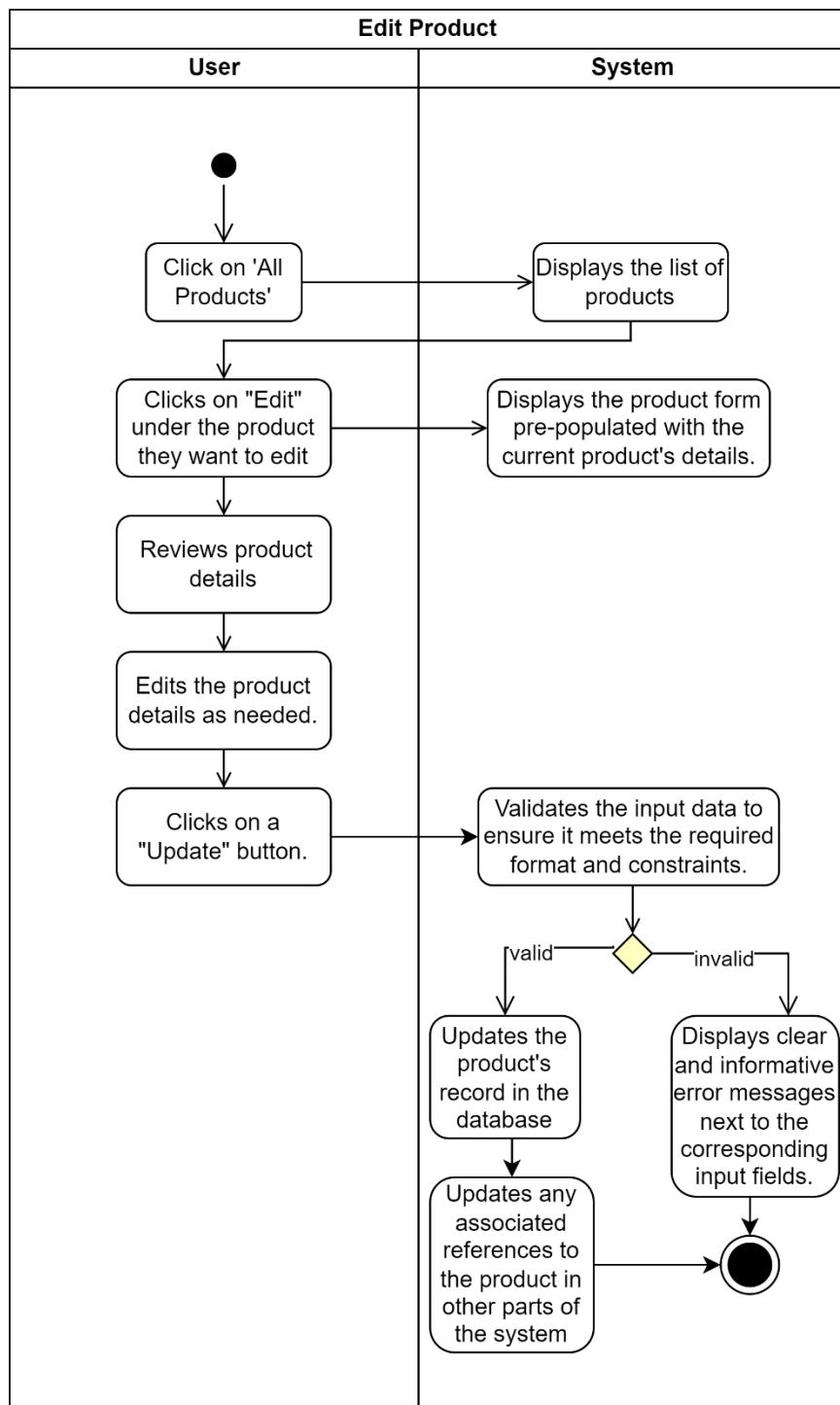


Figure 5.45. AD-35: Edit product

#### 5.2.37. AD-36: View all customer accounts

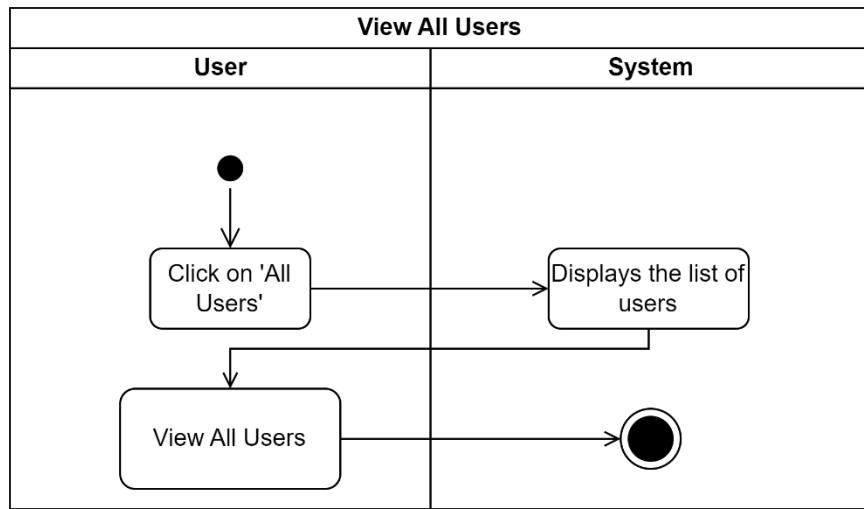


Figure 5.46. AD-36: View all customer accounts

#### 5.2.38. AD-37: View user accounts's details

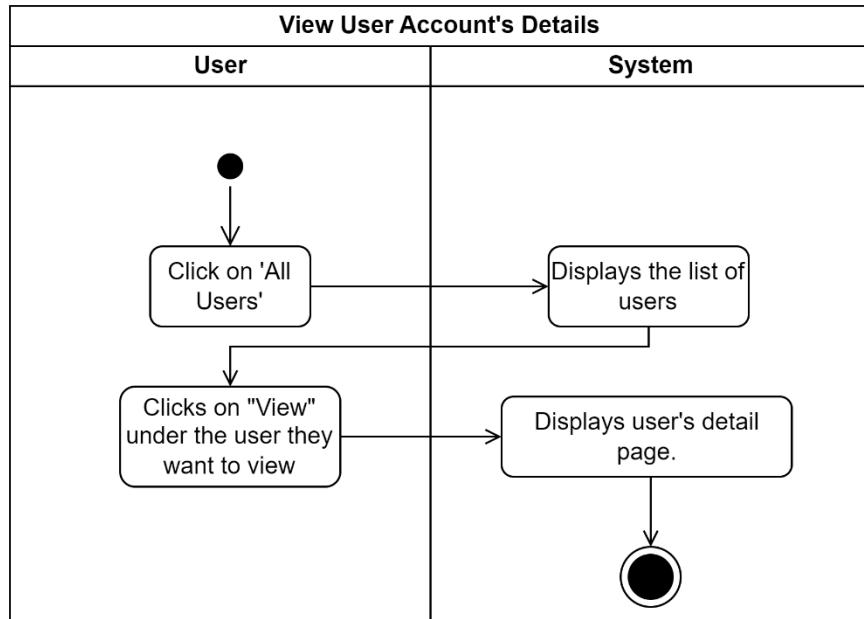


Figure 5.47. AD-37: View user account'details

#### 5.2.39. AD-38: Create User Account

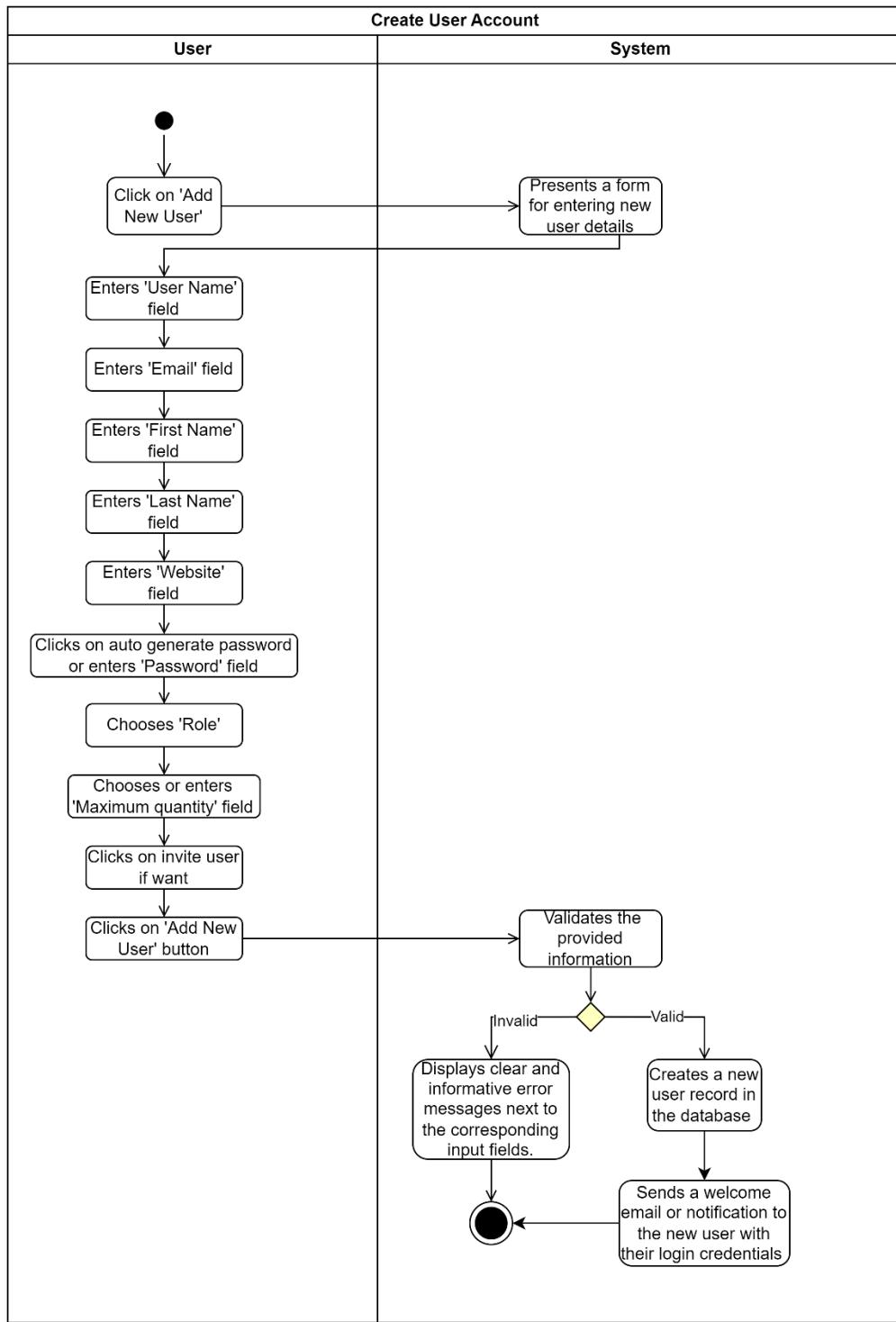
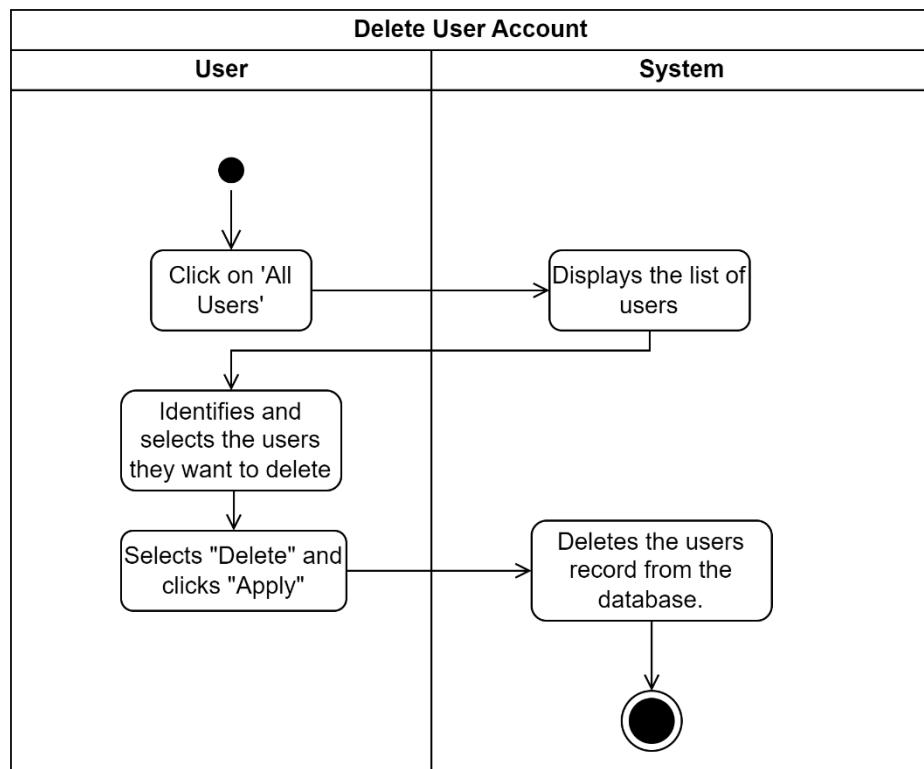


