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UIT

TRƯỜNG ĐẠI HỌC
CÔNG NGHỆ THÔNG TIN

FINAL REPORT

**MACHINE LEARNING FOR DETECTING ABNORMAL
TRANSACTION**

Course: Web Application Development

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Sincerely thank you!

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1 INSTRUCTOR'S COMMENTS

2 DEFINITIONS, ACRONYMS, AND ABBREVIATIONS

Term	Definition
User	Someone who interacts with the application
Customer	Someone who interacts with the application which is not Admin
Admin/Administrator	System administrator who is given specific permission for managing and controlling the system
ERD	System administrator who is given specific permission for managing and controlling the system
CRUD	Create, Read, Update, Delete
UC	Use Case
AD	Activity Diagram

Table 1: Table of definitions, acronyms and abbreviations

3 INTRODUCTION

3.1 Introduction:

The purpose of this document is to present a detailed description of the Foodies Bistro Garden program. It will explain the purpose and features of the system, what the system will do the constraints under which it must operate and how the system will react to external stimuli.

3.2 Project's proposal:

Foodies Bistro Garden is a web-based application designed to provide customers with the ability to explore the offerings of Foodies Bistro Garden, order dishes for delivery within the Ho Chi Minh City, Vietnam area, and make reservations through the website.

Moreover, the website will empower administrators to execute CRUD (Create, Read, Update, and Delete) operations on products and categories, manage orders, tables, and reservations.

4 PROJECT OVERVIEW

4.1 Rationale for Topic Selection:

Historically, the limited utilization of websites in the restaurant industry stemmed from the fact that individuals either did not genuinely feel the need to use them or

lacked the means to access such online platforms. However, in recent times, particularly within the last five years, the surge in information technology has dynamically altered this landscape. Websites have become more prevalent, playing a pivotal role in augmenting revenue streams for businesses, notably exemplified by restaurants.

Driven by an increased online user base, improved internet accessibility, and the convenience associated with mobile applications, the demand for website usage in searching for, ordering, and obtaining information about restaurants has witnessed a significant upswing. Against this backdrop, the team recognizes that customer needs extend beyond the domestic market and encompass a global audience, particularly with a growing interest in Western cuisine. The distinctive flavors and diversity of Western gastronomy have become major attractions for consumers. Consequently, the team has resolved to establish the Foodie restaurant and develop a corresponding website to meet these evolving customer preferences.

4.2 Introduction to the Restaurant:

Foodie is a vibrant and dynamic restaurant, brimming with enthusiasm and creativity, offering a selection of Western cuisine. Situated at 65 Xuân Thủy Street, Thảo Điền Ward, District 2, Ho Chi Minh City, Foodie is a culinary haven within the bustling metropolis.

The mission of Foodie is to deliver a unique and refined culinary experience by providing high-quality Western dishes. We are committed to offering customers not only delectable meals but also a journey of cultural exploration through a blend of innovation and authentic flavors.

The vision of Foodie is to become the premier destination for Western food enthusiasts in Ho Chi Minh City. We aspire to establish a distinguished culinary brand where each dining experience is exceptional, ranging from luxurious ambiance to the quality of the cuisine, creating unforgettable memories for our customers.

Our core values:

- **Quality at the Forefront:** We prioritize the quality of food and service, ensuring that every customer undergoes the finest culinary experience.
- **Innovation and Diversity:** Foodie is dedicated to introducing fresh and diverse creations in each dish, placing special emphasis on merging traditional flavors with contemporary culinary trends.

- **Warm and Creative Space:** Our restaurant is designed not only to serve meals but also to provide a space where customers can relax and enjoy a comfortable, creative atmosphere.
- **Emphasis on Experience:** Every step into Foodie is an adventure in gastronomy, where customers immerse themselves in an elegant environment and savor diverse culinary delights.
- **Heartfelt and Authentic Communication:** We consistently listen to and respect customer opinions, fostering genuine and long-lasting relationships with our food-loving community.

4.3 Market analysis:

4.3.1 Overview of the market:

According to the report from iPOS.vn, the estimated scale of the culinary business market in Vietnam in 2022 reached nearly 610 trillion VND, with 333.69 trillion VND coming from the take-out market. Ho Chi Minh City possesses the highest number of eateries, accounting for 39.78% of the total nationwide, nearly three times more than Hanoi, the second-ranking city.

The market for Western cuisine restaurants in Ho Chi Minh City is considered to have significant potential, with a stable growth rate in recent years. According to the report from the Business Association of International Integration, the consumption market share of Western food among Vietnamese people constitutes approximately 35% of revenue, driven by foreign brands and franchise agreements.

4.3.2 Driving factors:

Several factors contribute to the development of the market for Western cuisine restaurants in Ho Chi Minh City, including:

- The increasing middle and upper-class population in Vietnam with higher income levels and spending capacity for premium services.
- The process of international economic integration and cultural convergence between Vietnam and Western countries.
- The growth of the tourism industry, attracting a rising number of international tourists to Vietnam.

4.3.3 Market segments:

The market for Western cuisine restaurants in Ho Chi Minh City can be segmented into the following categories:

- Fast food: This is the largest segment, including brands such as KFC, McDonald's, Pizza Hut, The Pizza Company, etc. Restaurants in this segment typically offer affordable prices, catering to a broad customer base.
- Premium cuisine: This segment includes restaurants serving traditional Western dishes or creatively unique and distinctive dishes. Restaurants in this category usually have higher prices, targeting customers with higher income levels or a passion for Western cuisine.
- Fusion cuisine: This rapidly growing segment involves restaurants combining Western cuisine with local ingredients or flavors. Restaurants in this category offer diners novel and unique culinary experiences.

4.3.4 Competitive analysis:

KFC	
Product description	KFC's menu primarily focuses on traditional American dishes, including fried chicken, hamburgers, pizza, and chicken rice. KFC utilizes a special fried chicken recipe, creating a flavorful and crispy texture.
Advantages	<ul style="list-style-type: none">- Well-known brand: KFC is a globally renowned fast-food brand with over 25,000 restaurants in more than 140 countries and territories. This global recognition gives KFC an advantage in brand awareness, attracting potential customers.- Consistent product quality and service: KFC places a strong emphasis on product quality and service, ensuring the delivery of the best possible customer experiences.- Extensive distribution network: KFC has a widespread network of restaurants in Vietnam, providing convenient access for customers.- Effective marketing operations: KFC employs effective marketing strategies to promote the brand and attract customers.

Disadvantages	<ul style="list-style-type: none"> - Higher prices compared to local restaurants: As an international brand, KFC's product prices are often higher than those of local restaurants, which may limit its appeal to some customers. - Limited menu diversity: KFC's menu primarily focuses on traditional American dishes, which may not cater to the preferences of all customers. - Service may not align with vietnamese tastes: Being an international brand, KFC's service may not entirely align with the tastes of Vietnamese customers. For example, the use of many spices may not suit Vietnamese preferences.
Competitive strategy	<ul style="list-style-type: none"> - Focus on product quality and service: KFC consistently emphasizes product quality and service, ensuring the delivery of the best customer experiences through the use of fresh ingredients, special recipes, and professional staff training. - Development of new products and services: KFC regularly introduces new products and services to meet the increasingly diverse needs of customers. For example, the introduction of breakfast items and vegetarian options. - Enhanced marketing activities: KFC implements effective marketing strategies, regularly organizing promotional events and advertising through various media channels.
Competitive intensity	Low

Table 2: Indirect competitive analysis – KFC

El Gaucho	
Product description	El Gaucho's menu predominantly focuses on various steak dishes, including beef steak, lamb steak, pork steak, etc. The beef at El Gaucho is imported from Australia, the United States, and Japan, ensuring high quality. The restaurant offers a variety of steak options, with prices ranging from 400,000 VND to 2,000,000 VND. In addition to steaks, El Gaucho also serves other Western dishes such as pasta, salad, pizza, and has a dedicated menu for children.

Advantages	<ul style="list-style-type: none"> - Premium meat quality: El Gaucho is renowned for using high-quality beef and special grilling techniques, creating delicious and sophisticated meals. - Luxurious ambiance: The restaurant creates a luxurious, warm ambiance suitable for family meals and important events. - Argentina auténtico experience: El Gaucho provides customers with an authentic culinary experience from Argentina through unique service and ambiance.
Disadvantages	<ul style="list-style-type: none"> - High prices: The prices of El Gaucho's dishes are relatively high, catering to a higher-income customer base. - Limited menu diversity: El Gaucho's menu mainly focuses on steak dishes and lacks diversity compared to other Western restaurants.
Competitive strategy	<ul style="list-style-type: none"> - Focus on product quality: El Gaucho emphasizes product quality, using premium ingredients and special cooking methods. - Create a luxurious space: El Gaucho establishes a luxurious and cozy space suitable for gatherings and dates. - Provide attentive service: Professional and attentive staff provide special care to customers, contributing to their satisfaction and loyalty.
Competitive intensity	High

Table 3: Indirect competitive analysis – El Gaucho

Le Resto	
Product description	Le Resto's menu primarily emphasizes traditional French dishes, including soups, salads, appetizers, main courses, desserts, etc. The restaurant uses fresh ingredients imported from France and other European countries.

Advantages	<ul style="list-style-type: none"> - Diverse and creative menu: Le Resto is known for offering a diverse and creative menu, providing many choices for customers. - Friendly and creative space: The restaurant creates a warm and creative space, offering a convenient environment for enjoying European-style meals. - Quality ingredients: Le Resto focuses on the quality of ingredients, ensuring that every dish is prepared from the finest fresh ingredients.
Disadvantages	<ul style="list-style-type: none"> - Higher than average prices: The prices at Le Resto may be considered higher than some competitors, potentially posing challenges for certain customer segments. - Waiting time: Due to popularity and service quality, there may be waiting times during peak hours. - Reduced service capacity during peak hours: During busy hours, the restaurant's service capacity may decrease, affecting the customer experience.
Competitive strategy	<ul style="list-style-type: none"> - Quality and customer experience: Le Resto competes by maintaining high quality in both food and customer service, creating a unique and enjoyable dining experience. - Online advertising strategy: Utilize online advertising strategies to enhance brand awareness and attract customers through social media platforms and the website. - Special promotions and events: Organize special promotions and events to attract new customers and retain existing ones.
Competitive intensity	High

Table 4: Indirect competitive analysis – Le Resto

4.3.5 Customer segmentation:

Demographic criteria:

- Age: Customers of high-end Western cuisine restaurants in Ho Chi Minh City are typically aged between 25 and 45, individuals with high income, a passion for Western cuisine, and a desire to experience premium dishes.
- Gender: Restaurant customers are primarily male, constituting approximately 60%.

- Occupation: Restaurant patrons are often professionals, such as businessmen, experts, and individuals with high-level occupations.
- Income: Customers of the restaurant usually have a high income, ranging from 50 million VND and above.
- Geography: Restaurant customers are concentrated in central areas of the city, where there is a higher concentration of individuals with high income.

Behavioral criteria:

- Usage frequency: Customers of the restaurant typically use the services 1 to 2 times per month.
- Usage level: Restaurant customers usually opt for high-end dishes with higher price points.
- Usage nature: Customers of the restaurant typically use the services for dining, socializing with friends, and meeting business associates.

Psychological criteria:

- Attitude towards cuisine: Customers of the restaurant have a positive attitude towards Western cuisine, enjoying unique and exotic dishes.
- Desire for experience: Restaurant customers have a desire to experience premium dishes prepared from fresh and high-quality ingredients.
- Self-expression needs: Customers of the restaurant have a need to express themselves through the use of premium products and services.

4.3.6 Business model:

Business model objective: To furnish high-end Western cuisine, meticulously crafted from fresh, delectable, and quality ingredients, at reasonable prices, aiming to meet the demands of high-income customers with an affinity for Western cuisine and a desire for a premium dining experience.

Target customers: The restaurant focuses on a segment of customers with high income, ranging from 50 million VND and above, aged between 25 and 45, who appreciate Western cuisine and seek a high-end culinary experience.

Products and services: Providing high-end Western cuisine, prepared from fresh and high-quality ingredients. Additionally, the restaurant offers complementary services such as:

- Luxurious and cozy ambiance: The restaurant is designed with a luxurious and cozy ambiance, suitable for occasions like romantic dates, social gatherings with friends, and business meetings.
- Attentive and dedicated service: The restaurant's staff is systematically trained, professional, and always ready to serve customers attentively.
- Marketing strategy: The restaurant implements effective marketing activities to promote the brand and attract customers, including:
 - + Online marketing: Establishing a website to promote the brand and introduce products and services.
 - + Social media marketing: Utilizing social media platforms such as Facebook, Instagram, etc., to connect with customers and promote the brand.
- Financial operations: The restaurant employs a profit-oriented business model. Sources of revenue include:
 - + Revenue from sales: Income generated from the sale of dishes and services.
 - + - Revenue from other activities: Income from activities such as venue rental and event organization

Costs: The restaurant's costs encompass:

- Raw material costs: Expenditure on purchasing ingredients for preparing dishes.
- Labor costs: Employee salary expenses.
- Lease costs: Expenditure on renting premises for business operations.
- Management costs: Expenditure associated with restaurant management.

4.3.7 Business strategy:

Objectives to achieve:

- Product quality:
 - + *Objective:* Ensure that every dish from Foodie restaurant meets high-quality standards, using fresh ingredients and serving customers with the right flavor profile.
 - + *Measurement metrics:* Regularly evaluate the quality of ingredients, train restaurant staff in cooking techniques, and customer service.
- Production costs:

- + *Objective:* Maintain reasonable production costs to ensure competitive pricing in the market.
- + *Measurement metrics:* Implement careful cost control, optimize the production process, and consider material recycling where possible.

Product strategy content: Brand:

- Product branding strategy:
 - + *Foodie brand:* A prestigious and sophisticated brand, combining unique ambiance with high-quality products.
 - + *Unique selling proposition:* Focus on menu diversity and innovation, creating a distinctive culinary experience that sets Foodie apart from competitors.
- Support services:
 - + *Professional customer service:* Emphasis on professional customer service, from online ordering processes to the in-restaurant dining experience.
 - + *New product development:* Continuously research and develop new menu items, aligning with market trends and customer preferences, while maintaining beloved classic dishes.
- Unique selling points:
 - + *Exclusive recipe preparation:* Foodie incorporates input from culinary experts to create unique, exclusive dishes with distinct flavors.
 - + *Ingredient quality:* Use high-quality, fresh ingredients to ensure the taste and quality of the dishes.
 - + *Creative atmosphere:* Innovative interior design providing a unique and comfortable culinary experience.
- Support services:
 - + *Online ordering system:* Provide a convenient and swift online ordering system to enhance the customer experience.
 - + *Customer care:* Maintain a team of professional customer service staff ready to address all customer needs.
- New product development:
 - + *Market research:* Continuously monitor market trends and gather customer feedback to identify potential new dishes.
 - + *Innovation in the kitchen:* Collaborate with chefs to develop new, creative, and unique dishes that cater to the diverse tastes of customers.

4.3.8 Competitive advantages:

- Diverse and innovative menu: Foodie takes pride in offering a diverse menu, ranging from exquisite pasta to delicious pizzas and flavorful steaks. Continuous innovation in developing new dishes ensures that the menu remains fresh and enticing for customers.
- Quality ingredients and professional chef team: Utilizing high-quality, fresh ingredients in conjunction with a professional chef team, Foodie ensures that every dish not only tastes delicious but also meets customers' expectations regarding quality.
- Creative and cozy interior space: Foodie's interior space is creatively designed, creating a warm and comfortable ambiance. This not only enhances the dining experience but also provides a convenient environment for customers to relax and enjoy their meals.
- Flexible online ordering system: Foodie has invested in a convenient online ordering system, making it easy for customers to place orders and receive prompt services. This enhances the online shopping experience and convenience for customers.
- Unique brand with culinary cultural integration: Foodie is more than just a restaurant; it is a unique culinary experience. The brand is built on integrating culinary culture into each dish, creating a distinctiveness that resonates with customers.
- Customer-centric care: The Foodie staff is always ready to assist and address every customer's need, creating an environment of sincere and dedicated service. This customer-centric approach contributes to a thoughtful and attentive dining experience.

4.4 The purpose of this software:

The primary purpose of this software is to develop a comprehensive web application for Foodies Bistro Garden, catering to both customers and administrators. The application is designed to streamline the restaurant's operations, providing customers with a user-friendly platform for placing orders and reserving tables while offering administrators efficient tools for managing products, categories, orders, and reservations.

This initiative not only serves the immediate needs of the restaurant but also acts as a practical learning experience for the team to acquire fundamental skills in web development using PHP.

4.5 Product perspective:

Overview:

The Foodies Bistro Garden website application aims to provide a seamless and user-

friendly platform for customers to place orders and reserve tables at the restaurant. Simultaneously, it empowers administrators to efficiently manage products, categories, orders, and reservations.

System Architecture:

The system comprises a customer-facing web application for order placement and table reservations, while the admin interface allows for comprehensive management of the restaurant's offerings and operations.

4.6 Scope of Foodies Bistro Garden website:

Foodies Bistro & Garden website has various features listed below:

* Customer Side:

- Login and Register.
- Product quantity increment/decrement before adding to cart.
- Add to Cart
- Add to Cart with product quantity increment/decrement from the cart
- Remove product from the cart
- Add to Wishlist
- Remove product from the Wishlist
- Checkout information validation before placing order
- Checkout Page
- Reservation
- Multiple payment option during checkout – PayPal Cash on Delivery MOMO
- View orders and order status
- View and edit profile information (User's image, name, phone, password)
- View reservation and reservation status

* Admin Side:

- Category CRUD
- Product CRUD
- Control the visibility of product and category (Hide/Show)
- All Statistics on Dashboard (see total product added, Total customer registered, Revenue and Total messages)
- View Order and Order items

- Update Order Status
- View Reservation and Reservation details
- Update Reservation status

5 TECHNOLOGY:

5.1 HTML:

5.1.1 Introduction:

HTML, or Hypertext Markup Language, is a markup language for the web that defines the structure of web pages. HTML possesses two fundamental characteristics:

- **Hypertext:** Enabling the creation of links within a webpage, facilitating access to information from various directions through hyperlinks.
- **Universality:** All web browsers are capable of interpreting data in the HTML format.

5.1.2 Basic components of HTML:

Tag: A tag is a set of symbols defined in HTML with a specific purpose. A tag begins with "<," followed by a keyword with formatting, and ends with the ">" character. The tag dictates the data to be displayed on the webpage.

Example:

- The tag specifies bold text.
- The <I> tag formats text in italics.
- The <TITLE> tag sets the title for the webpage.
- The <HTML> tag initiates a webpage.
- The <P> tag marks the beginning of a text paragraph.

There are two types of tags: opening and closing. The affected data lies between the opening and closing tags. The closing tag is similar to the opening tag but includes a "/" before the tag name.

Example: <TITLE>Introduction</TITLE>.

Structure of an HTML File:

- Every webpage begins with the <HTML> tag and concludes with the </HTML> tag. Most webpages are divided into two parts: the head and the body.

- The head specifies the title, with the title content enclosed between <TITLE> and </TITLE> tags, and the head is encompassed by <HEAD> and </HEAD> tags.
- The body contains the main content of the webpage, providing essential information to the web browser, and is enclosed by <BODY> and </BODY> tags.

5.1.3 Basic HTML Tags:

- <a> for link.
- to make bold text.
- for bold text with emphasis.
- <body> main HTML part.
-
 for break.
- <div> it is a division or part of an HTML document.
- <h1>... for titles.
- <i> to make an italic text.
- for images in document.
- is an ordered list, for an unordered list.
- is a list item in bulleted (ordered list).
- <p> for paragraph.
- to style part of text.

5.2 CSS:

5.2.1 Introduction:

Cascading Style Sheets (CSS) is a stylesheet language used to describe the presentation of a document written in HTML or XML (including XML dialects such as SVG, MathML or XHTML). CSS describes how elements should be rendered on screen, on paper, in speech, or on other media.

5.2.2 Inline Style Sheet:

The formatting attributes are directly placed within the tag using the style attribute.

Syntax:

```
style="attribute 1: value; attribute 2: value"
```

5.2.3 Embedding Style Sheet:

Formatting attributes are defined on the same page using CSS.

Syntax:

```
Tag name {  
    Attribute: value;  
    Attribute: value;  
}
```

5.2.4 External Style Sheet:

CSS is placed in a file with the extension ".css."

Syntax:

```
<head>  
<link rel="stylesheet" href="URL" type="text/css">  
</head>
```

5.2.5 Selector Placement:

Type, class, and ID selectors:

Type selectors target an HTML element such as an `<h1>`:

```
h1 {  
}
```

Class selectors target an element that has a specific value for its class attribute:

```
box {  
}
```

ID selectors target an element that has a specific value for its id attribute:

```
#unique {  
}
```

Attribute selectors:

This group of selectors gives you different ways to select elements based on the presence of a certain attribute on an element:

```
a[title] {  
}
```

Or even make a selection based on the presence of an attribute with a particular value:

```
a[href="https://example.com"] {  
}
```

Pseudo-classes and pseudo-elements:

This group of selectors includes pseudo-classes, which style certain states of an element. The `:hover` pseudo-class for example selects an element only when it is being hovered over by the mouse pointer:

```
a:hover {  
}
```

It also includes pseudo-elements, which select a certain part of an element rather than the element itself. For example, `::first-line` always selects the first line of text inside an element (a `<p>` in the below case), acting as if a `` was wrapped around the first formatted line and then selected.

```
p::first-line {  
}
```

Combinators:

The final group of selectors combine other selectors in order to target elements within our documents. The following, for example, selects paragraphs that are direct children of `<article>` elements using the child combinator (`>`):

```
article > p {  
}
```

5.3 Bootstrap:

Bootstrap is a powerful front-end framework that streamlines the process of designing responsive and visually appealing websites. It provides a collection of pre-built CSS and JavaScript components, making it easy to create a consistent and mobile-friendly user interface. Bootstrap enables developers to create responsive layouts and ensures a seamless experience across various devices and screen sizes.

5.4 JavaScript and JQuery:

5.4.1 Introduction:

JavaScript is a scripting or programming language that allows you to implement complex features on web pages — every time a web page does more than just sit there and display static information for you to look at — displaying timely content updates, interactive maps, animated 2D/3D graphics, scrolling video jukeboxes, etc. — you can bet that JavaScript is probably involved. It is the third layer of the layer cake of standard web technologies, two of which (HTML and CSS) we have covered in much more detail in other parts of the Learning Area.

jQuery is a fast, small, and feature-rich JavaScript library. It makes things like HTML document traversal and manipulation, event handling, animation, and Ajax much simpler with an easy-to-use API that works across a multitude of browsers. With a combination of versatility and extensibility, jQuery has changed the way that millions of people write JavaScript.

5.4.2 Variables, Data Types, and Syntax of JavaScript

Variable naming syntax:

```
var <variablename>
```

JavaScript provides the following data types:

- String
- Bigint
- Boolean
- Undefined
- Null
- Symbol
- Object

Conditional Statement Structure:

- if
- if()... else
- switch()

Looping Statement Structure:

- for()
- while()
- do... while()
- for...in
- with

Function: Begins with the keyword "function". To return the value of the function, use the "return" statement.

