



TRƯỜNG ĐẠI HỌC FPT

MINISTRY OF EDUCATION AND TRAINING

# FPT UNIVERSITY

## Capstone Project Document

### SECOND-HAND MARKET

<2HMarket>	
<b>Group Members</b>	Diep The Sang - Leader - DE140025 Nguyen Phuc Ngoc Thanh - Member- DE140120 Hoang Hai Dang - Member - DE140112 Tran Thanh Long - Member - DE140145
<b>Supervisor</b>	Vo Duc Hoang – HoangVD7 Ly Quynh Tran – TranLQ
<b>Capstone Project code</b>	SCH

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## **II. Definition and Acronyms**

Acronym	Definition
PWM	Psychology website
AWS	Amazon Web Services
BA	Business Analysis
BR	Business Rule
ERD	Entity Relationship Diagram
GUI	Graphical User Interface
PM	Project Manager
SDD	Software Design Description
SPMP	Software Project Management Plan
SRS	Software Requirement Specification
UAT	User Acceptance Test
UC	Use Case
API	Application Program Interface

**Table 1: Definition and Acronyms**

## **III. Project Introduction**

### **1. Overview**

#### **1.1. Project Information**

- Project name: Secondhand Market
- Project code: SCH
- Group name: 2Hmarket Team
- Software type: Web Application, Mobile App

## 1.2. Project team

### 1.2.1 Supervisor

Full Name	Role	Email	Phone
Võ Đức Hoàng	Lecturer	hoangvd7@fe.edu.vn	0906477283
Lý Quỳnh Trần	Lecturer	tranlq@fe.edu.vn	0934915655

**Table 2: Supervisor**

### 1.2.3 Team Members

Full Name	Role	Student Code	E-mail	Phone
Diệp Thé Sang	Leader	DE140025	sangdtde140025@fpt.edu.vn	03456978 33
Nguyễn Phúc Ngọc Thành	Member	DE140120	thanhnpnde140120@fpt.edu.vn	088867127 8
Hoàng Hải Đăng	Member	DE140112	danghhde140112@fpt.edu.vn	039336652 3
Trần Thành Long	Member	DE140145	longttdde140145@fpt.edu.vn	093783444 6

**Table 3: Team Members**

## 2. Product Background

With the current situation of life being so chaotic, shopping is an indispensable thing in human life, buying and selling a lot will create a surplus of many things that we do not use. It is not difficult for us to come across second hand stalls on the street or in the market, but many inadequacies are happening.

For sellers: difficult to find premises for sale, expensive to rent.

For buyers: it takes a lot of time to find the items they need to buy, limited the products they need to search for, it is difficult for shoppers to find the best quality products at the most reasonable prices.

From those inadequacies, Second-hand market was born with the mission to solve the above difficulties of second-hand buyers and sellers. Second-hand Market is a system that allows buyers and sellers to connect to secure transactions. The system is a place specializing in trading, buying and selling old and used products, with a variety of categories from electronic devices such as laptops, phones ... to home appliances such as televisions, fans, rice cookers...etc. Anyone can easily buy, search for the product they want as a buyer or can post to sell products as a seller. The system will provide Vietnamese users with a simple and easy-to-use platform.

## 3. Existing Systems

### 3.1 ChoTot

- Chotot is a leading buying and selling website in Vietnam, this website allows users to post to sell second-hand goods, or can create new orders, allowing users to directly exchange prices, locations. transaction point

- Link: <https://www.chotot.com/>

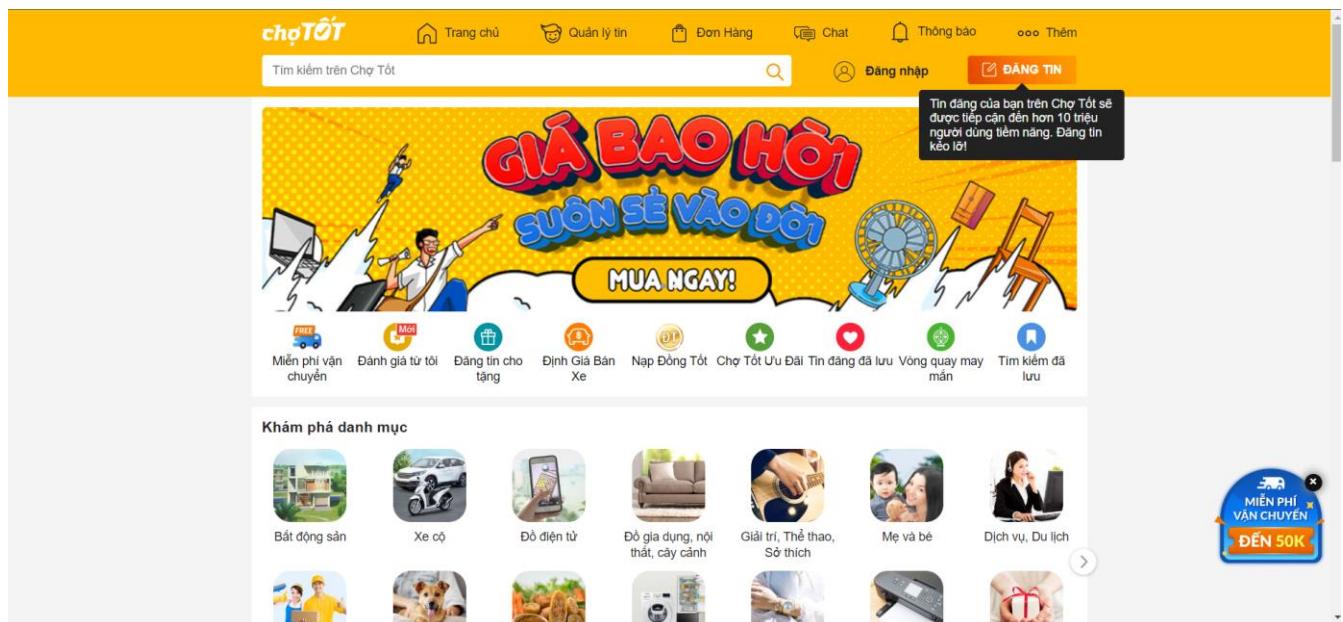


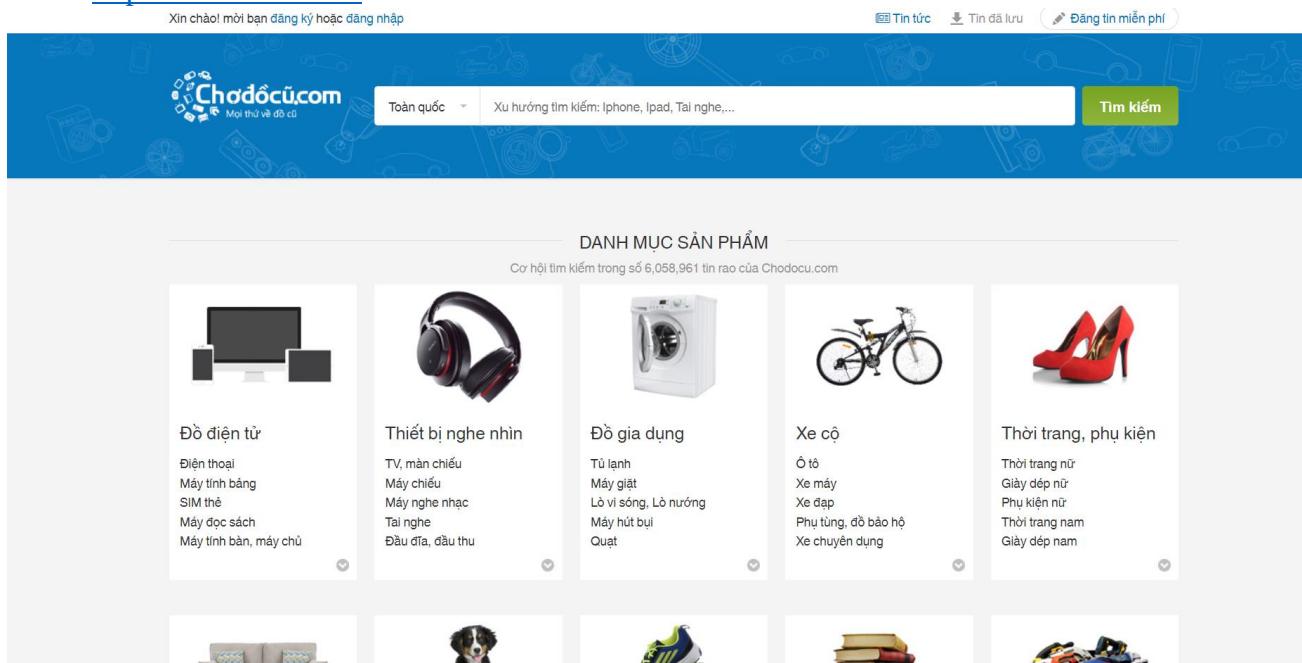
Figure 1: ChoTot System

- System actor:

- + Admin system
- + User
- **Advantage:**
  - + Friendly interface, beautiful, full display of information related to the item for sale
  - + Variety of goods, a large number of items for sale at various prices
  - + There is a chat function so that users can communicate with each other more carefully, supporting the post to be put on the front page if the user needs it.
  - + The approved items posted on Chotot are all reputable and highly tradable items
- **Disadvantage:**
  - + Selling products on Chotot is not really easy to use, posting on sales is difficult to show up on the front page without paying a fee.
  - + Payment on chotot also has many disadvantages

### 3.2 Chodocu.com

- Chodocu.com is a reliable address for you to choose from used and unused goods with good quality. A useful information site for people with limited financial resources. More simply, Chodocu.com helps you find unique items, strange items, and antiques at the best prices.
- **Link:** <https://chodocu.com/>



**Figure 2: Chodocu.com System**

- **System actor:**
  - + Admin system
  - + User
- **Advantage:**
  - + Provide a huge amount of information about products and goods in people's lives
  - + Providing the best products and services, enabling buyers and sellers to exchange and transact

- + Help those who need to find and buy satisfactory products and goods when they have limited financial resources, or simply search for unique items at the best prices.
- **Disadvantage:**
  - + Buying goods in the form of a bid will make users less interested in buying on the system
  - + Customers will not know how much the product competitors have paid.
  - + It can make buyers regret and depressed when they can't own the product because the price is too low compared to others

## 4. Business Opportunity

Currently, when the world is in the process of "digital transformation". Many e-commerce sites appeared, leading to changes in people's shopping needs. Currently, people are gradually turning to online shopping, but websites for selling second-hand goods online are still very limited despite the high demand for second-hand goods. Seizing that opportunity, we created a Secondhand market to make it easy for people to buy essential items at cheap prices. through which we will have a large number of users and mine and make money based on that number of users.

## 5. Software Product Vision

Today, buying and selling between people is an essential issue, although there have been websites, and e-commerce sites to help us buy and sell, those websites are still not enough. enough demand for the function makes it difficult or impossible for people to use, so many sellers still have to choose a location to create a direct trading market. Moreover, after the corona pandemic (covid - 19) we can see the danger when we come into contact with each other in large numbers. Therefore, the birth of the Second-hand market is a necessary and useful answer to solve this problem of buying and selling.

- Vision (Brief, inspiring goal for the product encapsulating the big idea & motivations):
  - + Replacing the traditional form of buying and selling also brings many inadequacies, optimizing prices and types of goods, providing many choices for people who want to buy and sell, and making it easier for users to buy and sell goods. by shopping online, thereby contributing to the world's "digital transformation" of business models
- Target group (Who will the product serve?):
  - + Buyers and sellers have a need to find and sell used items
- Needs (What problems should the product solve for the target group?):
  - + There will be many items to choose from people, thereby helping people to choose the right product, can optimize the price and time by being able to negotiate with each other on the application.
- Product (How will our product meet the needs of the target group?):
  - + Analyze the user's location, thereby recommending the products closest to the user
  - + Integrated chat feature to help users exchange information easily
  - + pay money via online payment methods
  - + Allows users to top up the website to push their listings to the front page

- + users can easily log in to the website and authenticate via google, facebook.... making it more convenient for users to use
- + added voting feature to increase the prestige of those who have confirmed the transaction successfully
- Business Goals (How will the product benefit the company?):
  - + Second-hand market will become the largest second hand e-commerce site in Vietnam

## **6. Project Scope & Limitations**

- Our products are aimed at solving the buying and selling of people, specifically those who want to resell their used things, and who need to find themselves items at a reasonable price. . In addition, our products help people chat with each other like a popular social networking site today to negotiate with each other, or take a closer look at products to buy and sell. After finding out, there are sellers and buyers who transact with each other or can transact by paying on the website and the money will be transferred directly to the seller.

### **6.1 Major Features**

#### **6.1.1. Second-Hand Market Seller Site**

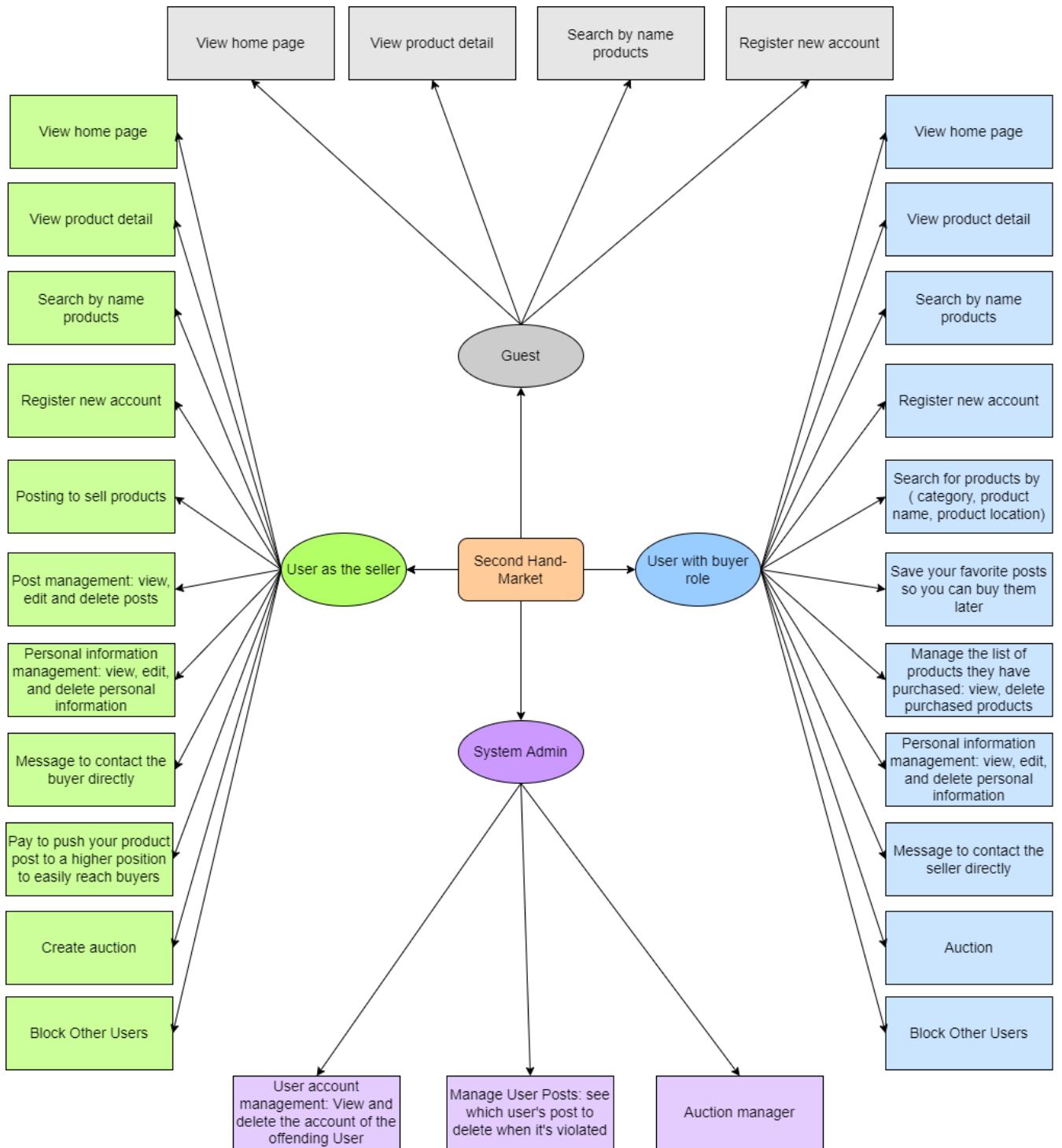
- FE-01: Posting to sell products
- FE-02: Post management: view, edit and delete posts
- FE-03: Personal information management: view, edit, and delete personal information
- FE-04: Message to contact the buyer directly
- FE-05: Create auction
- FE-06: Block Other Users
- FE-07: Pay to push your product post to a higher position to easily reach buyers

#### **6.1.2. Second-Hand Market Buyer Site**

- FE-01: Search for products by (category, category, product name, product location)
- FE-02: Save your favorite posts so you can buy them later
- FE-03: Manage the list of products they have purchased: view, delete purchased products
- FE-04: Personal information management: view, edit, and delete personal information
- FE-05: Message to contact the seller directly
- FE-06: Auction
- FE-07: Block Other Users

#### **6.1.3. Second-Hand Market Admin Site**

- FE-01: User account management: View and delete the account of the offending User
- FE-02: Manage User Posts: see which user's post to delete when it's violated
- FE-03: Auction manager



**Figure 3: Major Features**

## 6.2 Limitations & Exclusions

- LI-01: Do not cooperate with 3rd party delivery

## IV. Project Management Plan

### 1. Overview

#### 1.1 Scope & Estimation

- Details of the group's WBS & Estimation file by accessing the link: [Work Breakdown Structure](#)

#### 1.2 Project Objectives

- Learn new technologies: NodeJS, ReactJS, Figma, CI/CD, microservices,...
- Build communication and time management skills when working in groups.
- Learn to manage source code with Git, and Github.
- Drawing lessons, and experiences and fostering knowledge about the process of building and managing a project, creating a good foundation for work after graduation
- Allocated effort (person - day): 2000 hours

#	Testing Stage	No. of Defects	% of Defect	Notes
1	Requirement	5	25	In the process of building a website, not fully understanding the requirements makes the development sometimes go wrong and make mistakes.
2	Design	2	10	Developing a website in a short time, so it is difficult to have the most perfect interface in terms of overview, colors, fonts, ...
3	Code	3	15	There are many techniques that have never been encountered and draw Gantt chart takes up most of the project time.
4	Review	5	25	Review tasks and functions to make sure the code is clear and working correctly.
5	Test	5	25	Too many cases occurred, taking up a lot of the project's time to execute the test.

**Table 4: Project Objectives**

### 1.3 Project Risks

#	Risk Description	Impact	Possibility	Response Plans
1	Lack of clarity in Project purpose and need	High	High	Be careful in defining Project purpose, need from the beginning
2	Scope of project	High	High	Review of scope and revision along the timeline of the project. Define prioritization of topics done. Ability to trim project as progression due to open nature of the project.
3	Poor Project schedule	Medium	Medium	Define Project schedule clearly and everyone must follow
4	Spending time on project is interrupted by member's work	Medium	Medium	Cut low-priority tasks and focus on high priority tasks
5	Technical difficulties	High	High	Prepare deep knowledge, attend training meeting, members are encouraged to share knowledge about the technical, help others

**Table 5: Project Risks**

## 2. Management Approach

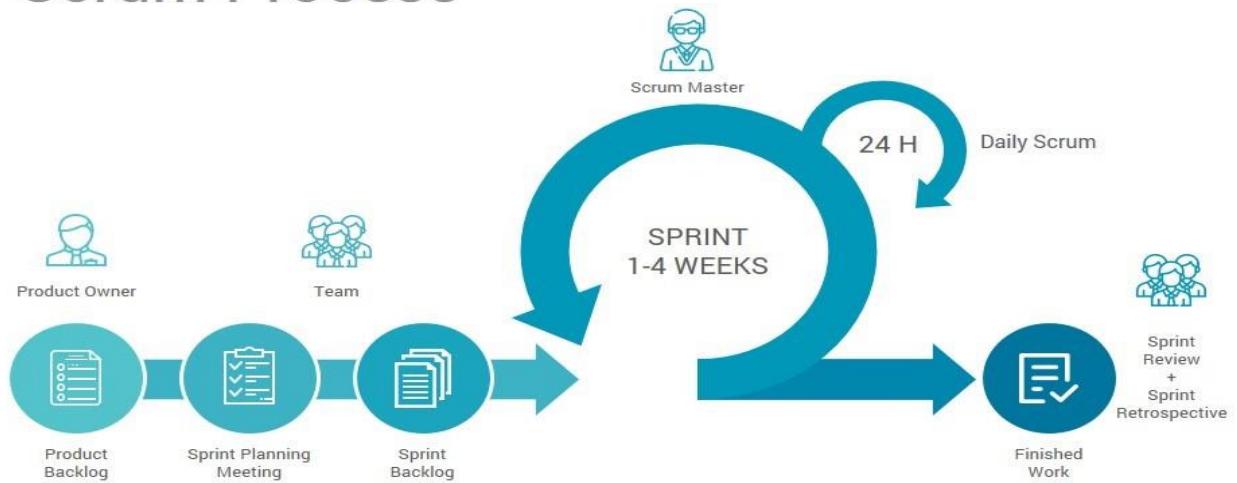
### 2.1 Project Process

In this project, our team agreed to use the Agile methodology to approach the project.