Figure 5.48. AD-38: Create User Account

#### 5.2.40. AD-39: Delete User Account



*Figure 5.49. AD-39: Delete User Account*

### 5.2.41. AD-40: Edit User Account

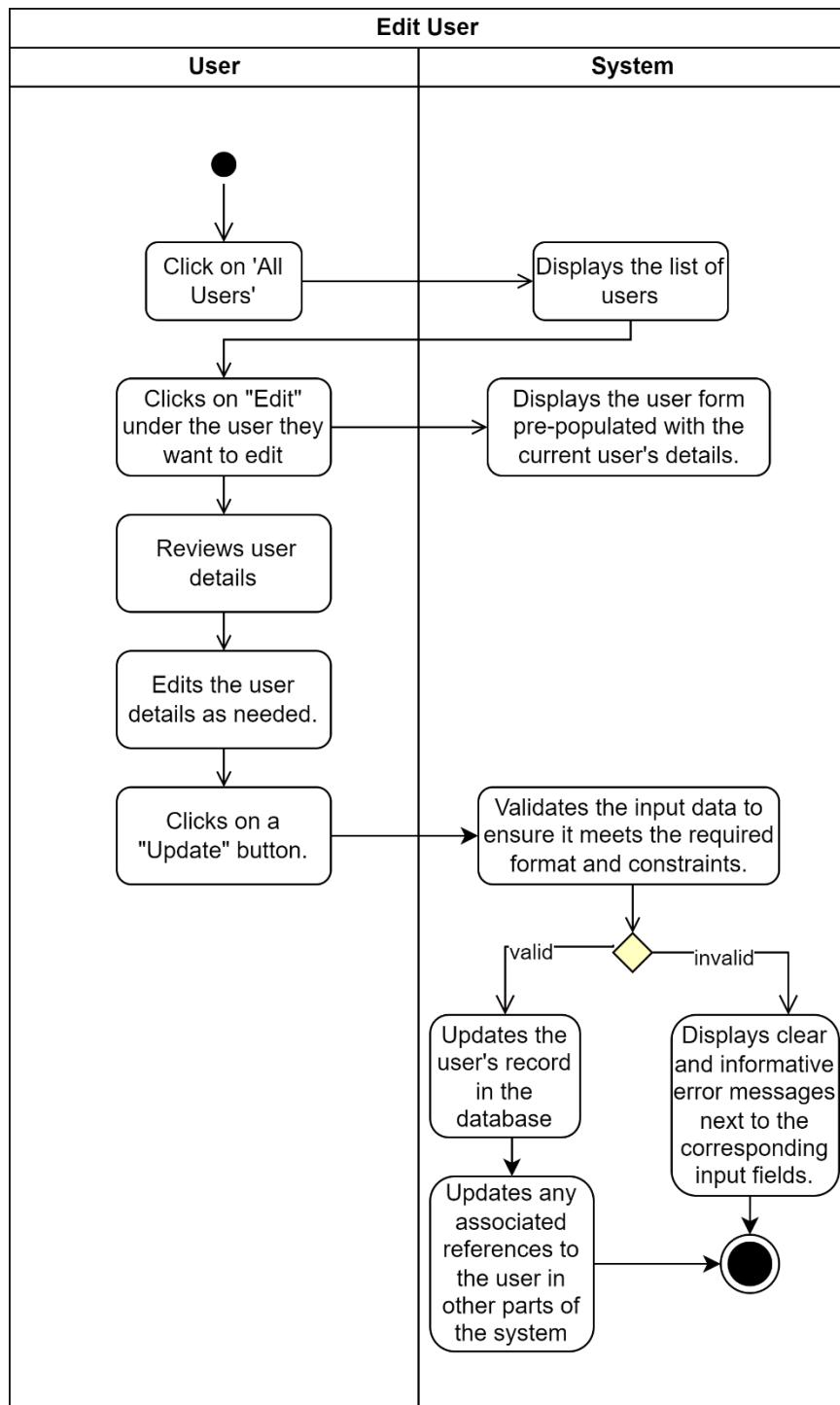


Figure 5.50. AD-41: Edit User Account

#### 5.2.42. AD-41: View statistic

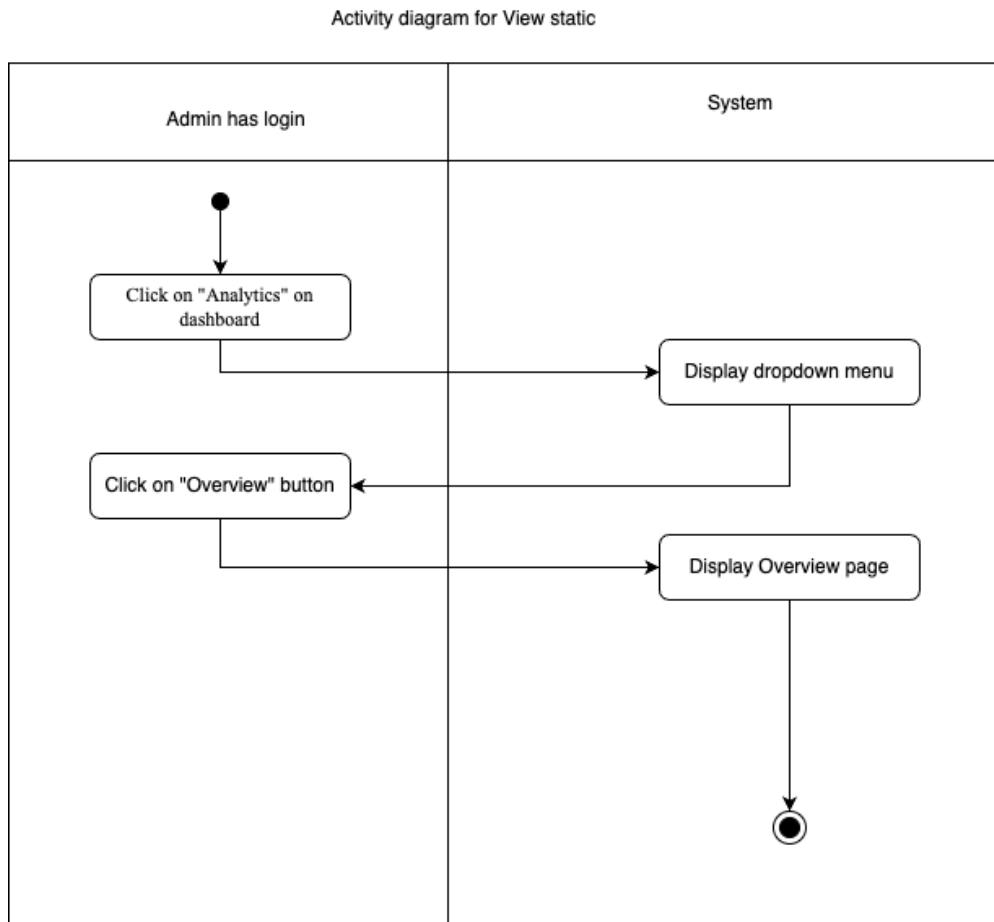


Figure 5.51. AD-41: View statistic

#### 5.2.43. AD-42: View Reservation

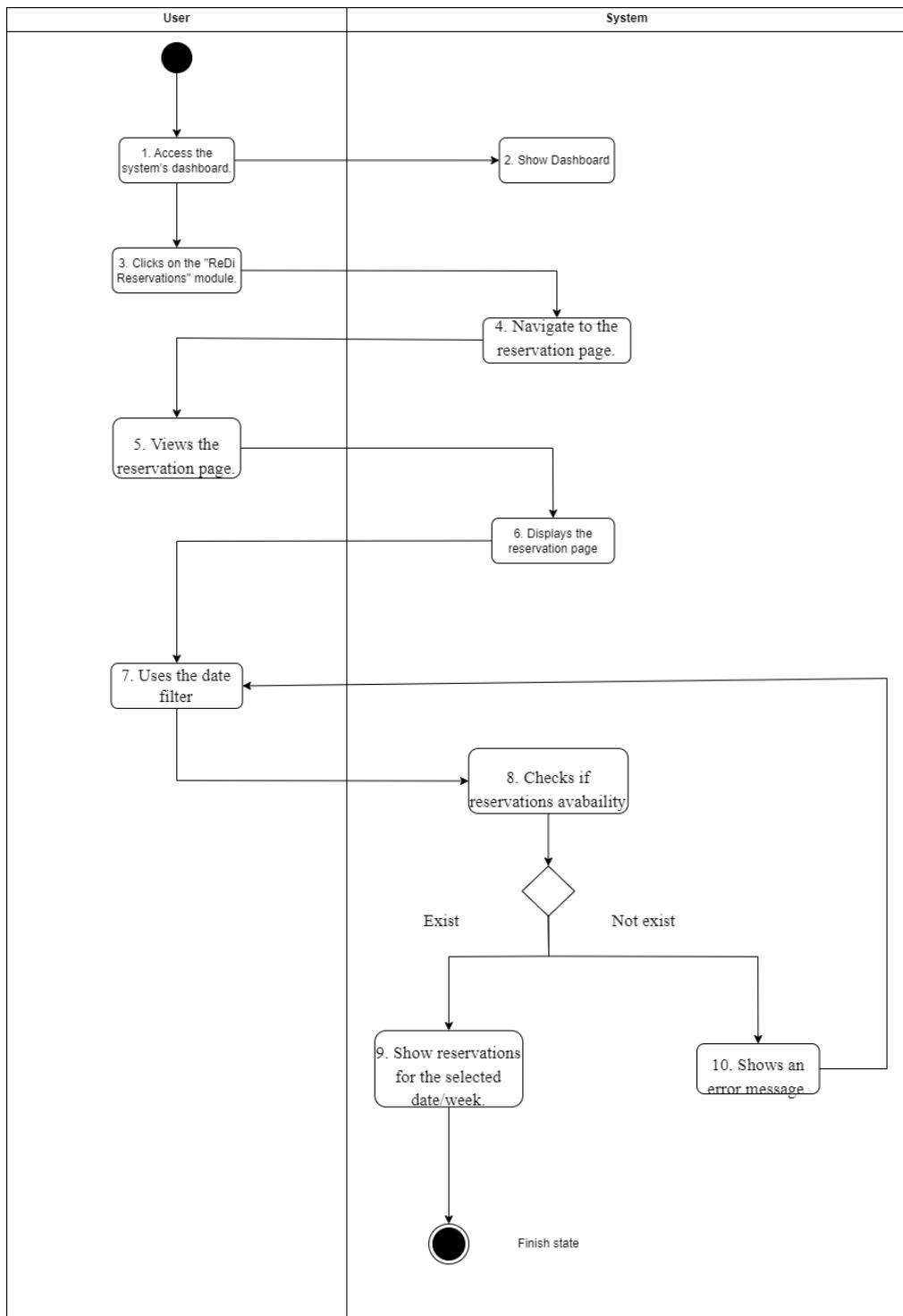


Figure 5.52. AD-42: View Reservation

#### 5.2.44. AD-43: Update Reservation

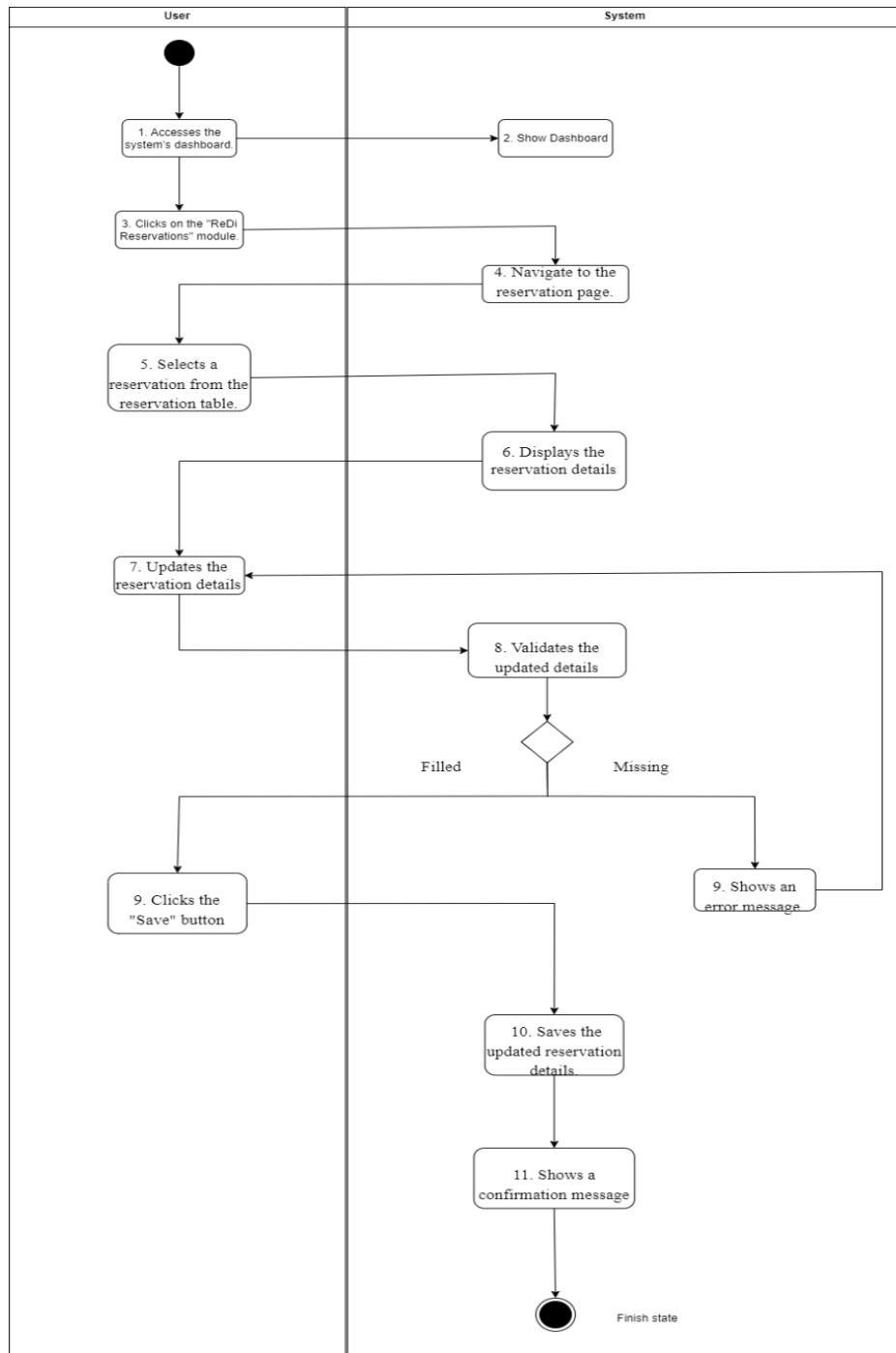


Figure 5.53. AD-43: Update Resservation

### 5.3. Sequence diagram

#### 5.3.1. SD-1: Login

##### 5.3.1.1. *Login*

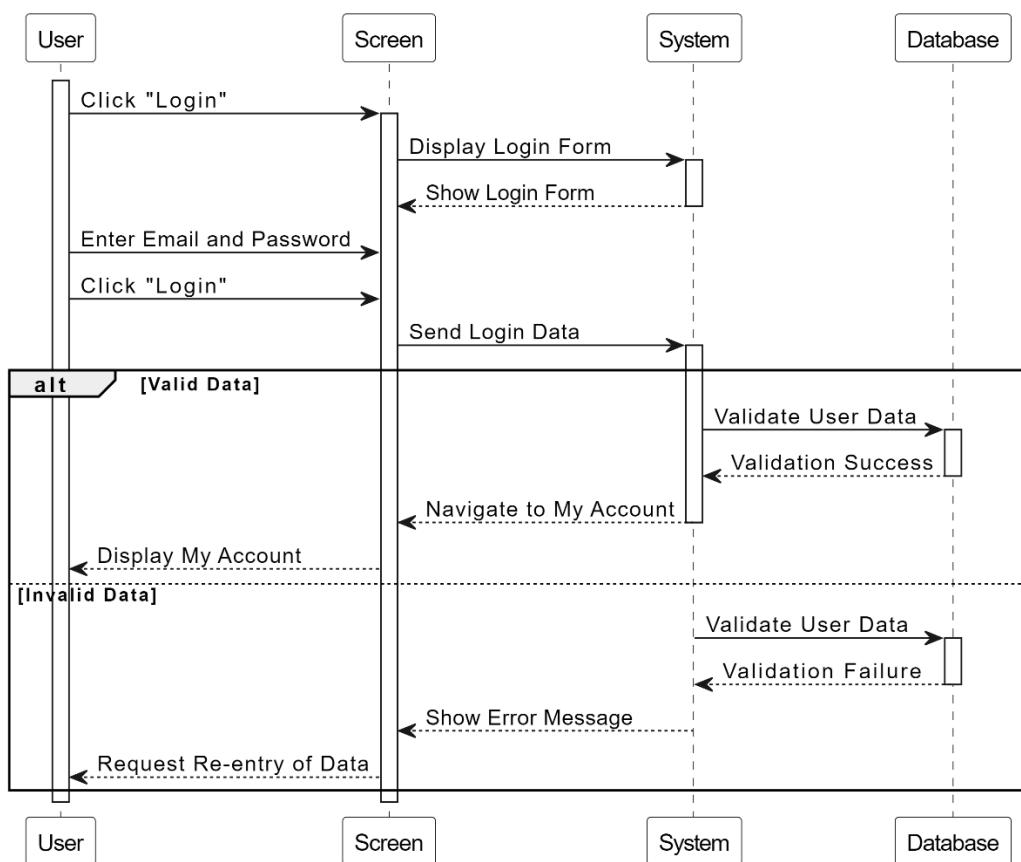


Figure 5.54.SD-1.1: Log in

### 5.3.1.2. *Forgot password*

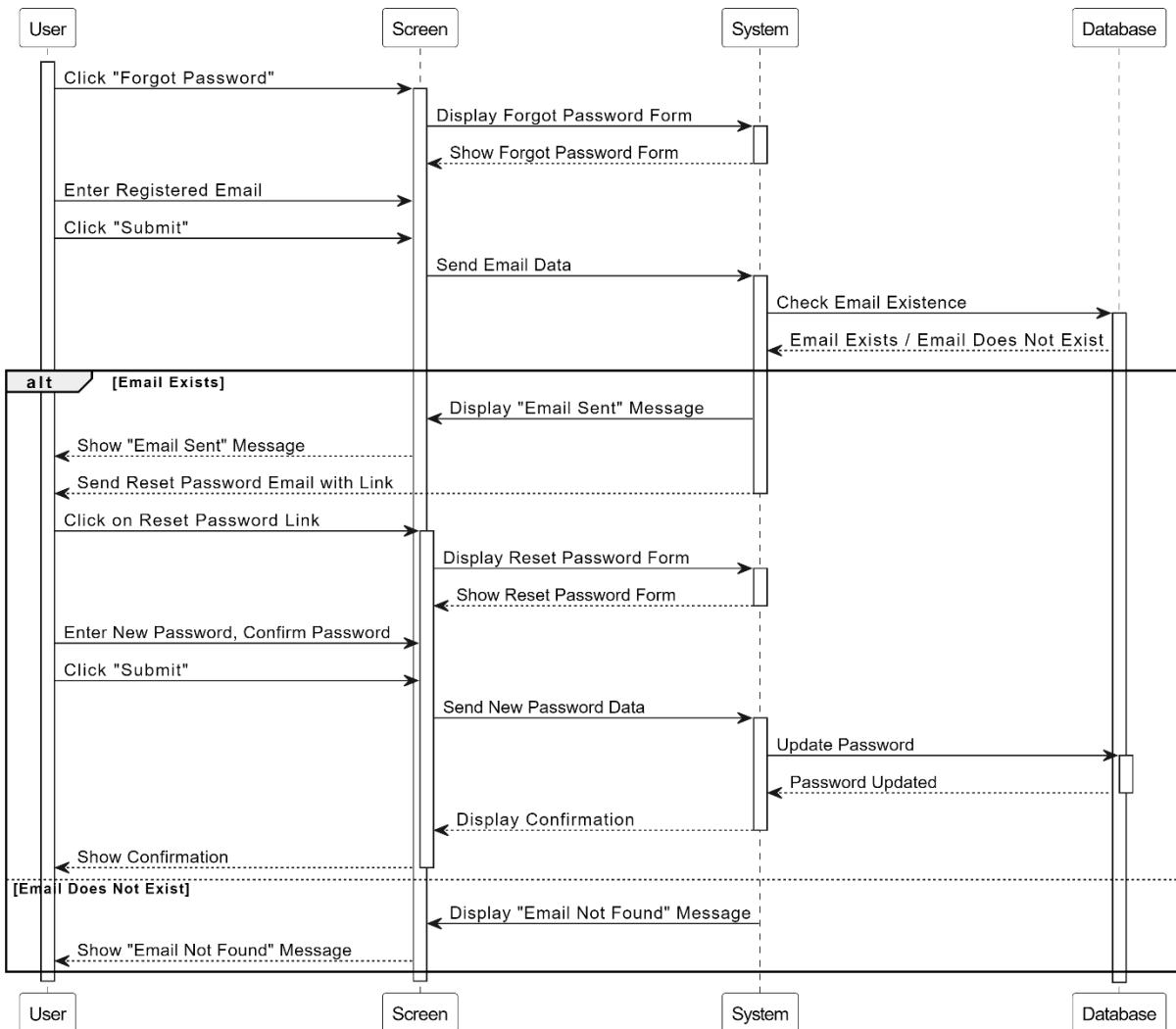


Figure 5.55. SD-1.1. *Forgot password*

### 5.3.2. SD-2: Log out

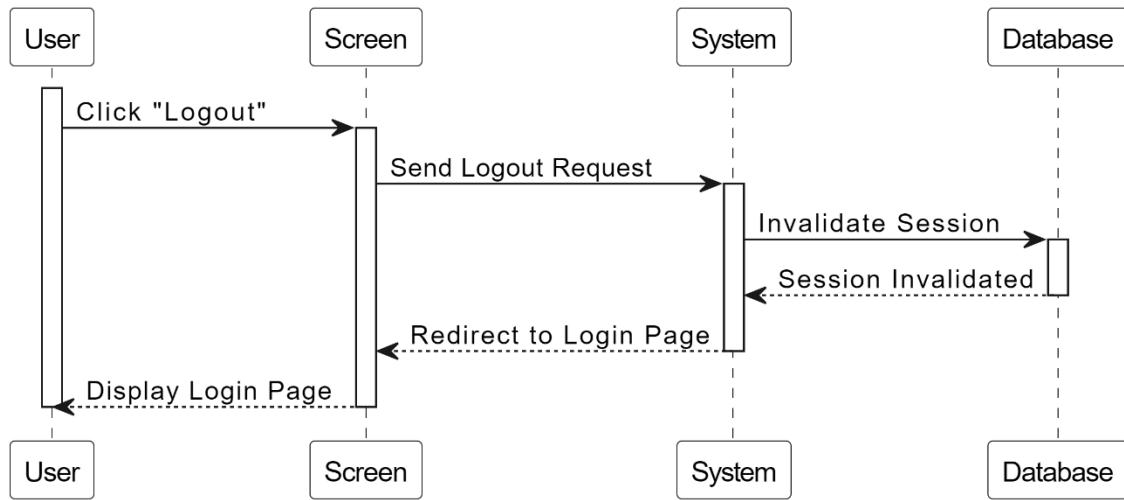


Figure 5.56. SD-2: Log out

### 5.3.3. SD-3: Register

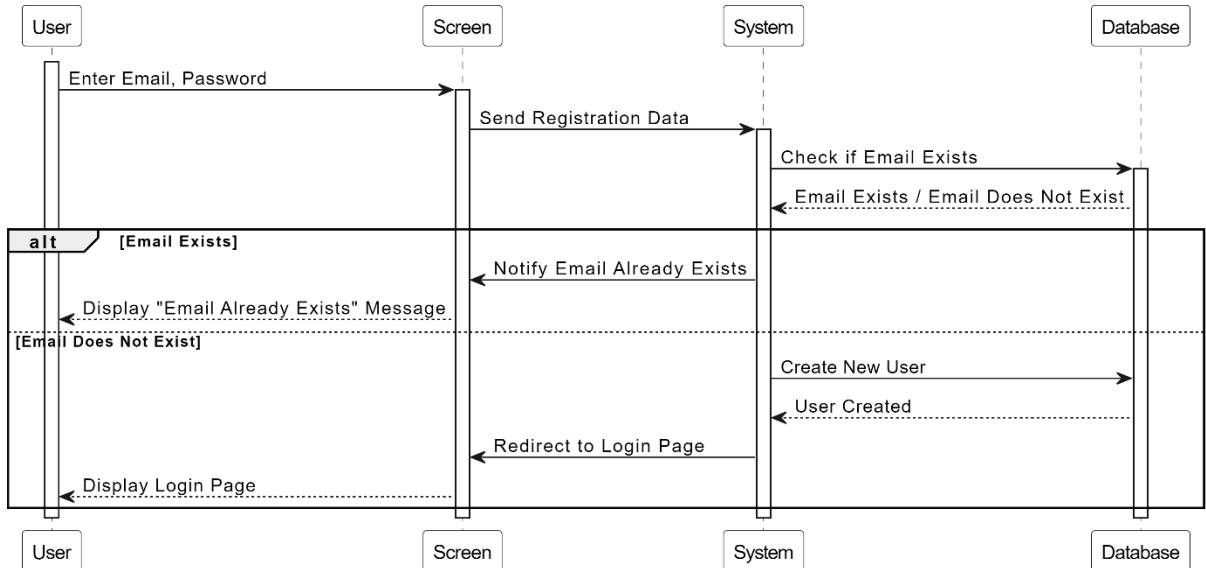


Figure 5.57. SD-3: Register