5.4.3 JQuery Command Syntax:

The jQuery syntax is tailor-made for selecting HTML elements and performing some action on the element(s).

Basic syntax:

`\$(selector).action()`

- A \$ sign to define/access jQuery.
- A (selector) to "query (or find)" HTML elements.
- A jQuery action() to be performed on the element(s).

5.5 PHP:

5.5.1 Introduction:

PHP (Hypertext Preprocessor) is a server-side scripting language commonly used in web development. It facilitates the creation of dynamic web pages by processing data on the server before sending it to the client's browser. PHP is known for its ease of integration with databases and is often used to build robust and scalable web applications. It plays a crucial role in server-side logic and enables the creation of dynamic and data-driven web content.

5.5.2 PHP rules:

The following list gives an overview of which rights the PHP project reserves for itself, when choosing names for new internal identifiers.

- PHP owns the top-level namespace but tries to find decent descriptive names and avoid any obvious clashes.
- Function names use underscores between words, while class names use both the camelCase and PascalCase rules.
- PHP will prefix any global symbols of an extension with the name of the extension. (In the past, there have been numerous exceptions to this rule.) Examples:
 - + Curl_close()
 - + Mysql_query()
 - + PREG_SPLIT_DELIM_CAPTURE
 - + new DOMDocument()
 - + strpos() (example of a past mistake)
 - + new SplFileObject()
- Iterators and Exceptions are however simply postfixed with "Iterator" and "Exception."
- PHP reserves all symbols starting with `_` as magical. It is recommended that you do not create symbols starting with `_` in PHP unless you want to use documented magical functionality.

5.5.3 Data Types in PHP:

- bool: a value that's either true or false.
- int: a whole number value.
- float: a numeric value with decimal.
- string: a series of characters.
- array: an ordered map of key/value pairs.
- object: an instance of a pre-defined class.
- callable: a reference to a PHP function.
- iterable: represents any array or object implementing the Traversable interface.
- resource: a reference to an external resource.
- NULL: represents a variable with no value.

5.5.4 Operators in PHP:

PHP Arithmetic Operators

Operator	Name	Example
+	Addition	<code>\$x + \$y</code>
-	Subtraction	<code>\$x - \$y</code>
*	Multiplication	<code>\$x * \$y</code>
/	Division	<code>\$x / \$y</code>
%	Modulus	<code>\$x % \$y</code>
**	Exponentiation	<code>\$x ** \$y</code>

Figure 5.5.1: PHP Arithmetic Operators

PHP Assignment Operators

Assignment	Same as...	Description
<code>x = y</code>	<code>x = y</code>	The left operand gets set to the value of the expression on the right
<code>x += y</code>	<code>x = x + y</code>	Addition
<code>x -= y</code>	<code>x = x - y</code>	Subtraction
<code>x *= y</code>	<code>x = x * y</code>	Multiplication
<code>x /= y</code>	<code>x = x / y</code>	Division
<code>x %= y</code>	<code>x = x % y</code>	Modulus

Figure 5.5.2: PHP Assignment Operators

PHP Comparison Operators

Operator	Name	Example	Result
<code>==</code>	Equal	<code>\$x == \$y</code>	Returns true if <code>\$x</code> is equal to <code>\$y</code>
<code>===</code>	Identical	<code>\$x === \$y</code>	Returns true if <code>\$x</code> is equal to <code>\$y</code> , and they are of the same type
<code>!=</code>	Not equal	<code>\$x != \$y</code>	Returns true if <code>\$x</code> is not equal to <code>\$y</code>
<code><></code>	Not equal	<code>\$x <> \$y</code>	Returns true if <code>\$x</code> is not equal to <code>\$y</code>
<code>!==</code>	Not identical	<code>\$x !== \$y</code>	Returns true if <code>\$x</code> is not equal to <code>\$y</code> , or they are not of the same type
<code>></code>	Greater than	<code>\$x > \$y</code>	Returns true if <code>\$x</code> is greater than <code>\$y</code>
<code><</code>	Less than	<code>\$x < \$y</code>	Returns true if <code>\$x</code> is less than <code>\$y</code>
<code>>=</code>	Greater than or equal to	<code>\$x >= \$y</code>	Returns true if <code>\$x</code> is greater than or equal to <code>\$y</code>
<code><=</code>	Less than or equal to	<code>\$x <= \$y</code>	Returns true if <code>\$x</code> is less than or equal to <code>\$y</code>
<code><=></code>	Spaceship	<code>\$x <=> \$y</code>	Returns an integer less than, equal to, or greater than zero, depending on if <code>\$x</code> is less than, equal to, or greater than <code>\$y</code> . Introduced in PHP 7.

Figure 5.5.3: PHP Comparison Operators

PHP Increment / Decrement Operators

Operator	Name	Description
<code>++\$x</code>	Pre-increment	Increments \$x by one, then returns \$x
<code>\$x++</code>	Post-increment	Returns \$x, then increments \$x by one
<code>--\$x</code>	Pre-decrement	Decrements \$x by one, then returns \$x
<code>\$x--</code>	Post-decrement	Returns \$x, then decrements \$x by one

Figure 5.5.4: PHP Increment / Decrement Operators

PHP Logical Operators

Operator	Name	Example	Result
<code>and</code>	And	<code>\$x and \$y</code>	True if both \$x and \$y are true
<code>or</code>	Or	<code>\$x or \$y</code>	True if either \$x or \$y is true
<code>xor</code>	Xor	<code>\$x xor \$y</code>	True if either \$x or \$y is true, but not both
<code>&&</code>	And	<code>\$x && \$y</code>	True if both \$x and \$y are true
<code> </code>	Or	<code>\$x \$y</code>	True if either \$x or \$y is true
<code>!</code>	Not	<code>!\$x</code>	True if \$x is not true

Figure 5.5.5: PHP Logical Operators

PHP String Operators

Operator	Name	Example	Result
<code>.</code>	Concatenation	<code>\$txt1 . \$txt2</code>	Concatenation of \$txt1 and \$txt2
<code>.=</code>	Concatenation assignment	<code>\$txt1 .= \$txt2</code>	Appends \$txt2 to \$txt1

Figure 5.5.6: PHP String Operators

PHP Array Operators

Operator	Name	Example	Result
+	Union	<code>\$x + \$y</code>	Union of <code>\$x</code> and <code>\$y</code>
<code>==</code>	Equality	<code>\$x == \$y</code>	Returns true if <code>\$x</code> and <code>\$y</code> have the same key/value pairs
<code>====</code>	Identity	<code>\$x === \$y</code>	Returns true if <code>\$x</code> and <code>\$y</code> have the same key/value pairs in the same order and of the same types
<code>!=</code>	Inequality	<code>\$x != \$y</code>	Returns true if <code>\$x</code> is not equal to <code>\$y</code>
<code><></code>	Inequality	<code>\$x <> \$y</code>	Returns true if <code>\$x</code> is not equal to <code>\$y</code>
<code>!==</code>	Non-identity	<code>\$x !== \$y</code>	Returns true if <code>\$x</code> is not identical to <code>\$y</code>

Figure 5.5.7: PHP Array Operators

PHP Conditional Assignment Operators

Operator	Name	Example	Result
<code>?:</code>	Ternary	<code>\$x = expr1 ? expr2 : expr3</code>	Returns the value of <code>\$x</code> . The value of <code>\$x</code> is <code>expr2</code> if <code>expr1 = TRUE</code> . The value of <code>\$x</code> is <code>expr3</code> if <code>expr1 = FALSE</code>
<code>??</code>	Null coalescing	<code>\$x = expr1 ?? expr2</code>	Returns the value of <code>\$x</code> . The value of <code>\$x</code> is <code>expr1</code> if <code>expr1</code> exists, and is not NULL. If <code>expr1</code> does not exist, or is NULL, the value of <code>\$x</code> is <code>expr2</code> . <i>Introduced in PHP 7</i>

Figure 5.5.8: PHP Conditional Assignment Operators

5.5.5 PHP Conditional Statements:

In PHP we have the following conditional statements:

- If statement - executes some code if one condition is true.

- If...else statement - executes some code if a condition is true and another code if that condition is false.
- If...else if...else statement - executes different codes for more than two conditions.
- Switch statement - selects one of many blocks of code to be executed.

5.6 MySQLi:

MySQLi (MySQL Improved) is a PHP extension specifically designed for interacting with MySQL databases. It provides an object-oriented interface, enhancing the security and performance of database operations. MySQLi enables developers to execute queries, retrieve data, and manage database connections within PHP applications. It is a crucial component for storing and retrieving data in web applications, ensuring efficient and secure database interactions.

6 FOODIES BISTRO & GARDEN

6.1 Non-Functional Requirements:

6.1.1 Performance:

- Fast Page Loading: The website needs to be optimized for fast loading and quick responsiveness to provide a good user experience.

6.1.2 Security:

- Data Encryption: This requirement is out of scope for this project.
- Authentication and Authorization: User authentication must be secure and include role-based access controls, limiting access to specific functionalities based on user roles (admin, customer).
- SQL Injection Prevention: Implement measures, such as parameterized queries and input validation, to prevent SQL injection attacks and ensure the security of the database.

6.1.3 Scalability:

This requirement is out of scope for this project.

6.2 Functional Requirements:

6.2.1 List of Requirements:

ID	Name of requirement	Priority	Diagram	Test case
----	---------------------	----------	---------	-----------

R-01	The user shall be able to login to access their personalized information	Critical		
R-02	The user shall be able to logout of their account	Critical		
R-03	The user shall be able to register	Critical		
R-04	The user shall be able to delete their account	Low		
R-05	The user shall be able to manage wishlist			
R-05.1	The user shall be able to view their wishlist	Low		
R-05.2	The user shall be able to add product to their wishlist	Low		
R-05.3	The user shall be able to remove product from their wishlist	Low		
R-06	The user shall be able to contact admin	Medium		
R-07	The user shall be able to manage shopping cart			
R-07.1	The user shall be able to view their shopping cart	Critical		
R-07.2	The user shall be able to add product to their shopping cart	Critical		
R-07.3	The user shall be able to remove product from their shopping cart	Critical		
R-07.4	The user shall be able to modify the product quantity	Critical		
R-08	The user shall be able to manage profile			
R-08.1	The user shall be able to view their profile information	Critical		
R-08.2	The user shall be able to update their profile	Medium		
R-08.3	The user shall be able to update their password	Medium		

R-09	The user shall be able to checkout	Critical		
R-10	The user shall be able to make purchase	Critical		
R-11	The user shall be able to view product	Critical		
R-12	The user shall be able to search for product	High		
R-13	The user shall be able to view webstore information	Critical		
R-14	The user shall be able to make reservation	High		
R-15	The user shall be able to manage message			
R-15.1	The user shall be able to view message	Medium		
R-15.2	The user shall be able to delete message	Low		
R-15.3	The user shall be able to reply to message	Low		
R-16	The user shall be able to manage order			
R-16.1	The user shall be able to view all orders	Critical		
R-16.2	The user shall be able to view order details	Critical		
R-16.3	The user shall be able to update order status	Critical		
R-17	The user shall be able to manage category			
R-17.1	The user shall be able to create category	Critical		
R-17.2	The user shall be able to view category	Critical		
R-17.3	The user shall be able to delete category	Critical		
R-17.4	The user shall be able to update category	Critical		

R-18	The user shall be able to manage product			
R-18.1	The user shall be able to create product	Critical		
R-18.2	The user shall be able to view product	Critical		
R-18.3	The user shall be able to delete product	Critical		
R-18.4	The user shall be able to update product	Critical		
R-19	The user shall be able to manage customer account			
R-19.1	The user shall be able to view all customer accounts	Medium		
R-19.2	The user shall be able to view customer account's details	Low		
R-19.3	The user shall be able to update customer account's status	Low		
R-20	The user shall be able to view statistic			
R-20.1	The user shall be able to view total customers	Medium		
R-20.2	The user shall be able to view total products	Medium		
R-20.3	The user shall be able to view total revenue	Medium		
R-20.4	The user shall be able to view total categories	Low		
R-20.5	The user shall be able to view total active products	Low		
R-20.6	The user shall be able to view total deactived products	Low		
R-20.7	The user shall be able to view total trending products	Low		
R-20.8	The user shall be able to view total cancelled orders	Low		
R-20.9	The user shall be able to view total completed orders	Low		

R-21	The user shall be able to manage reservation			
R-21.1	The user shall be able to create reservation	High		
R-21.2	The user shall be able to view reservation	High		
R-21.3	The user shall be able to update reservation	High		

Table 5: Table of Requirements

6.2.2 Requirements Detail

R-01. The user shall be able to login to access their personalized information:

- Both customer and admin can login.
- Only registered user can login.
- User fill in their email and password then press “Login” button.
- In the event of clicking the “Login” command button, the system shall validate the entered email and check if Email and Password match with an active account in the system
- Customer side:
 - + If the entered email and password is valid, navigate to Home page and display message: “Logged in”
 - + If the entered email is invalid, display the following error message: “Hey! invalid.”
 - + If the password is not correct, display the following error message: “Hey! Invalid.”
- Admin side:
 - + If the entered Email and Password is valid, navigate to admin dashboard page and display message: “Welcome to dashboard”
 - + If the entered email is invalid, display the following error message: “Hey! invalid.”
 - + If the password is not correct, display the following error message: “Hey! Invalid.”

R-02. The user shall be able to logout of their account:

- Both customer and admin can logout.
- User must login to logout.
- The system will show notification “Logged out” when user log out.

R-03. The user shall be able to register:

- Only customers can register accounts.
- The administration account is hand-coded and provided by the developer.
- In the event of clicking the “Submit” command button, the system shall perform following validation:
 - + All required data is entered.
 - + All entered data is valid.
 - + The email is not already registered.
 - + The re-entered password matches the entered password.
 - + Passwords must contain at least 8 characters, including one uppercase letter, one lowercase letter, one number, and one special character.
- Upon successful validation, a new user account is created but remains unverified.
- The system displays a notification: "Hey! An email has been sent. Please check your email."
- The email's content:
 - + Subject: Email Verification from Foodies
 - + Body:
 - You have Registered with Foodies
 - Verify your email address to Login with the below given link
 - Click me
- After opening the email and clicking the verification link, the link doesn't have expired time, the user account is verified, and the user is redirected to the login page with a notification of “Hey! Your Account has been verified successfully!!.” for further login.
- If validation fails, the system displays corresponding error messages:
 - + If required data is not entered: “Please fill out this field”.

- + If the entered email is not valid:
 - If the email is missing '@': "Please include an '@' in the email address. <email> is missing an '@'."
 - If the email is missing the following part after '@': "Please enter a part following '@'. <email> is incomplete."
 - If the email is not real: The system will navigate the customer to a new page and display "Message could not be sent. Mailer Error: Invalid address: (to): <email>"
- + If the password does not match the specified format: "Please match the requested format. Password must contain at least 8 characters, one uppercase letter, one lowercase letter, one number, and one special character".
- + If the email is not unique: "Hey! Email has already existed."
- + If the confirm password does not match with the entered password: "Hey! Password do not match."

R-04. The user shall be able to delete their account:

- Only logged in customers can delete their accounts.
- Customers click on their name on the nav bar; a dropdown menu will appear.
- Customers click on the "My Profile" hyperlink to navigate to the "My Profile" page, customers click on "Update Profile" command button, the system will navigate the user to Update Profile page.
- Customers click on "Delete account", the system will pop up a warning "Are you sure to delete the account?". Customers click "Yes" if they want to process, click "No" if they want to cancel the process.

R-05. The user shall be able to manage wishlist:

- Only logged in customers can manage their wishlist.

R-05.1. The user shall be able to view their wishlist:

- Customers click on the "Wishlist" hyperlink on the nav bar to navigate to the wishlist page and view their wishlist.
- If there is no product in the wishlist, the system will show: "No data available".

R-05.2. The user shall be able to add product to their wishlist:

- Customers click on a product to navigate to its specific detail page, and then click on the "Add to Wishlist" button to add the product to their wishlist:

- + If the product isn't in the wishlist: The system will show the notification "Product added to the wishlist."
- + If the product is already in the wishlist: The system will show the notification "Product already in the wishlist."

R-05.3. The user shall be able to remove product from their wishlist:

- Customers click on the trash bin icon to remove the product from their wishlist. The system will show notification "Product removed from wishlist".

R-06. The user shall be able to contact admin

- Only customers can contact the admin.
- Customers don't need an account to contact the admin.
- Customers click on the "Contact Us" hyperlink to navigate to the Contact Us page.
- Customers fill in these following field:
 - + First name
 - + Last name
 - + Email
 - + Message
- Customers click on the "Send now" command button to send the message.
- In the event of clicking the "Submit" command button, the system shall perform the following validation:
 - + All required data is entered.
 - + The email must be valid:
 - If the email is missing @: "Please include an '@' in the email address. <email> is missing an '@'."
 - If the email is missing the following part after '@': "Please enter a part following '@'. <email> is incomplete."

R-07. The user shall be able to manage shopping cart:

- Only logged in customers can manage their shopping cart.

R-07.1. The user shall be able to view their shopping cart

- Customers click on the "Cart" hyperlink on the nav bar to navigate to the cart page and view their shopping cart.

- If there is no product in the cart, the system will show: "Your cart is empty".

R-07.2. The user shall be able to add product to their shopping cart:

- Customers click on a product to navigate to its specific detail page, and then click on the "Add to Cart" button to add the product to their shopping cart.
 - + If the product isn't in the shopping cart: The system will show the notification "Product added to the cart."
 - + If the product is already in the shopping cart: The system will show the notification, the quantity of the product will not be updated "Product already in the cart."

R-07.3. The user shall be able to remove product from their shopping cart:

- Customers click on the "Remove" command button to remove the product from their shopping cart. The system will show notification "Product removed from cart".

R-07.4. The user shall be able to modify the product quantity:

- Customers can adjust the quantity of a product by clicking on the plus button to increase it by 1. Similarly, they can click on the minus button to decrease the quantity by 1.
- Customers have the flexibility to modify the quantity either before adding the product to the cart or while the product is already in the shopping cart. This allows them to easily manage and update the desired quantity based on their preferences.

R-08. The user shall be able to manage profile:

- Only logged in users can manage their profile.

R-08.1. The user shall be able to view their profile information:

- Both customers and admin can view their profile information.
- Users click on their name on the nav bar; a dropdown menu will appear.
- Users click on the "My Profile" hyperlink to navigate to the "My Profile" page.
- The "My Profile" page will display:
 - + User image
 - + Username

- + User email
- + User phone number

R-08.2. The user shall be able to update their profile:

- Only customers can update their profile.
- Customers click on “Update Profile” command button, the system will navigate the user to Update Profile page.
- Customers can update their user image, name and phone number.
- Customers click on “Update” command button to update the information, click on “Cancel” command button to cancel the process.

R-08.3. The user shall be able to update their password:

- Only registered customers can update their passwords.
- * On the Login page (Forgot Password):
 - Users click on “Forgot Password”, the system will navigate them to Reset Password page. Users enter the registered email address:
 - + If the entered email is not valid:
 - If the email is missing @: “Please include an ‘@’ in the email address. <email> is missing an ‘@’.”
 - If the email is missing the following part after ‘@’: “Please enter a part following ‘@’. <email> is incomplete.”
 - If the email is not registered: The system will display “Hey! No Email Found.”
 - * Customer’s Email:
 - If the entered email matches a registered email, the system notifies with “Hey! We have sent you a Reset Password email.” and sends an email to the customer with a reset password link to navigate to the Change Password page. The link doesn’t have an expiration time.
 - The email’s content:
 - + Subject: Reset Password Notification
 - + Body:

Hello

You are receiving this email because we received a password reset request for your account

Click me

- Customers fill in the new password field and confirm password field. Once the customer clicks on the “Update Password” command button, the system shall validate the following:
 - + The confirm password matches the entered password. If the confirm password does not match, the system will notify: “Hey! Password do not match.”
 - + Passwords must contain at least 8 characters, including one uppercase letter, one lowercase letter, one number, and one special character.”
- After updating the password successfully, the system will navigate the customer to the Login page to continue with their login process and show this notification: “Hey! New Password Updated Successfully!!”

* Admin’s Email:

- If the entered email belongs to an admin account, the system will notify: “Hey! No Email Found.”

R-09. The user shall be able to checkout

- Only logged in customers can make a purchase.
- The customer clicks on “Checkout” command button on the Cart page:
 - + If there is no product in the cart, the system will navigate the customer to Our Menu page.
 - + If there is at least one product in the cart, the system will navigate the customer to Checkout page.

R-10. The user shall be able to make purchase

- Only logged in customers can make a purchase.
- On the Checkout page, the customer needs to fill in these following fields except for Comments fields:
 - + Name
 - + Phone
 - + Email
 - + District
 - + Ward
 - + House Number
 - + Street Address
 - + Comments

- The user can choose one of these following ways to make a payment:
 - + Cash on Delivery
 - + MOMO
 - + PayPal
 - + Debit or Credit Card
- After the order has been placed successfully, the system will navigate them to My Order page.

R-11. The user shall be able to view product

- Both customers and admin can view product by searching for their name or view by category.

R-12. The user shall be able to search for product

- Both customers and admin can view product by searching for their name or view by category.
 - + If there is a product with matching name, the page will show that product.
 - + If there is not a product with matching name, the page will show “No product found. Please search for another one!”.

R-13. The user shall be able to view webstore information

- Both customers and admin can view webstore information by accessing the website.

R-14. The user shall be able to make reservation

- Only customers can make reservations.
- Customers click on the “Reservation” hyperlink on the nav bar, the system will navigate the user to Reservation page.
- Customers need to fill out all these following fields except for Note:
 - + Name
 - + Adult (how many people)
 - + Phone number
 - + Time
 - + Date
 - + Note
- Once the customer clicks on “Reserve now” button:

- + If all those required fields have been filled out, the system will notify: “Reserved successfully. We will contact with you in a minute!”.
- + If there is a missing field, the system will notify: “Please fill out this field”.

R-15. The user shall be able to manage message

- Only admin can manage message

R-15.1. The user shall be able to view message

- On the Admin Dashboard page, the user clicks on the “Dashboard” hyperlink and the Messages section will be displayed.

R-15.2. The user shall be able to delete message

- The admin clicks on the “Delete” button on the row of the message to delete that specific message.

R-15.3. The user shall be able to reply to message

- The admin will reply to the message through email. This action will be completed by hand.

R-16. The user shall be able to manage order

- Only logged in users can manage order

R-16.1. The user shall be able to view all orders

- Both customers and admin can view all orders

* Customer side:

- Customers click on their name on the nav bar and click on “My Orders” hyperlink.
- The system will navigate them to My Order page:
 - + If there is no order, the page will display: “No order yet”.
 - + If there is, the user can view the list of their orders in a table.

* Admin side:

- The administration clicks on the “Orders” hyperlink, the system will display a table of orders haven’t been confirmed.
- To view Confirmed or Cancelled Orders, admin clicks on the “Order history” command button on Orders page.