The reasons why we chose this approach:

- More adaptability (and less risky): This means that the project can respond to change, even at the last minute, and can adapt to it without much disruption. Project deliverables are not pre-set, so the team can easily reevaluate the plan and adjust priorities to align with updated goals. Teams can consistently deliver and manage change requests and ideas efficiently.
- Continuous improvement: Agile encourages team members to work, exchange, and provide their feedback so that different stages of the end product can be tested and improved as many times as needed.
- Faster handovers: Breaking projects down allows the team to test pieces, and identify and fix issues faster, resulting in more consistent and successful handovers.
- Happier teams: Agile groups are more autonomous. That is, they are often given the freedom to propose new ideas, innovate, and problem-solve that may be lacking in traditional project management methodologies.

# Scrum Process



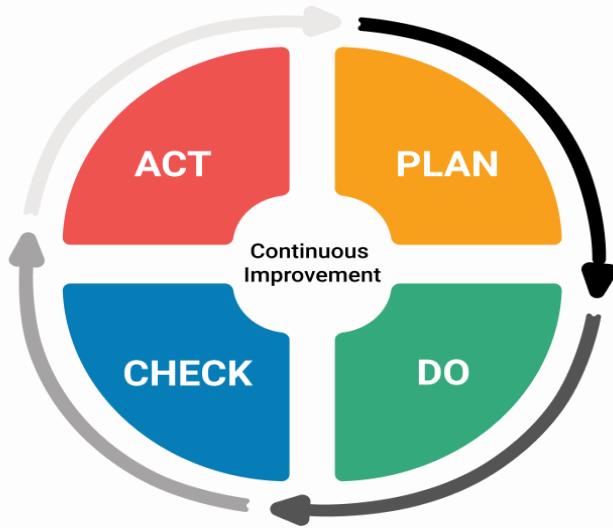
**Figure 4: Project Process**

## 2.2 Quality Management

The PDCA cycle is a cycle of continuous improvement in the quality management system. So with the expectation of ensuring the best possible project quality outcome, we decided to use the PDCA cycle for project quality management.

The PDCA cycle includes Plan - Do - Check - Act. In there :

- Plan: Set up a plan.
- Do: Implementation of the established plan.
- Check: Evaluate actual implementation results.
- Act: Change, improve.



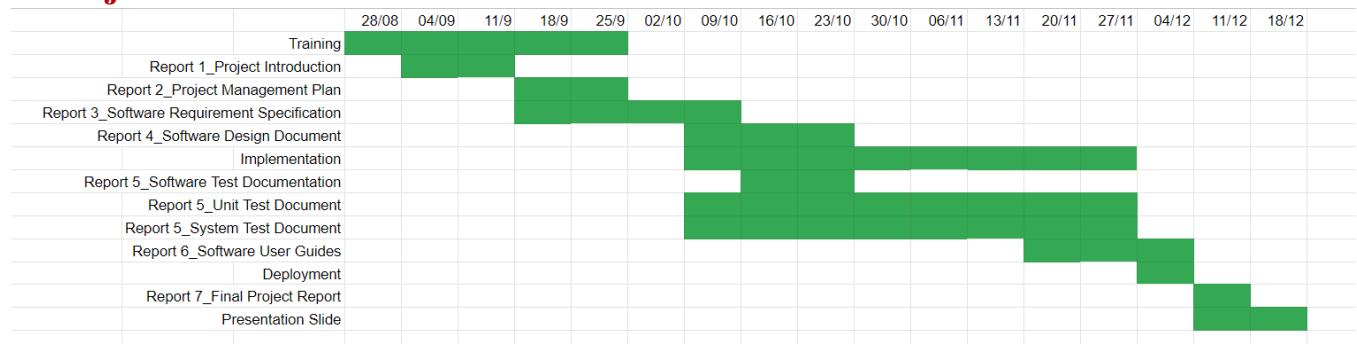
**Figure 5: Quality Management**

### 2.3 Training Plan

Training Area	Participants	When, Duration	Waiver Criteria
NodeJs	All members	21-08-2022, 3 weeks	Mandatory
ReactJS	All members	11-09-2022, 2 weeks	Mandatory
Git, Github	All members	22-09-2022, 3 days	Mandatory

**Table 6: Tranning Plan**

### 3. Project Deliverables



**Figure 6: Project Deliverables**

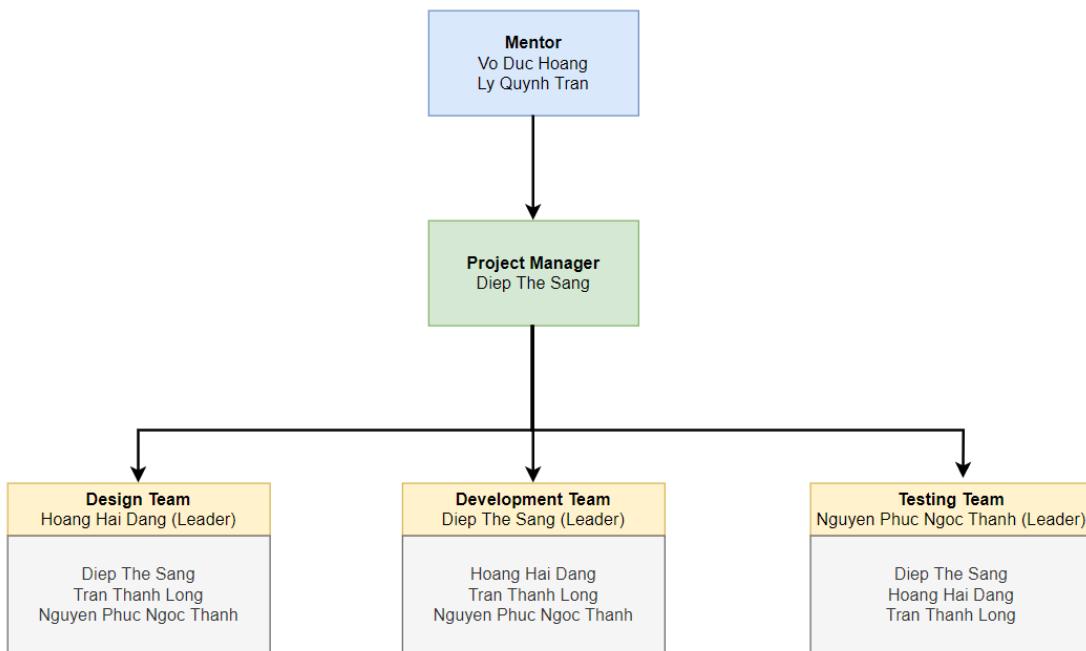
#	Deliverable	Due Date	Notes
1	Report1_Project Introduction	11-Sep-2022	

2	Report2_Project Management Plan	25-Sep-2022	
3	Report3_Software Requirement Specification	09-Oct-2022	
4	Report4_Software Design Document	23-Oct-2022	
5	Report5_Test Report	27-Nov-2022	
6	Report6_Software User Guides	04-Dec -202	
7	Report7_Final Project Report	11-Dec-2022	

**Table 7: Project Deliverables**

## 4. Responsibility Assignments

### 4.1 Team & Structures



**Figure 7: Project Organization**

### 4.2 Responsibility Assignments

D~Do; R~Review; S~Support; I~Informed; <blank>- Omitted

Responsibility	SangDT	DangHH	ThanhNPN	LongTT
Project Planning & Tracking	D, R, I	S	S	S
Prepare Project Introduction Document	D, R	D	D, I	D
Prepare Project Management Plan	S, R	D	S, I	S
Prepare SRS Document	D, R	S	S, I	S
Prepare Use Case Specifications	D, R	D	D, I	D
Prepare Software Design Document	S, R	D	S, I	S
Coding Front end	D, R	D, R, I	D, R	D, R
Coding Back end	D, R, I	D, R	D, R	D, R
Prepare Software Test Documentation	S, R	S	S, I	D
Prepare Unit Test Document	D, R	D, R	D, R	D, R
Testing	D, R	D, R	D, R	D, R
Prepare Software User Guides	S, R	S	D, I	S
Deployment	D	R	R	R
Prepare Project Report	D	R	R	S
Prepare Presentation Slide	S, R	S	D	S

**Table 8: Responsibility Assignments**

## 5. Project Communications

Communication Item	Who/ Target	Purpose	When, Frequency	Type, Tool, Method(s)
Online Meeting	All Members	Tracking plan, planning task for the next sprint, review product	20h30 Monday	Google Meet
Online Meeting	All Members	Tracking plan, planning task for the next sprint, review product	20h30 Friday	Google Meet
Stand-up meeting	All Members	Tracking status, issue	15 minutes at 20h All day	Google Meet

**Table 9: Project Communications**

## 6. Configuration Management

### 6.1 Document Management

All documents will be organized and saved in Google Drive, which only members and supervisors of the group have permission to add or edit. In addition, we always prepare a backup when needed or the original is unfortunately deleted.

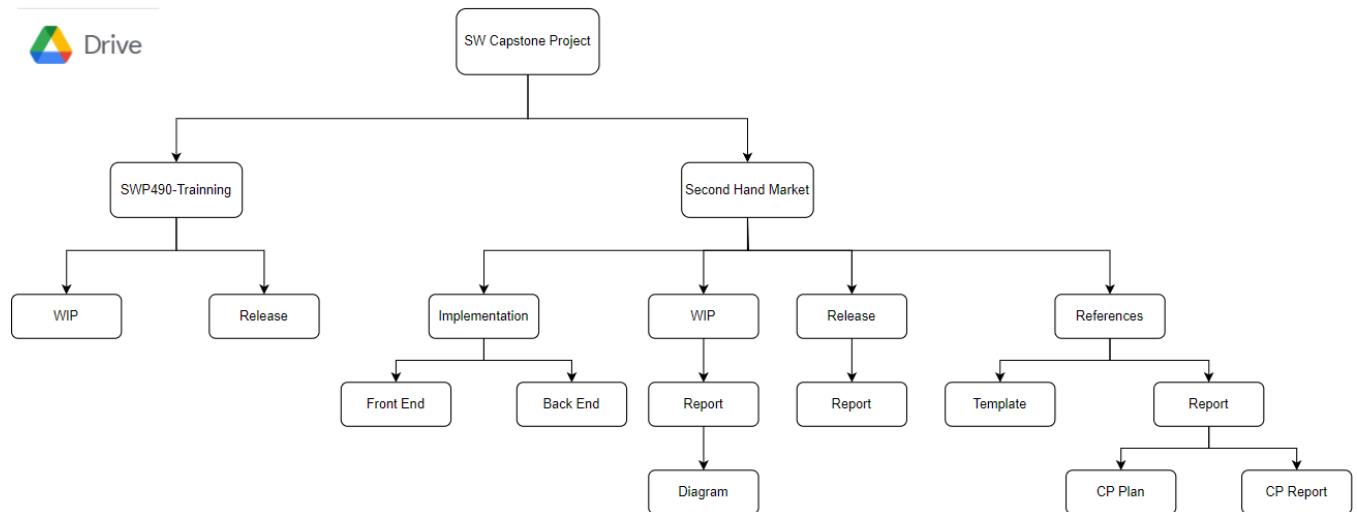


Figure 8: Document Management 1

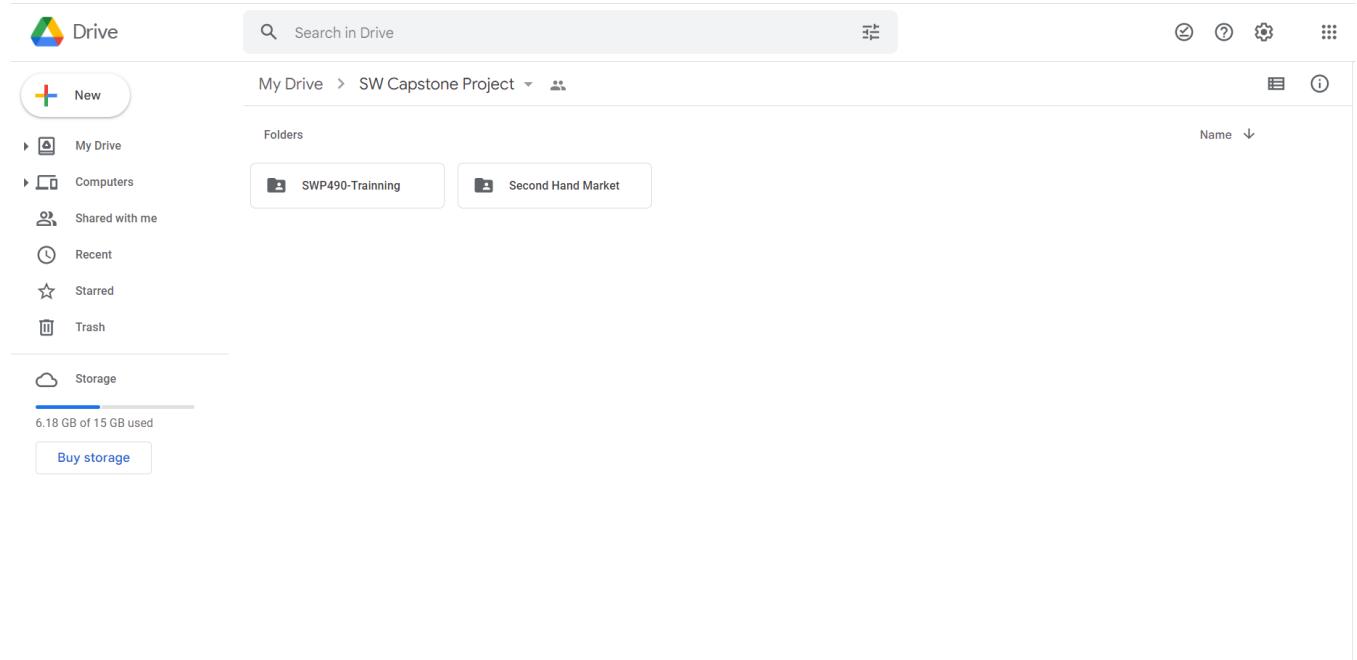


Figure 9: Document Management 2

Folder	Description

<b>Second Hand Market</b>	Store all documents of the Second Hand Market project.
<b>WIP</b>	Store documents are in progress.
<b>Report</b>	Store reports.
<b>Diagram</b>	Store diagrams.
<b>Release</b>	Store completed documents.
<b>References</b>	Store all resources used as references.
<b>Template</b>	Stores template of all documents.
<b>SWP490-Training</b>	Store all documents of the mock project.
<b>Implementation</b>	Store all documents about implementation.
<b>Back End</b>	Store all documents about back-end implementation.
<b>Front End</b>	Store all documents about front-end implementation.

**Table 10: Document Management**

## 6.2 Source Code Management

### 6.2.1. Convention

- All coding branches must be reviewed by leader before merging to default branch.
- There is only one person who can merge branches to default branch.
- All developers must implement unit test and review code before create merge request.

### 6.2.2. Management

- All source code will be stored on Github.
- Only team members can access the repository on Github.

### **6.3 Tools & Infrastructures**

<b>Category</b>	<b>Tools / Infrastructure</b>
<b>Development process</b>	Agile methodology
<b>Programming languages</b>	Javascript
<b>Framework/Library</b>	ReactJS, Sequelize
<b>Software architecture</b>	MVC
<b>Version control</b>	Git, Github
<b>IDEs/Editors</b>	Visual Studio Code, Postman
<b>UML tools</b>	Draw.io, Visual Paradigm Online
<b>Design UX/UI</b>	Figma
<b>Web server</b>	NodeJs
<b>DBMS</b>	MySQL
<b>Deployment server</b>	Amazon Web Services
<b>Project management tool</b>	Google Sheets
<b>Communication</b>	Discord, Google Meet, Messenger, Gmail

**Table 11: Tools & Infrastructures**

## V. Software Requirement Specification

### 1. Product Overview

The purpose of this document describes in detail the functions of the “website for buying and selling two-handed items”. It illustrates the functions in detail and builds a complete system. It clearly explains the system's constraints, providing an overview of the interface and interactions with the system or other external applications. This document uses the description presented for the customer to better understand the website

- The web-based project management and deployment management system "2hand market" helps the management and implementation of registrations to be done quickly, conveniently and with the least cost. The system was born to sell used products to people in need.
- The service system helps to sell the main objects: Most items from electrical appliances to phones or vehicles.
- The site allows users to register to participate in buying and sell by logging into the system. After registering, customers will be moderated to post their used products for sale or buy products sold on the website.

### 2. User Requirements

#### 2.1 Actors

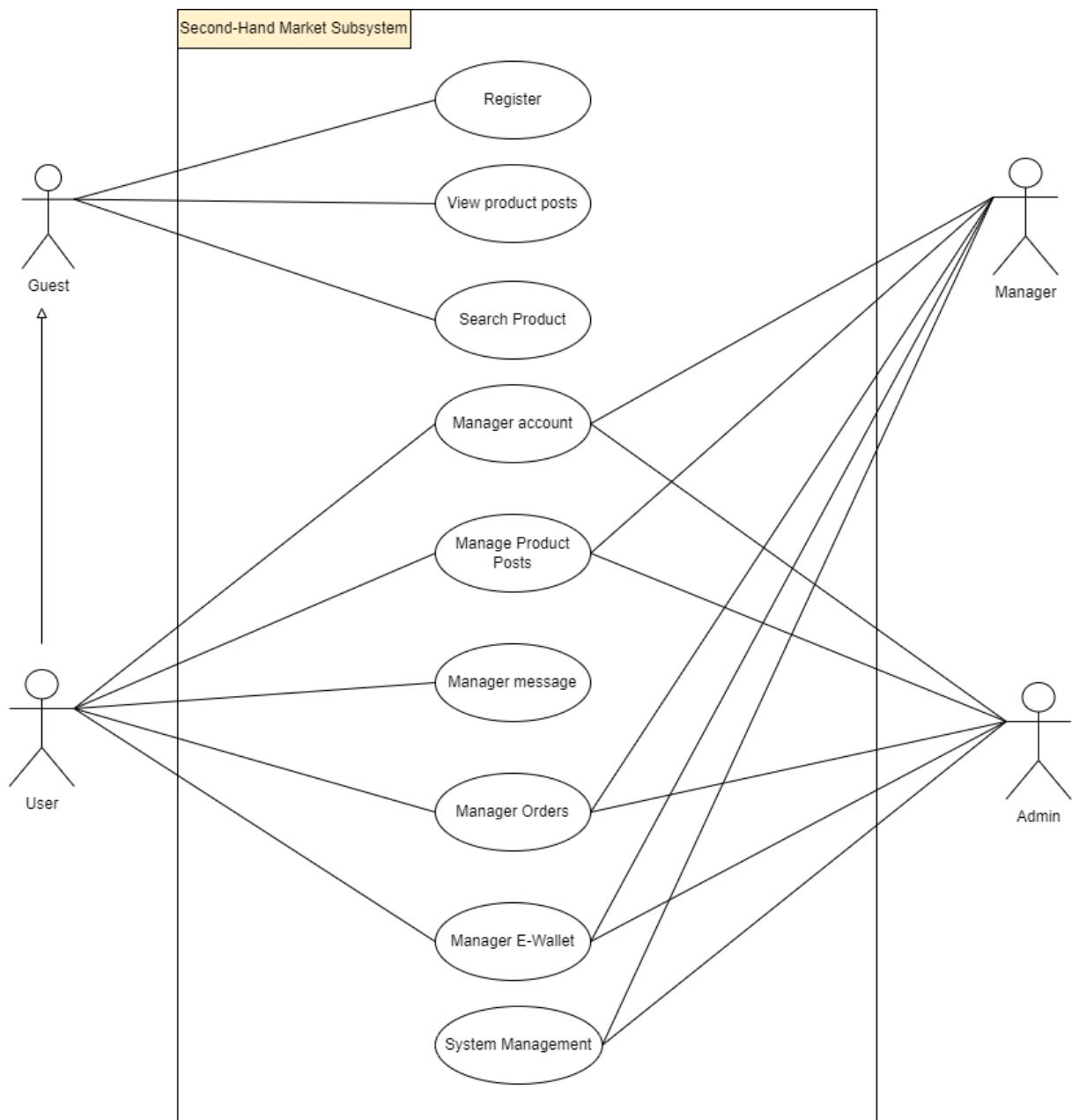
#	Actor	Description
1	Guest	As a user accessing the website (not logged in). They can view product and search product,...
2	User	As the user accessing the website (logged in). They can bid, post products they want to sell, ....
3	Manager	As the manager of posts related to the auction,.....
4	Admin	As a system administrator who has the right to manage all and has the right to ban accounts that show signs of violating the rules of the auction site