### 5.3.4. SD-4: Manage wishlist

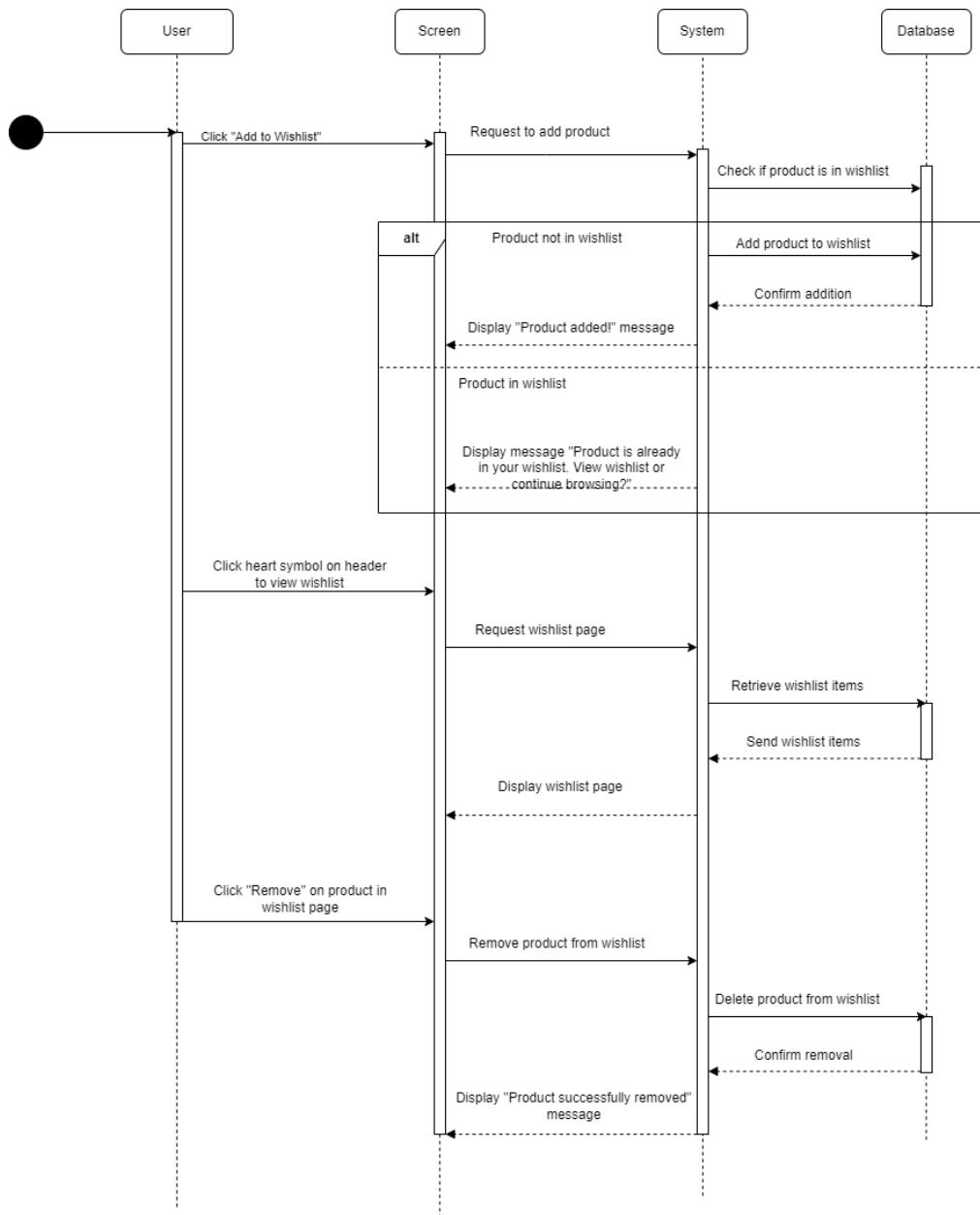


Figure 5.58. SD-4: Manage wishlist

### 5.3.5. SD-5: Manage Reservation

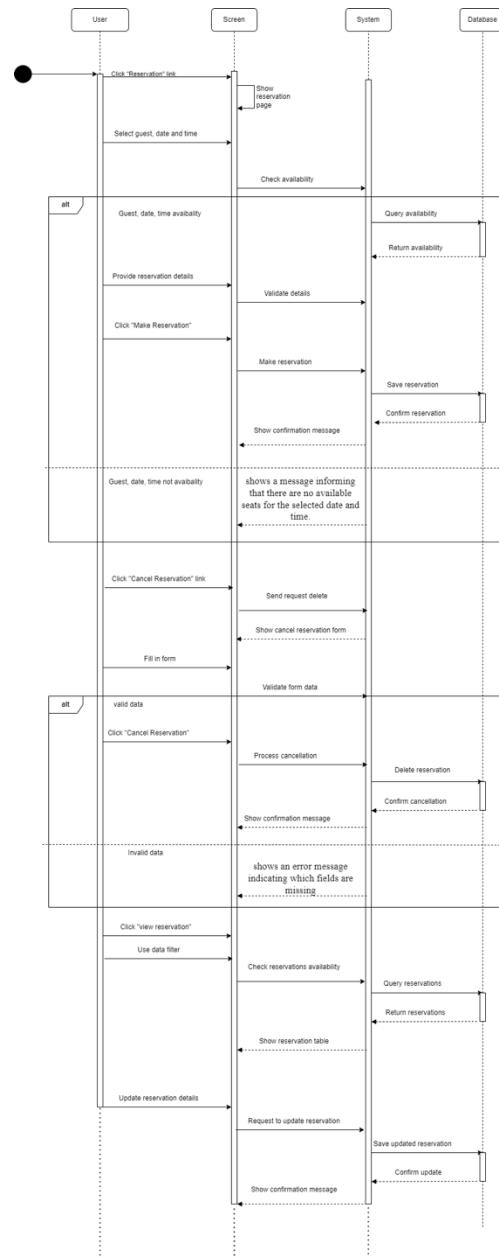


Figure 5.59. SD-5:Manage reservation

### 5.3.6. SD-6: Manage shopping cart

### 5.3.6.1. View shopping cart

Sequence diagram for View shopping cart

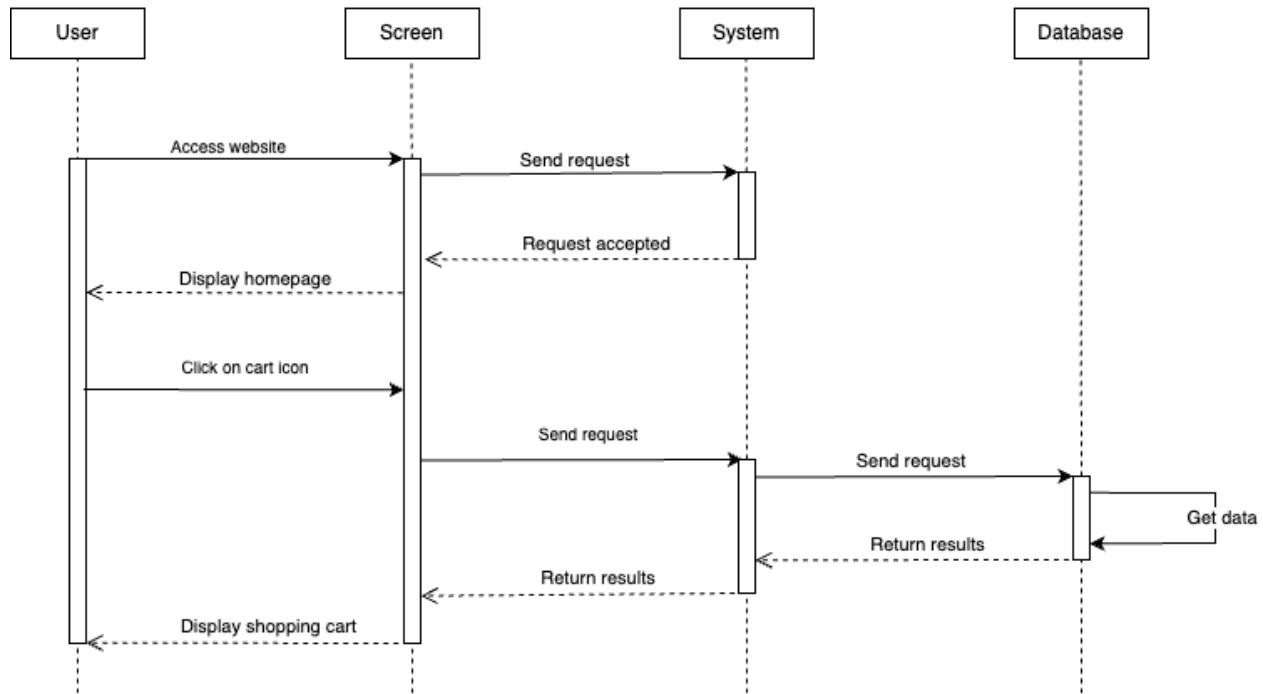


Figure 5.60. SD-6.1: View shopping cart

### 5.3.6.2. Add product into shopping cart

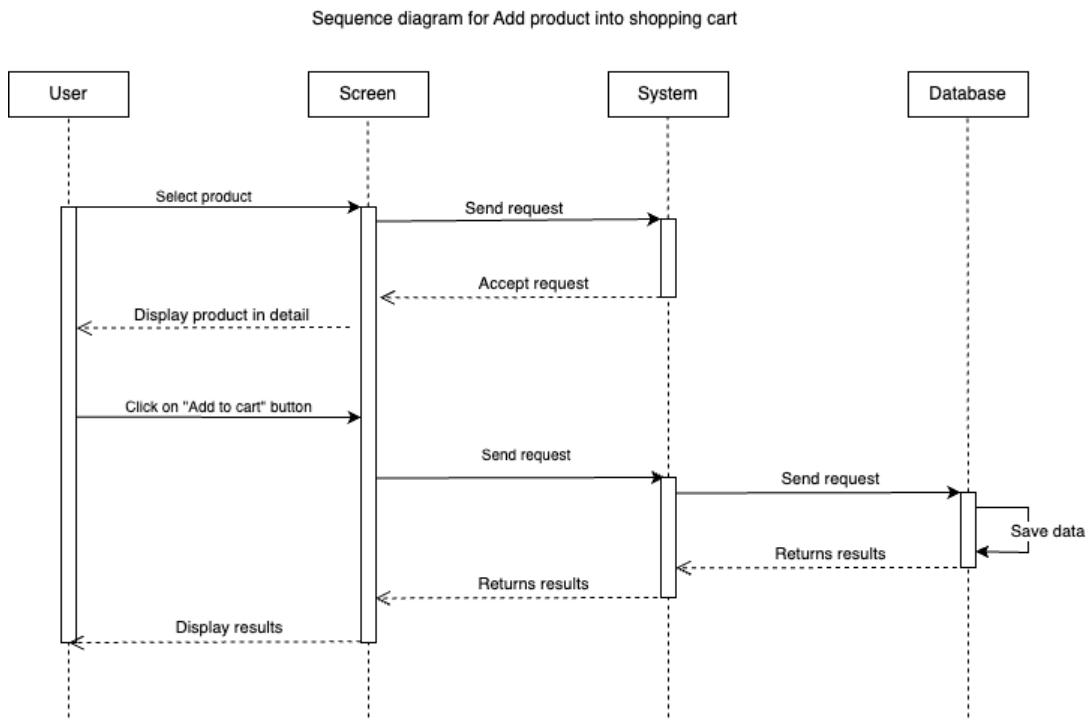


Figure 5.61. SD-6.2: Add product into shopping cart

### 5.3.6.3. Remove product from shopping cart

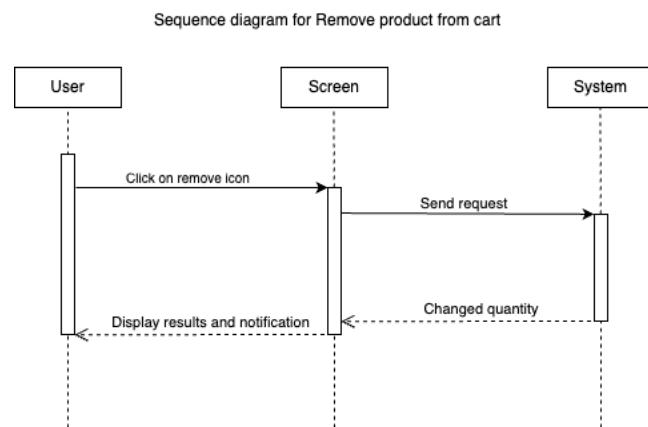


Figure 5.62. SD-6.3: Remove product from shopping cart

#### 5.3.6.4. *Modify the product quantity*

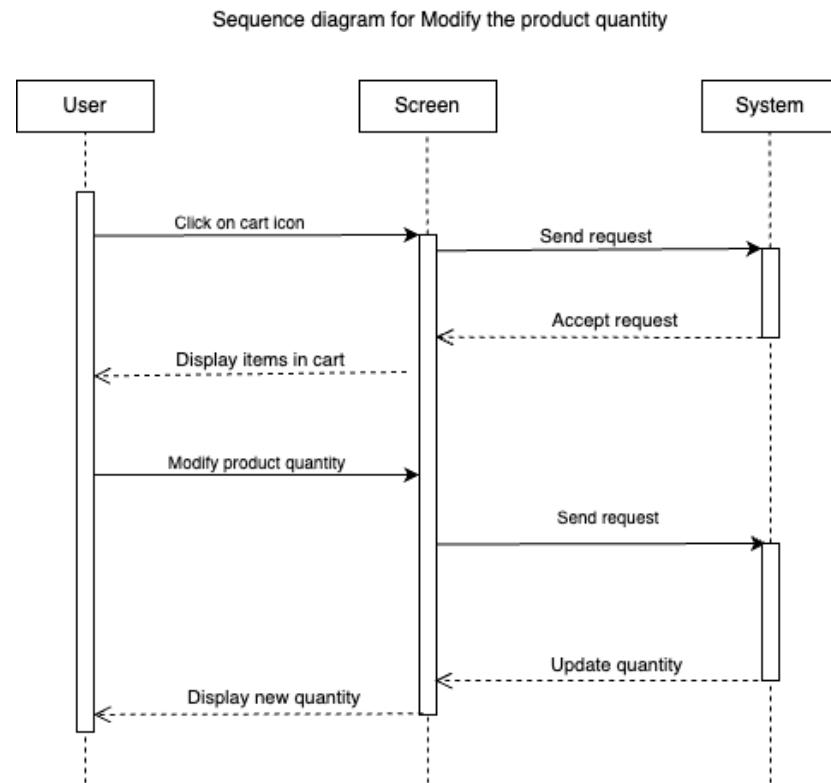


Figure 5.63. SD-7.4: *Modify product quantity*

### 5.3.7. SD-7: Manage profile

#### 5.3.7.1. View profile

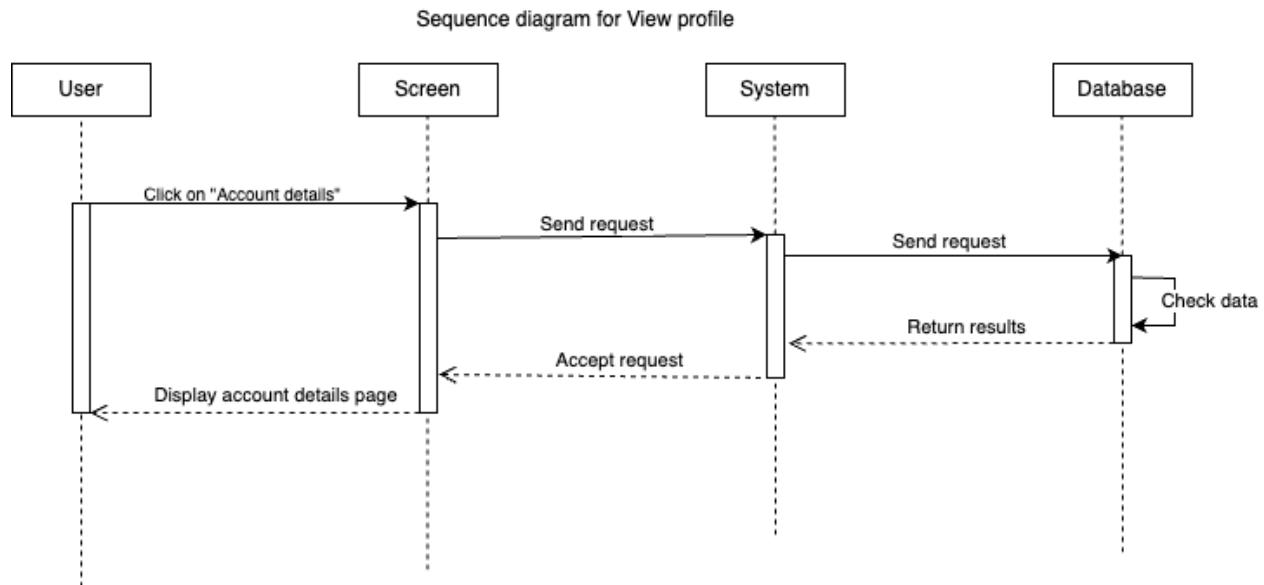


Figure 5.64. SD-7.1: View profile

### 5.3.7.2. Update profile

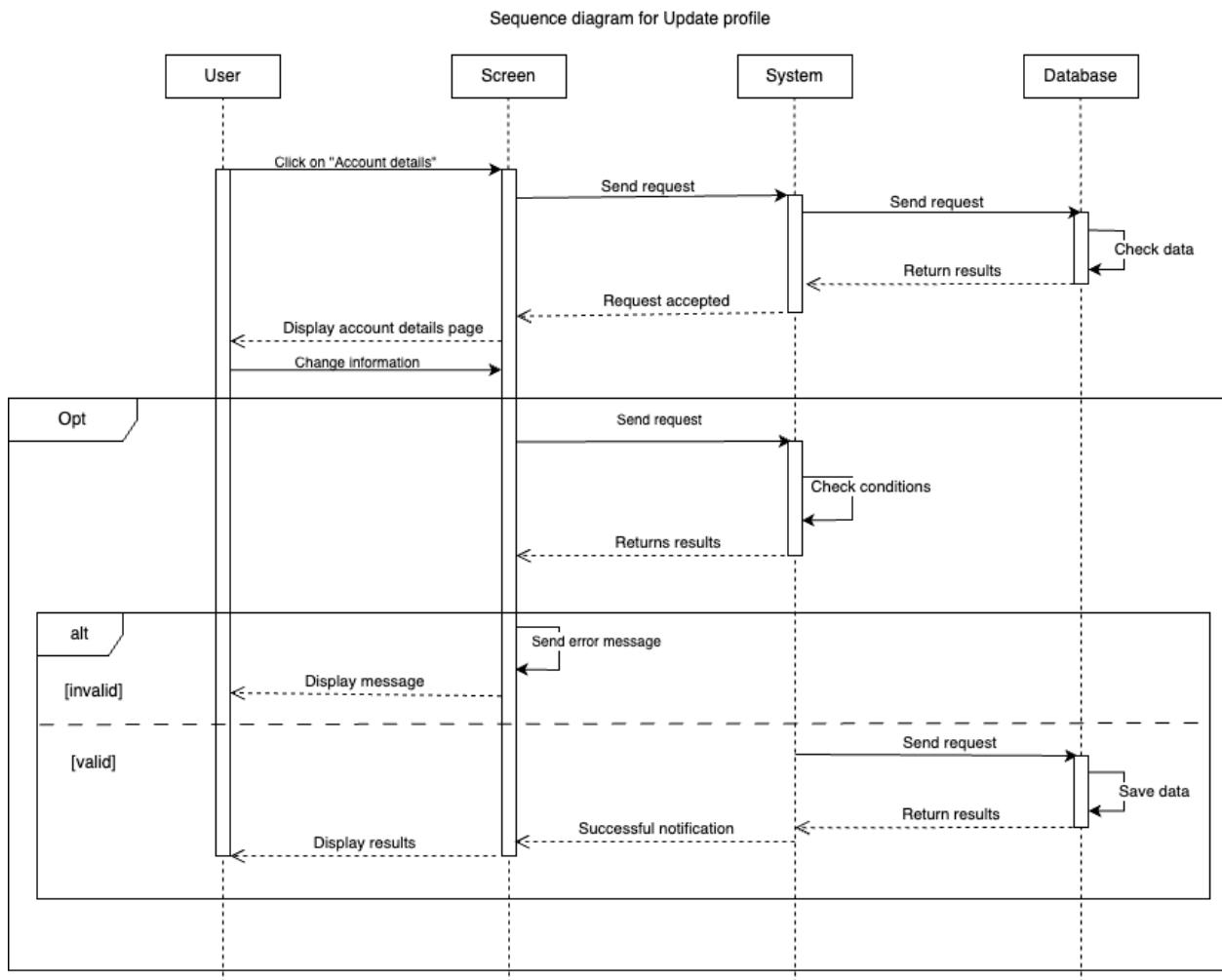