R-16.2. The user shall be able to view order details

- Both customers and admin can view order details
- Users click on “View details” command button on a specific row.
- The system will navigate them to View Order Details page.

R-16.3. The user shall be able to update order status

- Only admin can update order status.
- On View Order Details page, admin clicks to change the status (Pending, Completed, Cancelled)
- Then click on “Update Status” command button.
- If the updating is successful, the system will notify “Product updated successfully”
- If the updating is unsuccessful, the system will notify “Something went wrong”.

R-17. The user shall be able to manage category

R-17.1. The user shall be able to create category

- Only logged in admin can create category.
- Admin click on “Add Category” hyperlink, the Add Category page will be displayed.
- Admin needs to fill out all those fields except for Status and Popular:
 - + Name
 - + Slug
 - + Description
 - + Upload Image
 - + Meta Title
 - + Meta Description
 - + Meta Keywords
 - + Status (check to refer visible, otherwise the category will be hidden)
 - + Popular (refer to trending product)

- The admin clicks on “Save” command button to save.
- If there is a missing field, the system will notify “Please fill out this field” otherwise “Category Added Successfully”.

R-17.2. The user shall be able to view category

- All users can view category

- * Customer side:
 - Customer can view category by clicking on the “Our Menu” on the nav bar. The system will display the Menu by category.

- * Admin side:
 - Admin can view category by clicking on the “Our Menu” on the nav bar. The system will display the Menu by category.
 - Admin can view category by clicking on the “All Categories” hyperlink on the side bar, the system will display all the categories in a table in “Categories” page.

R-17.3. The user shall be able to delete category

- Only logged-in admins can delete a category.
- On the "Categories" page, administrators click the “Delete” button on a specific row to delete a particular category. The system will then display a warning: "Are you sure? Once deleted, you will not be able to recover!" The admin can proceed with the deletion process by clicking "OK" or cancel the process by clicking "Cancel."
- If the category is deleted successfully, the system will display a confirmation: "Success! Category Deleted Successfully!" The admin can proceed by clicking "OK" or clicking outside the pop-up to continue their work.
- If an error occurs, the system will notify: "Something went wrong."

R-17.4. The user shall be able to update category

- Only logged-in admins can update a category
- On the "Categories" page, administrators click the “Edit” button on a specific row to edit a particular category. The system will navigate the admin to the Edit Category page, where the user can update the following fields:
 - + Name
 - + Slug
 - + Description
 - + Upload Image
 - + Meta Title
 - + Meta Description
 - + Meta Keywords
 - + Status (check to refer visible, otherwise the category will be hidden)
 - + Popular (refer to trending product)

- After making the updates, the admin clicks on the “Update” command button to update or clicks on the “Cancel” command button to cancel.
- If the category is updated successfully, the system will notify: "Category updated successfully."
- If there is an error, the system will notify: "Something went wrong."

R-18. The user shall be able to manage product

R-18.1. The user shall be able to create product

- Only logged in admin can create category
- Admin click on “Add Category” hyperlink, the Add Category page will be displayed.
- Admin needs to fill out all those fields except for Status and Popular:
 - + Select Category (drop down to choose from)
 - + Name
 - + Slug
 - + Small Description
 - + Description
 - + Original Price
 - + Selling Price
 - + Upload Image
 - + Quantity
 - + Status (check to refer visible, otherwise the category will be hidden)
 - + Trending (refer to trending product)
 - + Meta Title
 - + Meta Description
 - + Meta Keywords
- The admin clicks on “Save” command button to save.
- If there is a missing field, the system will notify “Please fill out this field” otherwise “Product Added Successfully”

R-18.2. The user shall be able to view product

- Referring to R-11.

* Admin side:

- Admin can view products by clicking on the “All Products” hyperlink on the side bar, the system will display all the products in a table in “Products” page.

R-18.3. The user shall be able to delete product

- Only logged-in admins can delete a product.
- On the "Products" page, administrators click the “Delete” button on a specific row to delete a particular category. The system will then display a warning: "Are you sure? Once deleted, you will not be able to recover!" The admin can proceed with the deletion process by clicking "OK" or cancel the process by clicking "Cancel."
- If the product is deleted successfully, the system will display a confirmation: "Success! Product Deleted Successfully!" The admin can proceed by clicking "OK" or clicking outside the pop-up to continue their work.
- If an error occurs, the system will notify: "Something went wrong."

R-18.4. The user shall be able to update product

- Only logged-in admins can update a product.
- On the "Products" page, administrators click the “Edit” button on a specific row to edit a particular product. The system will navigate the admin to the Edit Product page, where the user can update the following fields:
 - + Select Category (drop down to choose from)
 - + Name
 - + Slug
 - + Small Description
 - + Description
 - + Original Price
 - + Selling Price
 - + Upload Image
 - + Quantity
 - + Status (check to refer visible, otherwise the category will be hidden)
 - + Trending (refer to trending product)
 - + Meta Title
 - + Meta Description
 - + Meta Keywords
- After making the updates, the admin clicks on the “Update” command button to update or clicks on the “Cancel” command button to cancel.

- If the product is updated successfully, the system will notify: "Product updated successfully."
- If there is an error, the system will notify: "Something went wrong."

R-19. The user shall be able to manage customer account

- Only logged in admin can manage customer account.

R-19.1. The user shall be able to view all customer accounts

- On the Admin Dashboard page, the user clicks on the “Dashboard” hyperlink and the Customer’s Information section will be displayed.

R-19.2. The user shall be able to view customer account’s details

- Admin can view customer account’s details by clicking on the “View details” command button a specific row. The system will navigate the admin to this Customer Information Details page.

R-19.3. The user shall be able to update customer account’s status

- On Customer Information Details page, admin clicks to change the status (Active, Banned)
- Then click on “Update Status” command button.
- If the updating is successful, the system will notify “Customer Status Updated Successfully”
- If the updating is unsuccessful, the system will notify “Something went wrong”.

R-20. The user shall be able to view statistic

- Only logged in admin can view statistic

R-20.1. The user shall be able to view total customers

- Admin click on “Dashboard” hyperlink, the system will display Total customers section in Admin Dashboard page.

R-20.2. The user shall be able to view total products

- Admin click on “Dashboard” hyperlink, the system will display View total products section in Admin Dashboard page.

R-20.3. The user shall be able to view total revenue

- Admin click on “Dashboard” hyperlink, the system will display View total revenue section in Admin Dashboard page.

R-20.4. The user shall be able to view total categories

- Admin click on “Dashboard” hyperlink, the system will display View total categories section in Admin Dashboard page.

R-20.5. The user shall be able to view total active products

- Admin click on “Dashboard” hyperlink, the system will display View total active products section in Admin Dashboard page.

R-20.6. The user shall be able to view total deactived products

- Admin click on “Dashboard” hyperlink, the system will display View total deactived products section in Admin Dashboard page.

R-20.7. The user shall be able to view total trending products

- Admin click on “Dashboard” hyperlink, the system will display View total trending products section in Admin Dashboard page.

R-20.8. The user shall be able to view total cancelled orders

- Admin click on “Dashboard” hyperlink, the system will display View total cancelled orders section in Admin Dashboard page.

R-20.9. The user shall be able to view total completed orders

- Admin click on “Dashboard” hyperlink, the system will display View total completed orders section in Admin Dashboard page.

R-21. The user shall be able to manage reservation

- Only logged in admin can manage reservation

R-21.1. The user shall be able to create reservation

- Only logged in admin can create reservation.
- Admin click on “Add new Reservation” hyperlink, the Add Reservation page will be displayed.
- Admin needs to fill out all those fields except for Note:
 - + Name
 - + Adult
 - + Phone
 - + Time
 - + Date

+ Note

- If all those required fields have been filled out, the system will notify: “Reservation Added Successfully” and redirect the admin to Reservation page.
- If there is a missing field, the system will notify: “Please fill out this field”.

R-21.2. The user shall be able to view reservation

- The administration clicks on the “Reservations” hyperlink, the system will display a table of reservations haven’t been arrived.
- To view all reservations, admin clicks on the “Reservations history” command button on Reservations page.

R-21.3. The user shall be able to update reservation

- Only admin can update reservation status.
- On the Reservation page, admin clicks on “Update” command button to be navigated to Update Reservation page to update.
- The admin can update those following fields:
 - + Name
 - + Adult
 - + Phone
 - + Time
 - + Date
 - + Note
 - + Status (Cancelled, Uncalled, Confirmed, Arrived)
- Then click on “Update” command button.
- If the updating is successful, the system will notify “Reservations updated successfully”.
- If the updating is unsuccessful, the system will notify “Something went wrong”.
- Admin click on “Back” command button go back to the previous page.