**Table 12: Actors**

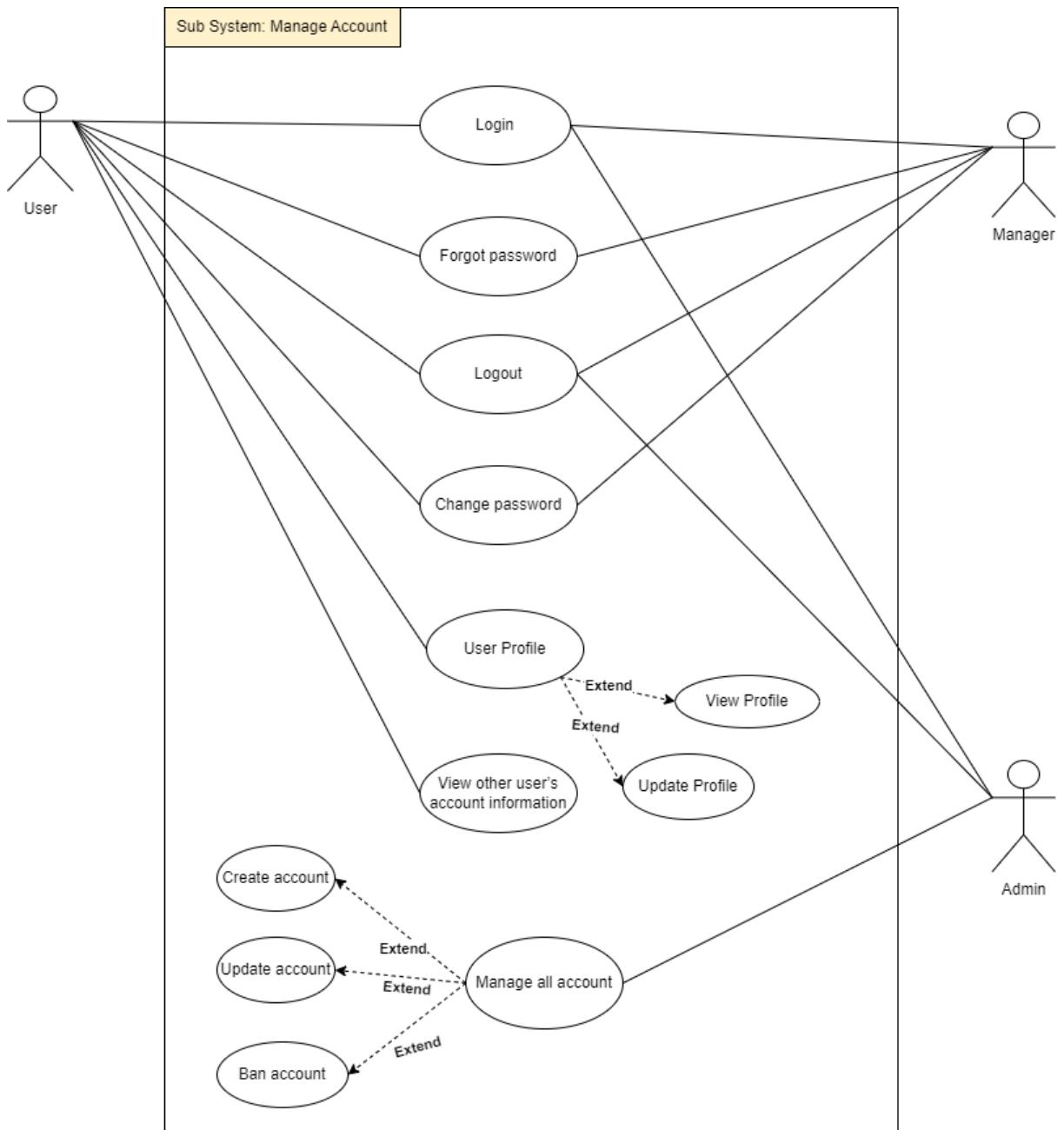
#### 2.2 Use Cases

The system has 4 actors, including Guest, User and Admin.

## 2.2.1 Diagram(s)



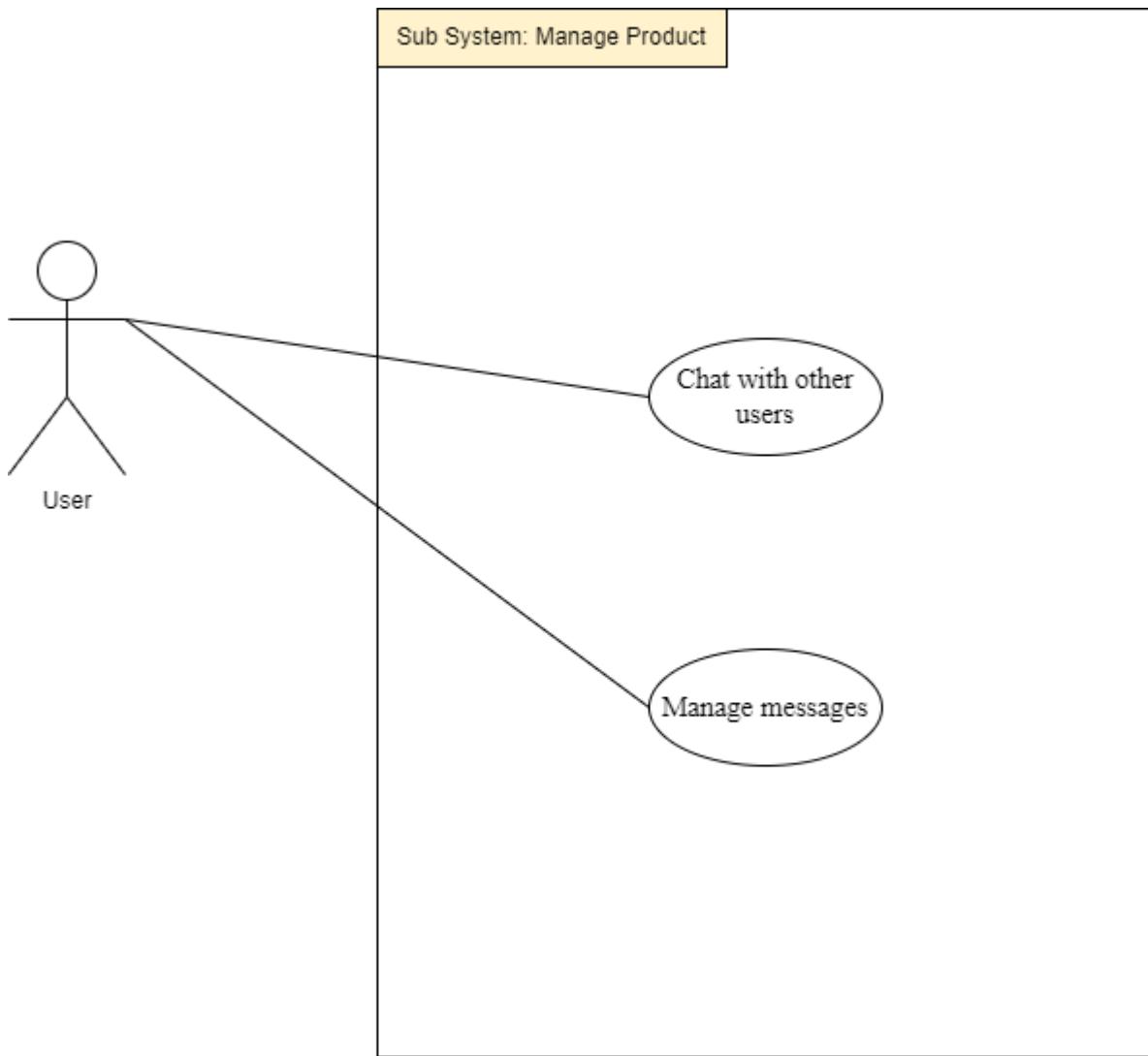
**Figure 10: Second-Hand Market Subsystem**



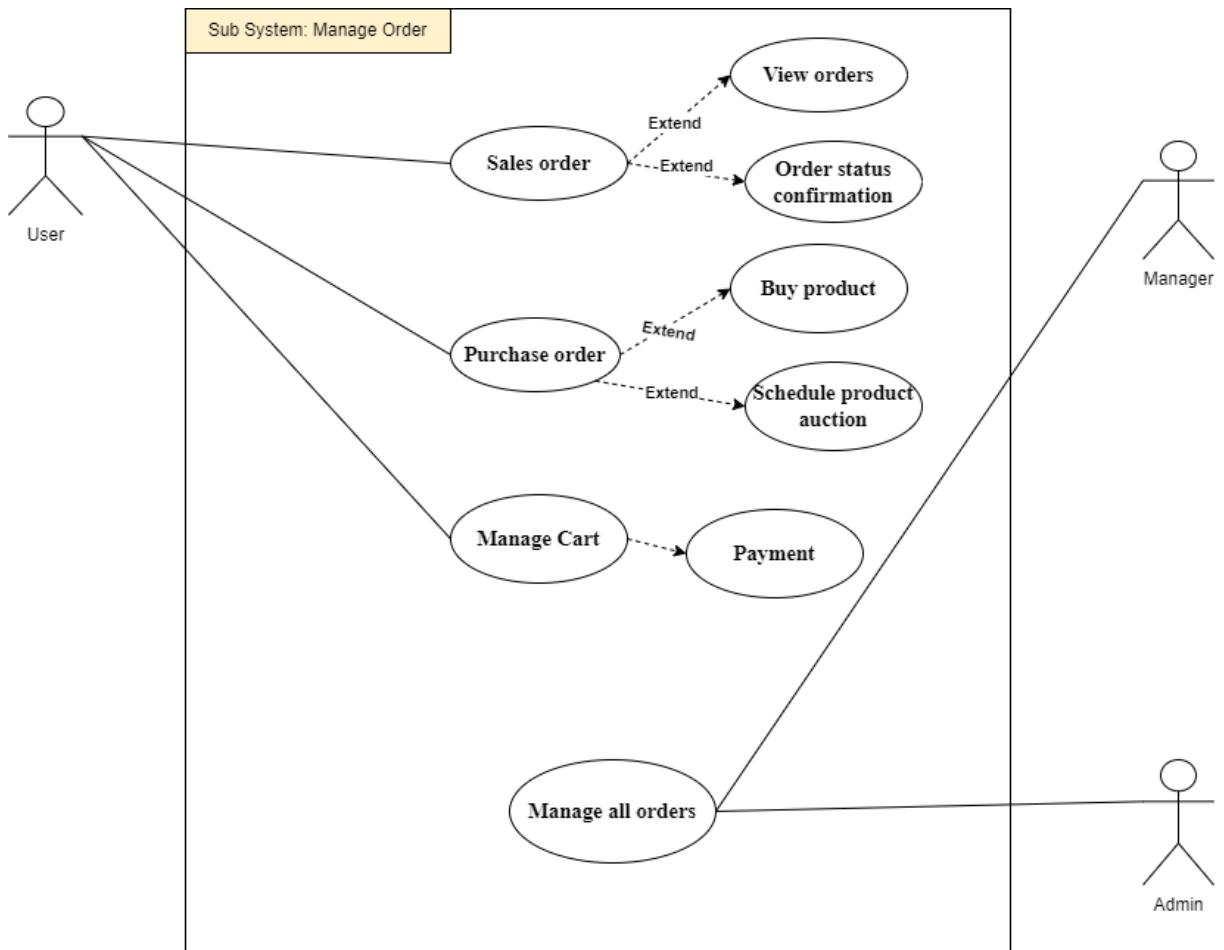
**Figure 11: Use case for Manage Account**



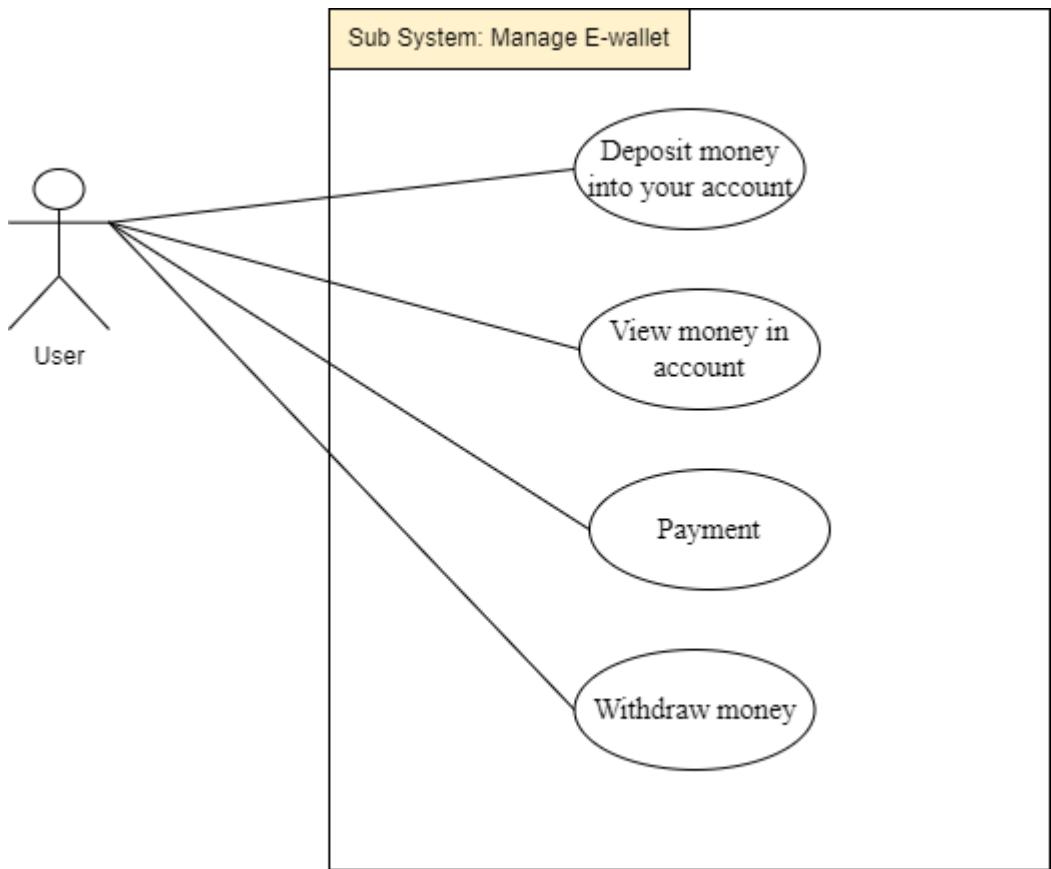
**Figure 12: Use case for Manage product posts**



**Figure 13: Use case for Manage Messages**



**Figure 14: Use case for Manage Order**



**Figure 15: Use case for Manage E-wallet**



**Figure 16: Use case for System Management**

### 2.2.2 Use Cases List

ID	Use Case	Actors	User Case Description
UC - 01	Register	Guest	Create new account
UC - 02	Login	User/ Admin/manager	Login on system
UC - 03	Search product by name	Guest/User	Search to find product
UC - 04	View product	Guest/User	View all product
UC - 05	Filter product by category	Guest/User	View product by filter

UC - 06	Filter product by location	User/Guest	View product by filter
UC - 07	Forgot password	User	User reset password
UC - 08	Logout	User/Admin/Manager	Log out system
UC - 09	Manage Product to sell	User	Manage product
UC - 10	Post product to sell	User	Post product
UC - 11	Manage auctioned product	User	Users with the seller role manage auction
UC - 12	Schedule product auction	User	Users with the buyer role Join and watch the auction
UC - 13	Create auction	User	Users with the seller role create auction posts
UC - 14	View other user's account information	User	Users view other users' personal information
UC - 15	View money in account	User	Users view their money on the system
UC - 16	Deposit money into your account	User	Users deposit money into their accounts
UC - 17	Manage order	User	View and delete product
UC - 18	Buy product	User	Users view posts describing the product and add it to the cart then checkout
UC - 19	Payment	User	The user makes payment via Paypal after receiving an order confirmation from the seller
UC - 20	Mange favorite product list	User	View and delete favorite product
UC - 21	Add favorite product	User	Can add favorite posts and be saved in the favorite products list
UC - 22	Manage messages	User	View, delete and message to other user
UC - 23	Manage account	User	View, update account
UC - 24	Manage category	Admin/Manager	Create, update, delete, view category

UC - 25	Manage all posting	Admin/Manager	View,delete post
UC - 26	Statistics and Report	Admin/Manager	Statistical analysis of data using tables and graphs
UC - 27	Mange all account User and Admin	Admin	Ban,view,update,create account

**Table 13: Use cases list**

### 2.2.3 Descriptions

#### 2.2.3.1 Register

<b>UC ID and Name:</b>	UC 01 - Register
<b>Created By:</b>	
<b>Primary Actor:</b>	Guest
<b>Trigger:</b>	Guests must be on the "home page" screen.
<b>Description:</b>	Guests want to register a new account to Order
<b>Preconditions:</b>	Guest does not have an account
<b>Post-conditions:</b>	POST-1: Register Successfully POST-2: The Guest is taken to the “Home page” screen.
<b>Normal Flow:</b>	1. Click the “Register” button at home screen 2. Redirect to the “Register” screen 3. Fill in register form 4. Click “Register” button 5. an OTP is sent to Gmail 6. Enter the OTP to verify the account
<b>Alternative Flows:</b>	N/A
<b>Exceptions:</b>	EX-01: Username is existed in the database EX-02: Email is existed in the database EX-03: Enter incorrect patterns of fields
<b>Priority:</b>	High
<b>Frequency of Use:</b>	High
<b>Business Rules:</b>	
<b>Other Information:</b>	N/A
<b>Assumptions:</b>	N/A

**Table 14: UC 01 Register**

### 2.2.3.2 Login

<b>UC ID and Name:</b>	UC 02 - Login
<b>Created By:</b>	
<b>Primary Actor:</b>	User, Admin,Manager
<b>Trigger:</b>	Click the "login" button on the login page.
<b>Description:</b>	Actor logs in to the system with an existing account.
<b>Preconditions:</b>	PRE-01: Must have a User account.
<b>Post-conditions:</b>	POST-1: Login Successfully POST-2: The user is taken to the home page.
<b>Normal Flow:</b>	<ol style="list-style-type: none"> <li>1. Click the “Login” at home screen</li> <li>2. Redirect to the “Login” screen</li> <li>3. Fill in username, email and password</li> <li>4. Click “Login” button</li> <li>5. When login succeeds, the user is taken to the user home page.</li> <li>6. When login fails, the system requests them to login again.</li> </ol>
<b>Alternative Flows:</b>	N/A
<b>Exceptions:</b>	<p>1. User logged in with the wrong username: The system displays "Account does not exist".</p> <p>2. User logged in with wrong password: The system displays “Password is not correct”</p>
<b>Priority:</b>	High
<b>Frequency of Use:</b>	High
<b>Business Rules:</b>	
<b>Other Information:</b>	N/A
<b>Assumptions:</b>	N/A

**Table 15: UC 02 Login**

### 2.2.3.3 Search product by name:

<b>UC ID and Name:</b>	UC 03 – Search product by name
<b>Created By:</b>	
<b>Primary Actor:</b>	User, guest
<b>Trigger:</b>	User, guest must press the search bar.