Figure 5.65. SD-7.2: Update profile

### 5.3.7.3. Delete profile

## 5.3.8. SD-8: Checkout

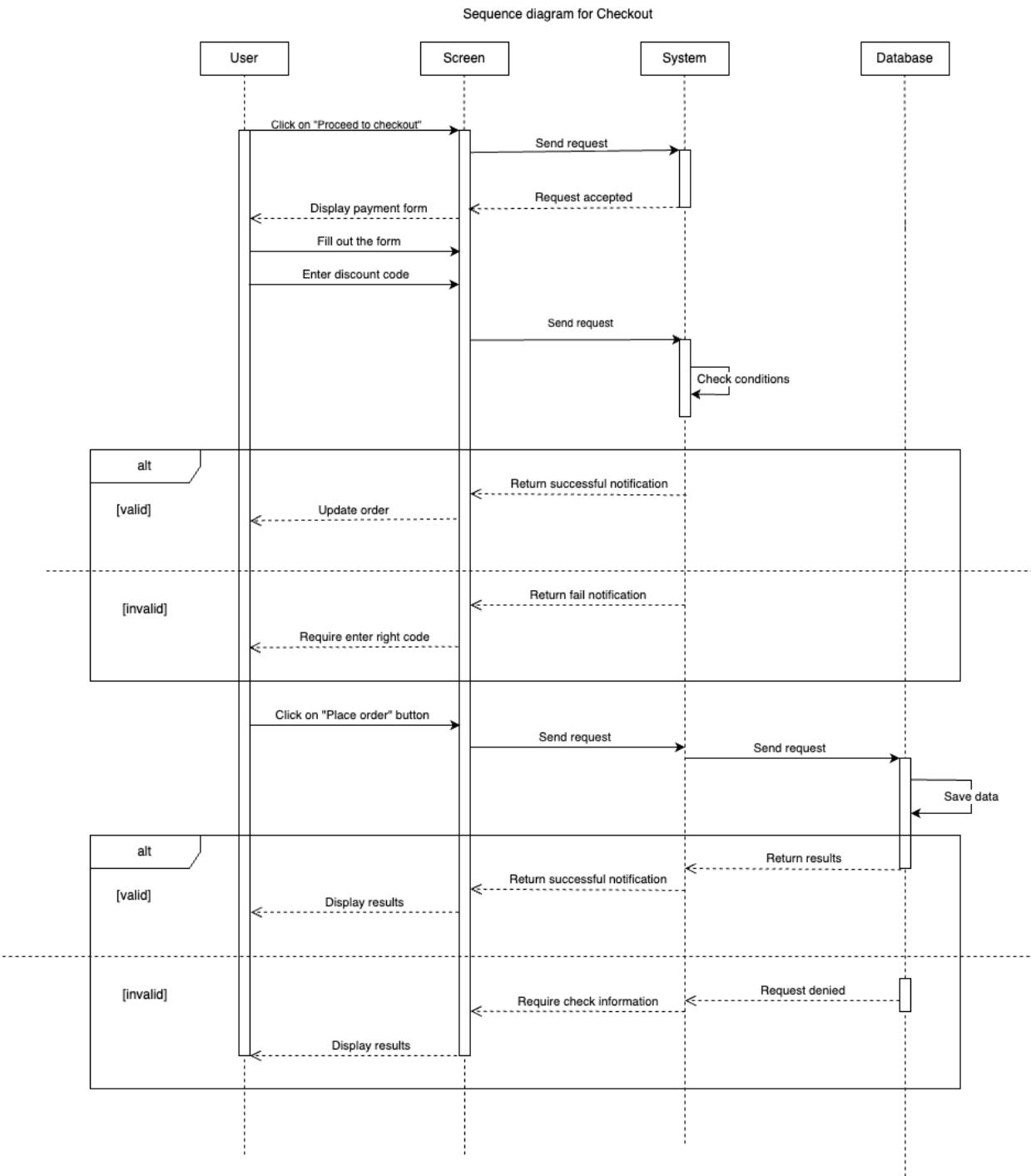


Figure 5.66. SD-8: Checkout

### 5.3.9. SD-9: Contact admin

### 5.3.9.1. Contact through chatbot

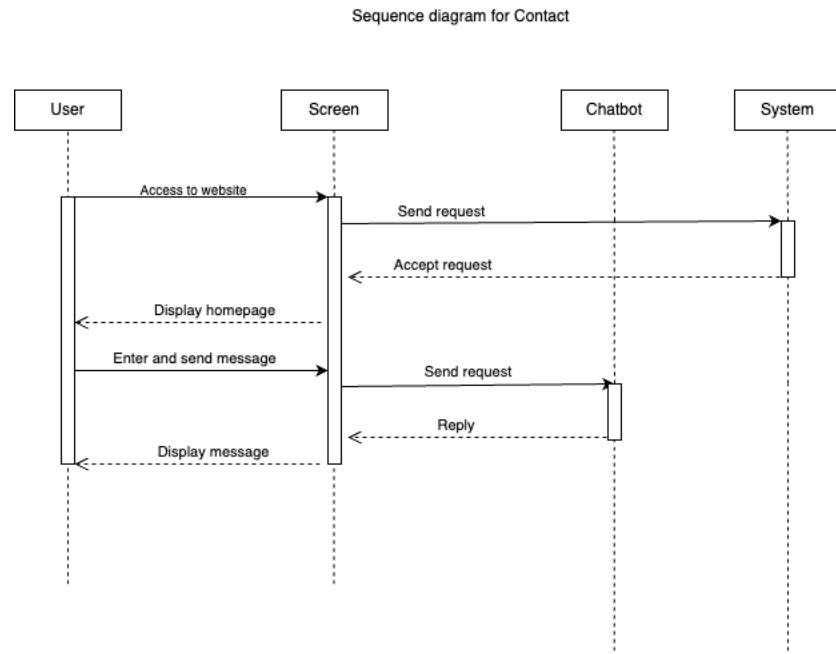


Figure 5.67. SD-9.1: Contact through botchat

### 5.3.9.2. Contact admin through system

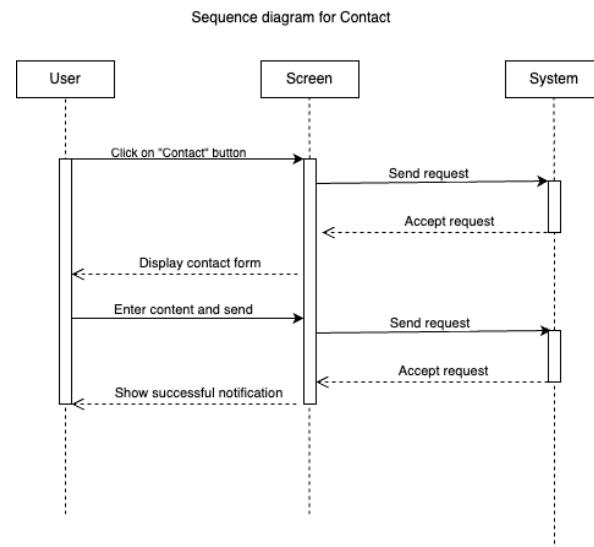


Figure 5.68. SD-9.2: Contact admin through system

### 5.3.10. SD-10: Manage message

#### 5.3.10.1. View message

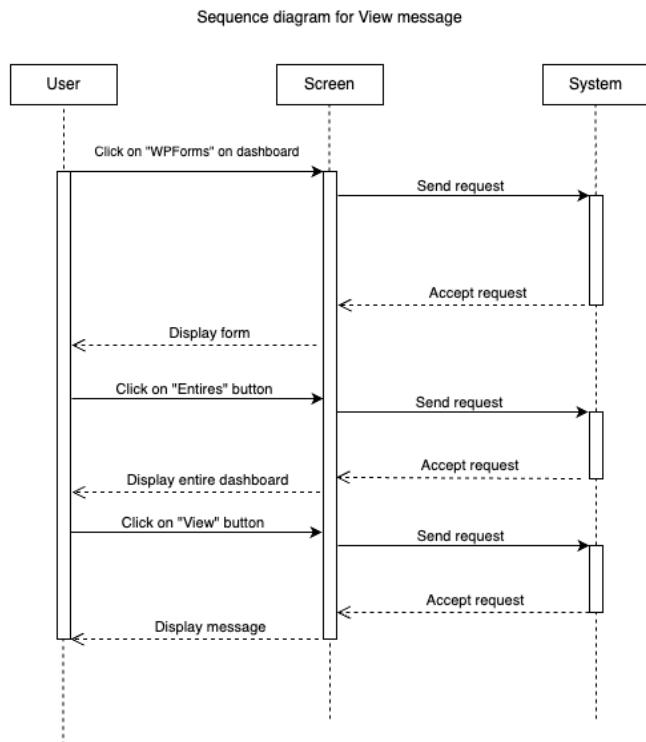


Figure 5.69. SD-10.1: View message

### 5.3.10.2. Remove message

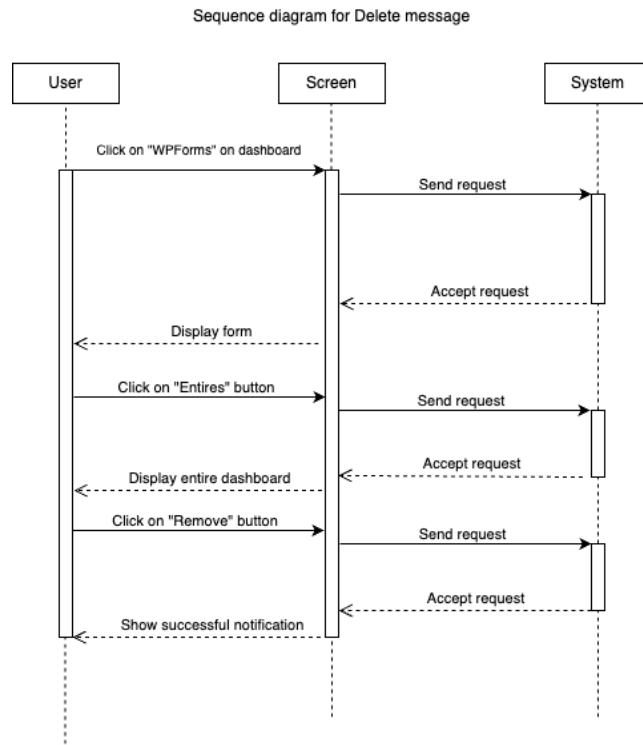


Figure 5.70. SD-10.2: Remove message

### 5.3.10.3. Reply message

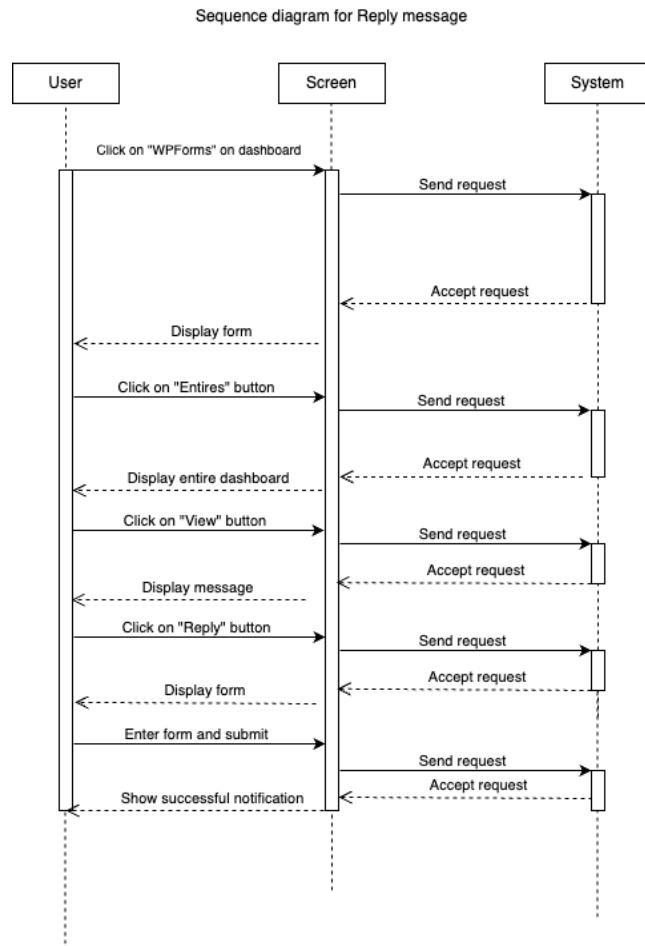


Figure 5.71. SD-10.3: Reply message

### 5.3.11. SD-11: Comment and rating on posts/products

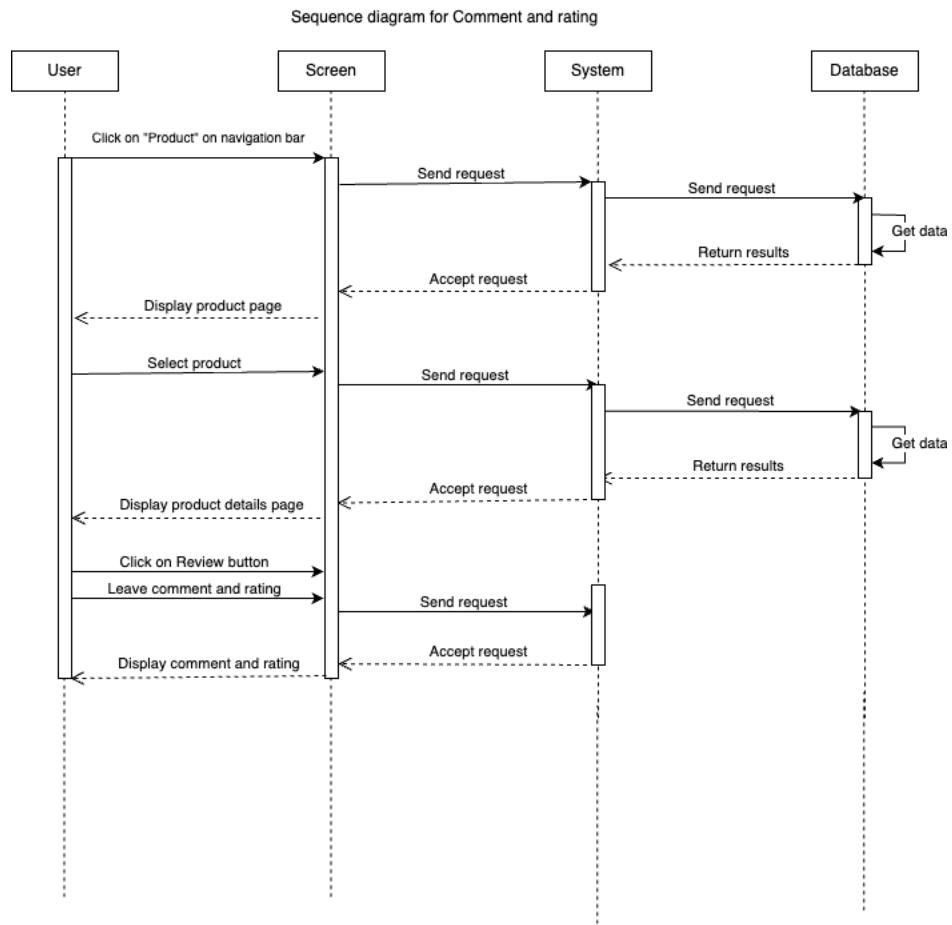


Figure 5.72. SD-11: Comment and rating on posts/products