6.3 Use case diagram:

6.3.1 High level use case diagram:

UC-0. Foodies Bistro Garden Use Case Diagram

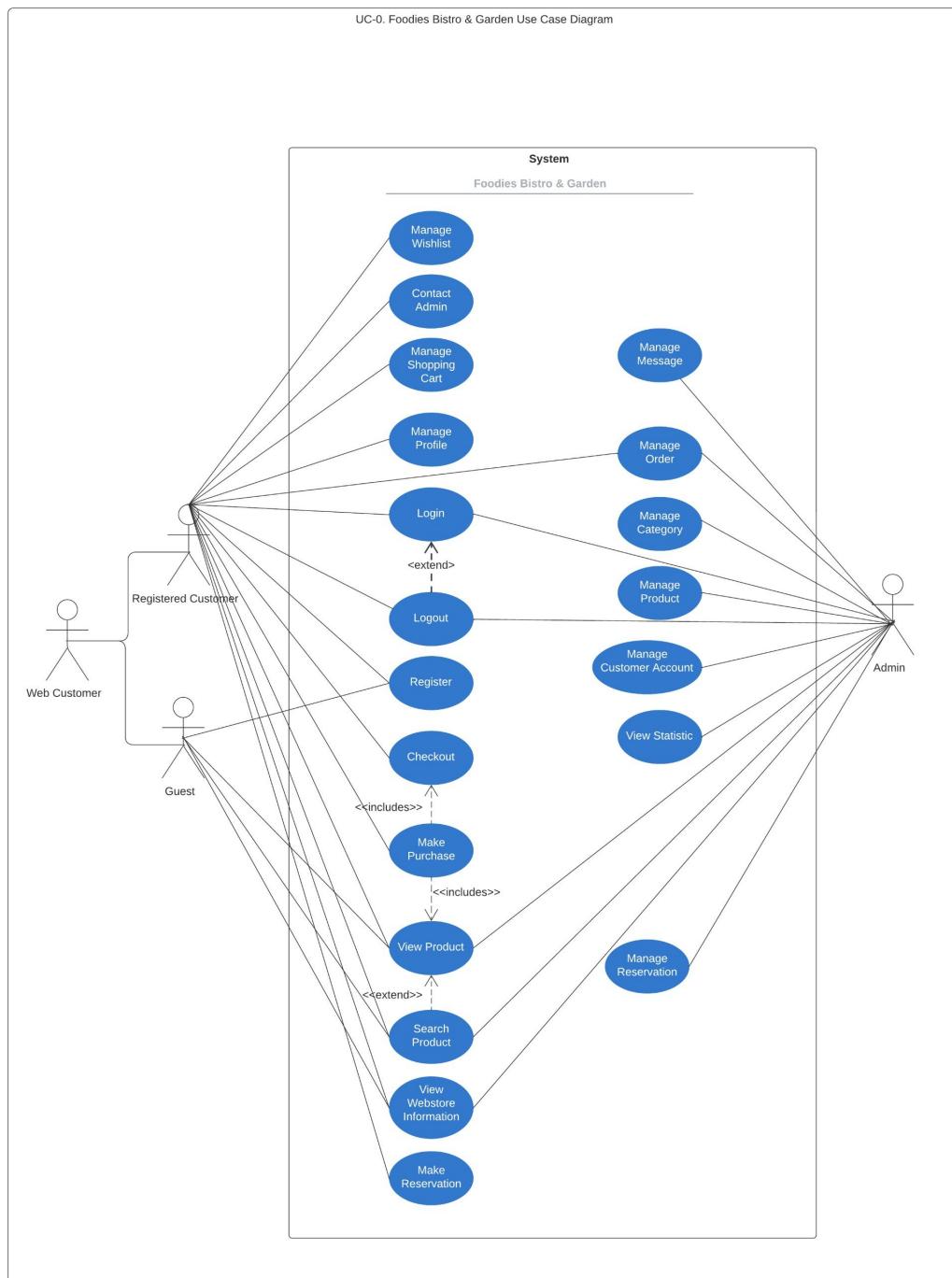


Figure 6.3.1: UC-0. Foodies Bistro Garden Use Case Diagram

6.3.2 Specific use case diagram

UC-1. Manage Wishlist

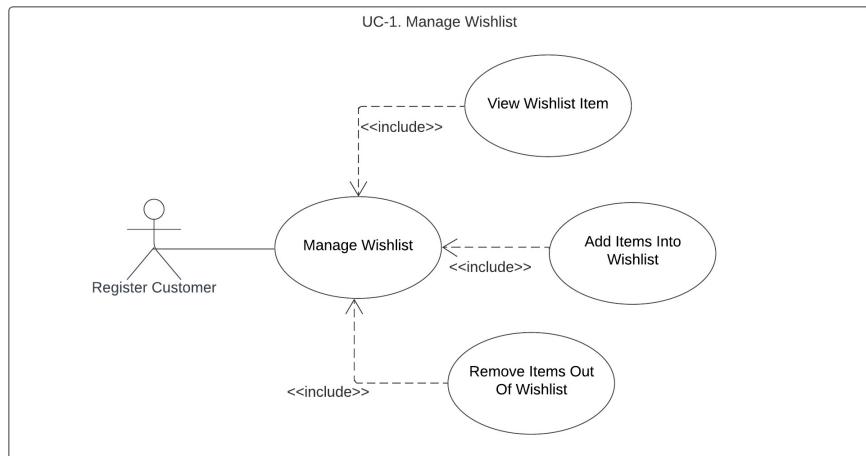


Figure 6.3.2: UC-1. Manage Wishlist

UC-2. Contact Admin

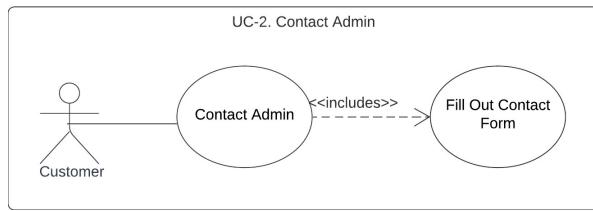


Figure 6.3.3: UC-2. Contact Admin

UC-3. Manage Shopping Cart

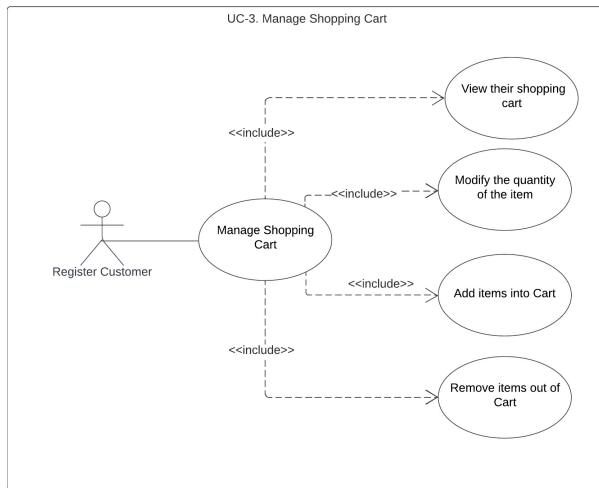


Figure 6.3.4: UC-3. Manage Shopping Cart

UC-4. Manage Profile

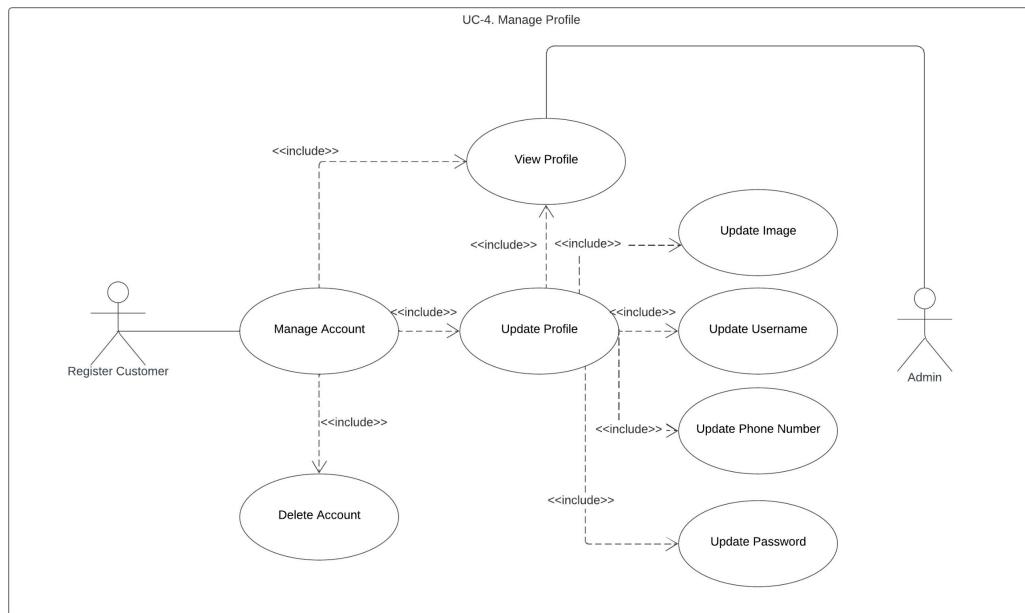


Figure 6.3.5: UC-4. Manage Profile

UC-5. Login/Logout Register

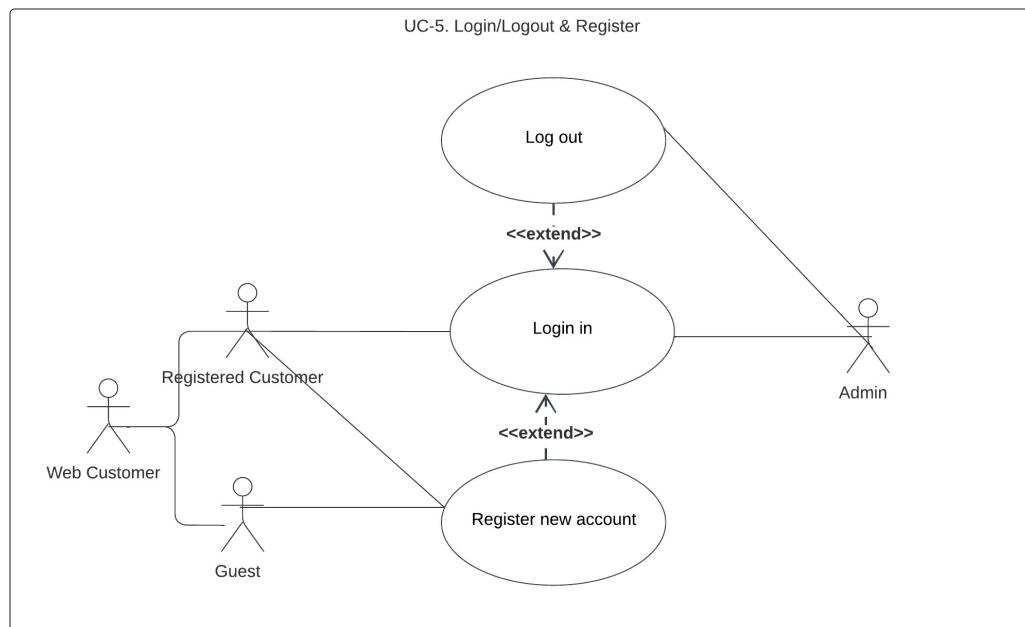


Figure 6.3.6: UC-5. Login/Logout Register

UC-6. Make Purchase

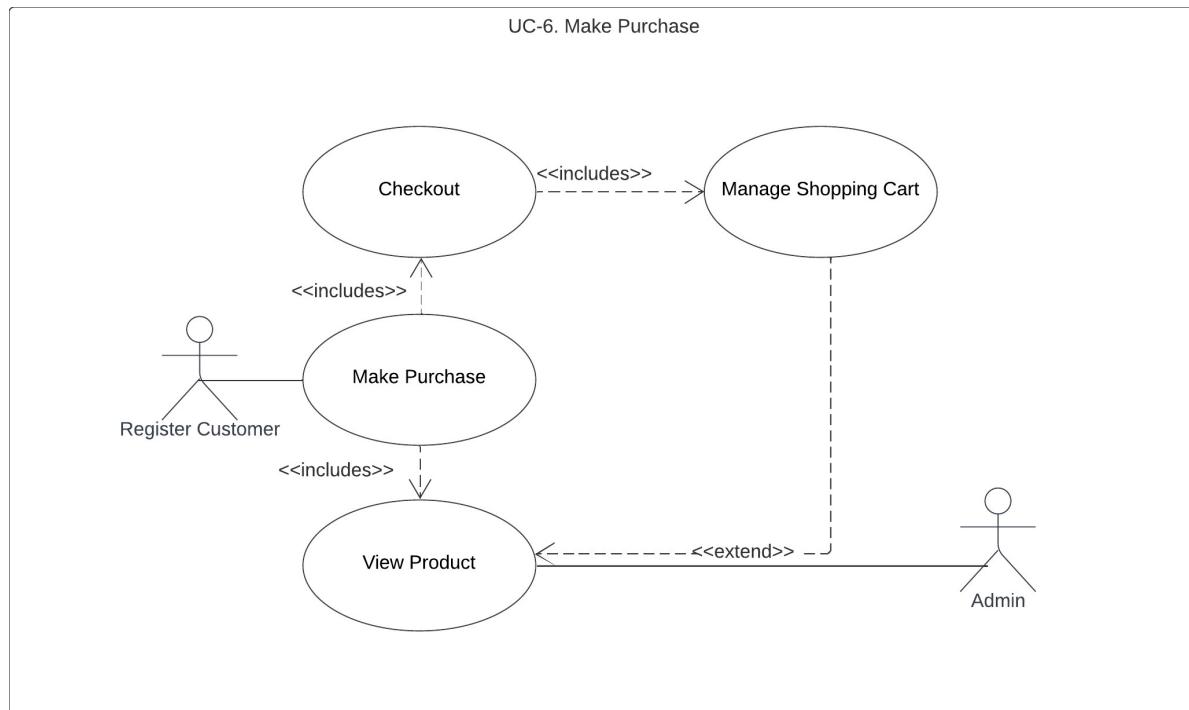


Figure 6.3.7: UC-6. Make Purchase

UC-7. View Product

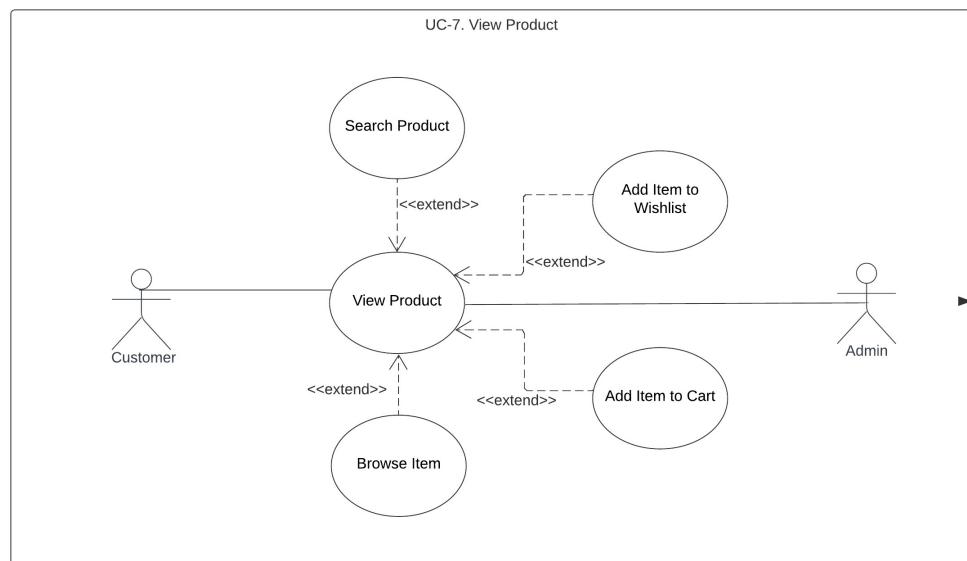


Figure 6.3.8: UC-7. View Product

UC-8. Search Product

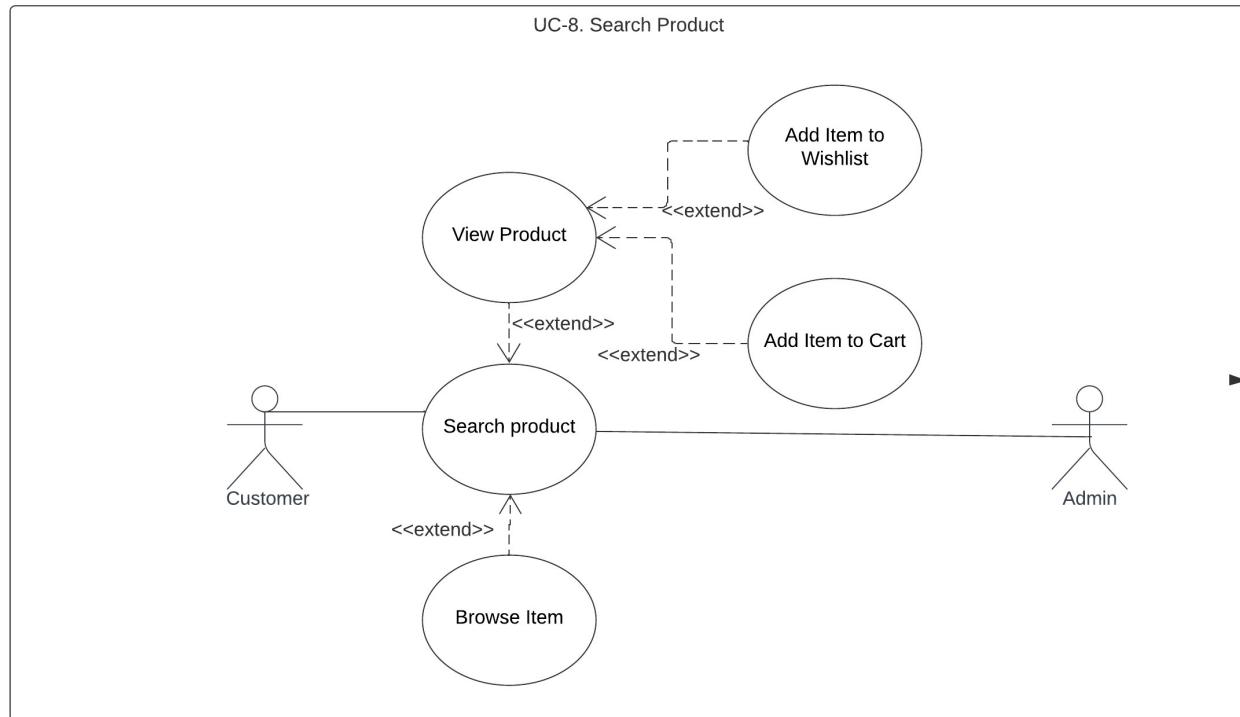


Figure 6.3.9: UC-8. Search Product

UC-9. View Webstore Information

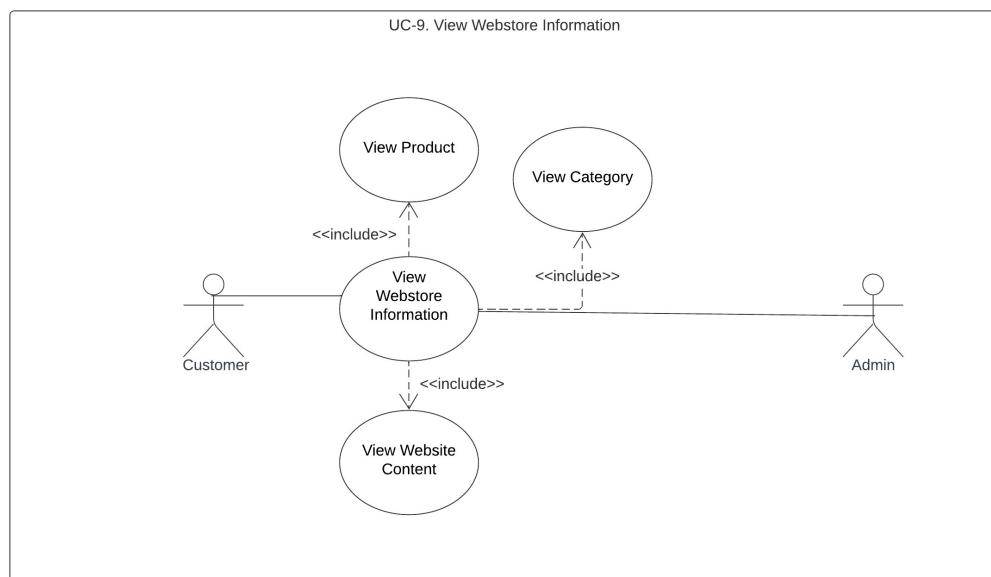


Figure 6.3.10: UC-9. View Webstore Information

UC-10. Make Reservation

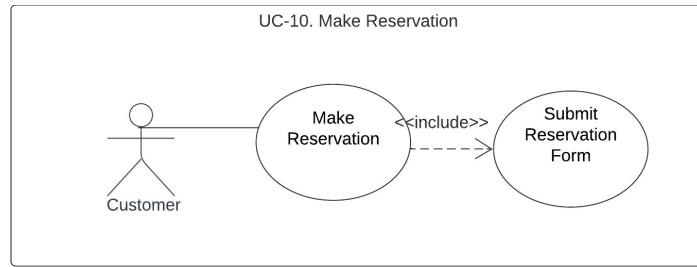


Figure 6.3.11: UC-10. Make Reservation

UC-11. Manage Message

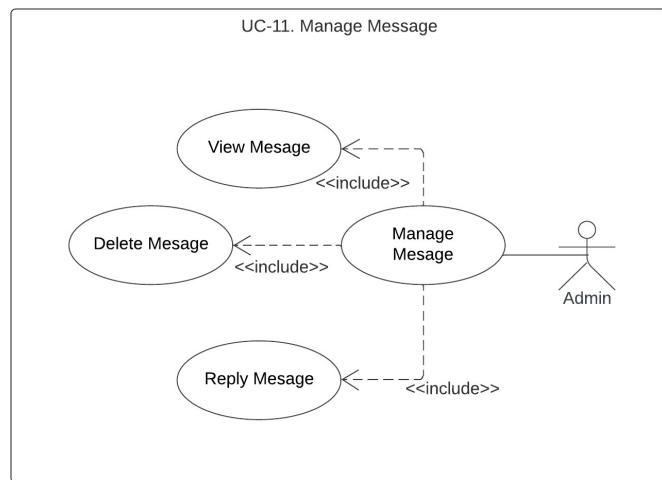


Figure 6.3.12: UC-11. Manage Message

UC-12. Manage Order

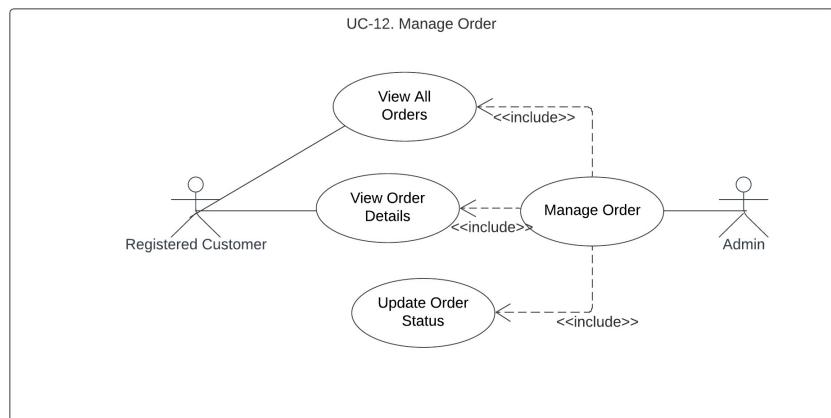


Figure 6.3.13: UC-12. Manage Order

UC-13. Manage Category

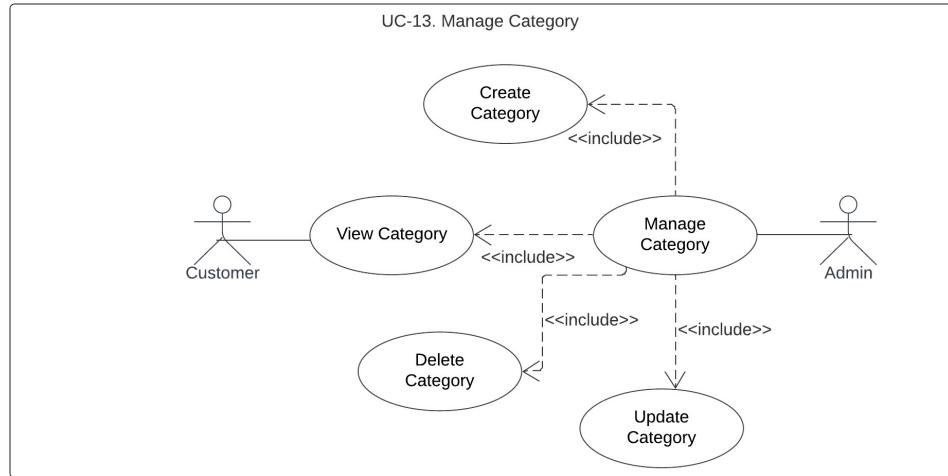


Figure 6.3.14: UC-13. Manage Category

UC-14. Manage Product

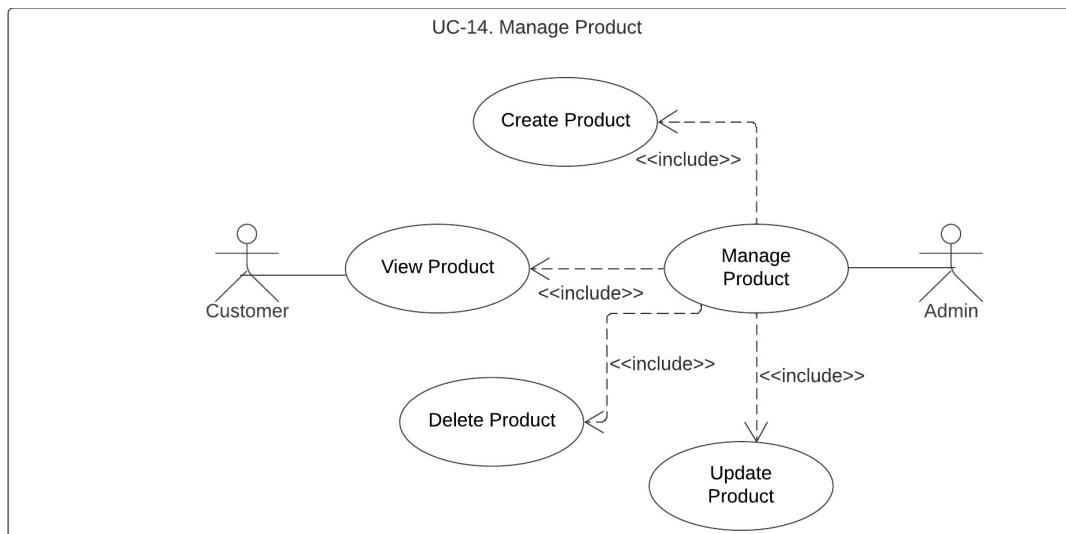


Figure 6.3.15: UC-14. Manage Product

UC-15. Manage Customer Account

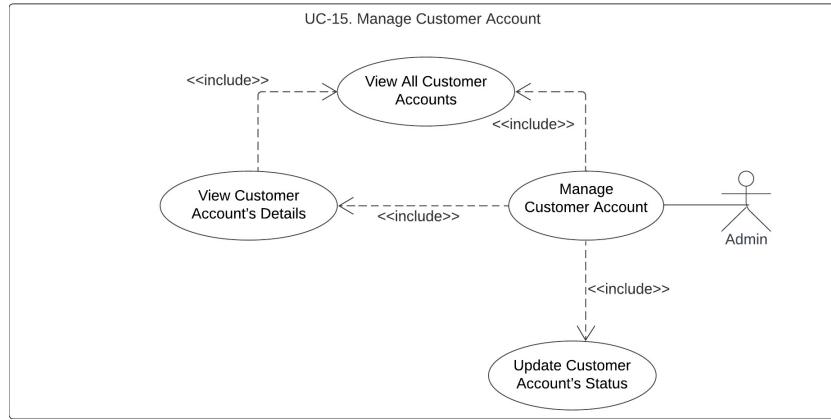


Figure 6.3.16: UC-15. Manage Customer Account

UC-16. View Statistic

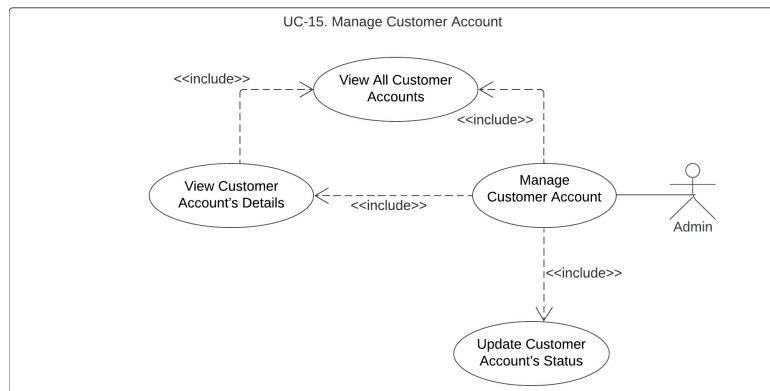


Figure 6.3.17: UC-16. View Statistic

UC-17. Manage Reservation

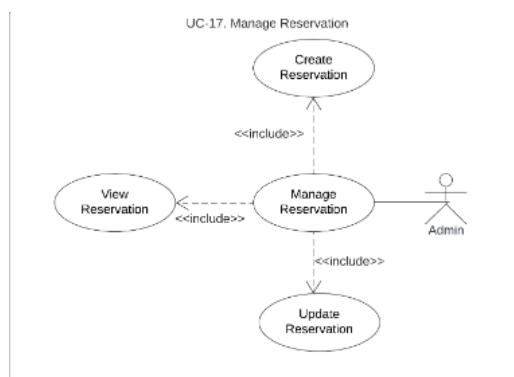


Figure 6.3.18: UC-17. Manage Reservation

6.3.3 Use case descriptions

UC-9. Manage Wishlist

ID and Name:	[UC-9] View Webstore Information		
Created By:	All team members	Date Created:	17/10/23
Primary Actor:	Admin	Secondary Actors:	Customer
Description:	Allows both customer and admin users to view webstore information, including viewing products, categories, and general webstore information.		
Trigger:	The user accesses the web store's homepage or navigates to a specific section of the website that provides store information.		
Preconditions:	The user is on the webstore homepage.		
Postconditions:	The user can successfully view product details, explore categories, and access general webstore information.		
Normal Flow:	<ol style="list-style-type: none"> User navigates to the "Our Menu" section on the navigation bar. User chooses to either search for a product by name or view products by category. <ol style="list-style-type: none"> If searching by name, the user enters the product name in the search bar and clicks search. If viewing by category, the system displays a list of categories, and the user selects a category of interest. The system presents a list of products matching the search criteria or belonging to the selected category. User clicks on the "All Categories" hyperlink on the sidebar. User navigates to the relevant section (e.g., About Us, Policies) on the navigation bar. The system displays the content related to the selected section. 		
Exceptions:	<ol style="list-style-type: none"> If the search yields no results, the system displays a message indicating no matching products were found. If there is an issue retrieving product information, category information, website content, an error message is displayed. 		
Priority:	Critical		
Business Rules:	<ol style="list-style-type: none"> Customers and admin have access to the same set of products. Product information is updated in real-time. Categories are organized and presented in a user-friendly manner. Website content is regularly updated to provide accurate information. Admin has additional access to view categories through the admin panel, modify website content through the admin panel. 		
Other Information:	<ol style="list-style-type: none"> Product information includes details such as name, price, and availability. Category information includes the name and a brief description. Website content includes information such as company history, policies, and contact details. 		

UC-9. Manage Wishlist

ID and Name:	[UC-9] View Webstore Information		
Created By:	All team members	Date Created:	17/10/23
Primary Actor:	Admin	Secondary Actors:	Customer
Description:	Allows both customer and admin users to view webstore information, including viewing products, categories, and general webstore information.		
Trigger:	The user accesses the web store's homepage or navigates to a specific section of the website that provides store information.		
Preconditions:	The user is on the webstore homepage.		
Postconditions:	The user can successfully view product details, explore categories, and access general webstore information.		
Normal Flow:	<ol style="list-style-type: none"> User navigates to the "Our Menu" section on the navigation bar. User chooses to either search for a product by name or view products by category. <ol style="list-style-type: none"> If searching by name, the user enters the product name in the search bar and clicks search. If viewing by category, the system displays a list of categories, and the user selects a category of interest. The system presents a list of products matching the search criteria or belonging to the selected category. User clicks on the "All Categories" hyperlink on the sidebar. User navigates to the relevant section (e.g., About Us, Policies) on the navigation bar. The system displays the content related to the selected section. 		
Exceptions:	<ol style="list-style-type: none"> If the search yields no results, the system displays a message indicating no matching products were found. If there is an issue retrieving product information, category information, website content, an error message is displayed. 		
Priority:	Critical		
Business Rules:	<ol style="list-style-type: none"> Customers and admin have access to the same set of products. Product information is updated in real-time. Categories are organized and presented in a user-friendly manner. Website content is regularly updated to provide accurate information. Admin has additional access to view categories through the admin panel, modify website content through the admin panel. 		
Other Information:	<ol style="list-style-type: none"> Product information includes details such as name, price, and availability. Category information includes the name and a brief description. Website content includes information such as company history, policies, and contact details. 		

UC-10. Make Reservation

ID and Name:	[UC-10] Make Reservation		
Created By:	Chi	Date Created:	14/10/23
Primary Actor:	Customer	Secondary Actors:	None
Description:	Allows customers to make reservations by providing necessary details through a reservation form. The reservation request will be processed by the system, and confirmation will be awaited from the admin.		
Trigger:	Customer clicks on "Reservation" in the header to access the reservation form.		
Preconditions:	The reservation form must be accessible.		
Postconditions:	<p>The reservation request is submitted to the system for further processing.</p> <p>The customer receives a confirmation message through phone call or email from the restaurant.</p>		
Normal Flow:	<ol style="list-style-type: none"> 1. The Customer locates the "Reservation" button in the header and clicks on it. 2. Once authenticated, the system displays the reservation form, prompting the Customer to enter the following details: <ul style="list-style-type: none"> • Name • Adult (number of adults) • Time • Phone number • Date • Note 3. The Customer enters the required information into the respective fields. 4. The Customer clicks on the "Reserve Now" button. 5. The system processes the reservation request and displays a confirmation message: "Reserved successfully. We will contact you shortly!" 6. The reservation is recorded in the system, and the admin is notified of the new reservation for further review and confirmation. 		
Exceptions:	<ol style="list-style-type: none"> 1. If any required field is missing, the system displays an error message: "Please fill out all required fields." 2. If there is an issue with processing the reservation, the system displays an error message: "Something went wrong. Please try again later." 		
Priority:	Medium		
Business Rules:			
Other Information:	The admin will review and confirm reservations after customer submission.		

UC-11. Manage Message

ID and Name:	[UC-11] Manage Message		
Created By:	Tú	Date Created:	14/10/23
Primary Actor:	Admin	Secondary Actors:	None
Description:	Allows admin users to manage messages on the system, including viewing messages, deleting specific messages, and replying to messages through email.		
Trigger:	Admin navigates to the "Dashboard" and accesses the Messages section.		
Preconditions:	Admin must be logged into the system. The Messages section must be accessible on the Admin Dashboard.		
Postconditions:	The message is viewed, deleted, or replied to as per the admin's action.		
Normal Flow:	<ol style="list-style-type: none"> 1. Admin logs into the system. On the Admin Dashboard page, the admin clicks on the "Dashboard" hyperlink. 2. The system displays the Messages section on the Dashboard. 3. Admin views a list of messages with details such as sender, date, and message content. 4. Admin can click on a specific message to view its full content and additional details. 5. If admin wants to delete message. Admin identifies a specific message they want to delete from the Messages section on the Dashboard. 6. Admin clicks on the "Delete" button, triggering a confirmation prompt. 7. The system asks for confirmation to proceed with the deletion. 8. Admin confirms the deletion action. The system removes the selected message from the Messages section. 9. If admin wants to reply message. Admin identifies a specific message they want to reply to within the Messages section. 10. For the manual reply action, the admin accesses their email client separately. 11. Inside the selected message, the admin locates the sender's email address. 12. Using the sender's email address, the admin manually crafts and sends a reply through their email client. 13. The reply is handled externally, outside the system, as the admin communicates directly through email. 		

Exceptions:	<ol style="list-style-type: none"> If the admin is not logged in, the system navigates the user to Login page If there is an issue with the deletion process, the system displays an error message: "Unable to delete the message. Please try again."
Priority:	High
Business Rules:	Only admin users are authorized to manage messages, ensuring secure and controlled access to message-related functionalities.
Other Information:	Replying to messages is a manual process performed by the admin through their email client.