<b>Description:</b>	User, guest want to search for a product
<b>Preconditions:</b>	PRE-01: Must press the search bar.
<b>Post-conditions:</b>	POST-01: Show the products you want to search for
<b>Normal Flow:</b>	<ol style="list-style-type: none"> <li>1. Go to the home screen</li> <li>2. Must click on the search bar</li> <li>3. Press the product name</li> <li>4. Show searched products</li> </ol>
<b>Alternative Flows:</b>	N/A
<b>Exceptions:</b>	N/A
<b>Priority:</b>	High
<b>Frequency of Use:</b>	High
<b>Business Rules:</b>	N/A
<b>Other Information:</b>	N/A
<b>Assumptions:</b>	N/A

**Table 16: UC 03 Search product by name**

#### 2.2.3.4 View Product:

<b>UC ID and Name:</b>	UC 04 – View product
<b>Created By:</b>	
<b>Primary Actor:</b>	User, guest
<b>Trigger:</b>	User, guest must press the product.
<b>Description:</b>	User, guest want to view for a product
<b>Preconditions:</b>	PRE-01: Must press picture image.
<b>Post-conditions:</b>	POST-01: Show the information and pricec products you want to search for.
<b>Normal Flow:</b>	<ol style="list-style-type: none"> <li>1. Go to the home screen</li> <li>2. Must click on the product</li> <li>3. Show products</li> </ol>
<b>Alternative Flows:</b>	N/A
<b>Exceptions:</b>	N/A

<b>Priority:</b>	High
<b>Frequency of Use:</b>	High
<b>Business Rules:</b>	N/A
<b>Other Information:</b>	N/A
<b>Assumptions:</b>	N/A

**Table 17: UC 04 View product**

#### 2.2.3.5 Filter product by category

<b>UC ID and Name:</b>	UC 05 - Filter product by category
<b>Created By:</b>	
<b>Primary Actor:</b>	Guest,User
<b>Trigger:</b>	The guest/user must press category they want to find.
<b>Description:</b>	The guest/user who visits the website can see the list of products
<b>Preconditions:</b>	PRE – 01: When the guest/user they will use the search by category and see products.
<b>Post-conditions:</b>	POST-01: The list of products by category names will appear.
<b>Normal Flow:</b>	1. User, Guest standing at home screen 2. When the user, guest click on the category, the list of products with related names will appear in the table below.
<b>Alternative Flows:</b>	N/A
<b>Exceptions:</b>	N/A
<b>Priority:</b>	High
<b>Frequency of Use:</b>	High
<b>Business Rules:</b>	N/A
<b>Other Information:</b>	N/A
<b>Assumptions:</b>	N/A

**Table 18: UC 05 Filter product by category**

#### 2.2.3.6 Filter product by location

<b>UC ID and Name:</b>	UC 06 - Filter product by location
------------------------	------------------------------------

<b>Created By:</b>	
<b>Primary Actor:</b>	User, Guest
<b>Trigger:</b>	The user/guest choose search by location.
<b>Description:</b>	The guest/user who visits the website can see the list of products
<b>Preconditions:</b>	PRE – 01: When the guest/user they will use the search by category and see products.
<b>Post-conditions:</b>	POST-01: The list of products by category names will appear.
<b>Normal Flow:</b>	1. User, Guest standing at home screen 2. When the user, guest click on the category ,the list of products with related names will appear in the table below.
<b>Alternative Flows:</b>	N/A
<b>Exceptions:</b>	N/A
<b>Priority:</b>	High
<b>Frequency of Use:</b>	High
<b>Business Rules:</b>	N/A
<b>Other Information:</b>	N/A
<b>Assumptions:</b>	N/A

**Table 19: UC 06 Filter product by location**

#### 2.2.3.7 Manager product to sell

<b>UC ID and Name:</b>	UC 07 – Manage Product to sell
<b>Created By:</b>	
<b>Primary Actor:</b>	User
<b>Trigger:</b>	User will post the products to sell
<b>Description:</b>	After the user post products the products will up to the manager to censorship and the products will up to sell
<b>Preconditions:</b>	PRE-1: Users must log in to the system. PRE-2: The product must be suitable and not on the prohibited list.
<b>Post-conditions:</b>	POST-01: User will waiting the product will be evaluated and approved.
<b>Normal Flow:</b>	1. Click to download product image and select item of product type 2. Update product price

	3. Wait for the administrator to approve 4. Products will be updated to selected categories.
<b>Alternative Flows:</b>	N/A
<b>Exceptions:</b>	N/A
<b>Priority:</b>	High
<b>Frequency of Use:</b>	High
<b>Business Rules:</b>	N/A
<b>Other Information:</b>	N/A
<b>Assumptions:</b>	N/A

**Table 20: UC 07 Manage product to sell**

#### 2.2.3.8 Post products to sell

<b>UC ID and Name:</b>	UC 08 – Post product to sell
<b>Created By:</b>	
<b>Primary Actor:</b>	User
<b>Trigger:</b>	User will post the products to sell.
<b>Description:</b>	After the user post products the products will up to the manager to censorship and the products will up to sell
<b>Preconditions:</b>	PRE-1: Users must log in to the system. PRE-2: PRE-3: The product must be suitable and not on the prohibited list.
<b>Post-conditions:</b>	POST-01: User will waiting the product will be evaluated and approved.
<b>Normal Flow:</b>	1. Click to download product image and select item of product type 2. Update product price 3. Wait for the administrator to approve 4. Products will be updated to selected categories.
<b>Alternative Flows:</b>	N/A
<b>Exceptions:</b>	N/A
<b>Priority:</b>	High
<b>Frequency of Use:</b>	High
<b>Business Rules:</b>	N/A

<b>Other Information:</b>	N/A
<b>Assumptions:</b>	N/A

**Table 21: UC 08 Post product to sell**

#### 2.2.3.9 Manage auctioned products

<b>UC ID and Name:</b>	UC 09 – Manage auction product
<b>Created By:</b>	
<b>Primary Actor:</b>	User
<b>Trigger:</b>	User must post auction item
<b>Description:</b>	User wants to see all his/her auctioned product.
<b>Preconditions:</b>	PRE-01: Must have a user account. PRE-02: Must login to the system as User
<b>Post-conditions:</b>	POST-01: View all auctioned product have post.
<b>Normal Flow:</b>	1. Click the “My auctioned product” on the sidebar. 2. Redirect to the “My auctioned product” screen.
<b>Alternative Flows:</b>	N/A
<b>Exceptions:</b>	N/A
<b>Priority:</b>	High
<b>Frequency of Use:</b>	High
<b>Business Rules:</b>	N/A
<b>Other Information:</b>	N/A
<b>Assumptions:</b>	N/A

**Table 22: UC 09 Manage auction product**

#### 2.2.3.10 Schedule production auction

<b>UC ID and Name:</b>	UC – 10: Schedule product auction
<b>Created By:</b>	
<b>Primary Actor:</b>	User
<b>Trigger:</b>	User must be on the 'auction' screen

<b>Description:</b>	User wants to schedule product auction
<b>Preconditions:</b>	PRE-01: Must have a user account. PRE-02: Must login to the system as User. PRE-03: Add notifications for upcoming auctions
<b>Post-conditions:</b>	POST-01: View notifications for upcoming.
<b>Normal Flow:</b>	1. Tap the notification 2. Select notification of scheduled auction
<b>Alternative Flows:</b>	N/A
<b>Exceptions:</b>	N/A
<b>Priority:</b>	High
<b>Frequency of Use:</b>	High
<b>Business Rules:</b>	N/A
<b>Other Information:</b>	N/A
<b>Assumptions:</b>	N/A

**Table 23: UC 10 Schedule product auction**

#### 2.2.3.11 Create auction

<b>UC ID and Name:</b>	UC – 11 : Create auction
<b>Created By:</b>	
<b>Primary Actor:</b>	User
<b>Trigger:</b>	User must be on the “Auction” screen.
<b>Description:</b>	User want to create an auction.
<b>Preconditions:</b>	PRE-01: User must download the auction product. PRE-02: Select the desired starting price
<b>Post-conditions:</b>	POST-01: Wait for the manager to confirm the auction.
<b>Normal Flow:</b>	1. The product must be prepared in the posted condition...
<b>Alternative Flows:</b>	N/A

<b>Exceptions:</b>	N/A
<b>Priority:</b>	High
<b>Frequency of Use:</b>	High
<b>Business Rules:</b>	N/A
<b>Other Information:</b>	N/A
<b>Assumptions:</b>	N/A

**Table 24: UC 11 Create auction**

#### 2.2.3.12 View other user's account information

<b>UC ID and Name:</b>	UC-12 View other user's account information
<b>Created By:</b>	
<b>Primary Actor:</b>	User
<b>Trigger:</b>	User must go to another User's Profile page
<b>Description:</b>	User wants to see other User's information
<b>Preconditions:</b>	Use phải vào trang Profile của User khác
<b>Post-conditions:</b>	User must go to another User's Profile page
<b>Normal Flow:</b>	<ol style="list-style-type: none"> <li>1. User enters someone else's User page</li> <li>2. User proceeds to view other people's information</li> <li>3. View success</li> </ol>
<b>Alternative Flows:</b>	N/A
<b>Exceptions:</b>	<ol style="list-style-type: none"> <li>1. Actor login with wrong username: The system displays "Account does not exist".</li> <li>2. Actor login with wrong password: The system displays "Invalid Password"</li> </ol>
<b>Priority:</b>	High
<b>Frequency of Use:</b>	High
<b>Business Rules:</b>	
<b>Other Information:</b>	N/A
<b>Assumptions:</b>	N/A

**Table 25: UC 12 View other user's account information**

#### 2.2.3.13 View money in account

<b>UC ID and Name:</b>	UC-13 View money in account
<b>Created By:</b>	
<b>Primary Actor:</b>	User
<b>Trigger:</b>	User must go to the personal information page to see the money in his account

<b>Description:</b>	User wants to see the money in his account
<b>Preconditions:</b>	User adds money to the account
<b>Post-conditions:</b>	User successfully added money to the account
<b>Normal Flow:</b>	1. User clicks on Profile 2. User proceeds to see the amount of money in the account
<b>Alternative Flows:</b>	N/A
<b>Exceptions:</b>	N/A
<b>Priority:</b>	High
<b>Frequency of Use:</b>	High
<b>Business Rules:</b>	
<b>Other Information:</b>	N/A
<b>Assumptions:</b>	N/A

**Table 26: UC 13 View money in account**

#### 2.2.3.14 Deposit money into your account

<b>UC ID and Name:</b>	UC- 14 Deposit money into your account
<b>Created By:</b>	
<b>Primary Actor:</b>	User
<b>Trigger:</b>	User must go to the page to pay money to their account
<b>Description:</b>	User wants to add money to his account
<b>Preconditions:</b>	User must add money to the account
<b>Post-conditions:</b>	User successfully added money to the account
<b>Normal Flow:</b>	1. User clicks on adding money to the account 2. Enter personal information, card information, amount you want to add 3. More success 4. Press the save button
<b>Alternative Flows:</b>	N/A
<b>Exceptions:</b>	N/A
<b>Priority:</b>	High
<b>Frequency of Use:</b>	High
<b>Business Rules:</b>	N/A
<b>Other Information:</b>	N/A
<b>Assumptions:</b>	N/A

**Table 27: UC 14 Deposit money into your account**

### 2.2.3.15 Manage order

<b>UC ID and Name:</b>	UC- 15 Manage order
<b>Created By:</b>	
<b>Primary Actor:</b>	User
<b>Trigger:</b>	User must go to product order page
<b>Description:</b>	User wants to manage ordered products.
<b>Preconditions:</b>	User must order the product
<b>Post-conditions:</b>	POST-01: Order successful
<b>Normal Flow:</b>	<ul style="list-style-type: none"> <li>1. User clicks on the ordered product page</li> <li>2. User can view, delete, update ordered products</li> <li>3. User view, delete, update ordered products successful</li> </ul>
<b>Alternative Flows:</b>	N/A
<b>Exceptions:</b>	N/A
<b>Priority:</b>	High
<b>Frequency of Use:</b>	High
<b>Business Rules:</b>	N/A
<b>Other Information:</b>	N/A
<b>Assumptions:</b>	N/A

**Table 28: UC 15 Manage order**

### 2.2.3.16 Buy product

<b>UC ID and Name:</b>	UC- 16 Buy product
<b>Created By:</b>	
<b>Primary Actor:</b>	User
<b>Trigger:</b>	User must go to the product purchase and sale page
<b>Description:</b>	User wants to buy product
<b>Preconditions:</b>	PRE: User must go to product purchase page
<b>Post-conditions:</b>	User successfully purchased product page
<b>Normal Flow:</b>	<ul style="list-style-type: none"> <li>1. User enters the product purchase and sale page</li> <li>2. User proceeds to buy the product</li> <li>3. After successful product purchase</li> <li>4. Press the pay button</li> </ul>
<b>Alternative Flows:</b>	N/A
<b>Exceptions:</b>	N/A

<b>Priority:</b>	High
<b>Frequency of Use:</b>	High
<b>Business Rules:</b>	N/A
<b>Other Information:</b>	N/A
<b>Assumptions:</b>	N/A

**Table 29: UC 16 Buy product**

#### 2.2.3.17 Payment

<b>UC ID and Name:</b>	UC- 17 Payment
<b>Created By:</b>	
<b>Primary Actor:</b>	User
<b>Trigger:</b>	User accesses the payment page
<b>Description:</b>	User wants to pay
<b>Preconditions:</b>	PRE – 01: User must pay
<b>Post-conditions:</b>	POST-01: User made payment successfully
<b>Normal Flow:</b>	1. User on the product purchase and sale page and buy the product successfully 2. Process product payment 3. Successful payment
<b>Alternative Flows:</b>	N/A
<b>Exceptions:</b>	N/A
<b>Priority:</b>	High
<b>Frequency of Use:</b>	High
<b>Business Rules:</b>	N/A
<b>Other Information:</b>	N/A
<b>Assumptions:</b>	N/A

**Table 30: UC 17 Payment**

#### 2.2.3.18 Mange favourite product list

<b>UC ID and Name:</b>	UC- 18 Mange favourite product list
<b>Created By:</b>	
<b>Primary Actor:</b>	User
<b>Trigger:</b>	User must go to the favorite product list page
<b>Description:</b>	User wants to manage the list of favorite products
<b>Preconditions:</b>	PRE – 01: User wants to manage the list of favorite products
<b>Post-conditions:</b>	POST-01: User managed successfully
<b>Normal Flow:</b>	1. User must go to the favorite product list page 2. User proceed to view, delete product 3. Press the save button

<b>Alternative Flows:</b>	N/A
<b>Exceptions:</b>	N/A
<b>Priority:</b>	High
<b>Frequency of Use:</b>	High
<b>Business Rules:</b>	N/A
<b>Other Information:</b>	N/A
<b>Assumptions:</b>	N/A

**Table 31: UC 18 Manage favourite product list**

#### 2.2.3.19 Add favourite product

<b>UC ID and Name:</b>	UC- 19 Add favourite product
<b>Created By:</b>	
<b>Primary Actor:</b>	User
<b>Trigger:</b>	User must go to favorite product page
<b>Description:</b>	User wants to add favorite products
<b>Preconditions:</b>	PRE – 01: User adds a favorite product
<b>Post-conditions:</b>	POST-01: User successfully added favorite product
<b>Normal Flow:</b>	1. User enters favorite product page. 2. User successfully added favorite product 3. Press the save button
<b>Alternative Flows:</b>	N/A
<b>Exceptions:</b>	N/A
<b>Priority:</b>	High
<b>Frequency of Use:</b>	High
<b>Business Rules:</b>	N/A
<b>Other Information:</b>	N/A
<b>Assumptions:</b>	N/A

**Table 32: UC 19 Add favourite product**

#### 2.2.3.20 Manage messages

<b>UC ID and Name:</b>	UC- 20 Manage messages
<b>Created By:</b>	
<b>Primary Actor:</b>	User
<b>Trigger:</b>	Users must go to the chat box to manage their messages
<b>Description:</b>	User wants to manage his messages
<b>Preconditions:</b>	PRE-1: User must successfully enter the chat box
<b>Post-conditions:</b>	POST-01:User managed successfully.

<b>Normal Flow:</b>	1. User clicks on the chat box. 2. User managed chat box successfully 3. Press the save button
<b>Alternative Flows:</b>	N/A
<b>Exceptions:</b>	N/A
<b>Priority:</b>	High
<b>Frequency of Use:</b>	High
<b>Business Rules:</b>	N/A
<b>Other Information:</b>	N/A
<b>Assumptions:</b>	N/A

**Table 33: UC 20 Manage messages**

#### 2.2.3.21 Manage account

<b>UC ID and Name:</b>	UC- 21 Manage account
<b>Created By:</b>	
<b>Primary Actor:</b>	User
<b>Trigger:</b>	User must go to his Profile page
<b>Description:</b>	User wants to view, update, edit user information
<b>Preconditions:</b>	PRE-01: User can access Profile page
<b>Post-conditions:</b>	POST-01: User successfully updated information
<b>Normal Flow:</b>	1. User clicks on his Profile page 2. User proceed to view, update, edit his information 3. After viewing, updating, editing my information successfully 4. Press the save button.
<b>Alternative Flows:</b>	N/A
<b>Exceptions:</b>	N/A
<b>Priority:</b>	High
<b>Frequency of Use:</b>	High
<b>Business Rules:</b>	N/A
<b>Other Information:</b>	N/A
<b>Assumptions:</b>	N/A

**Table 34: UC 21 Manage account**

#### 2.2.3.22 Manage category

<b>UC ID and Name:</b>	UC- 22 Manage category
<b>Created By:</b>	
<b>Primary Actor:</b>	Admin/ Manager
<b>Trigger:</b>	Admin/Manager must go to product catalog management page
<b>Description:</b>	Admin/Manager wants to manage product catalog
<b>Preconditions:</b>	PRE-01: Admin/Manager successfully entered the product catalog management page

<b>Post-conditions</b>	POST-01: Admin/Manager can view the product catalog.
<b>Normal Flow:</b>	<ol style="list-style-type: none"> <li>1. Admin/ Manager go to product catalog management.</li> <li>2. Approving the products posted by users</li> <li>3. Admin/Manager approved successfully.</li> </ol>
<b>Alternative Flows:</b>	N/A
<b>Exceptions:</b>	N/A
<b>Priority:</b>	High
<b>Frequency of Use:</b>	High
<b>Business Rules:</b>	N/A
<b>Other Information:</b>	N/A
<b>Assumptions:</b>	N/A

**Table 35: UC 22 Manage category**

#### 2.2.3.23 Manage all posting

<b>UC ID and Name:</b>	UC-23 Manage all posting
<b>Created By:</b>	
<b>Primary Actor:</b>	Admin/ Manager
<b>Trigger:</b>	Admin/Manager wants to manage user's post list
<b>Description:</b>	Admin /Manager approved the post successfully
<b>Preconditions:</b>	PRE-1: Admin/Manager must go to user's post management page
<b>Post-conditions:</b>	POST-01: Admin/Manager successfully entered user's post management page
<b>Normal Flow:</b>	<ol style="list-style-type: none"> <li>1. On the Admin homepage, Admin clicks on the list of user posts</li> <li>2. Admin/Manager approves each user's post</li> <li>3. Click the save button.</li> </ol>
<b>Alternative Flows:</b>	N/A
<b>Exceptions:</b>	N/A
<b>Priority:</b>	High
<b>Frequency of Use:</b>	High
<b>Business Rules:</b>	N/A
<b>Other Information:</b>	N/A
<b>Assumptions:</b>	N/A

**Table 36: UC 23 Manage all posting**

#### 2.2.3.24 Statistics and Report

<b>UC ID and Name:</b>	UC- 24 Statistics and Report
<b>Created By:</b>	
<b>Primary Actor:</b>	Admin/Manager
<b>Trigger:</b>	Admin/Manager must be on the “Order confirmation” screen.