### 5.3.12. SD-12: Manage orders

### 5.3.12.1. View all orders

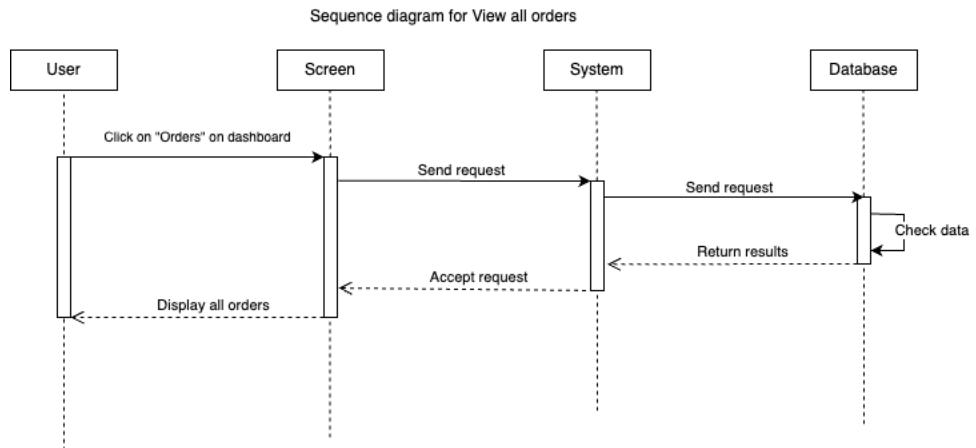


Figure 5.73. SD-12.1: View all orders

### 5.3.12.2. View order details

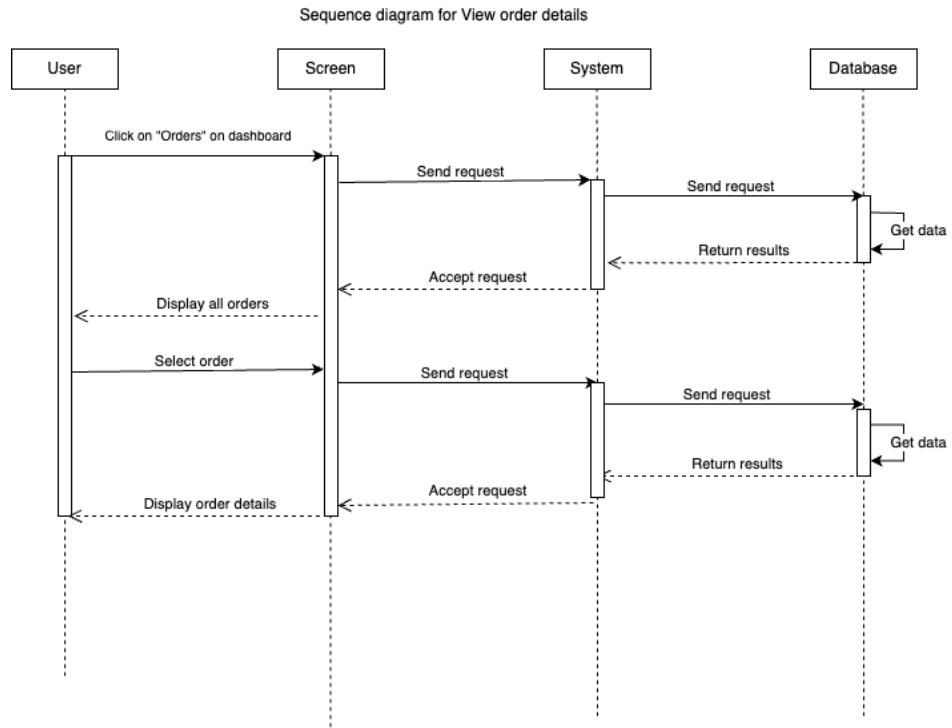


Figure 5.74. SD-12.2: View order details

### 5.3.12.3. Update status

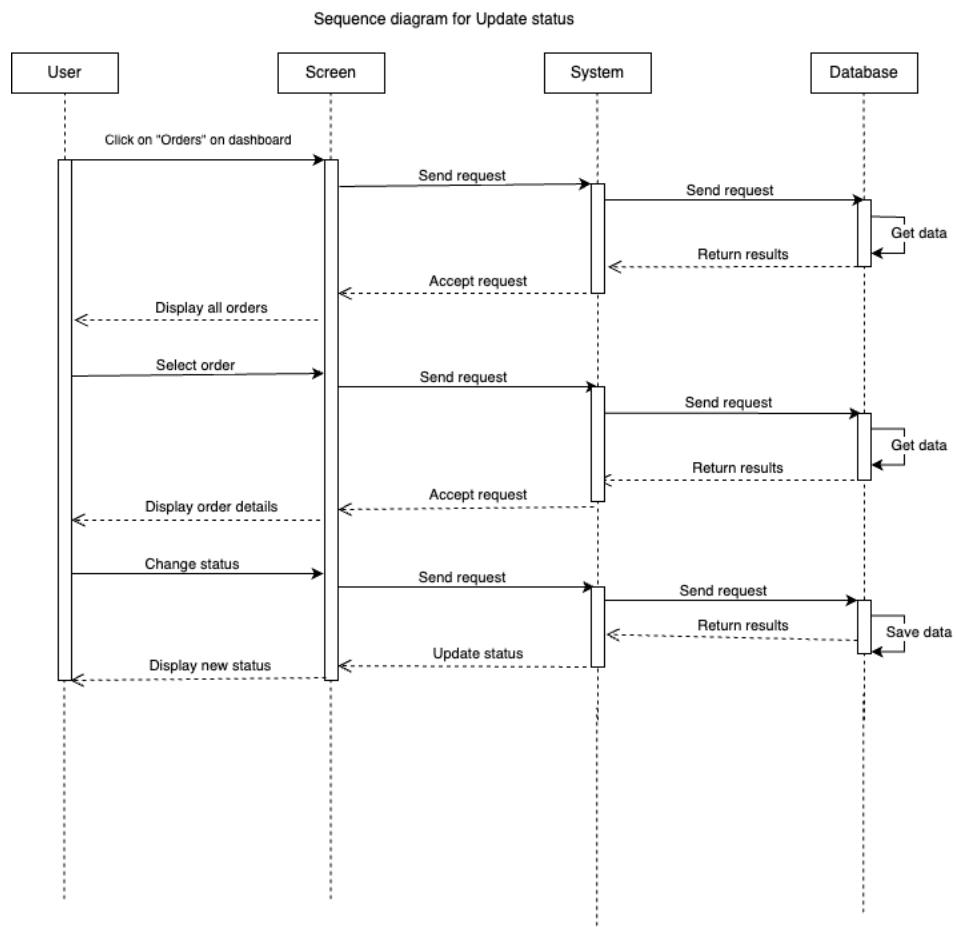


Figure 5.75. SD-12.3: Update status

### 5.3.13. SD-13: View statistic

Sequence diagram for View static

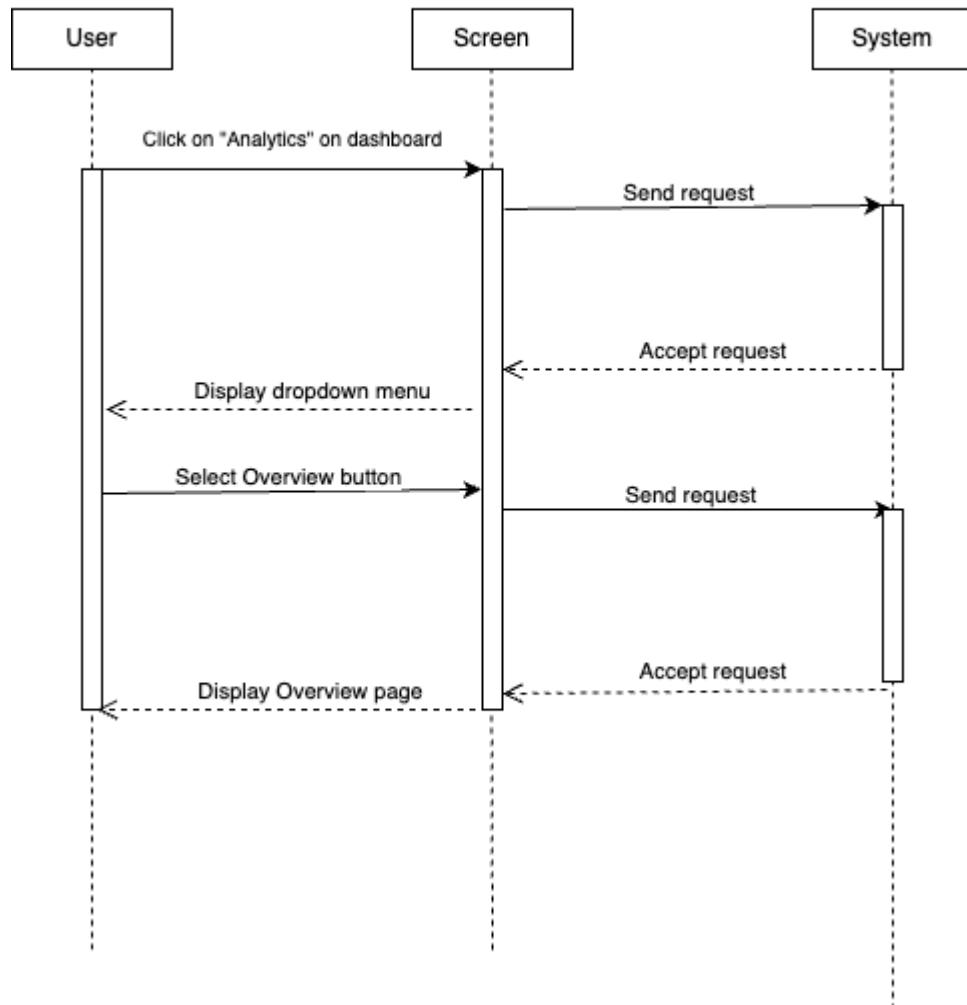


Figure 5.76. SD-13: View statistic

#### 5.3.14. SD-14: Manage Categories

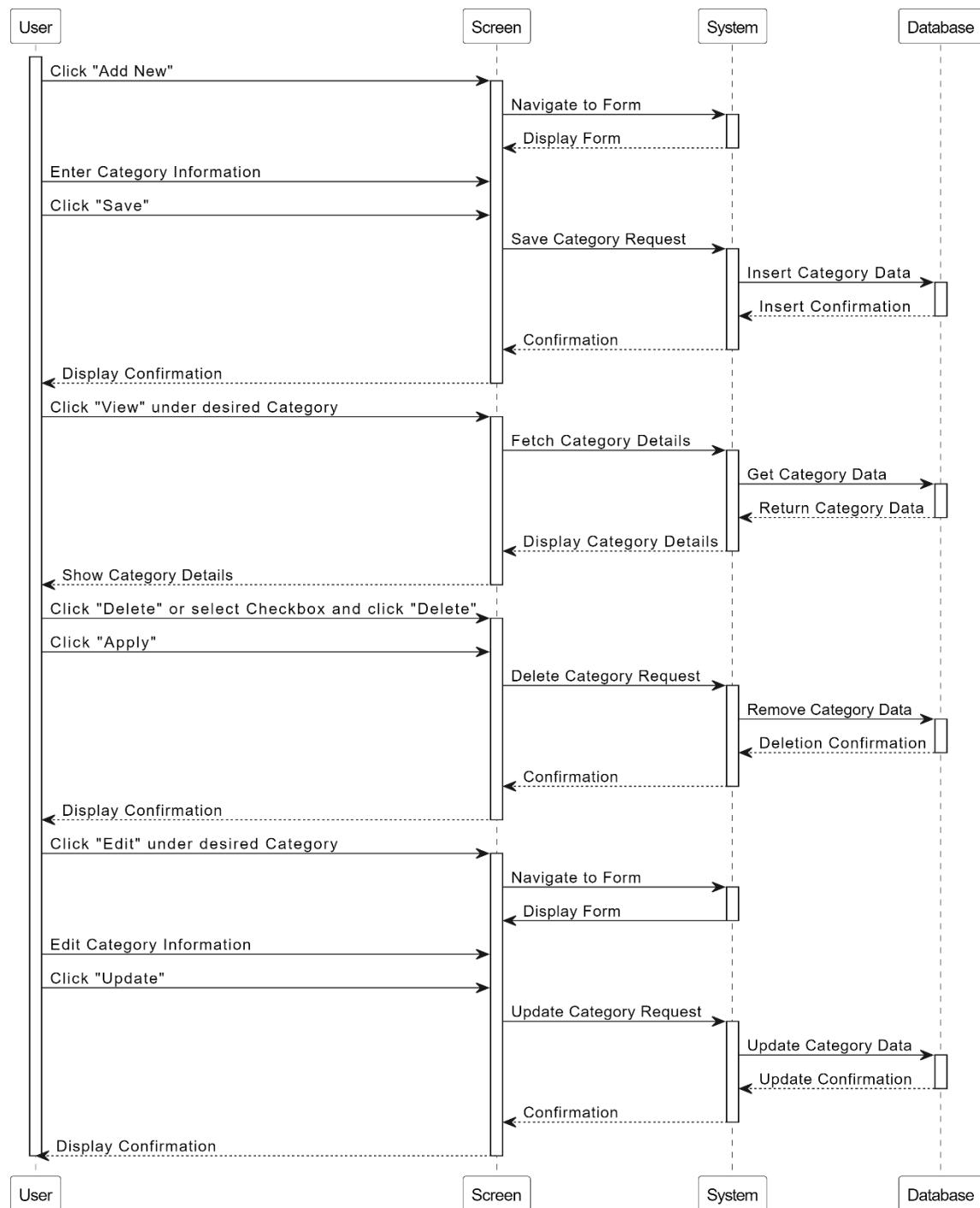


Figure 5.77. SD-14. Manage Categories

### 5.3.15. SD-15: Manage Products

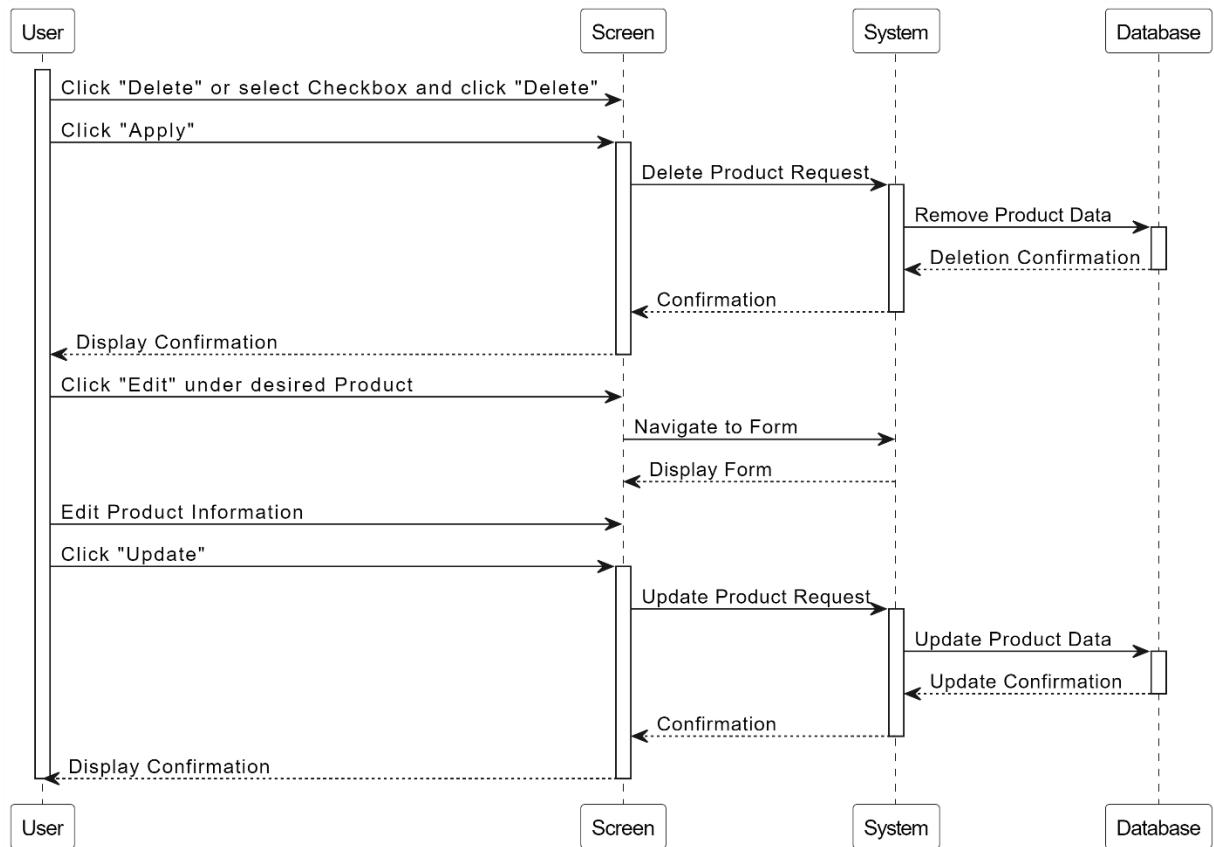


Figure 5.78. SD-15: Manage products

### 5.3.16. SD-16: User view product

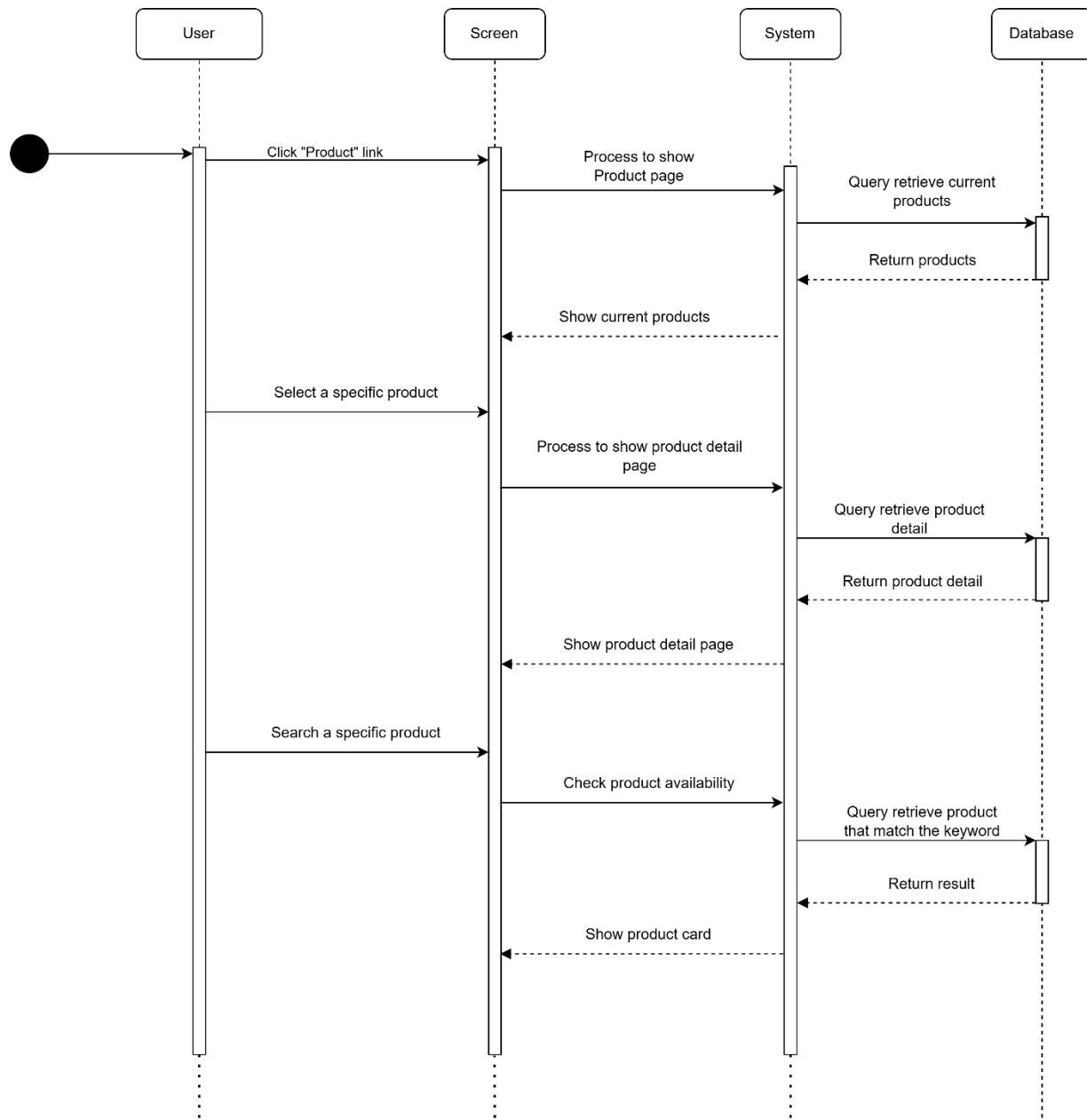


Figure 5.79. SD-16: User view product

### 5.3.17. SD-17: Manage User Account:

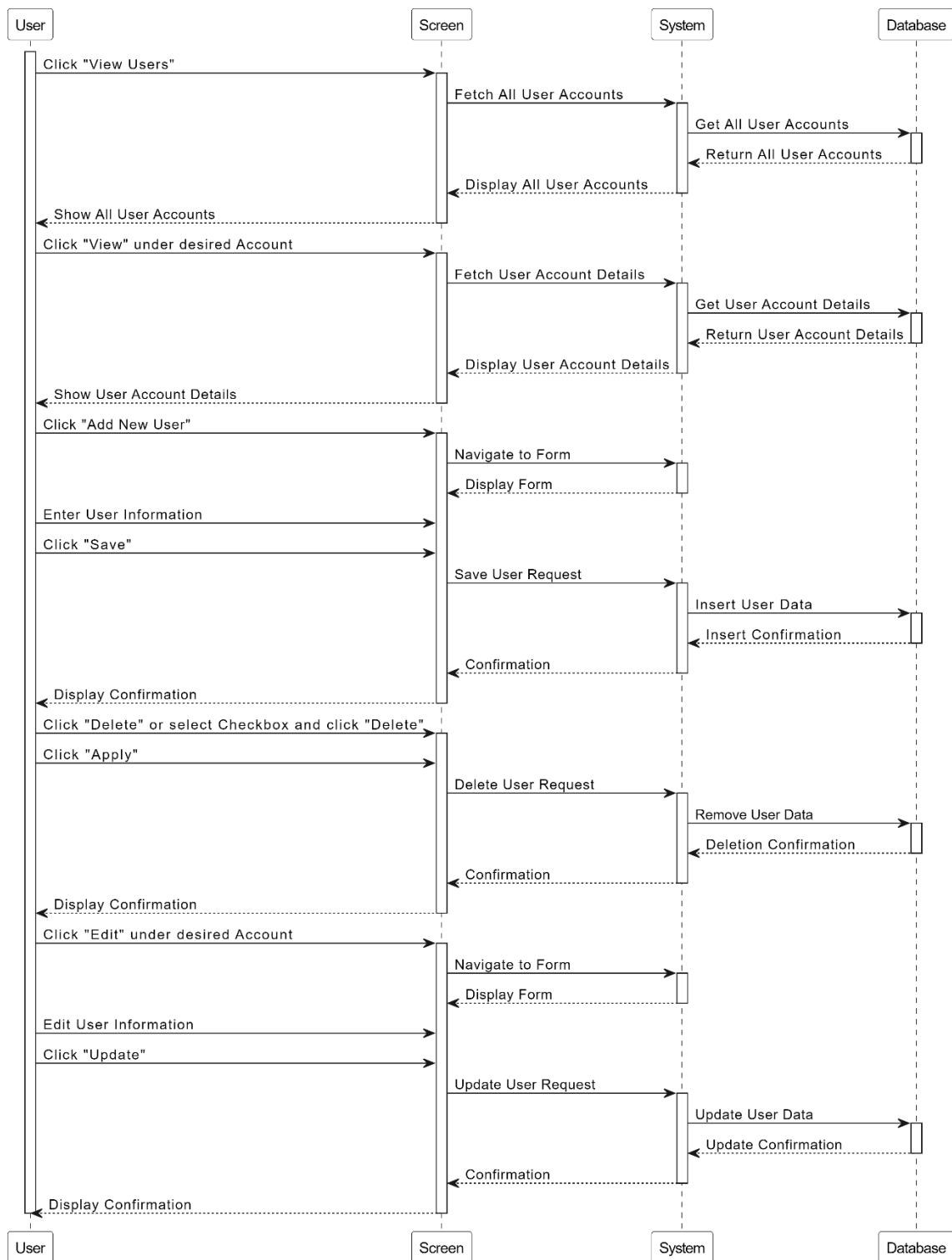


Figure 5.80. SD-17: Manage User account



# **CHAPTER 6. SYSTEM INTEGRATION**

## **6.1. Planning and Preparation**

- Requirement analysis: Understand the specific needs of Quynh Anh Quan, including payment gateways, shipping methods, inventory management, CRM, and other third-party services.
- Technical assessment: Evaluate the existing WordPress setup, server environment, and compatibility with WooCommerce and other plugins.

## **6.2. Setting up the environment**

- WordPress installation: Begin by installing WordPress.
- WooCommerce installation: Next, install and activate the WooCommerce plugin.
- Theme selection: Since Quynh Anh Quan is a startup with a limited product range and basic feature requirements, choose a popular, feature-rich theme that aligns with your needs. A suitable choice is a theme designed for “Home Decor Store”.

## **6.3. Core WooCommerce configuration**

- General settings: Configure store details, currency, and measurement units.
- Product setup: Add product categories, tags, attributes, and products.
- Payment gateways: Integrate and configure preferred payment gateways.
- Shipping options: Set up shipping zones, methods, and rates.