UC-12. Manage Order

ID and Name:	[UC-12] Manage Order		
Created By:	Khoa	Date Created:	17/10/23
Primary Actor:	Admin	Secondary Actors:	Customer
Description:	Allows logged-in users (both customers and admin) to manage orders. Customers can view their own orders, while admin can view and update order statuses.		
Trigger:	User initiates order management by accessing the respective sections on the platform.		
Preconditions:	Customers and admin must be logged into the system. Orders must exist in the system.		
Postconditions:	Order management actions are executed successfully, and the system reflects the changes.		
Normal Flow:	<ol style="list-style-type: none"> User Views Orders: <ul style="list-style-type: none"> Customer or admin logs into the system. Customer clicks on their name on the nav bar. Clicks on the "My Orders" hyperlink (for customers) or clicks on the "Orders" hyperlink (for admin). The system navigates them to the respective page displaying a table of orders. View Order Details: <ul style="list-style-type: none"> Users can click on the "View Details" command button on a specific order row. The system navigates them to the View Order Details page, providing a comprehensive overview of the selected order. Update Order Status (Admin Only): <ul style="list-style-type: none"> Admin navigates to the "Orders" section on the platform. The system displays a table of orders that haven't been confirmed. Admin can click on the "Order History" command button to view Confirmed or Cancelled Orders. Admin selects a specific order and clicks on the "View Details" command button. 		

	<ul style="list-style-type: none"> On the View Order Details page, admin clicks to change the order status (Pending, Completed, Cancelled). Admin clicks on the "Update Status" command button. If the update is successful, the system notifies: "Order updated successfully." If the update is unsuccessful, the system notifies: "Something went wrong."
Exceptions:	<ol style="list-style-type: none"> If the user is not logged in, the system displays an error message: "Please log in to manage orders." If there is an issue with updating the order status, the system displays an error message: "Unable to update the order status. Please try again."
Priority:	Critical
Business Rules:	<p>Only logged-in users (customers and admin) can manage orders. Both customers and admin can view all orders. Admin is the only user authorized to update order statuses.</p>
Other Information:	<p>Admin is responsible for updating order statuses. Both customers and admin can view order details.</p>

UC-13. Manage Category

ID and Name:	[UC-13] Manage Category		
Created By:	Vy	Date Created:	17/10/23
Primary Actor:	Admin	Secondary Actors:	Customer
Description:	Logged-in admins manage categories. Admins can create, view, update, and delete categories, controlling the visibility and popularity status of each category.		
Trigger:	Admin initiates category management through the admin dashboard or relevant navigation links.		
Preconditions:	Admin must be logged into the system. Categories already exist in the system.		
Postconditions:	Changes made to categories (creation, update, deletion) are reflected in the system.		
Normal Flow:	<ol style="list-style-type: none"> Create Category: <ul style="list-style-type: none"> Admin logs into the system. Admin clicks on the "Add Category" hyperlink. The system displays the Add Category page. Admin fills in required fields (Name, Slug, Description, Upload Image, Meta Title, Meta Description, Meta Keywords). Admin checks the "Status" to make the category visible. Admin checks "Popular" if the category is trending. Admin clicks on the "Save" command button. If any required field is missing, the system notifies: "Please fill out this field." If successful, the system notifies: "Category Added Successfully." 		

	<p>2. View Category:</p> <ul style="list-style-type: none"> • Admin clicks on "Our Menu" or "All Categories" on the nav bar or sidebar. • The system displays the menu by category or all categories in a table on the "Categories" page. <p>3. Delete Category:</p> <ul style="list-style-type: none"> • On the "Categories" page, admin clicks the "Delete" button on a specific row. • The system displays a confirmation warning: "Are you sure? Once deleted, you will not be able to recover!" • Admin clicks "OK" to proceed with deletion or "Cancel" to abort. • If successful, the system notifies: "Success! Category Deleted Successfully!" • If an error occurs, the system notifies: "Something went wrong." <p>4. Update Category:</p> <ul style="list-style-type: none"> • On the "Categories" page, admin clicks the "Edit" button on a specific row. • The system navigates to the Edit Category page. • Admin updates fields (Name, Slug, Description, Upload Image, Meta Title, Meta Description, Meta Keywords). • Admin checks/unchecks "Status" to control visibility. • Admin checks/unchecks "Popular" to indicate trending. • Admin clicks "Update" to save changes or "Cancel" to discard changes. • If successful, the system notifies: "Category updated successfully." • If an error occurs, the system notifies: "Something went wrong."
Exceptions:	<ol style="list-style-type: none"> 1. If admin is not logged in, the system navigates the admin to Login page 2. During category creation, if any required field is missing, the system displays: "Please fill out this field." 3. If there is an issue with processing the category, the system displays: "Something went wrong." 4. If admin attempts to delete a category without confirmation, the deletion process is canceled. 5. If there is an issue with deleting the category, the system displays: "Something went wrong." 6. If there is an issue with updating the category, the system displays: "Something went wrong."
Priority:	High
Business Rules:	Only logged-in admins have the authority to manage categories. Admins control the visibility and popularity settings of each category during creation and update.
Other Information:	This category management feature is essential for maintaining an organized and user-friendly product catalog.

UC-14. Manage Product

ID and Name:	[UC-14] Manage Product		
Created By:	Điểm Quỳnh	Date Created:	17/10/23
Primary Actor:	Admin	Secondary Actors:	Customer
Description:	Admins can manage products, including creating, viewing, updating, and deleting products within the system. Customers can only view products on the Our Menu.		
Trigger:	Admin initiates product management through relevant navigation links on the admin dashboard. Customers view products by accessing the Our menu.		
Preconditions:	Admin must be logged into the system.		
Postconditions:	Changes made to products (creation, update, deletion) are reflected in the system, and products are available for customers to view and purchase.		
Normal Flow:	<ol style="list-style-type: none"> 1. Create Product (admin): <ul style="list-style-type: none"> • Admin logs into the system. • Admin clicks on the "Add Product" hyperlink. • The system displays the Add Product page. • Admin selects a category from the drop-down menu. • Admin fills in required fields: <ul style="list-style-type: none"> - Name - Slug - Small Description - Description - Original Price - Selling Price - Upload Image - Quantity - Status (checked for visibility) - Trending (checked for trending product) - Meta Title - Meta Description - Meta Keywords • Admin clicks on the "Save" command button. • If any required field is missing, the system notifies: "Please fill out this field." • If successful, the system notifies: "Product Added Successfully." 2. View Products <ul style="list-style-type: none"> • Admin clicks on the "All Products" hyperlink on the sidebar. The system displays all the products <u>in</u> a table on the "Products" page. 		

	<ul style="list-style-type: none"> Customer clicks on the "Our Menu" link on the nav bar. The system displays the Menu by category. <p>3. Delete Product:</p> <ul style="list-style-type: none"> On the "Products" page, admin clicks the "Delete" button on a specific row. The system displays a confirmation warning: "Are you sure? Once deleted, you will not be able to recover!" Admin clicks "OK" to proceed with deletion or "Cancel" to abort. If the product is deleted successfully, the system notifies: "Success! Product Deleted Successfully!" If an error occurs, the system notifies: "Something went wrong." <p>4. Update Product:</p> <ul style="list-style-type: none"> On the "Products" page, admin clicks the "Edit" button on a specific row. The system navigates to the Edit Product page. Admin updates fields: Selects a category from the drop-down menu. Updates Name, Slug, Small Description, Description, Original Price, Selling Price, Upload Image, Quantity, Status, Trending, Meta Title, Meta Description, Meta Keywords. Admin clicks "Update" to save changes or "Cancel" to discard changes. If the product is updated successfully, the system notifies: "Product updated successfully." If there is an error, the system notifies: "Something went wrong."
Exceptions:	<ol style="list-style-type: none"> If admin is not logged in, the system navigates the admin to Login page During product creation, if any required field is missing, the system displays: "Please fill out this field." If there is an issue with processing the product, the system displays: "Something went wrong." If admin attempts to delete a product without confirmation, the deletion process is canceled. If there is an issue with deleting the product, the system displays: "Something went wrong." If there is an issue with updating the product, the system displays: "Something went wrong."
Priority:	High
Business Rules:	<p>Only logged-in admins have the authority to manage products.</p> <p>Admins control the visibility and trending settings of each product during creation and update.</p> <p>Customers can only view products on the Our Menu.</p>

Other Information:	The product management feature is crucial for maintaining an up-to-date and organized product catalog, accessible to both admins and customers.
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UC-15. Manage Customer Account

ID and Name:	[UC-15] Manage Customer Account		
Created By:	Điểm Quynh, Nguyệt Quynh, Vy	Date Created:	17/10/23
Primary Actor:	Admin	Secondary Actors:	None
Description:	Admins have the authority to manage customer accounts, including viewing all customer accounts, accessing customer account details, and updating customer account status.		
Trigger:	Admin initiates customer account management through relevant navigation links on the admin dashboard.		
Preconditions:	Admin must be logged into the system.		
Postconditions:	Changes made to customer accounts (viewing, updating status) are reflected in the system.		
Normal Flow:	<ol style="list-style-type: none"> 1. Admin logs into the system 2. Admin clicks on the "Dashboard" hyperlink. 3. The system displays the Admin Dashboard page. 4. Admin navigates to the "Customer's Information" section. 5. The system displays a table with all customer accounts. 6. On the Admin Dashboard page, admin clicks the "View details" command button on a specific row. 7. The system navigates the admin to the "Customer Information Details" page, displaying details of the selected customer account. 8. On the "Customer Information Details" page, admin clicks to change the status (Active, Banned). 9. Admin clicks on the "Update Status" command button. 10. If the updating is successful, the system notifies: "Customer Status Updated Successfully." 11. If there is an error, the system notifies: "Something went wrong." 		
Exceptions:	<ol style="list-style-type: none"> 1. If admin is not logged in, the system navigates the user to Login page. 2. If there is an issue with updating the customer account status, the system displays: "Something went wrong." 		
Priority:	High		
Business Rules:	Only logged-in admins have the authority to manage customer accounts.		
Other Information:	Customer account management is essential for ensuring the security and proper functioning of the system.		

UC-16. View Statistic

ID and Name:	[UC-16] View Statistic		
Created By:	Tú	Date Created:	17/10/23
Primary Actor:	Admin	Secondary Actors:	None
Description:	Admins have the authority to view various statistics related to the system, including total customers, total products, total revenue, total categories, total active products, total deactivated products, total trending products, total cancelled orders, and total completed orders.		
Trigger:	Admin initiates the viewing of statistics by clicking on the "Dashboard" hyperlink		
Preconditions:	Admin must be logged into the system.		
Postconditions:	Admin gains insights into the system's performance through various statistical data.		
Normal Flow:	<ol style="list-style-type: none"> 1. Admin logs into the system. 2. Admin clicks on the "Dashboard" hyperlink. 3. The system displays the Admin Dashboard page. • Admin observes the "Total Customers" section, which shows the total number of customers. • Admin observes the "View Total Products" section, which shows the total number of products. • Admin observes the "View Total Revenue" section, which shows the total revenue generated. • Admin observes the "View Total Categories" section, which shows the total number of product categories. • Admin observes the "View Total Active Products" section, which shows the total number of active products. • Admin observes the "View Total Deactivated Products" section, which shows the total number of deactivated products. 		
	<ul style="list-style-type: none"> • Admin observes the "View Total Trending Products" section, which shows the total number of trending products. • Admin observes the "View Total Cancelled Orders" section, which shows the total number of cancelled orders. • Admin observes the "View Total Completed Orders" section, which shows the total number of completed orders. 		
Exceptions:	12. If admin is not logged in, the system navigates the user to Login page.		
Priority:	High		
Business Rules:	Only logged-in admins have the authority to view statistics.		
Other Information:	None		

UC-17. Manage Reservation

ID and Name:	[UC-17] Manage Reservation		
Created By:	Quynh	Date Created:	17/12/23
Primary Actor:	Admin	Secondary Actors:	None
Description:	Admins have the ability to manage reservations, including creating new reservations, viewing reservation details, and updating reservation status.		
Trigger:	Admin initiates reservation management through relevant navigation links on the admin dashboard.		
Preconditions:	Admin must be logged into the system.		
Postconditions:	Changes made to reservations (creation, viewing, updating status) are reflected in the system.		
Normal Flow:	<ol style="list-style-type: none"> 1. Create Reservation: <ul style="list-style-type: none"> • Admin logs into the system. • Admin clicks on the "Add new Reservation" hyperlink. • The system displays the "Add Reservation" page. • Admin fills out the required fields: <ul style="list-style-type: none"> - Name - Adult - Phone - Time - Date • Admin can provide an optional note. • Admin clicks the "Add Reservation" button. • If all required fields are filled out, the system notifies: "Reservation Added Successfully," and admin is redirected to the Reservation page. • If there is a missing field, the system notifies: "Please fill out this field." 2. View Reservations: <ul style="list-style-type: none"> • Admin clicks on the "Reservations" hyperlink. • The system displays a table of reservations that haven't <u>been arrived</u>. • To view all reservations, admin clicks on the "Reservations history" command button on the Reservations page. 3. Update Reservation: <ul style="list-style-type: none"> • On the Reservation page, admin clicks the "Update" command button for a specific reservation. • The system navigates the admin to the "Update Reservation" page. 		

	<ul style="list-style-type: none"> To view all reservations, admin clicks on the "Reservations history" command button on the Reservations page. <p>3. Update Reservation:</p> <ul style="list-style-type: none"> On the Reservation page, admin clicks the "Update" command button for a specific reservation. The system navigates the admin to the "Update Reservation" page. Admin updates the following fields if needed: <ul style="list-style-type: none"> - Name - Adult - Time - Phone - Date - Note - Status (Cancelled, Uncalled, Confirmed, Arrived) Admin clicks the "Update" command button. If the updating is successful, the system notifies: "Reservation updated successfully." If there is an error, the system notifies: "Something went wrong." Admin clicks the "Back" command button to go back to the previous page.
Exceptions:	<ol style="list-style-type: none"> If admin is not logged in, the system displays an error message: "Please log in to manage reservations." If there is an issue with creating a reservation, the system displays: "Something went wrong." If there is an issue with updating the reservation, the system displays: "Something went wrong."
Priority:	High
Business Rules:	Only logged-in admins have the authority to manage reservations.
Other Information:	None