<b>Description:</b>	User wants to create an order.
<b>Preconditions:</b>	PRE-01: Must have a user account. PRE-02: Must login to the system as User
<b>Post-conditions:</b>	POST-01: View all Orders of current user
<b>Normal Flow:</b>	1. Choose delivery address and payment method. 2. Enter voucher code (if available) 3. Click on “Paypal payer” button or chose QR code payment
<b>Alternative Flows:</b>	N/A
<b>Exceptions:</b>	N/A
<b>Priority:</b>	High
<b>Frequency of Use:</b>	High
<b>Business Rules:</b>	N/A
<b>Other Information:</b>	N/A
<b>Assumptions:</b>	N/A

**Table 37: UC 24 Statistics and Report**

#### 2.2.3.25 Manger all account

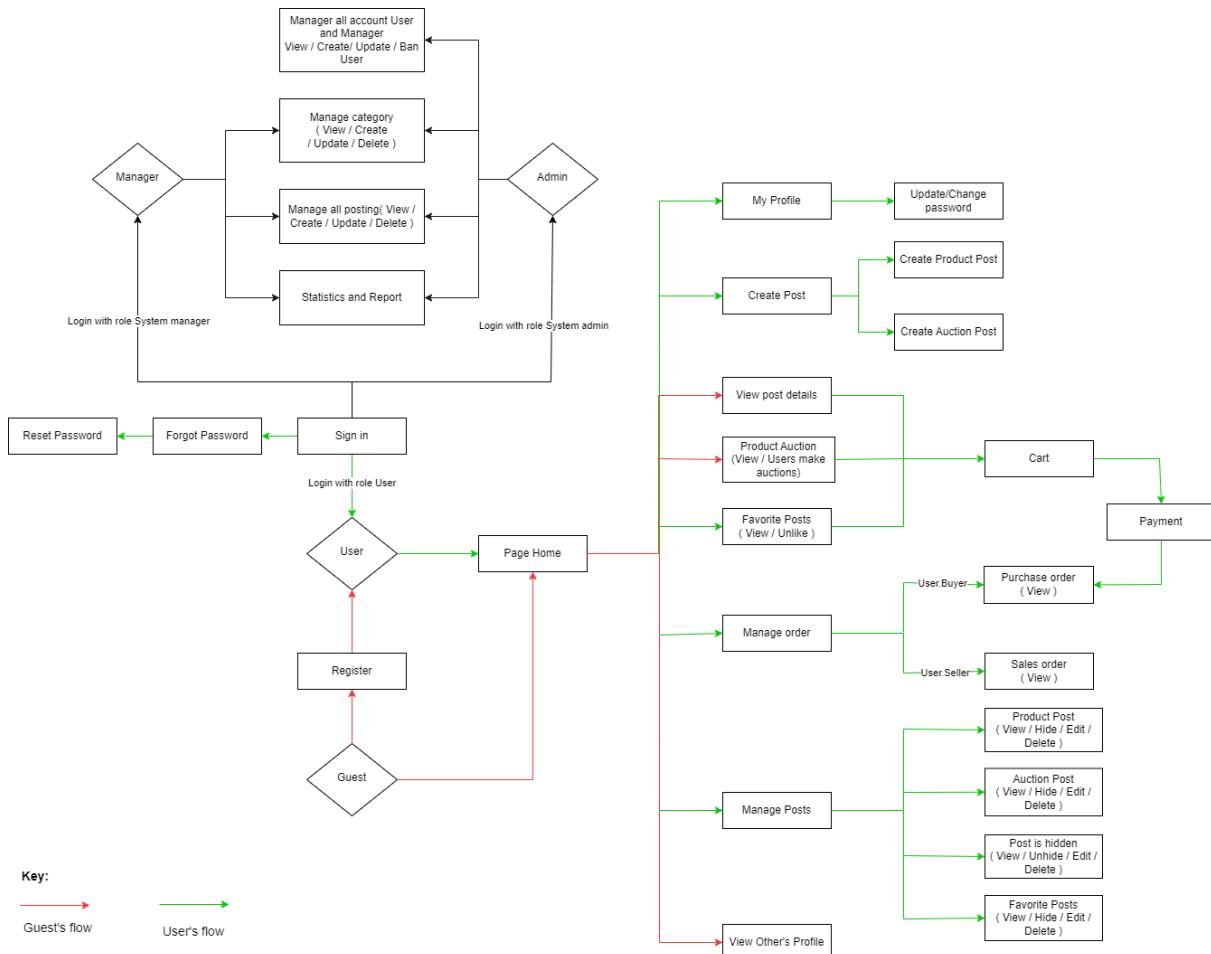
<b>UC ID and Name:</b>	UC- 25 Manger all account
<b>Created By:</b>	
<b>Primary Actor:</b>	Admin
<b>Trigger:</b>	Admin go to "Admin homepage" to manage account
<b>Description:</b>	Admin wants to add, delete, edit, update account
<b>Preconditions:</b>	PRE-01: Admin must go to the account management page.
<b>Post-conditions:</b>	POST-01: Admin successfully added, deleted, edited and updated account
<b>Normal Flow:</b>	1. Admin must go to the account management page. 2. Admin adds, deletes, edits and updates accounts 3. Admin click on save button.
<b>Alternative Flows:</b>	N/A
<b>Exceptions:</b>	N/A
<b>Priority:</b>	High
<b>Frequency of Use:</b>	High
<b>Business Rules:</b>	N/A
<b>Other Information:</b>	N/A
<b>Assumptions:</b>	N/A

**Table 38: UC 25 Manger all account**

### 3. Functional Requirements

#### 3.1 System Functional Overview

##### 3.1.1 Screens Flow



**Figure 17: Screens Flow**

### 3.1.2 Screen Descriptions

Web-app's screen descriptions:

No	Feature	Screen	Description
1	Common	Login	Login to system
2	Common	Register	Create an account to access the system
3	Common	Forgot Password	Reset your new password when you forgot your old password
4	Common	My profile	View/update personal information and change password
5	Common	Create Post	Create posts to sell products
6	Common	View post details	See a post selling product description
7	Common	Product Auction	View / bid in the auction to own the product
8	Common	Favorite Posts	Add/remove favorite posts
9	Common	Manage order	Manage purchase/sale orders on the system
10	Common CRUD	Manage Posts	Manage created posts (product sale posts, auction posts, hidden posts, favorite posts)
11	Common	View Other's Profile	View other users' personal information
12	Common	Cart	Shopping cart stores posts to make product purchases
13	Common	Payment	Make payment via paypal
14	Common CRUD	Manage all account User/Manager	Manage all accounts on the system
15	Common CRUD	Manage category	Manage post categories for products
16	Common CRUD	Manage all posting	Manage all posts on the system
17	Common	Dashboard	Analyze and make reports on the system on the number of users, number of posts,....

**Table 39: Screen Descriptions**

### 3.1.3 Screen Authorization

Screen	Screen Activity	Guest	User	Manage	Admin
Login	Query Own Data	x	x	x	x
Profile	Query Own Data		x	x	x
Change password	Query Own Data		x	x	x
Dashboard	Query Own Data		x	x	x
Manage manager	Query Own Data + CRUD Data				x

Manage User	Query Own Data + CRUD Data			x	x
Manage Post	Query Own Data + CRUD Data			x	x
Manage post	Query Own Data + CRUD Data			x	x
Manage auction	Query Own Data + CRUD Data			x	x
Manage category	Query Own Data + CRUD Data			x	x
Upload posts to sell	Query Own Data + Update Data	x	x		
View all post product	Query Own Data	x	x	x	x

**Table 40: Screen Authorization**

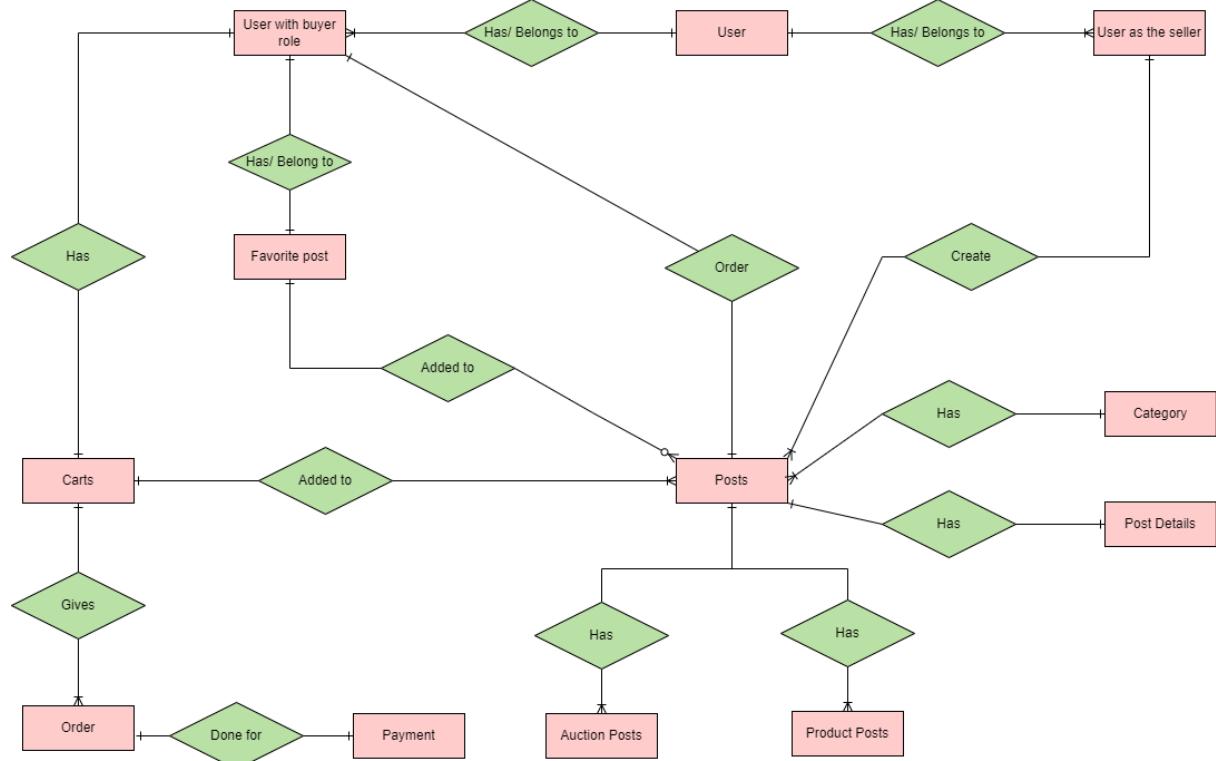
### 3.1.4 Non-Screen Functions

No	Feature	System Function	Description
1	Login	/login	Login to system
2	Logout	/logout	Logout of system
3	Change password	/changepassword	Change password of an account
4	Input OTP	/sentOTP	Input OTP for register
5	Add new account	/register	Register account
6	Post Product	/post	Post product
7	Get detail	/post/:_postId	Get detail the product already created
8	Manage Post	/managePosting	Manage posts of product
9	Delete subject	/edit/post/:postId	Update the product already created
10	Get category	/category/:categoryParentId	Get category
11	Update specialization	/cart	Get list of category
12	Get profile	/profile/user/:userId	Get Profile of user

13	Update profile	/editProfile	Update profile of user
14	Get all item	/cart	Get all item that have type of category
15	Create oder	/order/buy	Add item to payment
16	Get all classes	/class (GET)	Get all classes in system
17	Update payment	/payment/success	Update item to buy

**Table 41: Non-Screen Functions**

### 3.1.5 Entity Relationship Diagram



**Figure 18: Entity Relationship Diagram**

### Entities Description

No	Entity	Description
1	User with buyer role	Users with the buyer role view posts and place orders to acquire products
2	User as the seller	User as the seller creates posts to sell products
3	Posts	Posts describing products. 2 types of posts are auction posts and regular posts
4	Product Post	Regular post available price and detailed product description
5	Auction Post	The auction post will have a detailed description of the product, and the starting price for the auction. Other users will participate in the auction for a chance to own the product.

No	Entity	Description
1	User with buyer role	Users with the buyer role view posts and place orders to acquire products
6	Category	Posts will be categorized by product category: Fashion, home appliances, electronics...
7	Post Details	Store all information about product details: Product name, price, origin,...
8	Favorite post	Users can add posts to their favorites list for purchase later
9	Carts	Store products for a purchase payment
10	Order	Store all information about orders
11	Payment	Make payments and save payment information

**Table 42: Entities Description**

### 3.2 Account services

#### 3.2.1 Login

- Trigger: the guest want to login to system
- Description: Provide a page for guests to log in to the Second hand market system
- Function detail:
  - + Validation: User must fill all field to log in to the Second hand market system
  - + Functionality: Log in to the system
- Screen layout:

**Second-Hand Market**



🔒 Đăng nhập

Đăng nhập

[Quên mật khẩu?](#)
[Bạn chưa có tài khoản? Đăng kí](#)

**Figure 19: Login**

#### 3.2.2 Register

- Trigger: The Guest want to register an account to use the Second hand market system

- Description: Provide a page for guests register an account to use the Second hand market system
- Function detail:
  - + Validation: User must fill all field to register an account.
  - + Functionality: Register an account
- Screen layout:

The screenshot shows a registration form titled "Đăng ký". It contains four input fields: "Họ\*" (Last Name), "Tên\*" (First Name), "Địa chỉ email\*" (Email Address), and "Mật khẩu\*" (Password). Below these is a "Xác nhận mật khẩu\*" (Confirm Password) field. At the bottom is a purple "Gửi OTP" (Send OTP) button. Below the button is a link for existing users: "Bạn đã có tài khoản? Đăng nhập".

**Figure 20: Register**

### 3.2.3 Forgot password

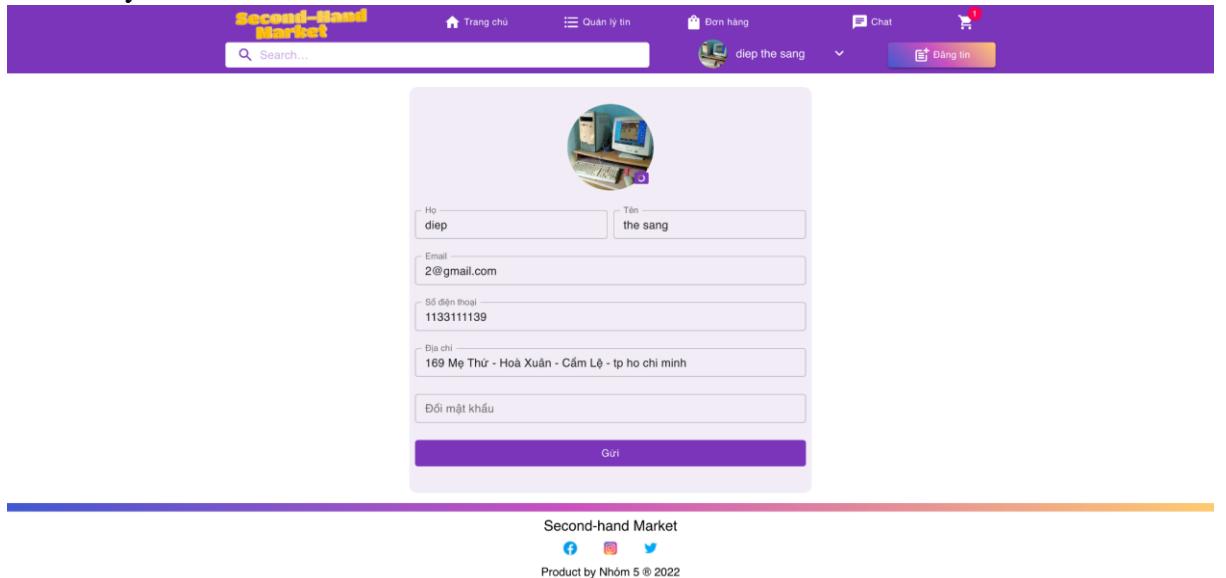
- Trigger: User forgot password and want to reset the new password.
- Description: Provide a page for user who want to get the link resetting password from user email or username
- Function detail:
  - + Validation: User must fill email or username to get link for reset the password, username or email must be registered in system.
  - + Functionality: Reset the password
- Screen layout:

## 3.3 Profile

### 3.3.1 Change password

- Trigger: User, manager want to change password.
- Description: Provide a page for user, manager to change password
- Function detail:
  - + Validation: User, Manager must fill all filed to change the password, new password and confirm password must be the same, the old password must be the same as the current password.
  - + Functionality: Change the password

- Screen layout:



**Figure 21: Change password**

### 3.3.2 View Profile

- Trigger: User want to view themself profile
- Description: Provide a page for User can view all information of themselves such as fullname, email, age, gender, profession, phone number, address.
- Function detail: Show all information for current

- Screen layout:

diep the sang

Đánh giá: 4 ★★★★☆

Ngày tham gia: 2022-09-23T17:10:50.000Z

Địa chỉ: 169 Mê Thủ - Hòa Xuân - Cẩm Lệ - tp ho chí minh

Số điện thoại: 1133111139

Tin đang đăng

- giay nike chính hãng
- Đầu giá
- 2022-12-01T16:29:32.000Z
- lan đột biến 5 cánh trắng
- Đầu giá
- 2022-12-01T16:27:47.000Z
- đồng hồ apple watch seri 3
- Đầu giá
- 2022-12-01T16:25:23.000Z
- laptop dell cũ
- Đầu giá
- 2022-12-01T16:23:55.000Z
- test bid
- 6200000
- 2022-12-01T16:15:09.000Z
- giay nike cũ
- 8000000
- 2022-12-01T16:13:03.000Z

1 2 3 4 >

Second-hand Market

Product by Nhóm 5 ® 2022

**Figure 22: View Profile**

### 3.3.3 Edit Profile

- Trigger: User want to edit themself profile
- Description: Provide a page for User can themself profile
- Function detail: Edit information of user
- Screen layout:

diep the sang

Họ: diep

Tên: the sang

Email: 2@gmail.com

Số điện thoại: 1133111139

Địa chỉ: 169 Mê Thủ - Hòa Xuân - Cẩm Lệ - tp ho chí minh

Đổi mật khẩu

Gửi

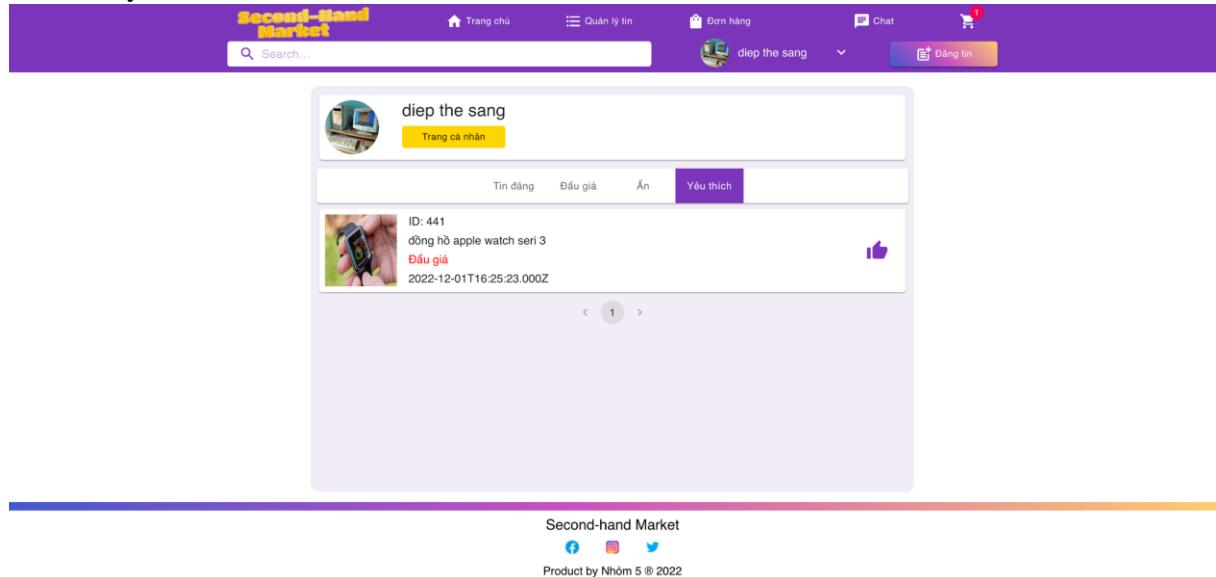
Second-hand Market

Product by Nhóm 5 ® 2022

**Figure 23: Edit Profile**

### 3.3.4 Manage favorite product list

- Trigger: User want to manage favorite product list in themself cart
- Description: Provide a page for User can manage favorite product list in themself cart
- Function detail: Manage favorite product list in themself cart
- Screen layout:



**Figure 24: Manage favourite product list**

### 3.3.5 View other user's account profile

- Trigger: User want to view other user's profile
- Description: Provide a page for User can view all information of other user's profile such as fullname, email, age, gender, profession, phone number, address.
- Function detail: Show all information for current

- Screen layout:

diep the sang

Đánh giá: 4 ★★★★☆  
Ngày tham gia: 2022-09-23T17:10:50.000Z  
Địa chỉ: 169 Mẹ Thủ - Hòa Xuân - Cẩm Lệ - tp ho chí minh  
Số điện thoại: 1133111139

**Tin đang đăng**

Thumbnail	Title	Price	Date
	giày nike chính hãng	Đầu giá	2022-12-01T16:29:32.000Z
	lan đột biến 5 cánh trắng	Đầu giá	2022-12-01T16:27:47.000Z
	đồng hồ apple watch seri 3	Đầu giá	2022-12-01T16:25:23.000Z
	laptop dell cũ	Đầu giá	2022-12-01T16:23:55.000Z
	test bid	6200000	2022-12-01T16:15:09.000Z
	giày nike cũ	8000000	2022-12-01T16:13:03.000Z

1 2 3 4 >

Second-hand Market  
[Facebook](#) [Instagram](#) [Twitter](#)  
 Product by Nhóm 5 ® 2022

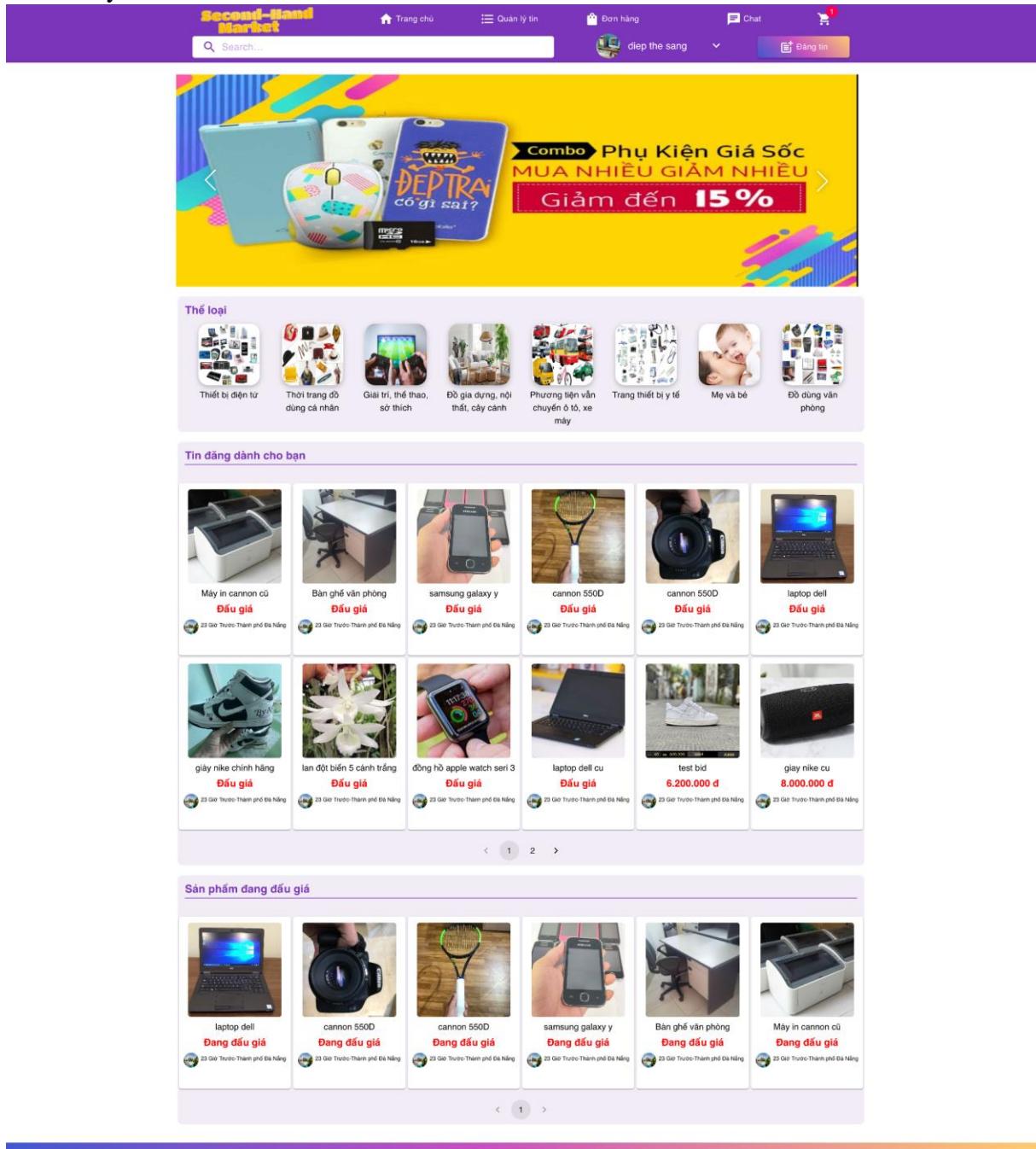
**Figure 25: View other user's account profile**

### 3.4 Buyer services

#### 3.4.1 View all product to buy

- Trigger: User, Guest want to view list product current in Secondhand market system.
- Description: Provide a page for User, Guest can view list product
- Function detail: Show all list product.