## **6.4. Integrating API/third-party service**

### **6.4.1. ReDi Reservations**

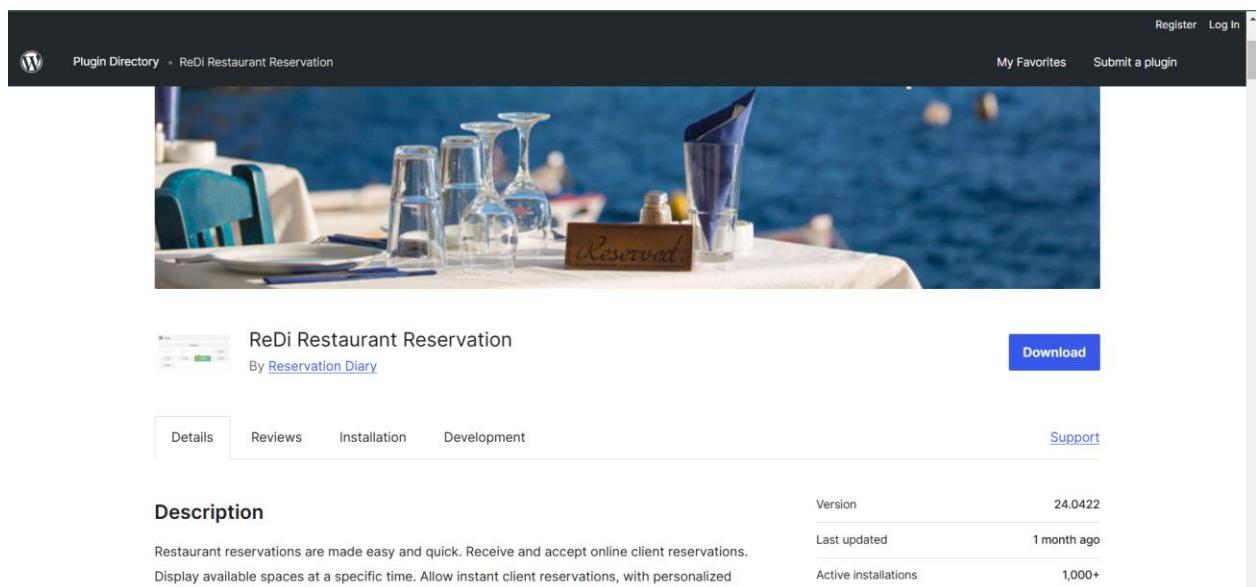


Figure 81. ReDI Restaurant Reservation Plugin

### API Key:



Figure 82. ReDI API Key

### Make and cancel reservations

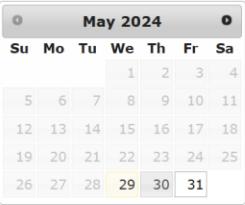
---

## Reservation

[Cancel reservation](#)

**Step 1: Select guests, date and time**

Guests: \*

Date: \*  


Time:  

10:00 am	10:30 am	11:00 am	11:30 am
----------	----------	----------	----------

Chat with us 

Figure 83. ReDi Restaurant Front Page

### Reservation list

Enable exporting, statistics, and printing of reservations. Sort and filter by status (pending, confirmed, rejected, canceled) and by date.

---

#### Reservation list

Place name: quynhanhquan.hersou  
[Add new place](#)

Today

Show  entries

#	Date	Party size	Name	Email	Phone	Visited	Comments	Status
3-688-087	5/29/2024 2:00:00 PM	2	Diem Quynh	quynhbk16cqt@gmail.com	+84901202690	No		Canceled
3 588 261	5/29/2024 2:00:00 PM	2	Quynh	potato@gmail.com	88888	No		Confirmed

Showing 1 to 2 of 2 entries

Previous  Next

Figure 84. ReDi Reservation List

Send update through email when a reservation is made.

**Dear service provider,**

We would like to inform you that the list of reservations was modified; as a result, we are sending you a full modified reservations report for restaurant **quynhanhquan.hersou**.

Last reservation details:

<b>Reservation #:</b>	3 591 515
<b>Action:</b>	NEW
<b>Date:</b>	Thursday, May 30, 2024
<b>Time:</b>	10:00 AM - 12:30 PM
<b>Party size:</b>	2 persons
<b>Name:</b>	Phạm Nguyệt Quỳnh
<b>Phone:</b>	+84989598472
<b>E-mail:</b>	<a href="mailto:phamnguyetquynh0307@gmail.com">phamnguyetquynh0307@gmail.com</a>
<b>Comments:</b>	Table near the window, please <3
<b>The reason for cancellation:</b>	

All upcoming reservations:

<b>Reservation #</b>	<b>Date</b>	<b>Party size</b>	<b>Name</b>	<b>Phone</b>	<b>E-mail</b>
3 591 515	30/05/2024 10:00 AM - 12:30 PM	2 persons	Phạm Nguyệt Quỳnh	+84989598472	<a href="mailto:phamnguyetquynh0307@gmail.com">phamnguyetquynh0307@gmail.com</a>
3 585 024	30/05/2024 12:30 PM - 3:00 PM	2 persons	Quynh	+84924847593	<a href="mailto:potato@gmail.com">potato@gmail.com</a>

Figure 85. ReDi notify through Email

Send update through email when a reservation is modified/cancelled.

**Dear service provider,**

We would like to inform you that the list of reservations was modified; as a result, we are sending you a full modified reservations report for restaurant. **quynhanhquan.hersou**.

Last reservation details:

<b>Reservation #:</b>	3 591 515
<b>Action:</b>	CANCELED
<b>Date:</b>	Thursday, May 30, 2024
<b>Time:</b>	10:00 AM - 12:30 PM
<b>Party size:</b>	2 persons
<b>Name:</b>	Phạm Nguyệt Quỳnh
<b>Phone:</b>	+84989598472
<b>E-mail:</b>	<a href="mailto:phamnguyetquynh0307@gmail.com">phamnguyetquynh0307@gmail.com</a>
<b>Comments:</b>	Table near the window, please <3
<b>The reason for cancellation:</b>	I want to change the date

All upcoming reservations:

<b>Reservation #</b>	<b>Date</b>	<b>Party size</b>	<b>Name</b>	<b>Phone</b>	<b>E-mail</b>
3 591 515	30/05/2024 10:00 AM - 12:30 PM	2 persons	Phạm Nguyệt Quỳnh	+84989598472	<a href="mailto:phamnguyetquynh0307@gmail.com">phamnguyetquynh0307@gmail.com</a>
			Table near the window, please <3 I want to change the date		
3 585 024	30/05/2024 12:30 PM - 3:00 PM	2 persons	Quynh	+84924847593	<a href="mailto:potato@gmail.com">potato@gmail.com</a>
			test thử		

Figure 86. ReDi notify changes through Email

#### 6.4.2. MailPoet

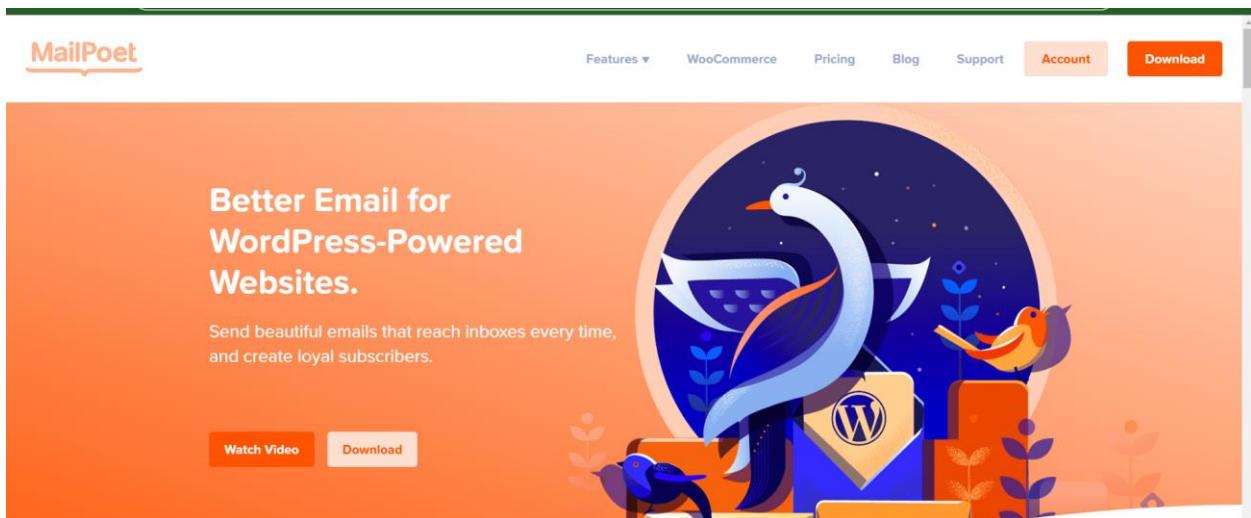


Figure 87. MailPoet

## API Key

A screenshot of a MailPoet activation page. It shows a text input field containing the API key "883b37419be8d1b50de54c3aa77f0314" and a red "Verify" button to its right. Above the input field, there's a section titled "MailPoet Activation Key" with a sub-instruction: "Activate your [MailPoet plan](#) to access advanced features like detailed analytics or subscriber segmentation, faster customer".

Figure 88. MailPoet API Key

MailPoet is a powerful WordPress plugin for creating, sending, and managing email newsletters directly from your dashboard. It offers a drag-and-drop editor, responsive templates, and subscriber segmentation for targeted emails. With automation features like welcome emails and post notifications, it integrates seamlessly with WooCommerce for product recommendations and abandoned cart emails.

Automation “Welcome new subscriber”: When a user fills out the subscribing form, an email will be sent to the user. After the user confirms, after 5 minutes a coupons will automatically be sent to the user email.

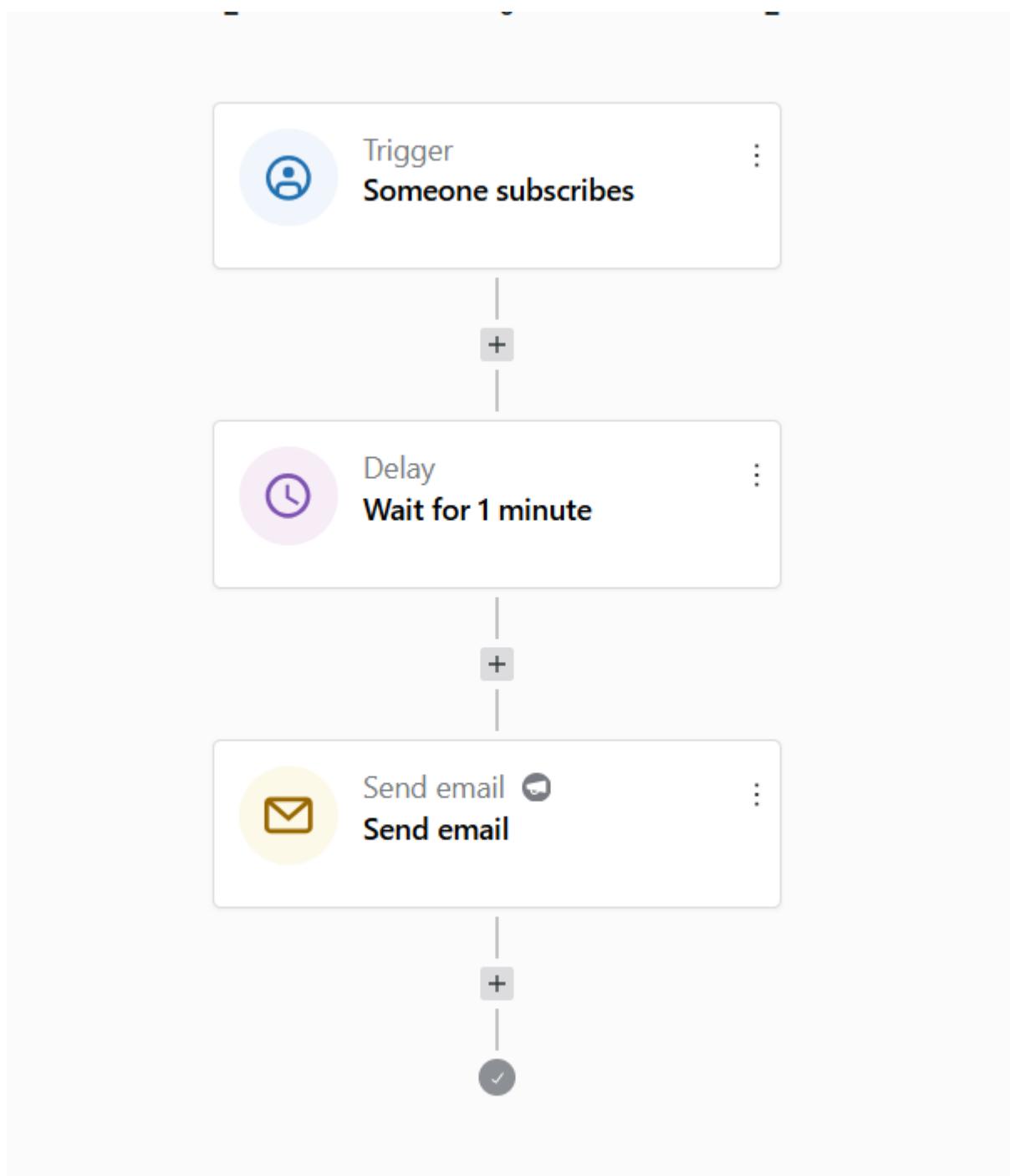


Figure 89. Automate send email to subscriber

#### 6.4.3. Tidio Chat

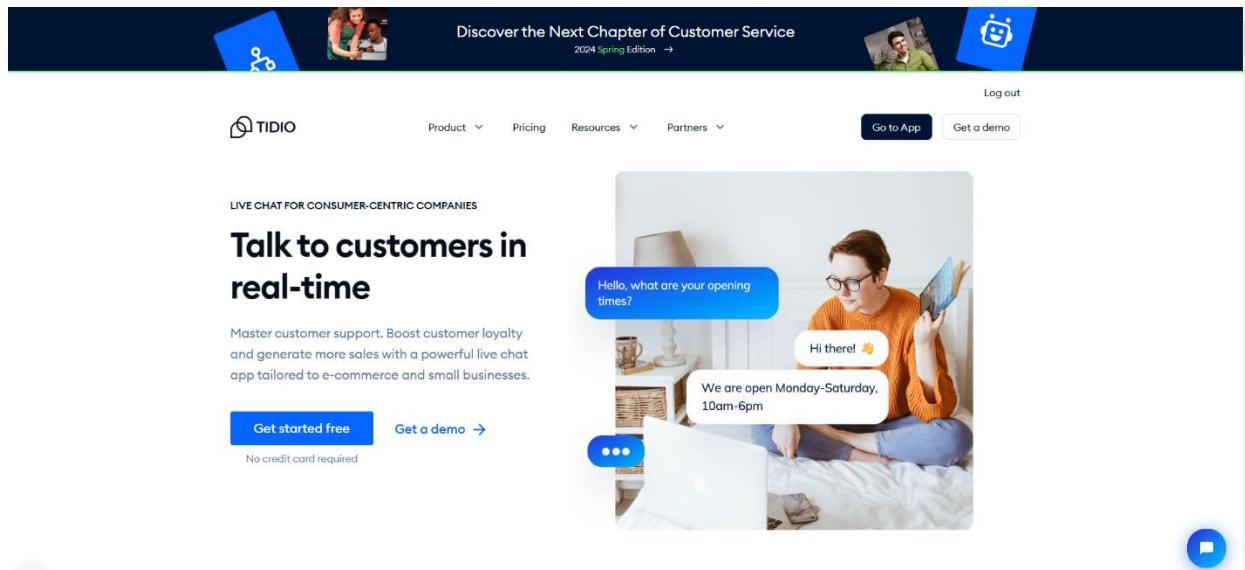


Figure 90. Tidio Chat

Feed Chatbot Quynh Anh Quan site content to train and chat bot will answer questions based on its knowledge.