6.3.4 Activity diagram

AD-1. Login

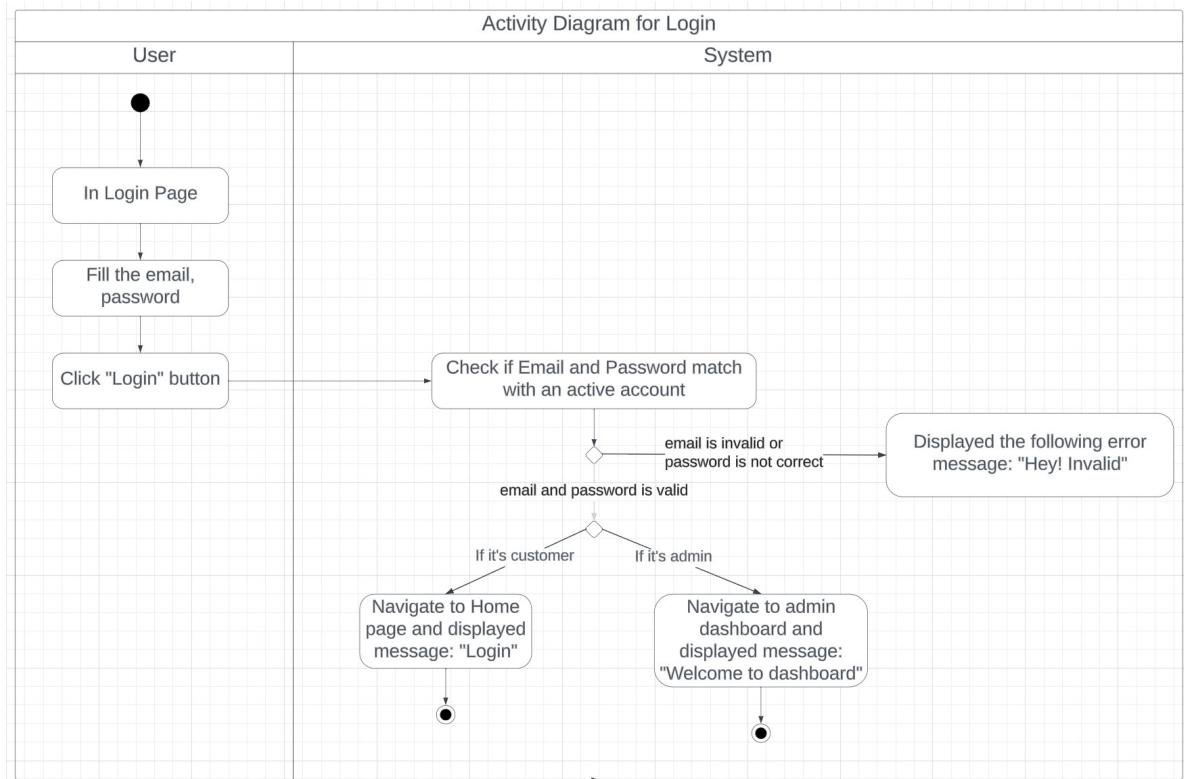


Figure 6.3.19: AD-1. Login

AD-2. Logout

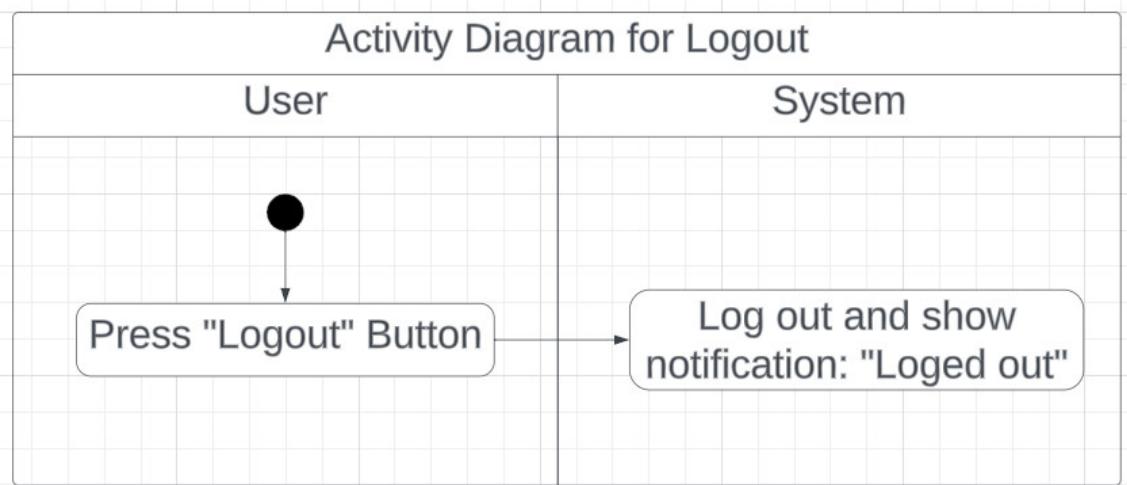


Figure 6.3.20: AD-2. Logout

AD-3. Register

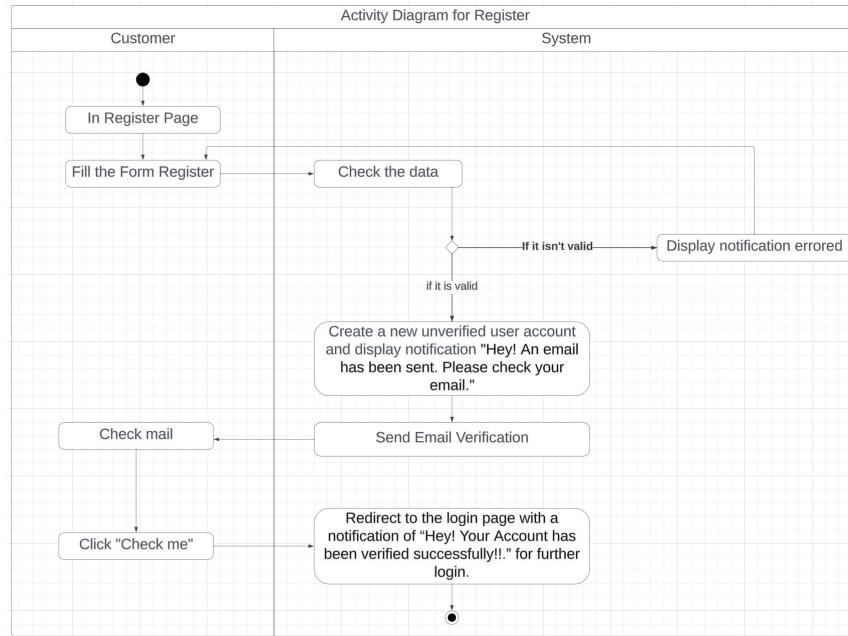


Figure 6.3.21: AD-3. Register

AD-4. Delete Account

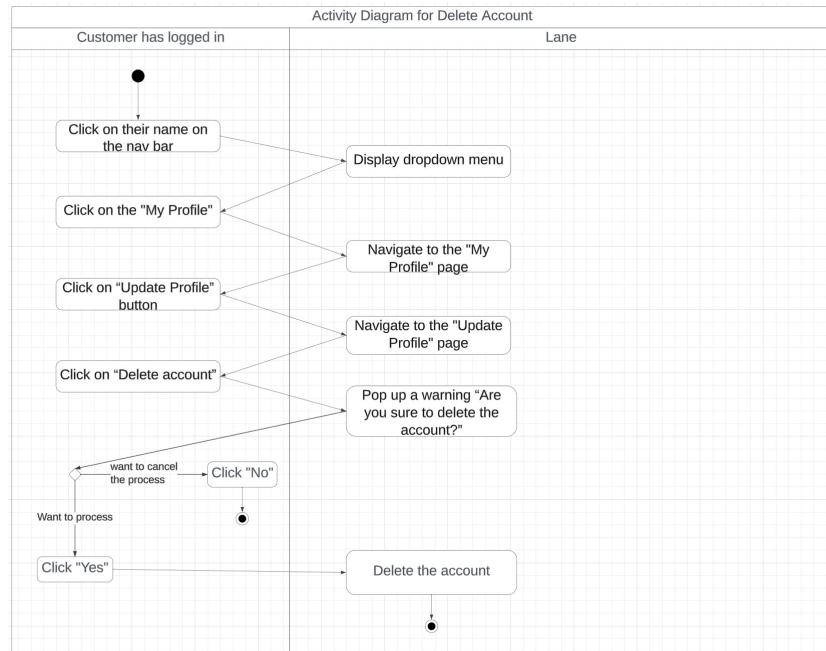


Figure 6.3.22: AD-4. Delete Account

AD-5. View Wishlist

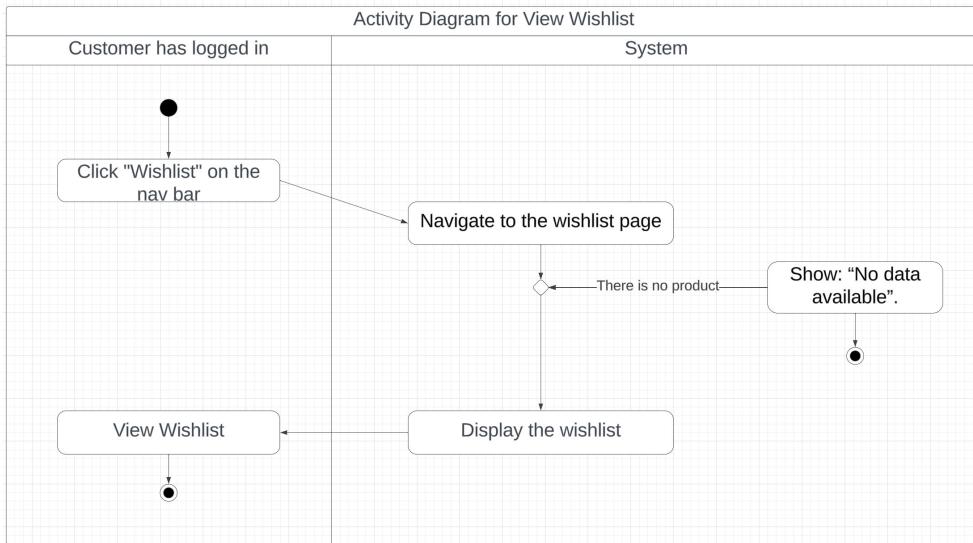


Figure 6.3.23: AD-5. View Wishlist

AD-6. Add Product To Wishlist

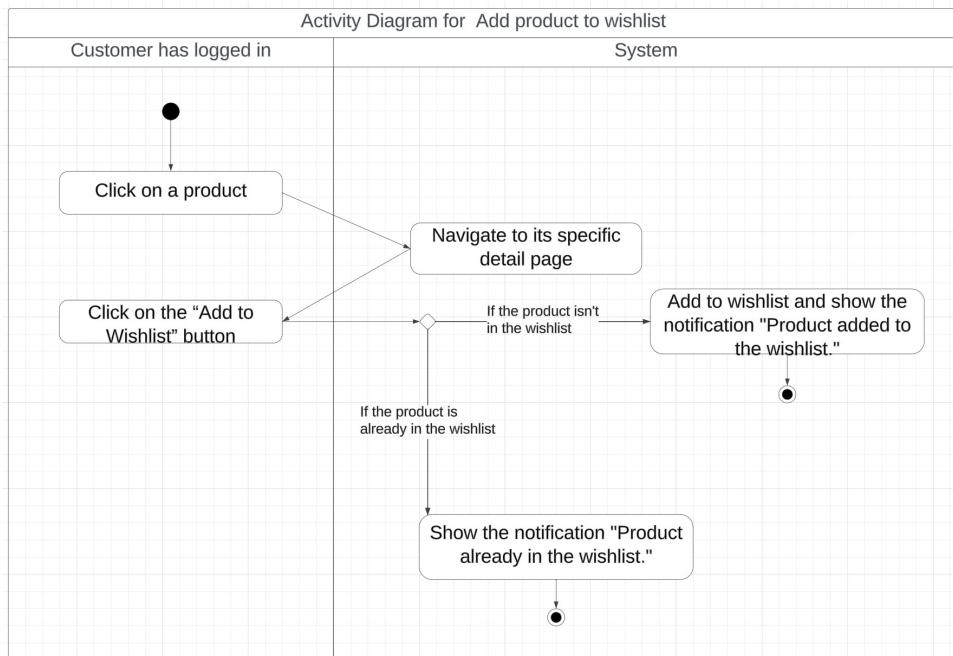


Figure 6.3.24: AD-6. Add Product To Wishlist

AD-7. Remove Product From Wishlist

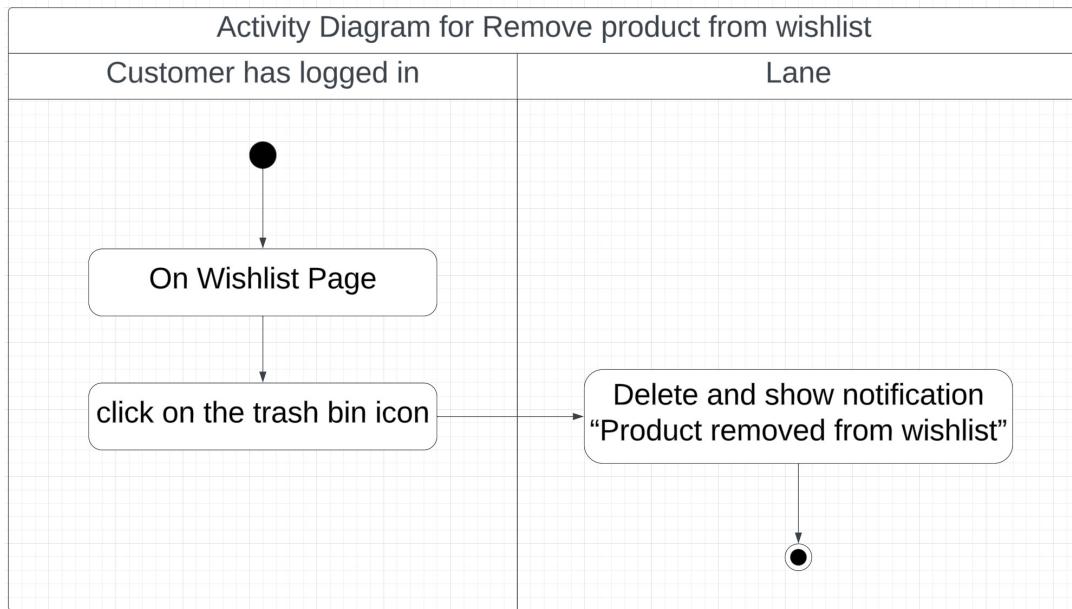


Figure 6.3.25: AD-7. Remove Product From Wishlist

AD-8. Contact Admin

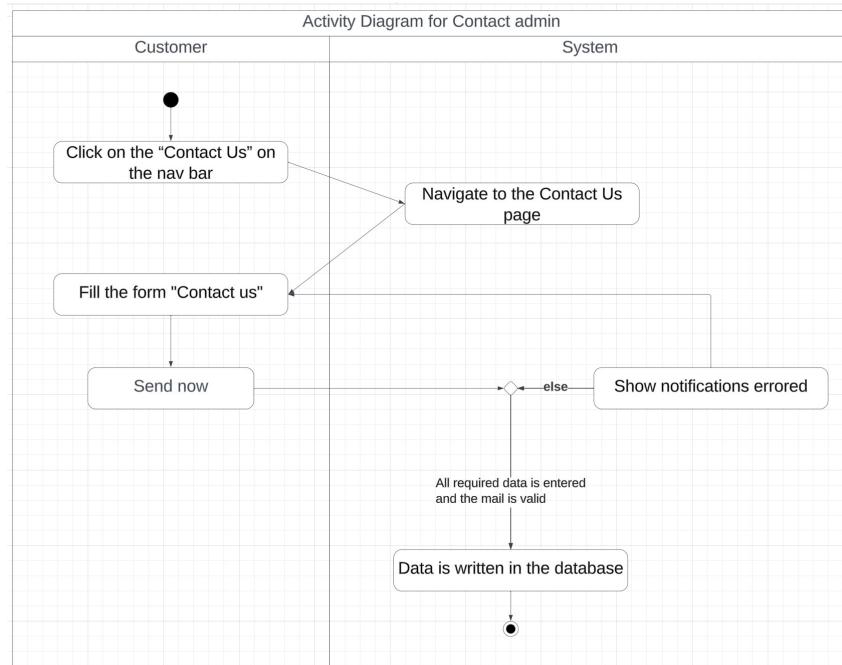


Figure 6.3.26: AD-8. Contact Admin

AD-9. View Shopping Cart

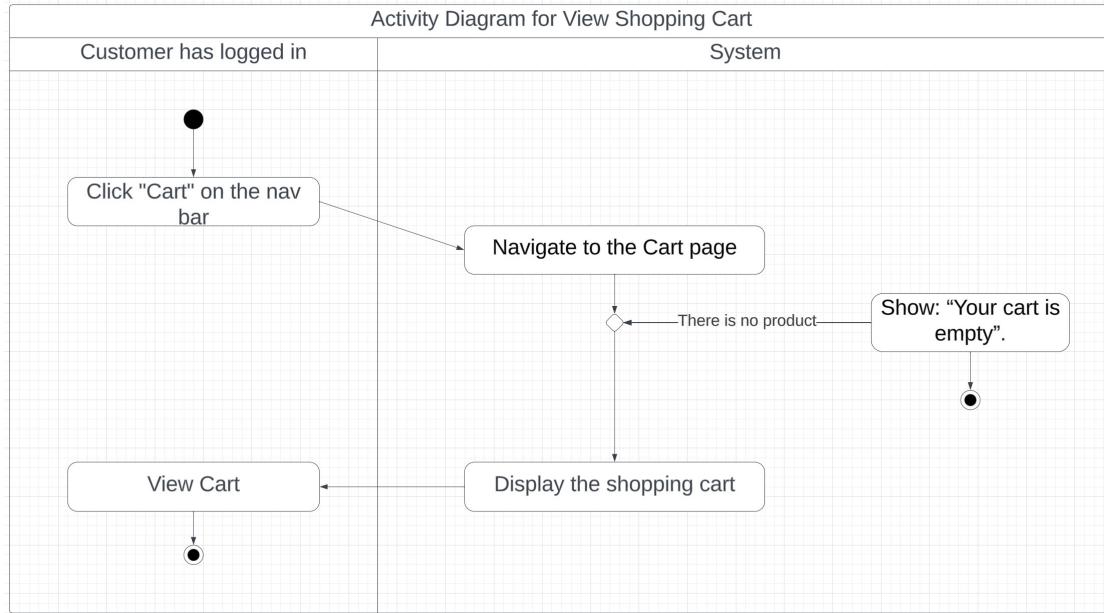


Figure 6.3.27: AD-9. View Shopping Cart

AD-10. Add Product To Cart

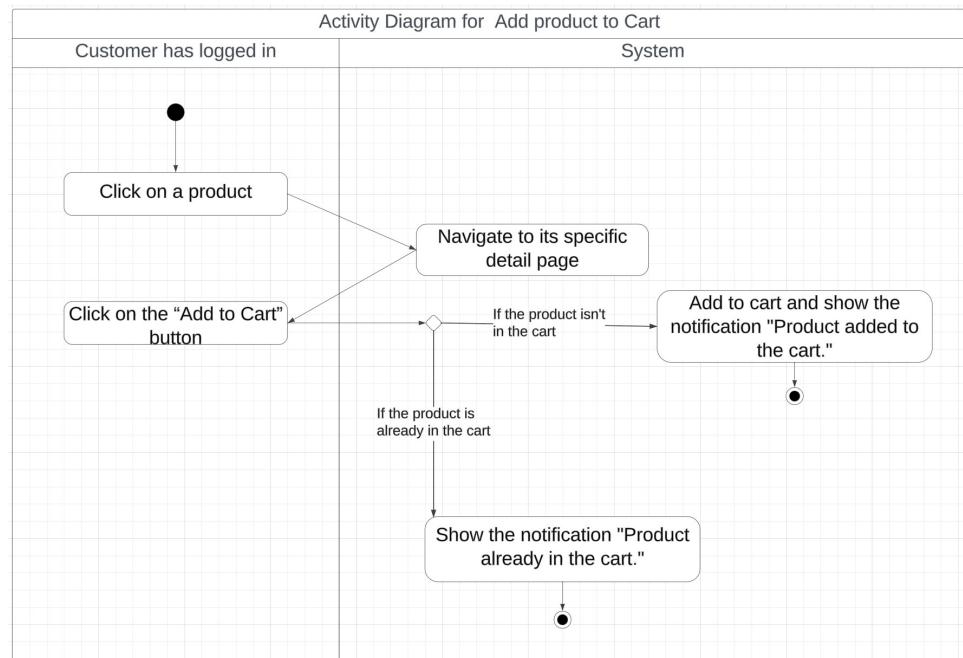


Figure 6.3.28: AD-10. Add Product To Cart

AD-11. Remove Product From Cart

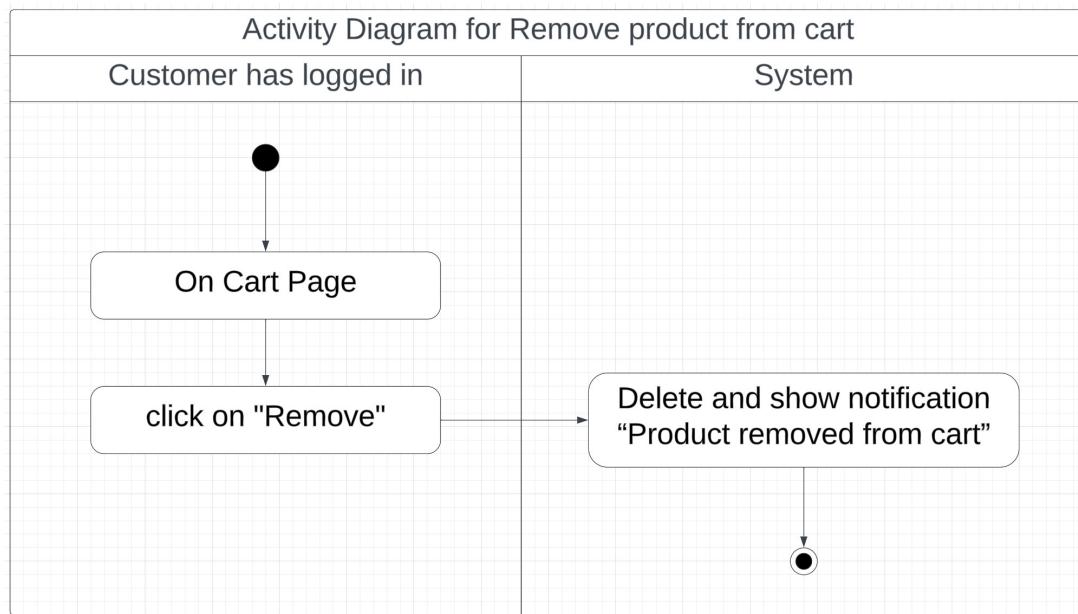


Figure 6.3.29: AD-11. Remove Product From Cart

AD-12. Modify The Product Quantity

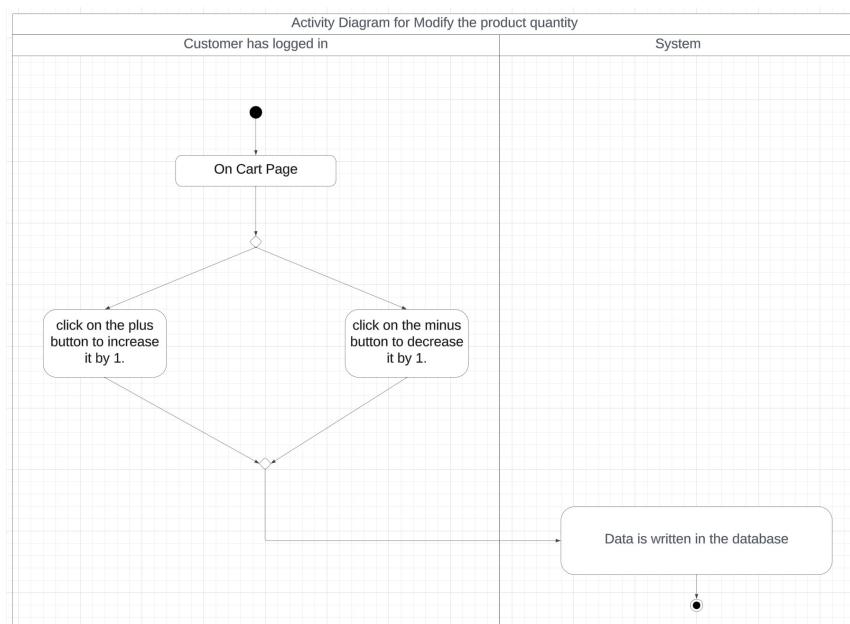


Figure 6.3.30: AD-12. Modify The Product Quantity

AD-13. View Profile

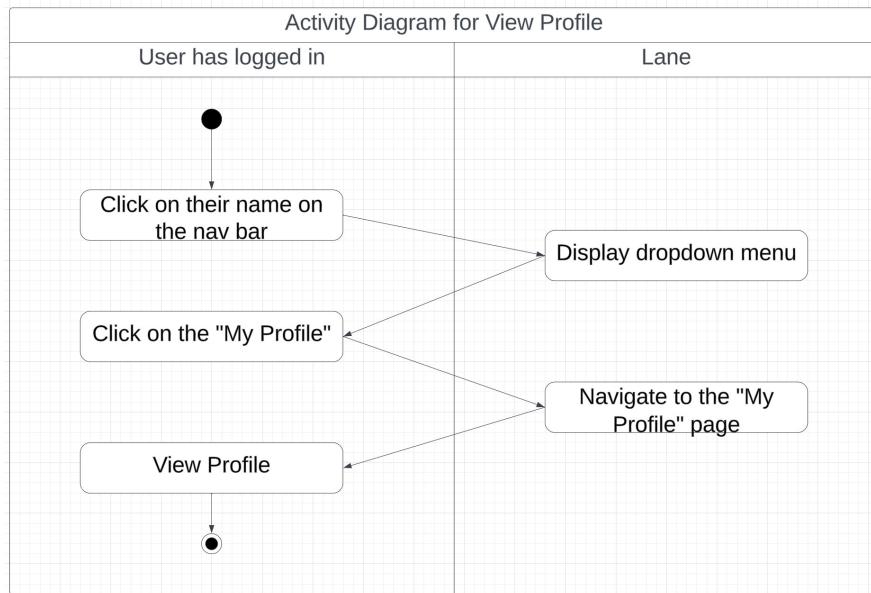


Figure 6.3.31: AD-13. View Profile

AD-14. Update Profile

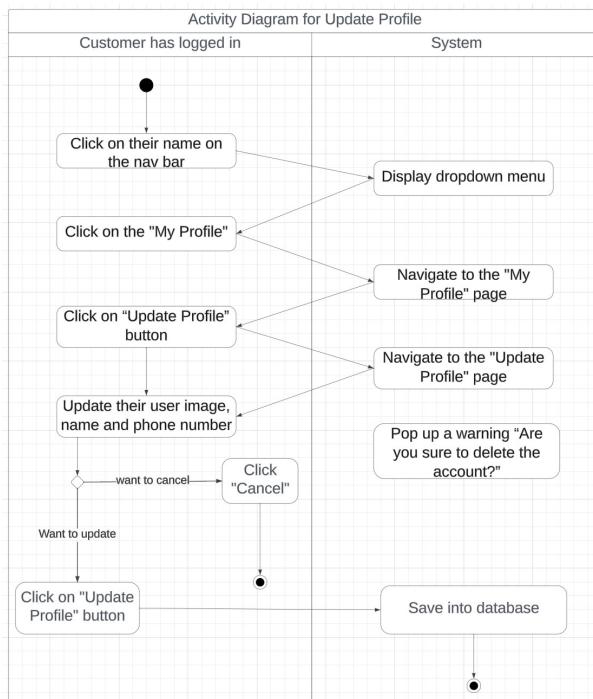


Figure 6.3.32: AD-14. Update Profile

AD-15. Checkout

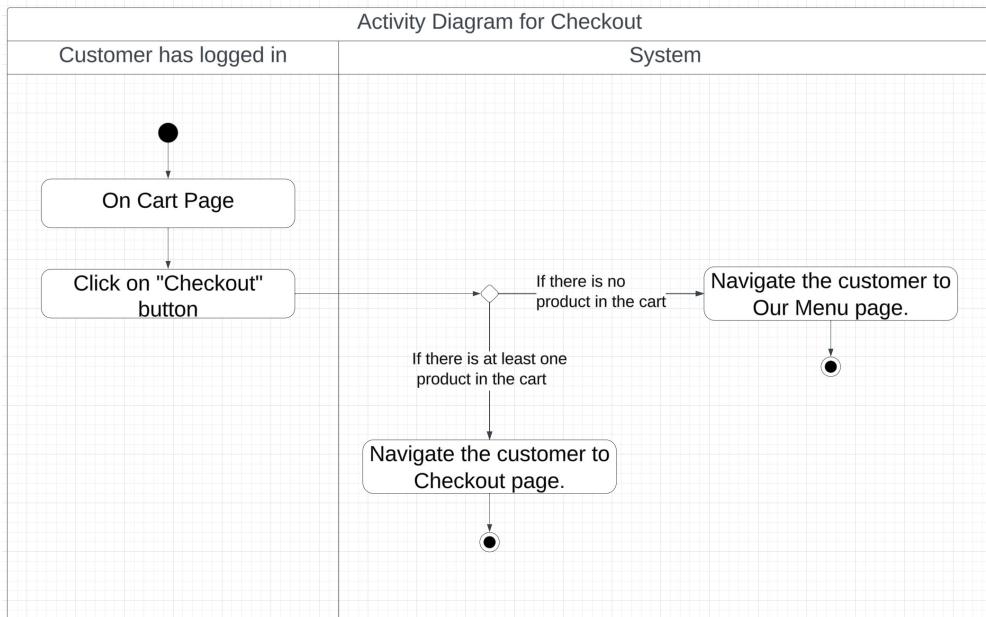


Figure 6.3.33: AD-15. Checkout

AD-16. View Product

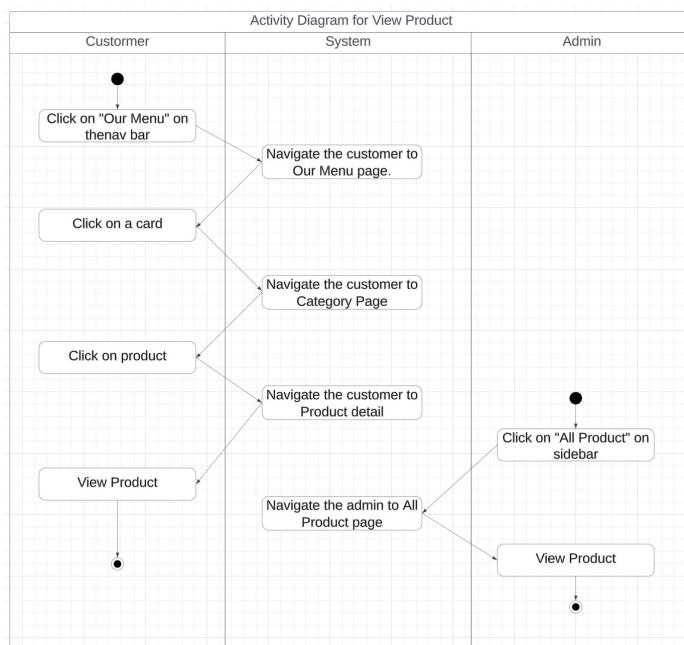


Figure 6.3.34: AD-16. View Product

AD-17. Search Product

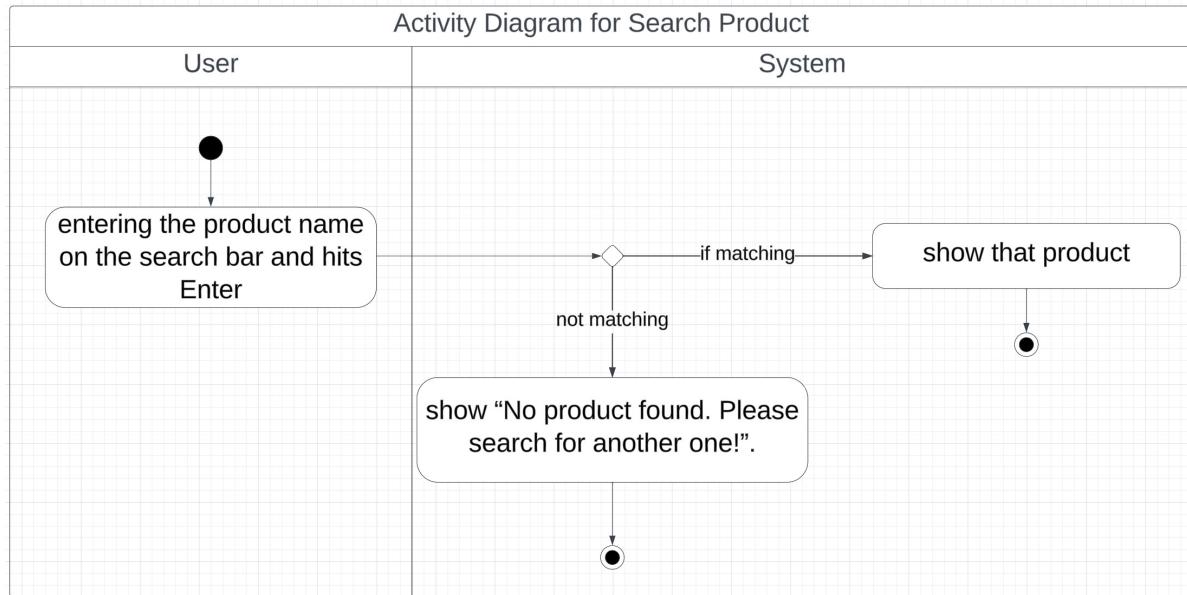


Figure 6.3.35: AD-17. Search Product

AD-18. View Webstore Information

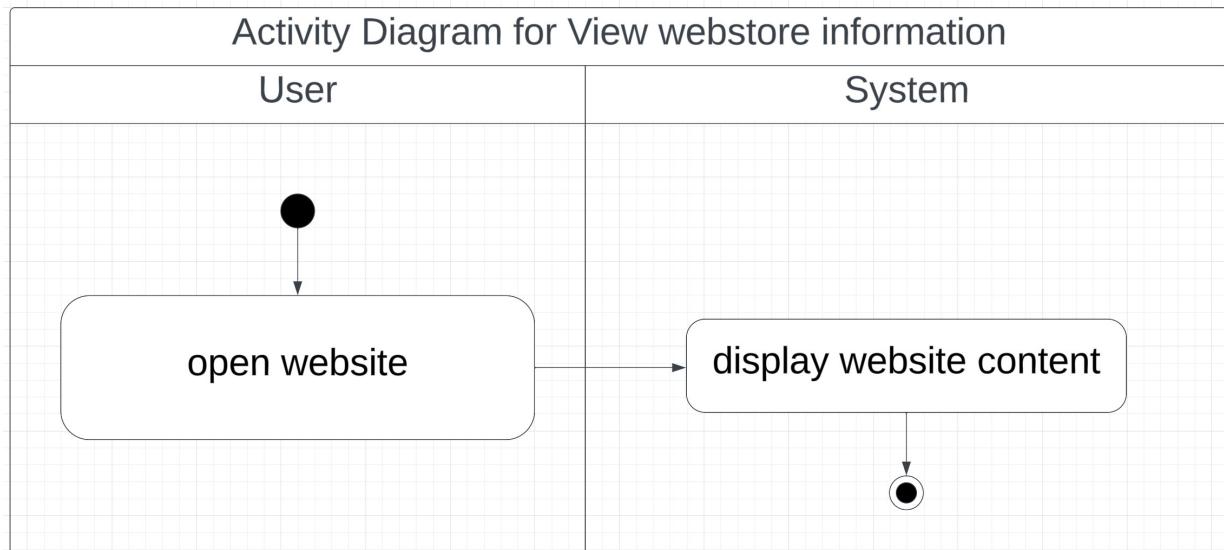


Figure 6.3.36: AD-18. View Webstore Information

AD-19. Make Reservation

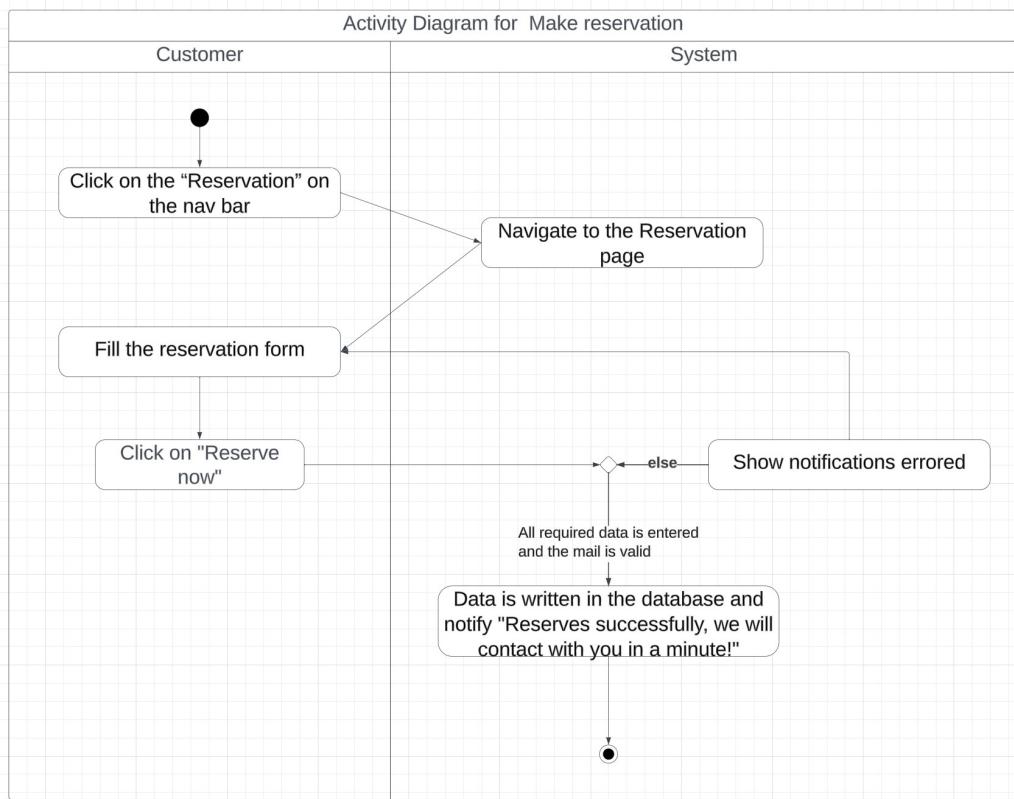


Figure 6.3.37: AD-19. Make Reservation

AD-20. View Message

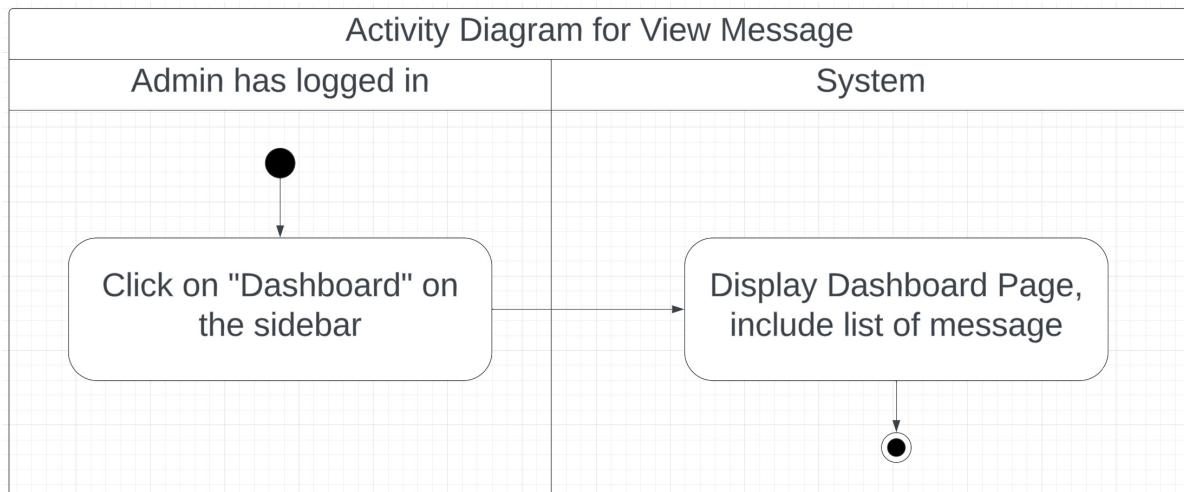


Figure 6.3.38: AD-20. View Message

AD-21. Delete Message

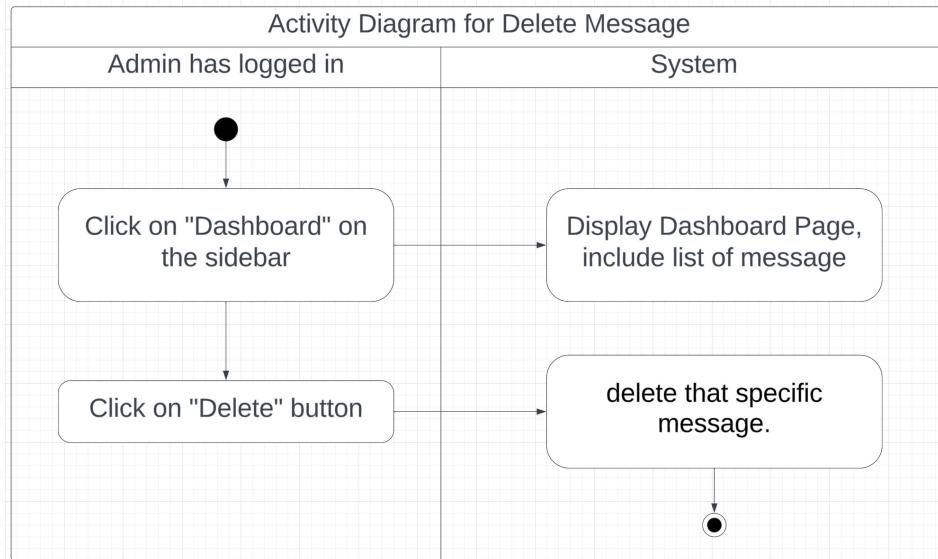


Figure 6.3.39: AD-21. Delete Message

AD-22. Reply Message

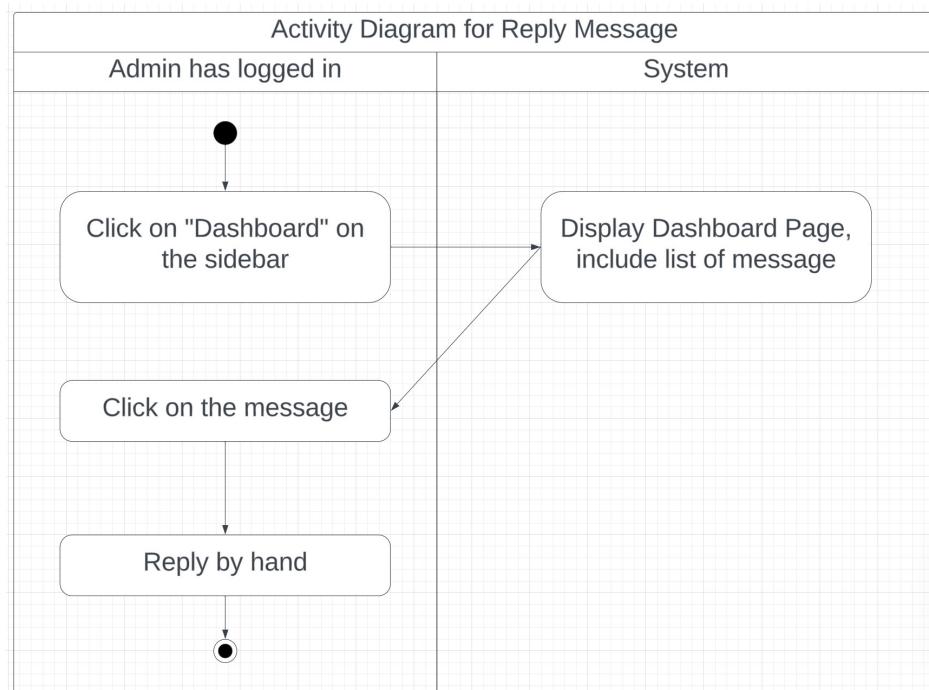


Figure 6.3.40: AD-22. Reply Message

AD-23. View All Orders

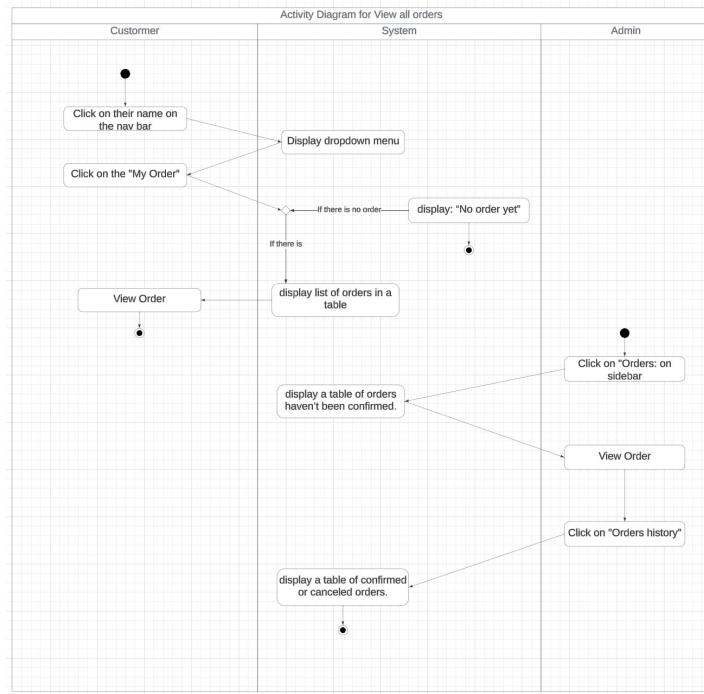


Figure 6.3.41: AD-23. View All Orders

AD-24. View Detail Order

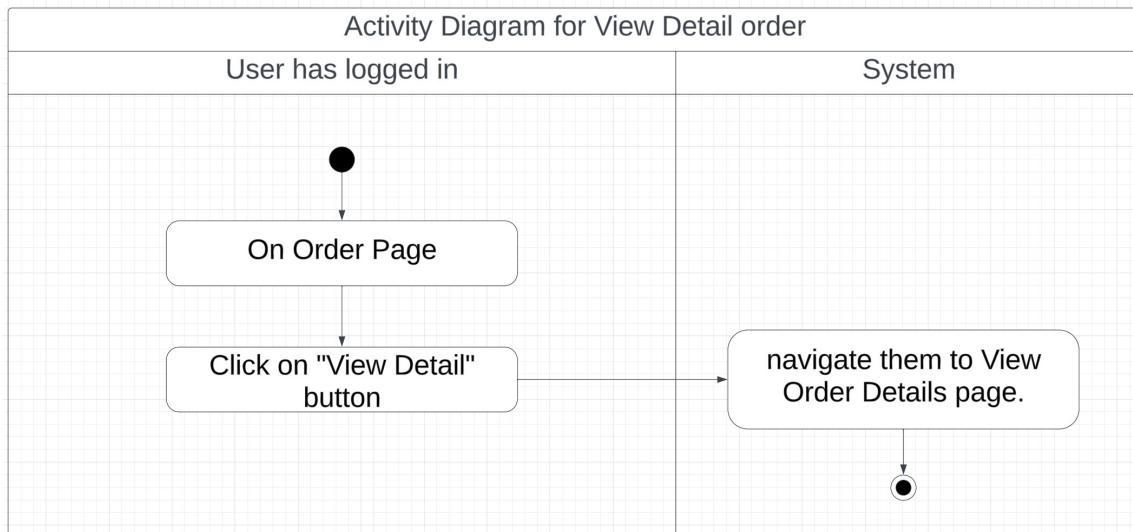


Figure 6.3.42: AD-24. View Detail Order

AD-25. Update Order Status

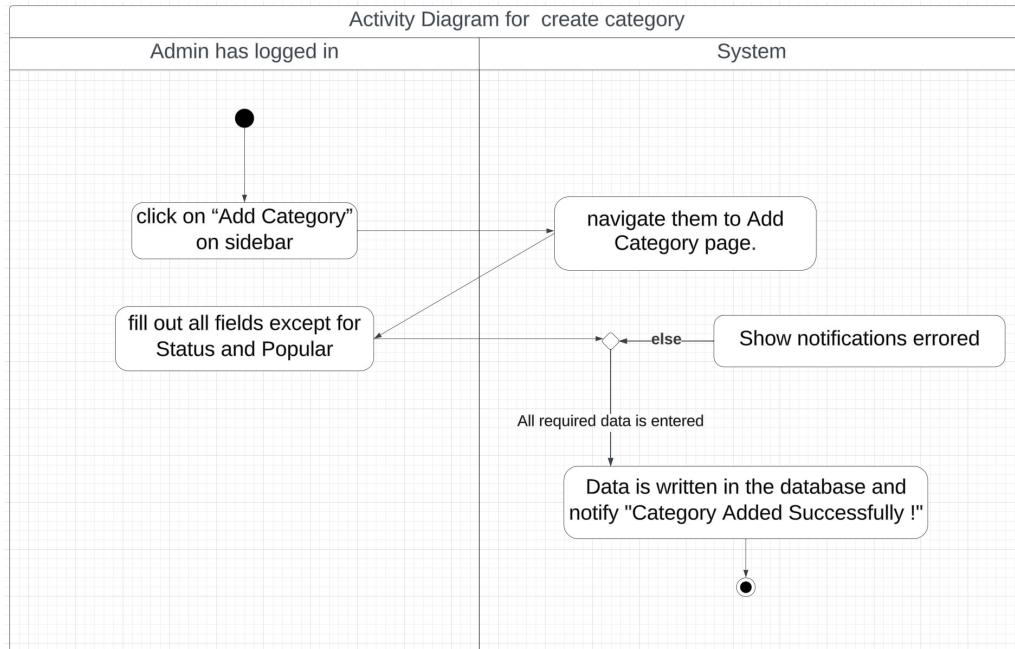


Figure 6.3.43: AD-25. Update Order Status

AD-26. Create Category

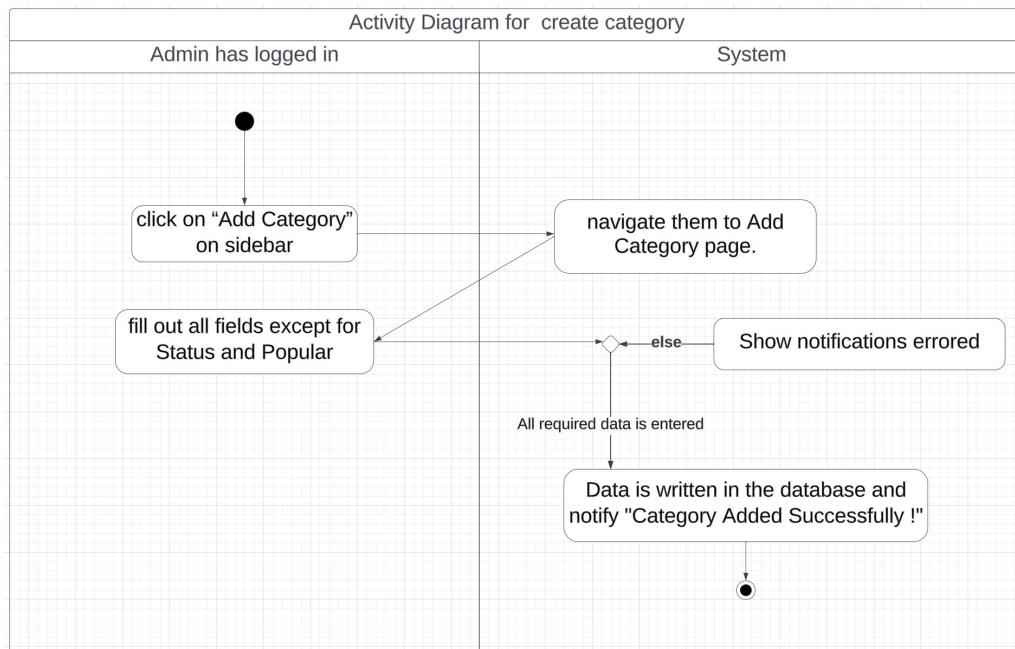


Figure 6.3.44: AD-26. Create Category

AD-27. View Category

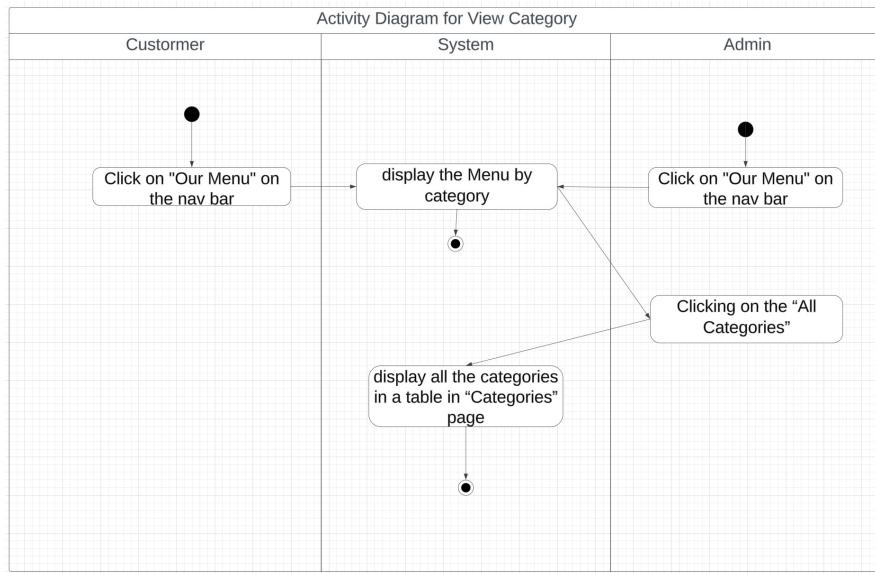