- Screen layout:



**Figure 26: View all product to buy**

### 3.4.2 Search product

- Trigger: User, Guest want to search list product current in Secondhand market system.
- Description: Provide a page for User, Guest can search list product
- Function detail: Show all list product that same the name User, Guest search.

- Screen layout:

Second-hand Market

Trang chủ Quản lý tin Đơn hàng Chat Đăng tin

mac

macbook air 2020  
13000000  
2022-12-01T15:49:33.000Z

macbook air 2020  
15000000  
2022-12-01T15:52:06.000Z

Second-hand Market

Product by Nhóm 5 © 2022

**Figure 27: Search product**

### 3.4.3 Filter product by category

- Trigger: User, Guest want to filter list product current in Secondhand market system.
- Description: Provide a page for User, Guest can filter list product
- Function detail: Show all list product that same the name User, Guest filter.
- Screen layout:

Second-hand Market

Trang chủ Quản lý tin Đơn hàng Chat Đăng tin

Search...

diep the sang

Điện thoại, máy tính bảng Laptop, máy tính bàn Tivi, Tủ lạnh, thiết bị âm thanh

Trạng thái Giá Thành phố

macbook air 2020 <b>13.000.000 đ</b>	laptop dell cũ <b>Đầu giá</b>	card đồ họa <b>4.500.000 đ</b>	cannon 550D <b>Đầu giá</b>	Bàn phím cơ ek387 <b>500.000 đ</b>	lan đột biến 5 cánh trắng <b>Đầu giá</b>
laptop dell <b>Đầu giá</b>	Máy in cannon cũ <b>Đầu giá</b>				

Second-hand Market

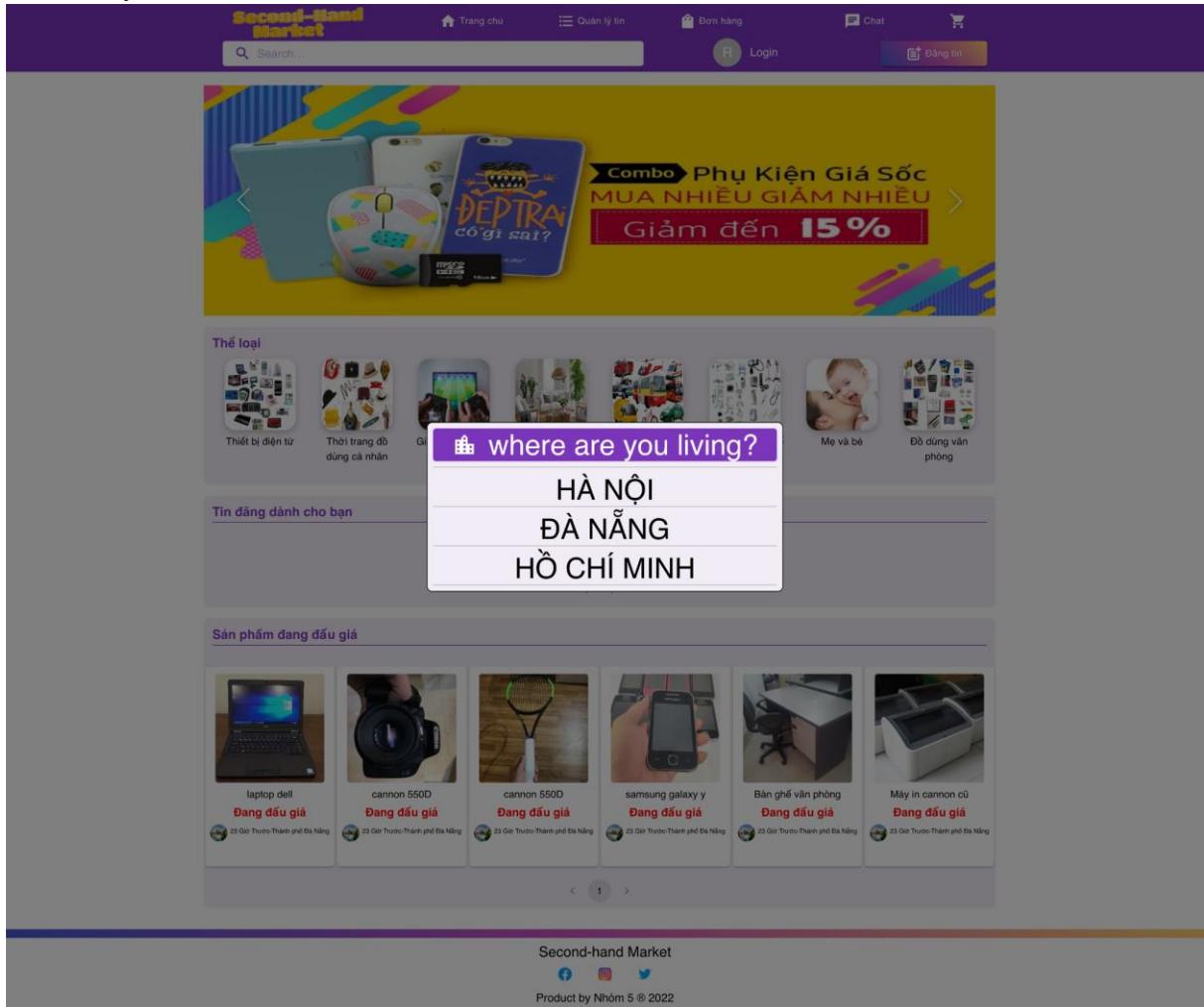
Product by Nhóm 5 © 2022

**Figure 28: Filter product by category**

### 3.4.3 Filter product by location

- Trigger: User, Guest want to filter list product current in Secondhand market system.

- Description: Provide a page for User, Guest can filter list product
- Function detail: Show all list product that same the name User, Guest filter.
- Screen layout:



**Figure 29: Filter product by location**

#### 3.4.4 View product detail

- Trigger: User, Guest want to view detail product in Secondhand market system.
- Description: Provide a page for User, Guest can view product detail
- Function detail: Show all list product that same the name User, Guest search.

- Screen layout:

The screenshot displays the Second-hand Market website interface. At the top, there's a purple header bar with the site's logo and navigation links for 'Trang chủ', 'Quản lý tin', 'Đơn hàng', 'Chat', and 'Đăng tin'. Below the header is a search bar and a user profile section for 'diep the sang'.

The main content area shows a large image of a black JBL Bluetooth speaker. Below the image, the product title is 'loa bluetooth', the price is '8.000.000 đ', and it has a 'hang moi' status. There are also details about its condition ('Tình trạng: Sản phẩm cũ (đã sửa chữa)'), warranty ('Bảo hành: Hết bảo hành'), origin ('Sản xuất tại: Trung Quốc'), and category ('Thể loại: Tivi, Tủ lạnh, thiết bị âm thanh'). The listing is located at '169 Mèo Thứ - Phường Tân Chính - Quận Thanh Khê - Thành phố Đà Nẵng'.

Below the product detail, there are sections for 'Tin đăng khác' (Other ads) and 'Tin đăng tương tự' (Similar ads), each displaying a grid of thumbnail images and titles for various items like cameras, laptops, and shoes.

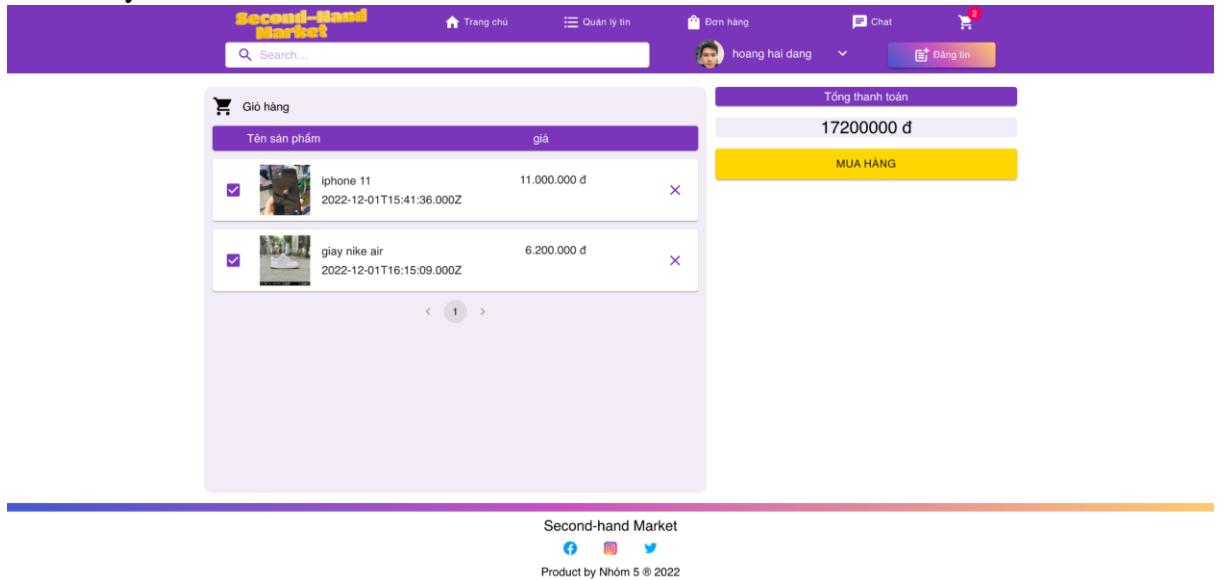
At the bottom of the page, there's a footer with the text 'Second-hand Market', social media icons for Facebook, Instagram, and Twitter, and a note that the product was 'Product by Nhóm 5 ® 2022'.

**Figure 30: View product detail**

### 3.4.5 Buy product

- Trigger: User want to buy product in Secondhand market system.
- Description: Provide a page for User can buy product in Secondhand market system.
- Function detail: Buy product for user

- Screen layout:



**Figure 31: Buy product**

### 3.4.5 Auction product

- Trigger: User want to auction product in Secondhand market system.
- Description:Provide a page for User can auction product in Secondhand market system.
- Function detail: auction product for user

- Screen layout:

The screenshot shows a product listing for a 'Bàn ghế văn phòng' (Office desk and chair) on the 'Second-hand Market' website. The main image shows a white desk with a black office chair. The listing includes the following details:

- Owner:** diep the sang
- Rating:** ★★★★☆
- Phone:** 1133111139
- Delivery:** 0 Ngày - 0 Giờ - 10 Phút - 50 Giây
- Initial Price:** Giá khởi điểm: 550.000 đ
- Price:** Tối đa: 600000 (Số tiền bạn trả phải trên: 550000 đ)
- Current Bid:** Bạn đã ra giá: 600.000 đ
- Bid Price:** Giá hiện tại: 600.000 đ

**Tin đăng khác** (Other listings) section shows various items like a printer, a desk, a smartphone, a racket, a camera, a laptop, Nike shoes, a flower arrangement, an Apple Watch, a Dell laptop, and a speaker.

**Tin đăng tương tự** (Similar listings) section shows a similar desk and chair listing.

At the bottom, there's a footer for 'Second-hand Market' with social media links and a copyright notice: 'Product by Nhóm 5 © 2022'.

**Figure 32: Auction product**

### 3.4.6 Manage order

- Trigger: User want to manage order in Secondhand market system.
- Description: Provide a page for User can manage order in Secondhand market system.
- Function detail: manage order for user

- Screen layout:

The screenshot shows the 'Second-hand Market' application interface. At the top, there is a purple header bar with the logo 'Second-hand Market' and several navigation links: 'Trang chủ', 'Quản lý tin', 'Đơn hàng', 'Chat', and 'Bảng tin'. A search bar with the placeholder 'Tim kiếm...' is also present. Below the header is a main content area with a light gray background. At the top of this area, there is a navigation bar with tabs: 'Chờ xác nhận', 'Đang xử lý', 'Đang giao', 'Đã giao', and 'Hoàn tiền/dđ hủy'. Below this is another row of tabs: 'Sản phẩm', 'Tổng đơn hàng', 'Trạng thái', 'Vận chuyển', and 'Thao tác'. A specific order is displayed in a table row, showing details: 'hoang hai dang' (Seller), 'Bàn ghế gamming' (Product Name), '2000000' (Price), 'Chờ xác nhận' (Status), 'Vận chuyển' (Shipping), and a red button labeled 'Xác nhận' (Accept). The bottom of the page features a footer with the text 'Second-hand Market', social media icons for Facebook, Instagram, and Twitter, and the copyright notice 'Product by Nhóm 5 © 2022'.

**Figure 33: Manage order**

## 3.5 Seller services

### 3.5.1 Create post to sell

- Trigger: User want to create product to sell in Secondhand market system.
- Description: Provide a page for User can create product to sell
- Function detail: Create product to sell

- Screen layout:

**Figure 34: Create post to sell**

### 3.5.2 Create post to auction

- Trigger: User want to create product to auction in Secondhand market system.
- Description:Provide a page for User can create product to auction
- Function detail: Create product to auction
- Screen layout:

**Figure 35: Create post to auction**

### 3.5.3 Manage product to sell

- Trigger: User want to manage product to sell in Secondhand market system.
- Description: Provide a page for User can manage product to sell
- Function detail: Manage product to sell
- Screen layout:

The screenshot shows a product listing for a JBL Bluetooth speaker. The product image is a black JBL speaker with a red logo, shown from a side-on perspective. Below the image, the text "loa bluetooth" and "8.000.000 đ" (8,000,000 VND) are visible. To the right of the product details is a user profile for "diep the sang" with a purple background. The profile includes a small profile picture, the name "diep the sang", a "Xem trang" button, and a rating of 5 stars. Below the profile are buttons for "Nhắn tin với người bán" (Send message) and "MUA" (Buy). Further down the page, there are sections for "Tin đăng khác" (Other posts) and "Tin đăng tương tự" (Similar posts), each displaying several thumbnail images of various products like laptops, cameras, and phones.

**Figure 36: Manage product to sell**

### 3.5.4 Manage post auction

- Trigger: User want to create product to auction in Secondhand market system.

- Description: Provide a page for User can create product to auction
- Function detail: Create product to auction
- Screen layout:

The screenshot shows a web-based application for managing auction posts. At the top, there's a purple header with the title "Second-hand Market". Below the header is a search bar with placeholder text "Search...". The main content area displays a list of four auction items, each with a small thumbnail image, the item ID, its name, the starting bid price, and a timestamp. To the right of each item are three buttons: "Sửa" (Edit), "Án" (Put on Hold), and "Xoá" (Delete). The items listed are:

- ID: 440, laptop dell cũ, Giá: 2022-12-01T16:23:55.000Z
- ID: 441, đồng hồ apple watch seri 3, Giá: 2022-12-01T16:25:23.000Z
- ID: 442, lan đột biến 5 cánh trắng, Giá: 2022-12-01T16:27:47.000Z
- ID: 443, giày nike chính hãng, Giá: 2022-12-01T16:29:32.000Z

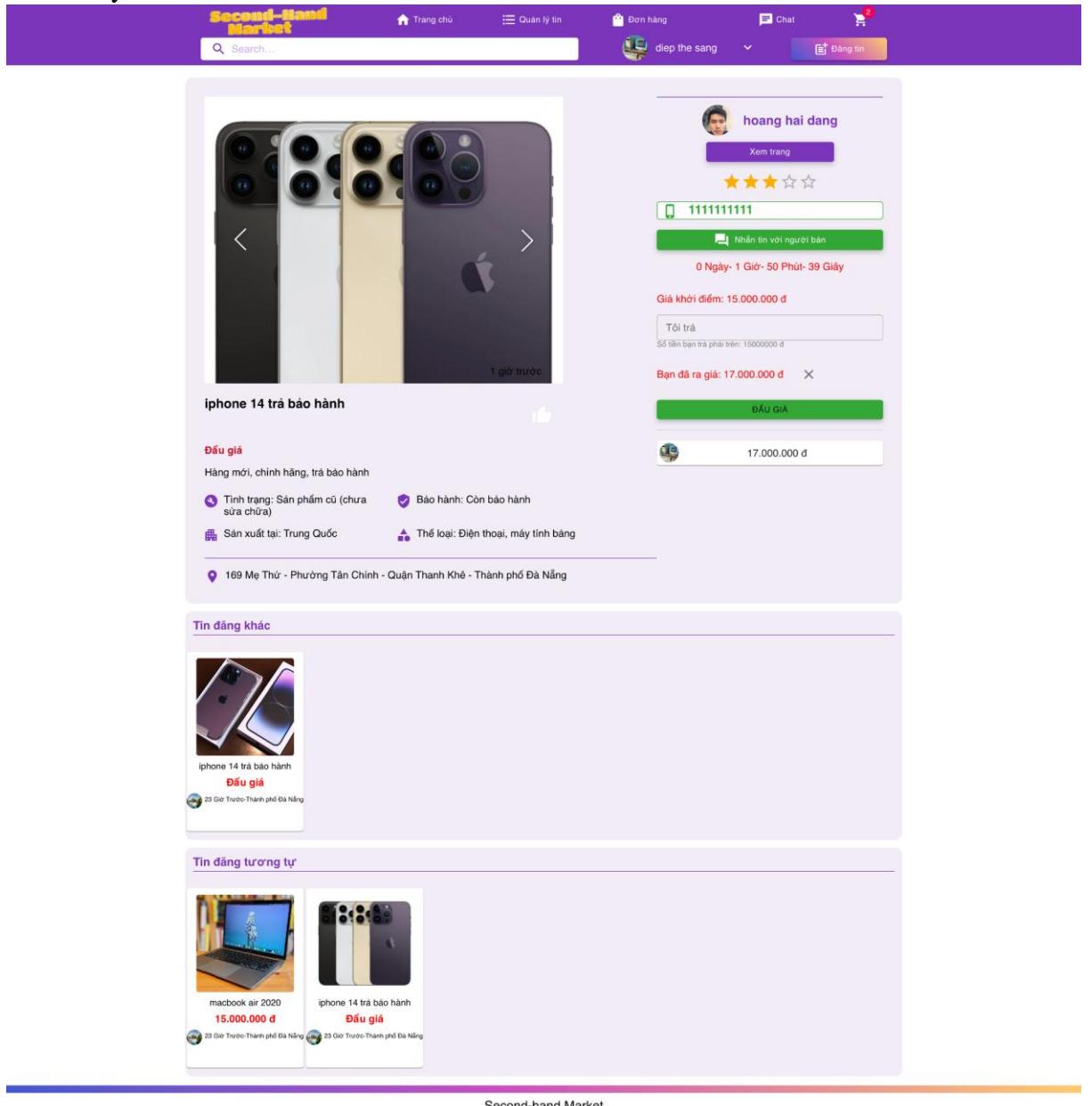
At the bottom of the page, there are social media sharing icons (Facebook, Google+, Twitter) and a copyright notice: "Product by Nhóm 5 © 2022".