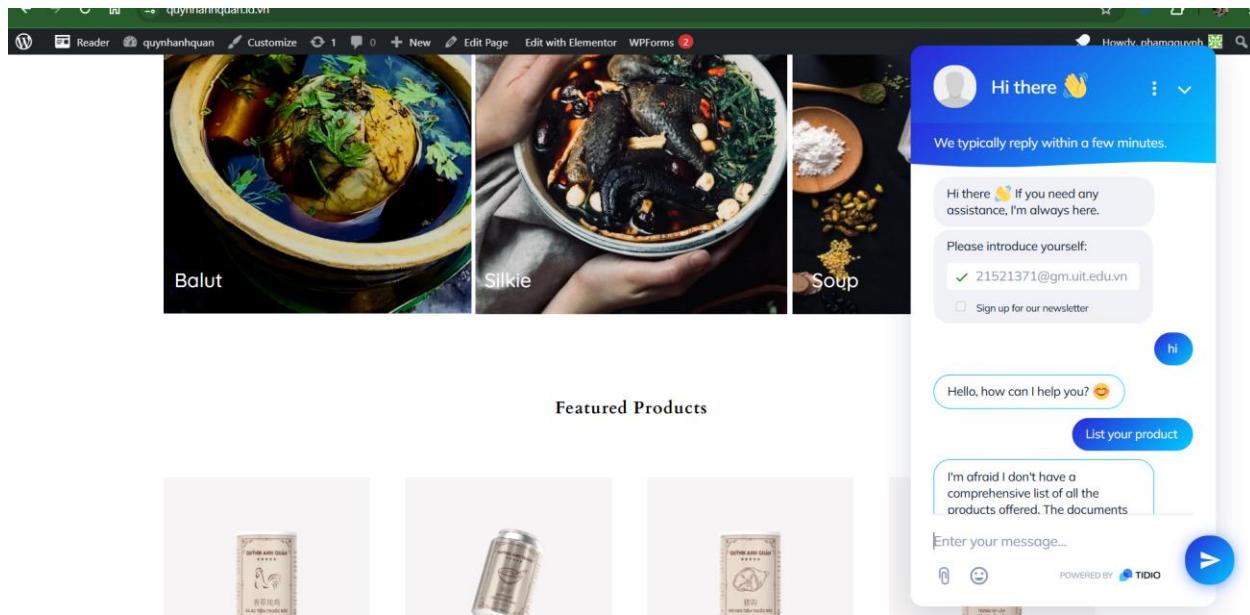


Figure 91. Tidio Chat on Quynh Anh Quan Website

If the customer requires to talk to a real person, sale person can join the chat:

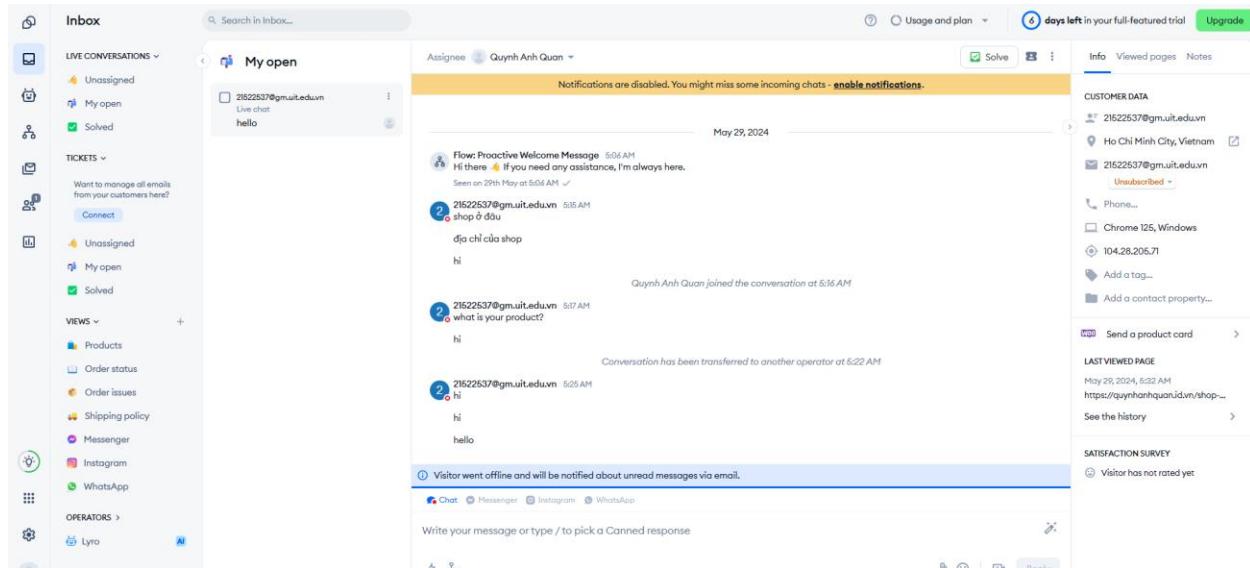


Figure 92. Tidio Chat with real person

Tidio supports marketing with features like automated workflows, lead generation, strategic planning, and sales management.

#### 6.4.4. Craw 500 product from Tiki

Application to crawl Tiki products using Node.js and Express.js

Description: Use Node.js and Express.js to crawl 500 "Canned Goods" products from Tiki into a CSV file, then import it into Wordpress Quynh Anh's store.

```
const { Builder, By, Key, until } = require("selenium-webdriver");
const fs = require("fs");

async function searchAndDownloadData(keyword) {
    // Initialize the Edge driver
    const driver = await new Builder().forBrowser("MicrosoftEdge").build();

    try {
        // Navigate to Tiki website
        await driver.get("https://tiki.vn/");

        // Wait for the search bar input to be present
        const searchBar = await driver.wait(until.elementLocated(By.css('input')), 10000);
        await searchBar.sendKeys(keyword, Key.RETURN);

        // Define CSV header
        const csvHeader = [
            "Image URL",
            "Product Name",
            "Price",
            "Brand",
            "Quantity",
            //Additional Data"
        ];
    }
}
```

Figure 6.93. Format components in csv file

```

for (let i = 0; i < imageWrappers.length; i++) {
    const imageWrapper = imageWrappers[i];
    const info = infos[i];

    // Get image URL
    const imgElement = await imageWrapper.findElement(By.css('img.styles__StyledImg-sc-p9s3t3-0'));
    const srcset = await imgElement.getAttribute('srcset');
    const srcsetArray = srcset.split(',');
    const imageUrl = srcsetArray[0].trim().split(' ')[0];

    // Get other product data
    const price = await info.findElement(By.className('price-discount__price'));
    const productName = await info.findElement(By.css('h3'));
    const brand = await info.findElement(By.css('span'));
    let quantity;
    try {
        const quantityElement = await info.findElement(By.css('span.quantity.has-border'));
        quantity = await quantityElement.getText();
    } catch (error) {
        // If quantity is not found, set default value
        quantity = 0;
    }
}

```

*Figure 6.94. The function collects data from tiki*

Perform the following steps such as entering search keywords, collecting information about the products like images, names, prices, and quantities, then write them into a CSV file.

The result after running will be as follows:

File in visual studio code

```

1 Image URL,Product Name,Price,Brand,Quantity
2 ◇https://salt.tikicdn.com/cache/280x280/ts/product/c6/83/c8/304e29add669ba9fdcd67144175ba965.jpg,Thịt Hộ
3 https://salt.tikicdn.com/cache/280x280/ts/product/11/99/0f/1181b92f9cc1a1fbf36caa0d24a1c77d.png,Paté Cột
4 https://salt.tikicdn.com/cache/280x280/ts/product/fe/68/1e/47965520568d4af158d5b1050018452d.png,Paté Cột
5 https://salt.tikicdn.com/cache/280x280/ts/product/e4/51/c4/b0b2e3d61f2b9bdf74d867bfb830c74e.jpg,Úc gà cát
6 https://salt.tikicdn.com/cache/280x280/ts/product/22/cc/93/ede54584298ed74df4958dea316b4be7.png,Thịt Heo
7 https://salt.tikicdn.com/cache/280x280/ts/product/de/a9/33/7bc08a189abc81c8aa39b45a71b54631.png,Thịt Hộp
8 https://salt.tikicdn.com/cache/280x280/ts/product/56/f9/c7/8b3f75a34e8c6ab66c92daa70f881f2f.png,Thịt Hộp
9 https://salt.tikicdn.com/cache/280x280/ts/product/8f/bc/06/4ed70db8c9c27d211f9b1c4a65407b28.png,Thịt Heo
10 https://salt.tikicdn.com/cache/280x280/ts/product/01/b5/ac/f3611be9525678e32493e5b6a9d1ad84.png,Thịt Heo
11 https://salt.tikicdn.com/cache/280x280/ts/product/f2/0a/60/ee4b2c81ada82ebf55fe8c4d44edd89a.png,Pate Heo
12 https://salt.tikicdn.com/cache/280x280/ts/product/25/e4/91/5c642567d33c6bb1ea72ffdc29739769.png,Cá Ngừ Cá
13 https://salt.tikicdn.com/cache/280x280/ts/product/9d/ff/58/9cca756df20421dd5df8dbfa0db52e37.png,Thịt Hộp
14 https://salt.tikicdn.com/cache/280x280/ts/product/85/b7/bc/791498585754ae732f063ecf42dd541c.png,Thịt Heo
15 https://salt.tikicdn.com/cache/280x280/ts/product/7e/22/54/46e0c294fa51fbc036ced31ec43fb737.png,Xíu Mai S
16 https://salt.tikicdn.com/cache/280x280/ts/product/e2/b5/57/de847080ba325f867212f8e6cf9f77d16.png,Nước Cốt
17 https://salt.tikicdn.com/cache/280x280/ts/product/8e/80/59/11593ef2e0a4930e395cfda81762723f.png,Thịt Heo
18 https://salt.tikicdn.com/cache/280x280/media/catalog/product/1/4/1446113173707_9067867.jpg,Trái Nhãn Ngân
19 https://salt.tikicdn.com/cache/280x280/ts/product/31/0a/e4/d259ee66fc9b8ef9b62e3cb44b4df4c0.jpg,Heo Hai L
20 https://salt.tikicdn.com/cache/280x280/ts/product/a1/65/76/c7d724acf4ed0b4ce23131e6d51ac0a3.jpg,Mận sấy d
21 https://salt.tikicdn.com/cache/280x280/ts/product/a3/f2/77/7e9546ad5880a15b4ad279d43a056dff.jpg,Thịt Hộp
22 https://salt.tikicdn.com/cache/280x280/ts/product/7c/86/bb/fcd9e2a6f6f10ae4a78c8c6a9b024eb7.png,Pate gan
23 https://salt.tikicdn.com/cache/280x280/ts/product/ce/e1/17/77243743e29353b8aaa9d04ef0e5e31e.png,Pate gan
24 https://salt.tikicdn.com/cache/280x280/ts/product/ea/9e/3b/e33c14b044edd996f5323266925494bb.png,(Date: 11/09/2023)

```

Figure 6.95. The result is a CSV file

### File in excel

A	B	C	D	E
Image URL	Product Name	Price	Brand	Quantity
https://salt.tikicdn.com/cache/280x280/ts/product/c6/83/c8/304e29add669ba9f Thịt Hộp Hormel Spam Classic 340g	129.000đ	HORMEL SPAM	Đã bán 1	
https://salt.tikicdn.com/cache/280x280/ts/product/11/99/0f/1181b92f9cc1a1fb Paté Cột Đèn Hải Phòng 150g - Đồ Hộp H.	27.500đ	HALONG CANFOCO	Đã bán 3.3k	
https://salt.tikicdn.com/cache/280x280/ts/product/fe/68/1e/47965520568d4af1 Paté Cột Đèn Hải Phòng 90g - Đồ Hộp H. 18.500đ	18.500đ	HALONG CANFOCO	Đã bán 1.0k	
https://salt.tikicdn.com/cache/280x280/ts/product/e4/51/c4/b0b2e3d61f2b9bdf Úc gà cát khúc - 180g - Đồ Hộp H. Long	28.500đ	HALONG CANFOCO	Đã bán 220	
https://salt.tikicdn.com/cache/280x280/ts/product/22/cc/93/ede54584298ed74 Thịt Heo Hộp Tulip 200g (Đan Mạch)	44.900đ	TULIP	Đã bán 536	
https://salt.tikicdn.com/cache/280x280/ts/product/de/a9/33/7bc08a189abc81c Thịt Hộp Hormel SPAM Giảm Mặn 340g (M)	119.000đ	SPAM	Đã bán 351	
https://salt.tikicdn.com/cache/280x280/ts/product/56/f9/c7/8b3f75a34e8c6ab6 Thịt Hộp Hormel SPAM 340g (Mỹ)	119.000đ	SPAM	Đã bán 467	
https://salt.tikicdn.com/cache/280x280/ts/product/8f/bc/06/4ed70db8c9c27d21 Thịt Heo Hộp Tulip 340g (Đan Mạch)	79.000đ	TULIP	Đã bán 854	
https://salt.tikicdn.com/cache/280x280/ts/product/01/b5/ac/f3611be9525678e3 Thịt Heo Hộp Tulip 40% Giảm Mặn 340g (F)	95.100đ	TULIP	Đã bán 735	
https://salt.tikicdn.com/cache/280x280/ts/product/f2/0a/60/ee4b2c81ada82ebf Pate Heo Tulip 125g (Đan Mạch)	39.000đ	TULIP	Đã bán 305	
https://salt.tikicdn.com/cache/280x280/ts/product/25/e4/91/5c642567d33c6bb Cá Ngừ Cắt Khúc Ngâm Dầu H. Long - 1147.300đ	1147.300đ	HALONG CANFOCO	Đã bán 349	
https://salt.tikicdn.com/cache/280x280/ts/product/9d/ff/58/9cca756df20421dd5 Thịt Hộp Hormel SPAM Ít Béo 340g (Mỹ)	119.000đ	SPAM	Đã bán 205	
https://salt.tikicdn.com/cache/280x280/ts/product/85/b7/bc/791498585754ae7 Thịt Heo Hộp Tulip Xông Khói Bacon 340g 89.000đ	89.000đ	TULIP	Đã bán 125	
https://salt.tikicdn.com/cache/280x280/ts/product/7e/22/54/46e0c294fa51fbc0 Xíu Mai Sốt Cà Vissan 200g	23.100đ	VISSAN	Đã bán 53	
https://salt.tikicdn.com/cache/280x280/ts/product/e2/b5/57/de847080ba325f86 Nước Cốt Dứa Roi Thai 500ml (Thái Lan)	49.900đ	ROI THAI	Đã bán 89	
https://salt.tikicdn.com/cache/280x280/ts/product/8e/80/59/11593ef2e0a4930e Thịt Heo Muối Xông Khói Hormel SPAM B	125.000đ	SPAM	Đã bán 41	

Figure 6.96. File excel crawler data

### 6.4.5. Rest API

Activate, create API keys, and write a program to perform operations to assist in completing some tasks quickly.

Use APIs to CRUD products and CRUD coupons on the website.

## Create and get APIs

```
// Enter your WooCommerce API credentials and the URL of your store
const consumerKey = 'ck_207937490e843189e827d3f154135d3a5c9ef595';
const consumerSecret = "cs_f7bcde6176902e1ce63c5cd2c08436df14821d24";
const storeUrl = 'https://quynhanhquan.id.vn/';
```

Figure 6.97. Connect API from wordpress

### EX1: Use create-product.js to create new product

```
router.post('/create-product', (req, res) => {
  const {
    httpLink, key, secretKey,
    productName, productRegularPrice,
    productDescription,
    ProductImagesSrc, producStockQuantity
  } = req.body;

  console.log('HTTP Link:', httpLink);
  console.log('Key:', key);
  console.log('Secret Key:', secretKey);
  console.log('Name:', productName);

  const WooCommerce = new WooCommerceAPI({
    url: httpLink,
    consumerKey: key,
    consumerSecret: secretKey,
    wpAPI: true,
    version: 'wc/v3'
  });

  // Define the product data to add
  const productData = {
    name: productName,
    regular_price: productRegularPrice,
    description: productDescription.
```

Figure 6.98. Function create new product from API

EX2: Use create-coupon.js to create new coupon.

```
router.post('/create-coupon', (req, res) => {
  const {
    httpLink, key, secretKey, code, discountType, couponAmount, couponExpi
  } = req.body;

  console.log('HTTP Link:', httpLink);
  console.log('Key:', key);
  console.log('Secret Key:', secretKey);

  const WooCommerce = new WooCommerceAPI({
    url: httpLink,
    consumerKey: key,
    consumerSecret: secretKey,
    wpAPI: true,
    version: 'wc/v3'
  });

  const couponData = {
    code: code,
    discount_type: discountType,
    amount: couponAmount,
    date_expires: couponExpiryDate,
    description: description
  };

  WooCommerce.post('coupons', couponData, function (err, data, response) {
    if (err) {
      res.status(500).send(`Error creating coupon: ${err.message}`);
    } else {
      res.status(201).send(data);
    }
  });
});
```

Figure 6.99. Function create new coupon from API

## CHAPTER 7. REFERENCES

- [1] “Woocommerce Document” . Accessed: may 25, 2024. Online source:  
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- [3] “A beginner’s guide to ecommerce SEO”. Accessed: May 30, 2024. Online source: [https://woocommerce.com/posts/seo-basics-ecommerce-beginners-guide/?fbclid=IwZXh0bgNhZW0CMTAAAR1Q9gC0oyGpJuzzJ4irHHk2iVg7K8kRhBq9po7Ty0bo8P5hd8NvTdBHxk\\_aem\\_AQjyLSP52VdmwZoJMcbnBWPt71cInNnR22RDaRm90LtK3sLUY7nqokzoSRRMn9npGfYaKbQt55hQv8GBgWl\\_ljiB](https://woocommerce.com/posts/seo-basics-ecommerce-beginners-guide/?fbclid=IwZXh0bgNhZW0CMTAAAR1Q9gC0oyGpJuzzJ4irHHk2iVg7K8kRhBq9po7Ty0bo8P5hd8NvTdBHxk_aem_AQjyLSP52VdmwZoJMcbnBWPt71cInNnR22RDaRm90LtK3sLUY7nqokzoSRRMn9npGfYaKbQt55hQv8GBgWl_ljiB)