Figure 6.3.45: AD-27. View Category

AD-28. Delete Category

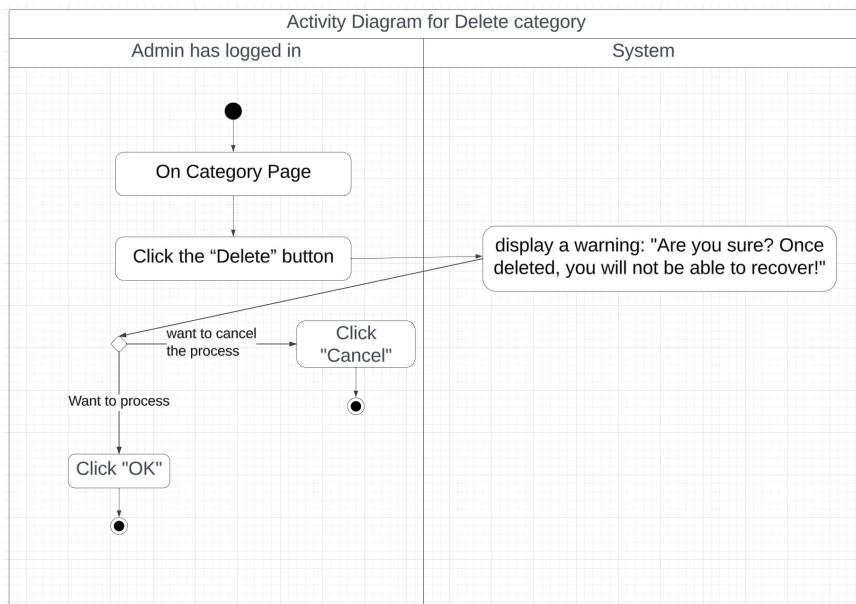


Figure 6.3.46: AD-28. Delete Category

AD-29. Update Category

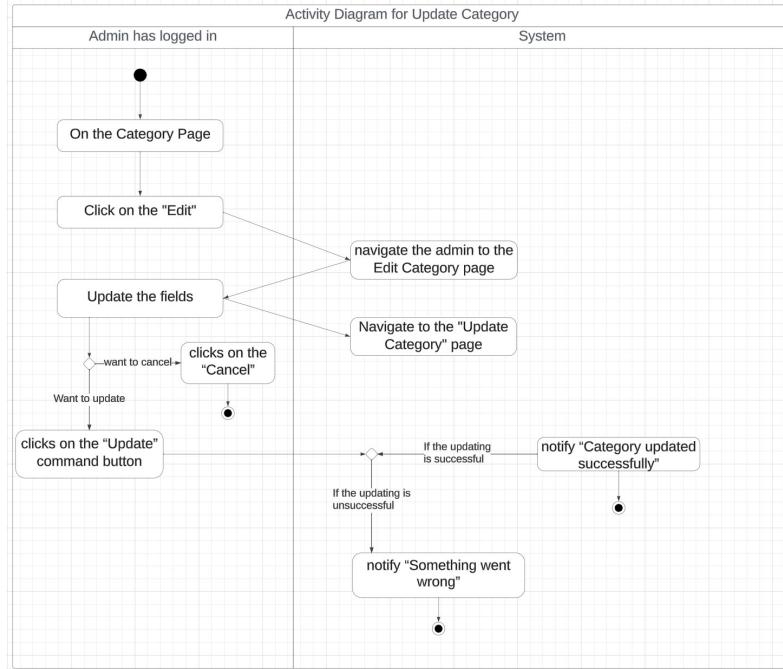


Figure 6.3.47: AD-29. Update Category

AD-30. Create Product

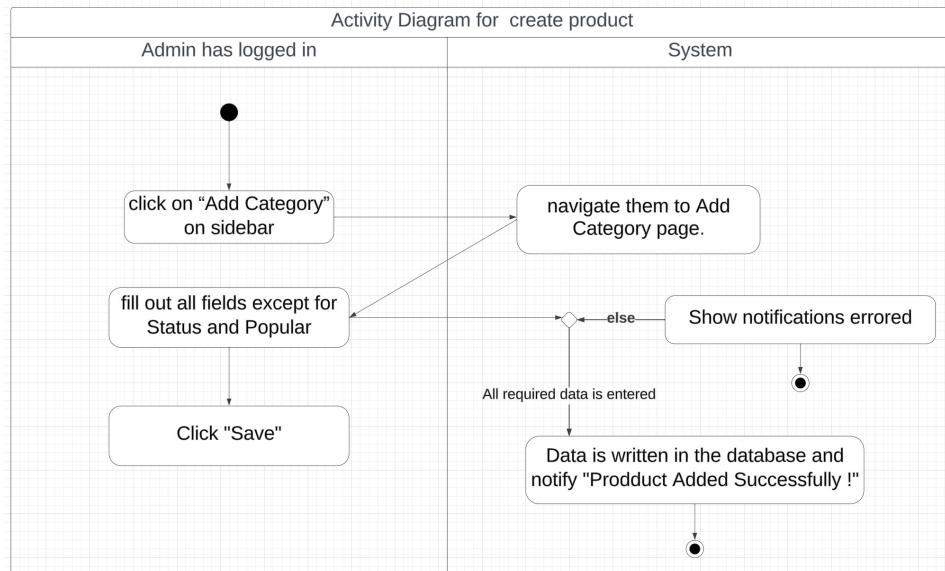


Figure 6.3.48: AD-30. Create Product

AD-31. View Product

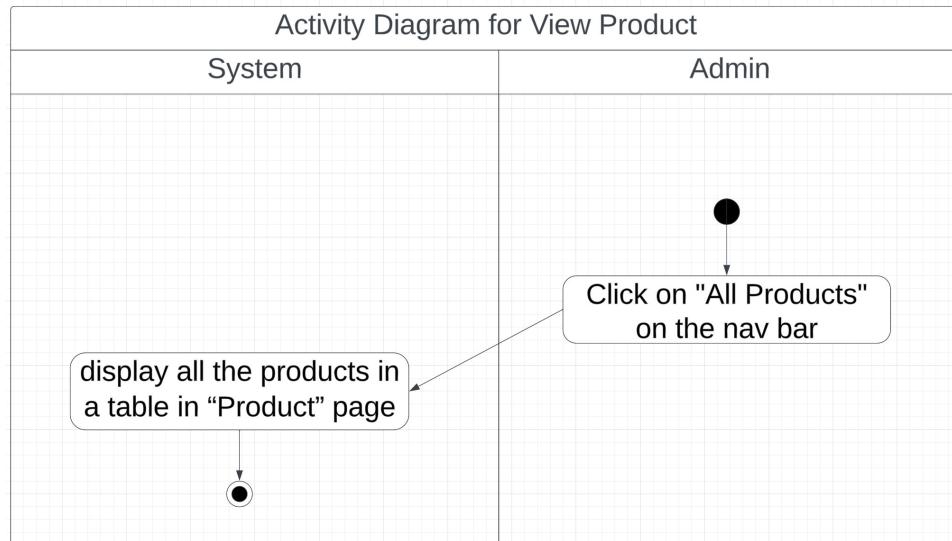


Figure 6.3.49: AD-31. View Product

AD-32. Delete Product

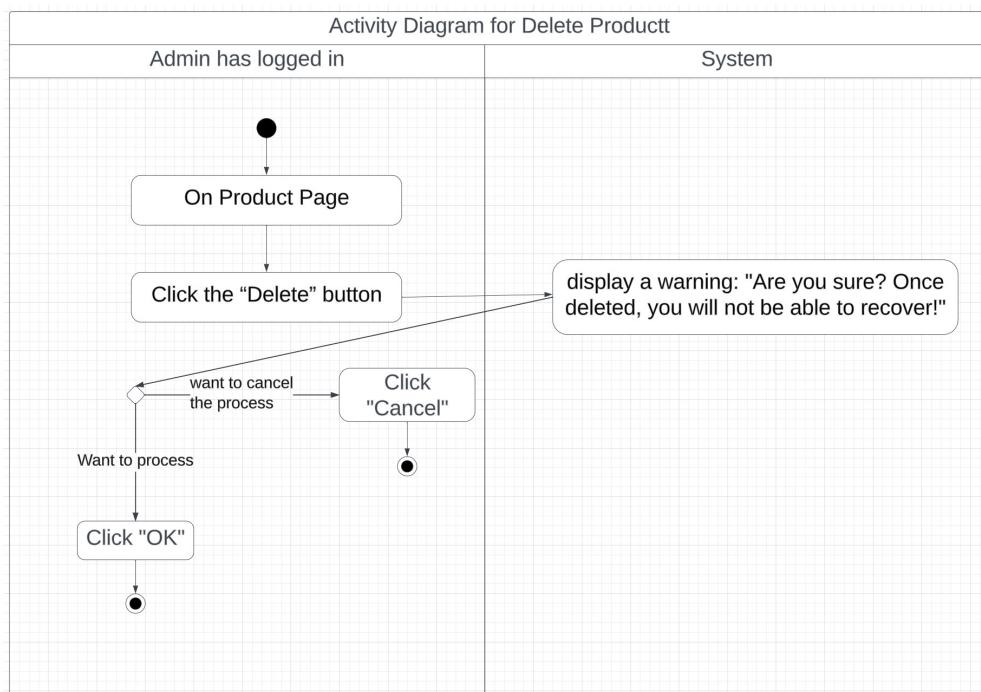


Figure 6.3.50: AD-32. Delete Product

AD-33. Update Product

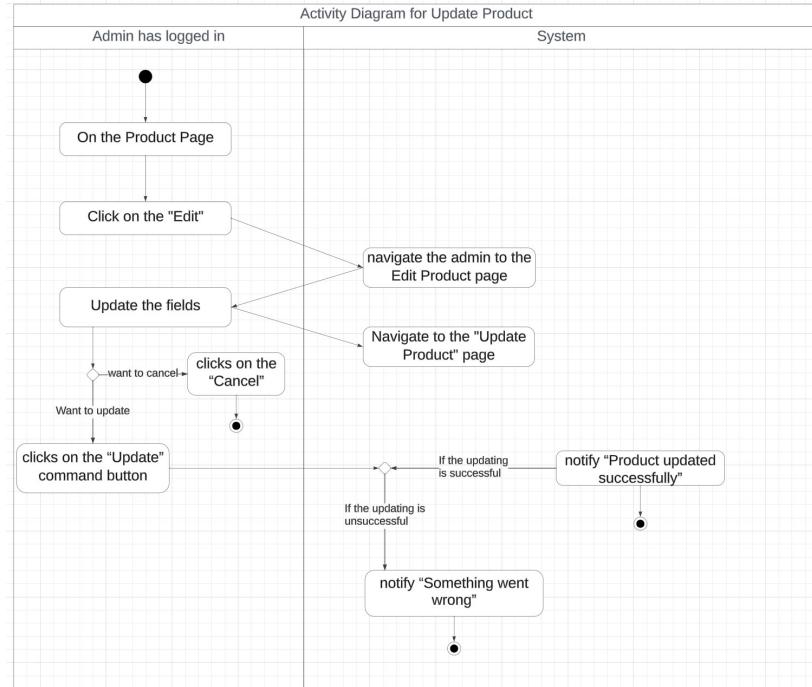


Figure 6.3.51: AD-33. Update Product

AD-34. View All Customer's Account

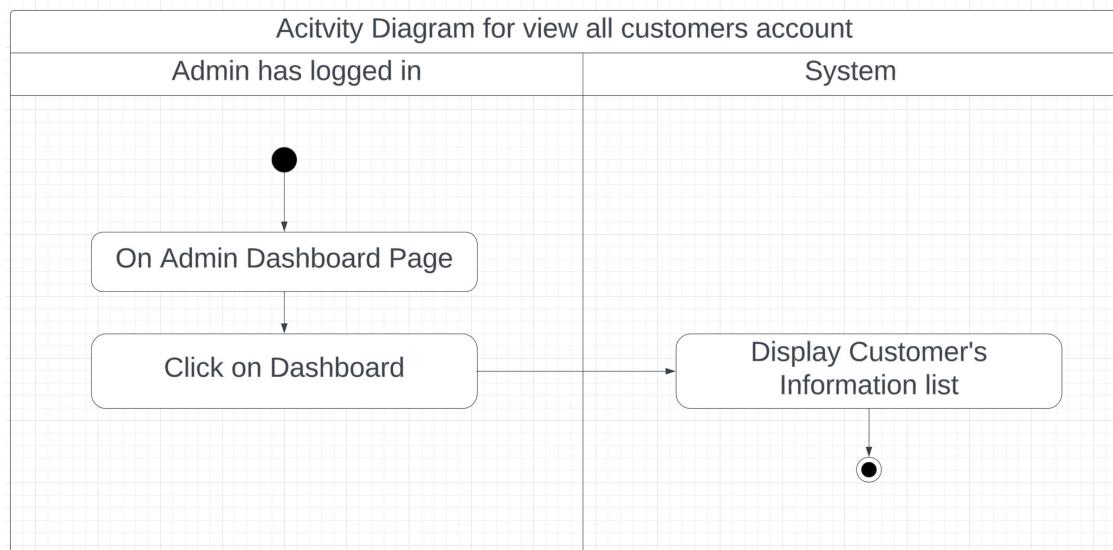


Figure 6.3.52: AD-34. View All Customer's Account

AD-35. View Customer's Information Details

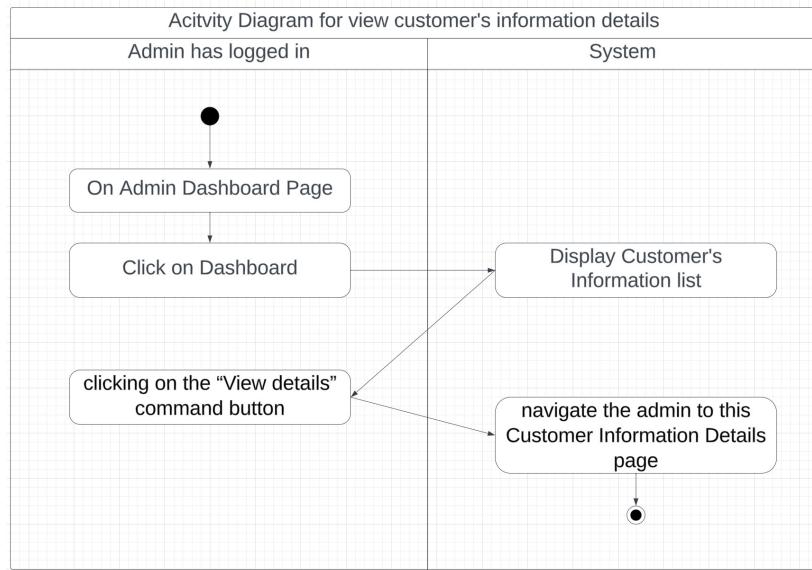


Figure 6.3.53: AD-35. View Customer's Information Details

AD-36. Update Customer's Account Status

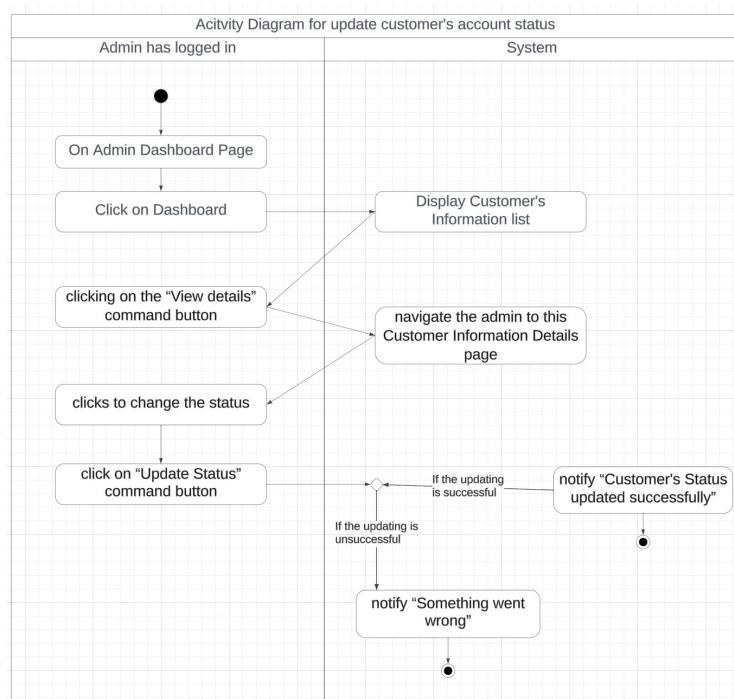


Figure 6.3.54: AD-36. Update Customer's Account Status

6.4 Class Diagram

6.5 Database Schema:

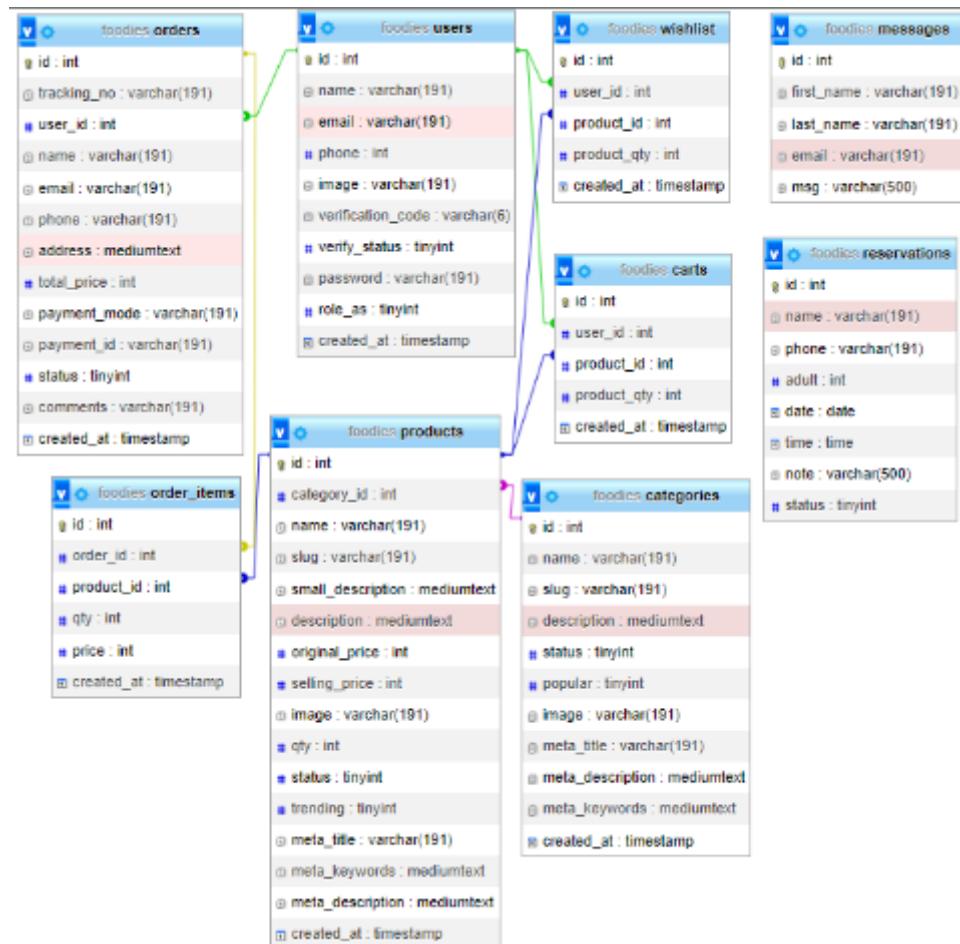


Figure 6.5.1: Database Schema

6.6 Testing:

6.6.1 Register Test Result:

ID	Feature	Section	Precondition	Step by step	Expected result	Test result
Register_001	Register	Register	Access the web, click "Register"	1. Not filling out any field 2. Submit	Message: "Please fill out this field"	Message: "Please fill out this field"

Register_002	Register	Register	Access the web, click "Register"	Fill out all fields in the correct formats: 1. Enter name 2. Enter phone number 3. Enter email 4. Enter password 5. Confirm password 6. Submit	Message: "Hey! Email has been sent. Please check your email"	Message: "Hey! Email has been sent. Please check your email"
Register_003	Register	Register	Access the web, click "Register"	Not filling out all fields	Message: "Please fill out this field"	Message: "Please fill out this field"
Register_004	Register	Register	Access the web, click "Register"	Fill out all fields but in the incorrect formats: 1. Enter name 2. Enter phone number 3. Enter email 4. Enter wrong password format 5. Confirm password 6. Submit	Message: "Please match the requested format"	Message: "Please match the requested format"

6.6.2 Login/Logout Test Result

ID	Feature	Section	Precondition	Step by step	Expected result	Test result
Login_001	Login	Login	Access the web, click "Login"	1. Not filling out any field 2. Login	Message: "Invalid"	Message: "Hey! Invalid."
Login_002	Login	Login	Access the web, click "Login"	1. Enter registered email address 2. Enter incorrect password 3. Login	Message: "Invalid"	Message: "Hey! Invalid."
Login_003	Login	Login	Access the web, click "Login"	1. Enter unregistered email address 2. Enter correct password 3. Login	Message: "Invalid"	Message: "Hey! Invalid."