**Figure 37: Manage post auction**

### 3.5.4 Schedule auction

- Trigger: User want to create product to auction in Secondhand market system.
- Description: Provide a page for User can create product to auction
- Function detail: Create product to auction

- Screen layout:



**Figure 38: Schedule auction**

## 4. Non-Functional Requirements

### 4.1 External Interfaces:

- Our product has no external interfaces.

### 4.2 Quality Attributes

#### 4.2.1 Usability

- The user interface should be friendly, simple, logical, and easy to use.
- All the texts and messages should be precise, consistent, and easy to understand.
- Buttons and checkboxes should be made easy for the user to tap.

#### **4.2.2 Security**

- The system must use JSON Web Token (JWT) authentication, in which the authentication server returns an access token after the user logs in with an email and password. Then the client will include the access token in the subsequent requests to access protected resources.
- The system must use HTTPS to encrypt the information transferred between clients and servers.
- Password must be hashed before inserted into the database.

#### **4.2.3 Performance**

- Front end using React JS, which was designed to provide high performance in mind. The core of the framework offers a virtual DOM program and server-side rendering, which makes complex apps run extremely fast.
- Back-end system uses NodeJS to develop fast web server.

#### **4.2.4 Maintainability & Scalability**

- Using RESTful API for the backend architect to help improve scalability.
- We use some stuffs on GitHub Apps is Codacy, CodeCov to check coding quality. In a single merge request, they can run automatically to check our codes. Though we only merge code when all checks passed (we can restrict who can push to matching branches without passing all CI)

### **5. Requirement Appendix**

#### **5.1 Business Rules**

**Domain business rules:**

No	Description
BR-1	Only admin can manage manager
BR-2	Guests can only buy products when they have registered an account
BR-3	Guests can only view items that are listed for sale
BR-4	User can view and buy or bid on any item
BR-5	All users can post for sale or auction
BR-6	User can view information of other users
BR-7	User can rate the product quality after purchasing from another account
BR-8	When admin or Manager accounts have been disabled an account, this account will automatically log out from the system and cannot log in again.
BR-9	Manager has the right to show and hide posts that violate the policy
BR-10	Manager can ban accounts that violate the policy

**Table 43: Domain business rules**

**Specific business rule:**

No	Description
----	-------------

BI-1	The field must be filled by 10 numbers.
BI-2	The field must be filled, followed by format “X@X.Y”, where X is characters and Y is alphabets. X and Y are at least 1 character.

**Table 44: Specific business rule**

## 5.2 Common Requirements

### 5.3 Application Messages List

#	Message code	Message Type	Context	Content
1	MSG01	Under the text box	Input-required fields are empty	<i>Please fill out this field.</i>
2	MSG02	Toast message	Updating asset(s) information successfully	<i>Update asset(s) successfully.</i>
3	MSG03	Toast message	Adding new asset successfully	<i>Add asset successfully.</i>
4	MSG04	Toast message	Deleting asset information successfully	<i>Delete asset(s) successfully.</i>
5	MSG05	Toast message	Updating asset(s) information failed	<i>Update asset(s) failed.</i>
6	MSG06	Toast message	Adding new asset failed	<i>Add asset failed.</i>
7	MSG07	Toast message	Deleting asset information failed	<i>Delete asset(s) failed.</i>
8	MSG08	Under input field	Username or password is not correct when clicking sign-in	<i>Incorrect user name or password. Please check again.</i>
9	MSG09	Under input field	Input an invalid information	<i>Invalid asset</i>
10	MSG10	Toast message	Take attendance successfully	<i>Take attendance successfully for [username]</i>
11	MSG11	Toast message	The face recognized is not the same with the face registered	<i>Wrong face detected</i>
12	MSG11	Toast message	Upload photo successfully	<i>Image is successfully trained for [userid]</i>

**Table 45: Application Messages List**

## VI. Software Design Document

### 1. System Design

The project has successfully applied a data analysis method to make suggestions. Basically, these suggestions are based on location parameters (the city the customer lives in).

As for the client side, the recommendations online system has been developed in web applications. The web application used the framework NodeJS built on top of React which provided a short page load time and fast scan of the data taken from the user.

As for the server side, the recommendations online system have been developed with the ReactJS web framework, the Rest API and the database management system MySQL is a database management system that allows you to manage relational databases.

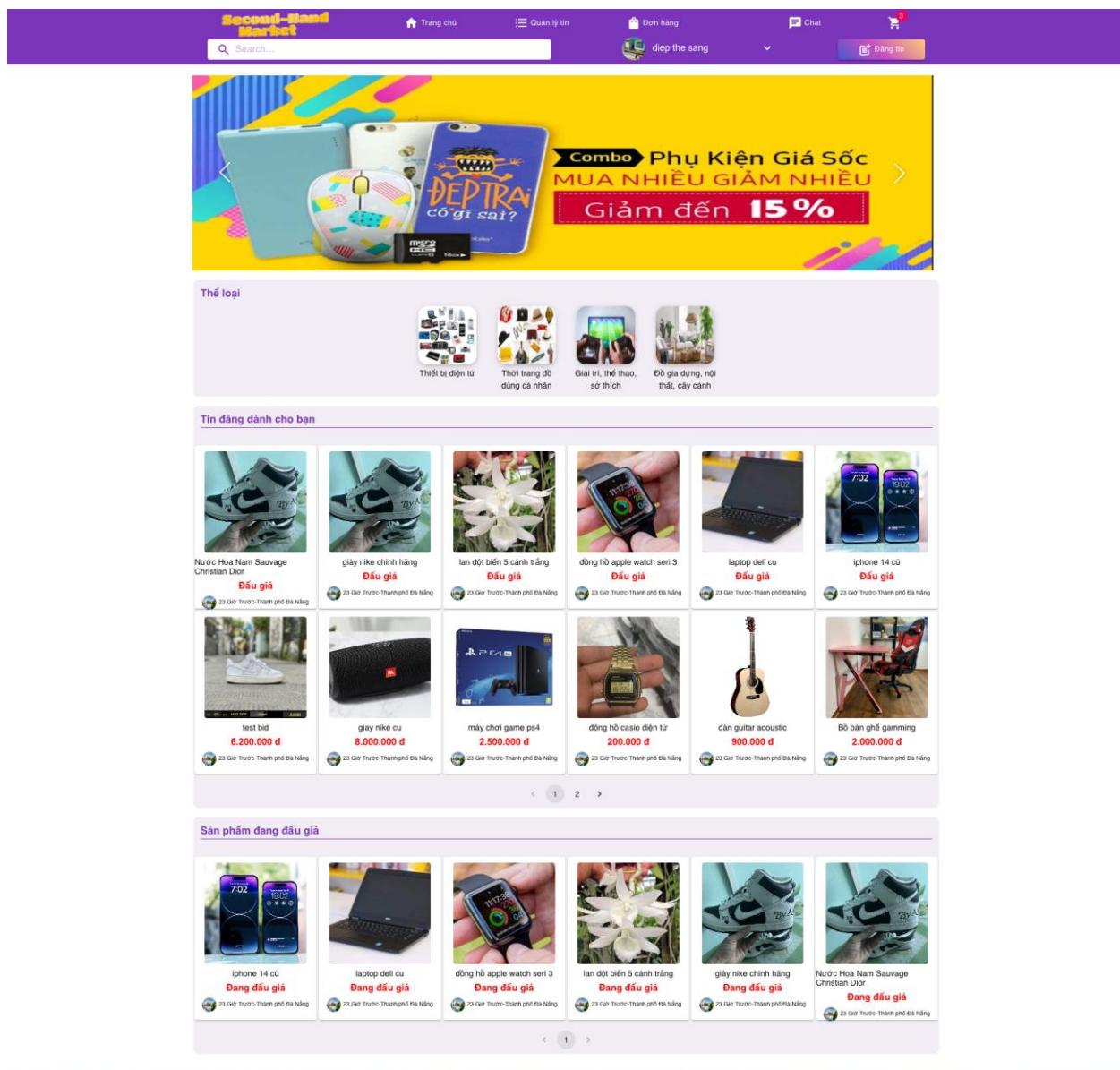


Figure 39:User interface

## 1.1 System Architecture

### 1.1.1 Client

Reactjs is an open-source Javascript library that helps build user interface components quickly and easily. Usually, programmers will embed javascript into HTML code through attributes like AngularJS but Reactjs works as a library that allows embedding HTML into javascript through JSX. You can easily nest HTML snippets into JSX making components easier to understand and use.

The basic components of React are called components. Syntax to write HTML using Javascript to render. You can create a component by calling the `createClass` method of the React object, the starting point when accessing this library. Multiple components can be nested through the return statement of the `render` method.

Benefits of using Reactjs

- ReactJS makes it easier to write Javascript code because it uses a special syntax that is the JSX syntax. Through JSX allows embedding HTML and Javascript code.
- ReactJS allows Developers to break complex UI structures into independent components. Devs won't have to worry about the overall web application, now it's easier for developers to break down complex UI/UX structures into simpler components.
- Included with ReactJS are many development tools that make debugging code easier.
- One of the more advantages of ReactJS is its SEO friendliness. Most of the JS Frameworks are not search-friendly, although much improved, but with the help of rendering data returned in the form of web pages, it helps to make SEO more



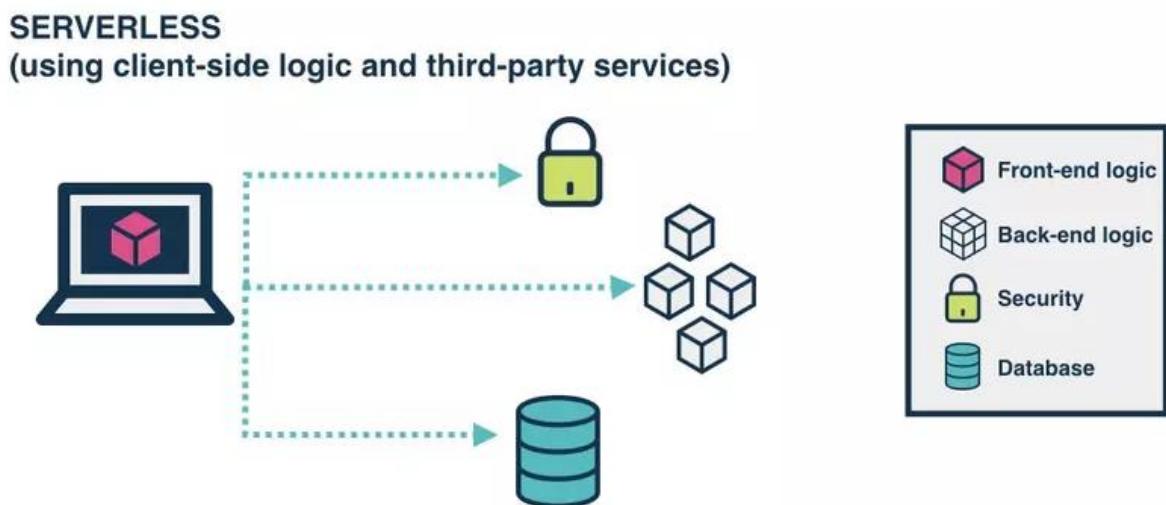
Figure 40: Application Architecture

standard.

## 1.1.2 Server

### 1.1.2.1 Serverless

Serverless (also known as a serverless platform) is a platform that creates an environment that allows programmers to code applications or services without having to worry too much about server problems. Serverless application can be understood as a server that takes care of internal system operations such as allocation, system resource management, upgrade and security.



**Figure 41: Serverless Architecture**

### 1.1.2.1 Cognito

Amazon Cognito allows you to quickly and easily add registration, sign-in, and user access control to websites and mobile apps. Amazon Cognito scales to millions of users and supports logins through social identity providers such as Apple, Facebook, Google, and Amazon, as well as enterprise identity providers through SAML 2.0 and OpenID Connect.



**Figure 42: Cognito**

#### 1.1.2.1.2 SQS Service

Amazon Simple Queue Service (SQS) is a fully managed message queue service that allows you to unlink and scale your microservices, distributed systems, and serverless applications. SQS eliminates the complexity and indirect costs associated with managing and operating message-oriented middleware and allows developers to focus on other things. Using SQS, you can send, store, and receive messages between software components at any volume, without losing messages or forcing other services to be available at all times.

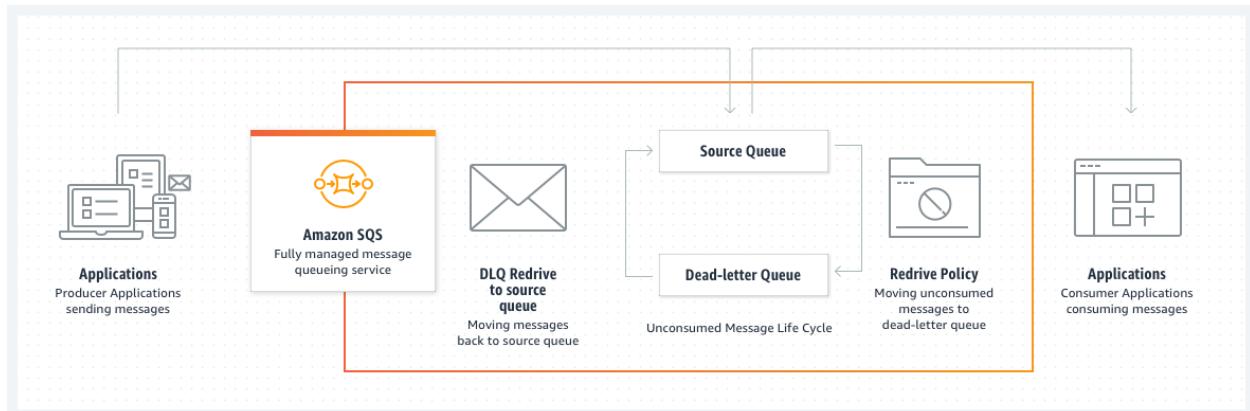


Figure 43: SQS Service

#### 1.1.2.1.3 SES Service

Amazon Simple Email Service (SES) is a cost-effective, flexible, and scalable email service that allows developers to send email from within any application. You can quickly configure Amazon SES to support a number of email use cases including mass email communications, marketing, or transactions. Amazon SES' flexible IP deployment and email authentication options help drive greater deliverability and protect sender reputation, while delivery analytics measure the impact of individual emails. With Amazon SES, you can securely send email globally at scale.

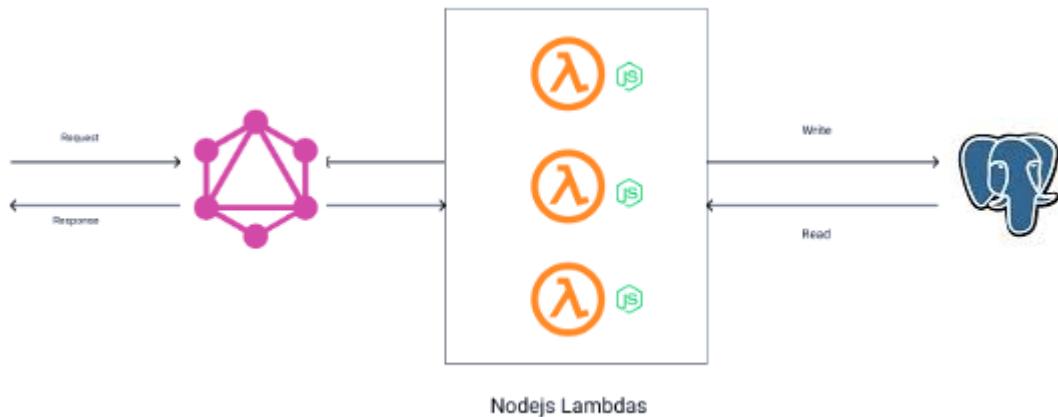


Figure 44: SES Service

#### 1.1.2.2 Lambda function

AWS Lambda is a computer service where you can upload your code, and the AWS Lambda service helps you run that code using available AWS resources. After you upload your code, and you create a Lambda function, AWS provisions and manages the servers that you use to run the code. As for using AWS, you can do the following:

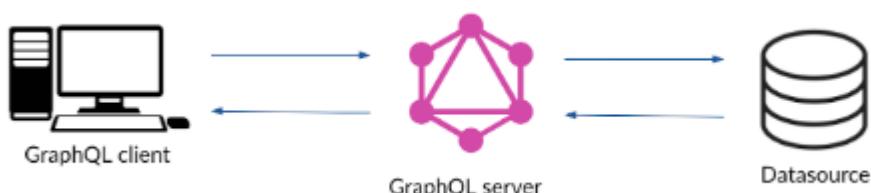
- An event-driven compute service where AWS Lambda runs your code and returns events, data changes pushed into an Amazon S3 bucket or an Amazon DynamoDB table. (you can learn more about Amazon DynamoDB)
- A computer service to run code and return HTTP requests using Amazon API Gateway or APIs using AWS SDKs.



**Figure 45: Lambda function**

#### 1.1.2.3 Type Graphql

GraphQL is a query language for APIs that provides a complete description of the data in your API, allowing the client side to request exactly the data it needs without being redundant or missing. In other words, it provides a common interface between the client and the server for retrieving and manipulating data.



**Figure 46: Type Graphql**

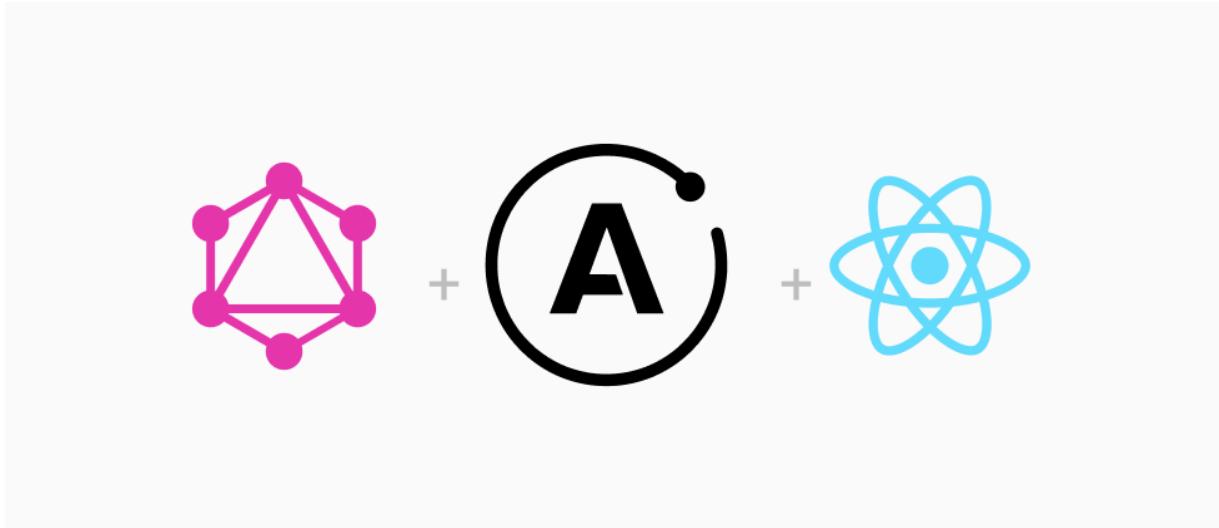
#### 1.1.2.4 Apollo server

Apollo Server is a GraphQL server implementation for JavaScript, specifically for the Node.js platform. It supports many popular Node.js frameworks, including:

- Express
- Hapi
- Koa
- Adonis

Apollo Server provides us with 3 basic things:

- Gives us a way to describe our data with schema.
- Provides a framework for resolvers, which are functions we write to fetch the data needed to make a request.
- Facilitate authentication processing for our API.



**Figure 47: Apollo server**

#### 1.1.2.5 PostgreSQL

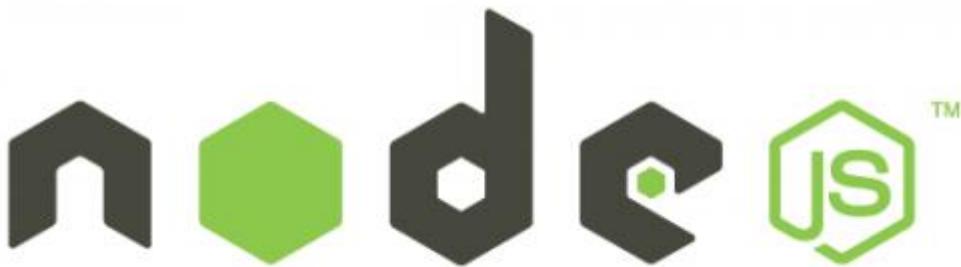
PostgreSQL is a general-purpose object-relational database management system, the most advanced open source database system available today. PostgreSQL is designed to run on UNIX-like platforms. However, PostgreSQL was also dynamically adapted to run on many different platforms such as Mac OS X, Solaris, and Windows.