ID	Feature	Section	Precondition	Step by step	Expected result	Test result
Login_001	Login	Login	Access the web, click "Login"	1. Not filling out any field 2. Login	Message: "Invalid"	Message: "Hey! Invalid."
Login_002	Login	Login	Access the web, click "Login"	1. Enter registered email address 2. Enter incorrect password 3. Login	Message: "Invalid"	Message: "Hey! Invalid."
Login_003	Login	Login	Access the web, click "Login"	1. Enter unregistered email address 2. Enter correct password 3. Login	Message: "Invalid"	Message: "Hey! Invalid."

6.6.3 Delete Profile Test Result:

This feature hasn't been developed yet.

6.6.4 View Webstore Information

ID	Feature	Section	Precondition	Step by step	Expected result	Test result
ViewWeb_001	View Web	View Web	Access the web	Access the web	Display Homepage	Display Homepage

6.6.5 Manage Category

ID	Feature	Section	Precondition	Step by step	Expected result	Test result
ManageCategory_001	View Category	View Category	Access the web, log in	Click "Category"	Display View Category page	Display View Category page
ManageCategory_002	Create Category	Create Category	Access the web, log in	1. Click "Category" 2.	Display View Category page	Display View Category page
ManageCategory_003	View Category	Add Product	Access the web, log in	Click "Category"	Display View Category page	Display View Category page
ManageCategory_004	View Category	Add Product	Access the web, log in	Click "Category"	Display View Category page	Display View Category page

6.6.6 Manage Product

ID	Feature	Section	Precondition	Step by step	Expected result	Test result
ManageProduct_001	Add Product	Add Product	Access the web, log in, click “Add product”	1. Click “Add Product” 2. Enter product name 3. Enter product price 4. Enter Product detail 5. Enter Total Stock 6. Upload image 7. Click “Publish now”	Display View Product page	Display View Product page
ManageProduct_002	Add Product	Add Product	Access the web, log in, click “Add product”	1. Not filling out any field 2. Click “Publish”	Message: “Please fill out this field”	Message: “Please fill out this field”

6.6.7 Search Product

ID	Feature	Section	Precondition	Step by step	Expected result	Test result
SearchProduct_001	Search Product	Search	Access the web	1. Enter content that is not on the page 2. Search	Message: “No result found”	Message: “No result found”
SearchProduct_002	Search Product	Search	Access the web	1. Enter content that is on the page 2. Search	Display product information card	Display product information card

7 TÀI LIỆU THAM KHẢO

References

- [1] Lớp Quản trị bán hàng trường Đại học Công nghệ thông tin, Đại học quốc gia thành phố Hồ Chí Minh, SalesManagementC06.pdf

- [2] Lớp Quản trị bán hàng trường Đại học Công nghệ thông tin, Đại học quốc gia thành phố Hồ Chí Minh, SalesManagementC02.pdf
- [3] How to start a healthy food snack business