**Figure 48: MySQL**

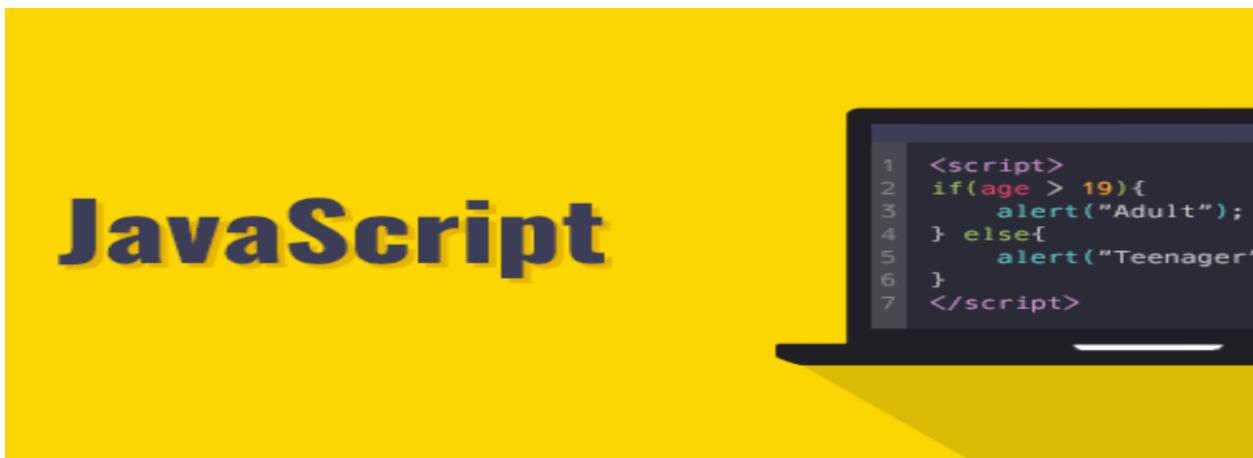
#### 1.1.2.6 NodeJS & JavaScript

NodeJS is an open-source and cross-platform JavaScript runtime environment that is used to run web applications outside of the client's browser. This platform, developed by Ryan Dahl in 2009, is considered a perfect solution for data-intensive applications thanks to its asynchronous event-driven model.



**Figure 49: NodeJS**

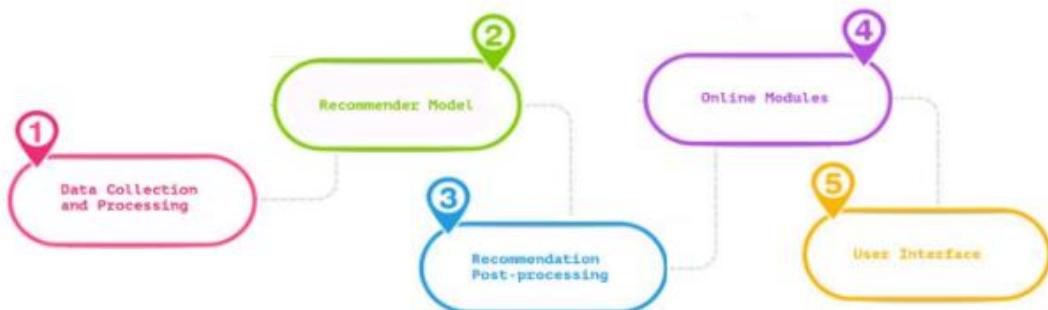
JavaScript is a scripting or programming language that allows you to implement complex features on web pages — every time a web page does more than just sit there and display static information for you to look at — displaying timely content updates, interactive maps, animated 2D/3D graphics, scrolling video jukeboxes, etc. — you can bet that JavaScript is probably involved.



**Figure 50: JavaScript**

### 1.1.3 Recommendation System

#### 1.1.3.1 Overview of recommendation system

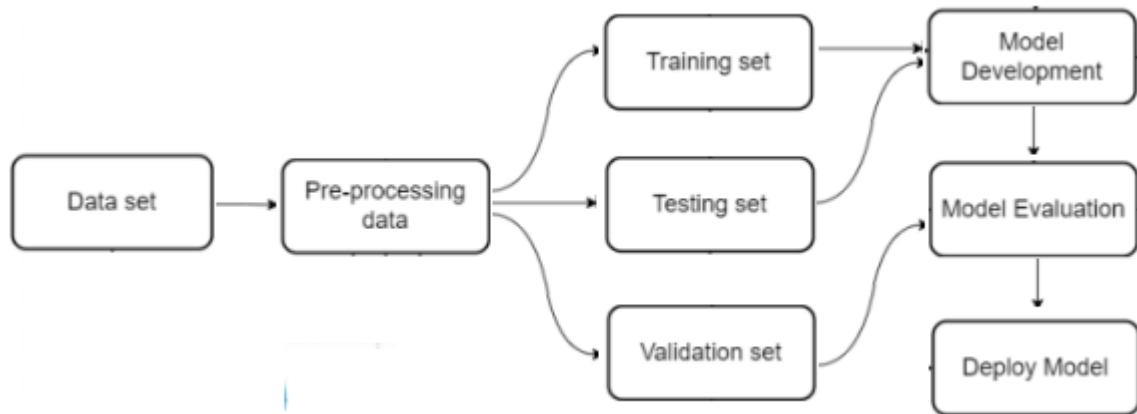


**Figure 51: Flow of recommendation system**

Health and fitness is the area that users are most concerned and worried about, so we build a recommendation system based on each user's desire and self-improvement criteria through a survey, because so we used a Collaborative Filtering System (Item-Item Filtering) for the suggestion and it had to respond to the following location parameters.

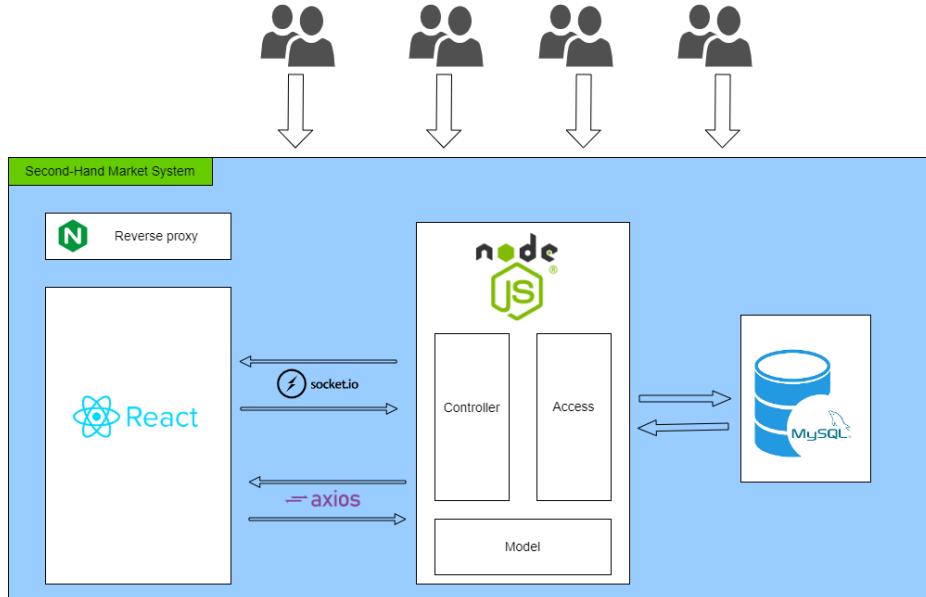
#### 1.1.3.2 The setting up steps of the recommendation System

The suggestion system provides value to customers by understanding individual user behavior and then recommending foods & exercises that they may find appropriate. First, the system collects data from the survey, from which the system calculates the BMI data and sends to the customer the most suitable suggestions



**Figure 52: Flow of building model**

#### 1.1.4 System Architecture



**Figure 53: System Architecture**

## 1.2 Package Diagram

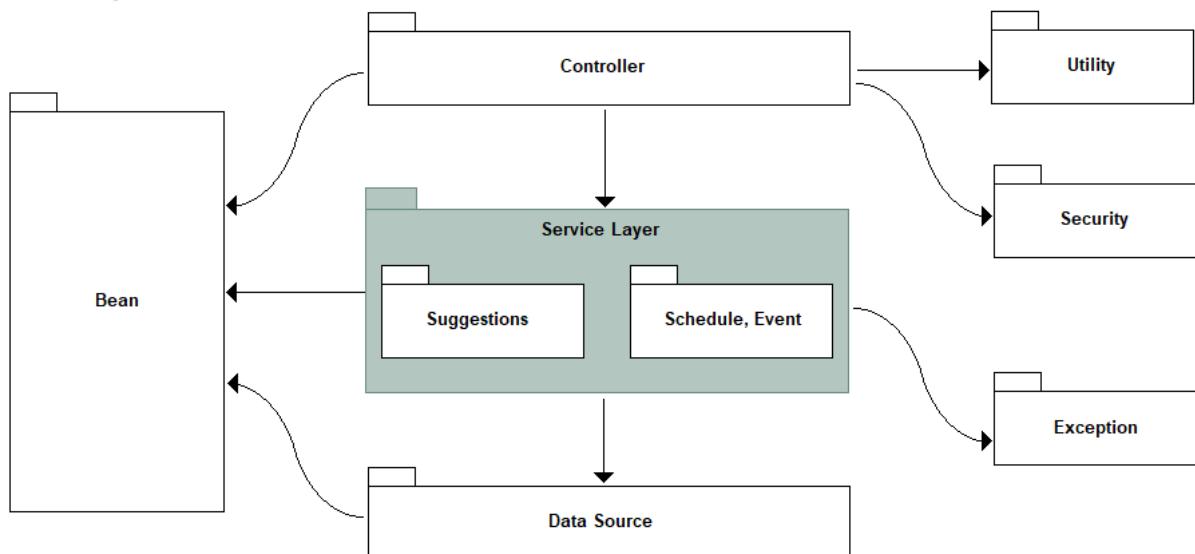


Figure 54: Package Diagram

- **Package Descriptions**

No	Package	Description
01	Controller	Contains controller classes which are responsible for processing incoming REST API requests, preparing a model, and returning the view to be rendered as a response.
02	Suggestions	Contains suggestion classes that are used to write business logic in another layer, separate from the controller
03	Schedule, Event	Contains schedule, event classes that are used to write business logic in another layer, separate from the controller
04	Utility	Contains entity classes which are the persistence objects stores as a record in the database
05	Security	Implements authentication, authorization, and protection against common attacks
06	Exception	Provides a mechanism to treat exceptions that are thrown during execution of handlers
07	Data Source	A factory for connections to the PostgreSQL database
08	Bean	Exploits the Inversion of Control feature by which an object defines its dependencies without creating them

## 2. Database Design

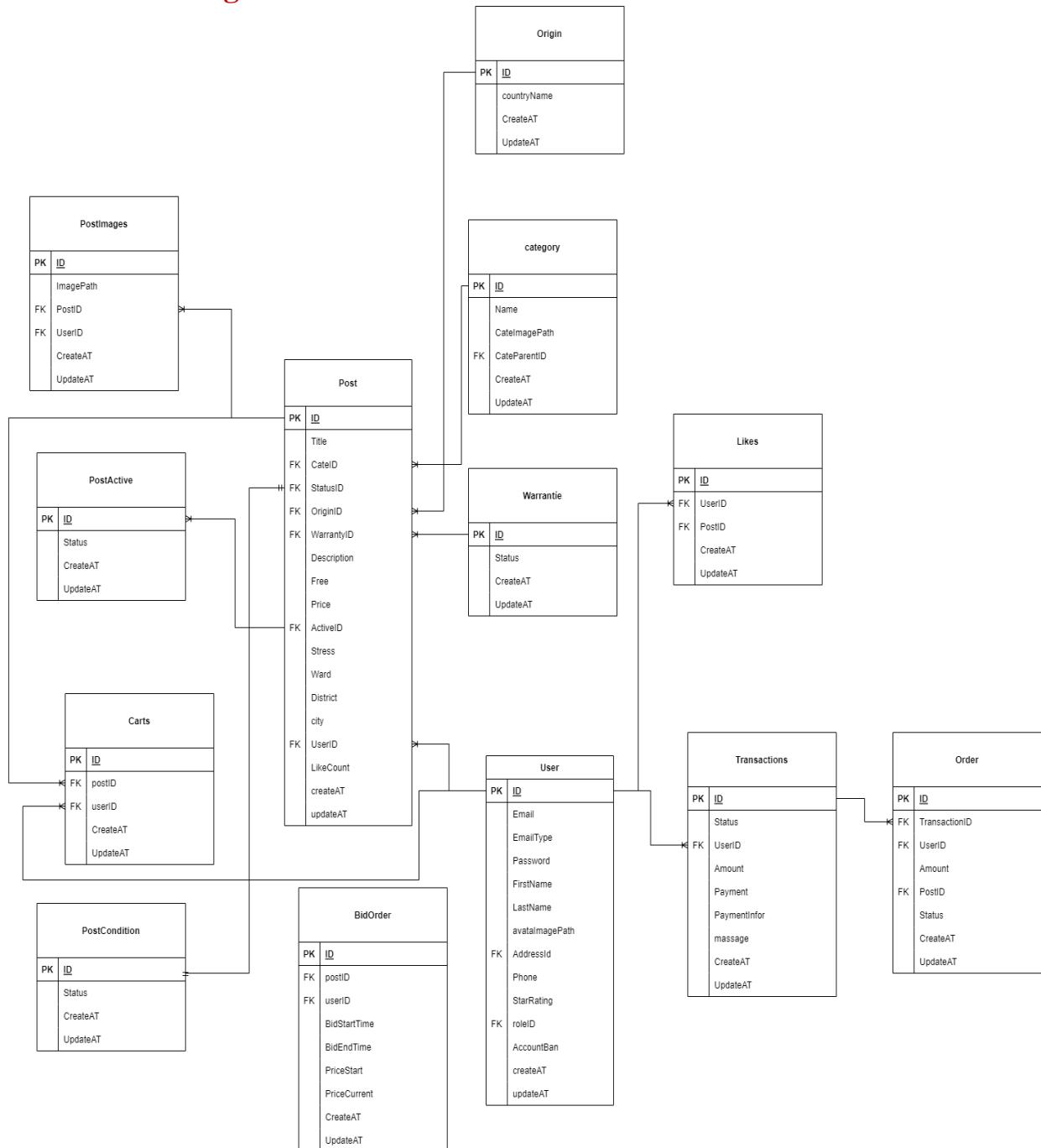


Figure 55: Database Design

- **Table Descriptions**

No	Table	Description
----	-------	-------------

01	Users	<ul style="list-style-type: none"> <li>- <b>Primary keys:</b> userid</li> <li>- <b>Foreign keys:</b> None</li> </ul>
02	Posts	<ul style="list-style-type: none"> <li>- <b>Primary keys:</b> id</li> <li>- <b>Foreign keys:</b> cateId,statusId,warrantyId,originId,activeId,userId</li> </ul>
03	Origins	<ul style="list-style-type: none"> <li>- <b>Primary keys:</b> id</li> <li>- <b>Foreign keys:</b> none</li> </ul>
04	Postmages	<ul style="list-style-type: none"> <li>- <b>Primary keys:</b> id</li> <li>- <b>Foreign keys:</b> postId,userId</li> </ul>
05	Categories	<ul style="list-style-type: none"> <li>- <b>Primary keys:</b> id</li> <li>- <b>Foreign keys:</b> cateParentId</li> </ul>
06	Likes	<ul style="list-style-type: none"> <li>- <b>Primary keys:</b> id</li> <li>- <b>Foreign keys:</b> postId,userId</li> </ul>
07	PostCondition	<ul style="list-style-type: none"> <li>- <b>Primary keys:</b> id</li> <li>- <b>Foreign keys:</b> none</li> </ul>
08	PostActive	<ul style="list-style-type: none"> <li>- <b>Primary keys:</b> id</li> <li>- <b>Foreign keys:</b> None</li> </ul>
09	Waranties	<ul style="list-style-type: none"> <li>- <b>Primary keys:</b> id</li> <li>- <b>Foreign keys:</b> None</li> </ul>
10	Carts	<ul style="list-style-type: none"> <li>- <b>Primary keys:</b> id</li> <li>- <b>Foreign keys:</b> postId,userId</li> </ul>
11	Transactions	<ul style="list-style-type: none"> <li>- <b>Primary keys:</b> id</li> <li>- <b>Foreign keys:</b> userid</li> </ul>
12	Order	<ul style="list-style-type: none"> <li>- <b>Primary keys:</b> id</li> <li>- <b>Foreign keys:</b> postId,transactionId</li> </ul>
13	BidOrder	<ul style="list-style-type: none"> <li>- <b>Primary keys:</b> id</li> <li>- <b>Foreign keys:</b> postId,userId</li> </ul>

**Table 46: Table Descriptions**

### 3. Detailed Design

#### 3.1 Class Diagram

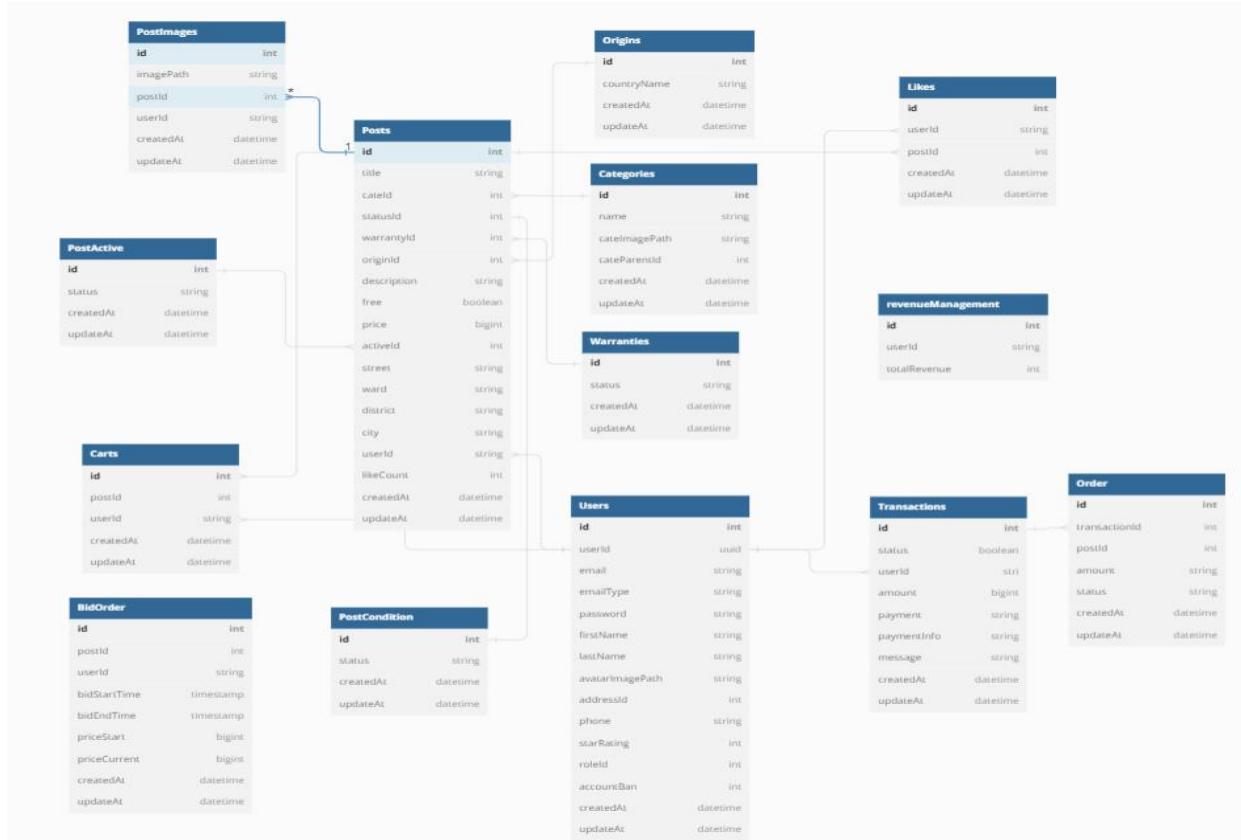


Figure 56: Class Diagrams

## 3.2 Class Specifications

### 3.2.1 Users

No	Attributes	Type	Description
01	id	int	Unique identifier, auto increment
02	UserID	uuid	Unique identifier by userlist ,auto increment
03	email	string	email of user
04	emailType	string	type of user email
05	Password	string	password
06	FirstName	string	User Firstname
07	LastName	string	User Lastname
08	avataImagePath	string	link to avata image
09	addressID	int	address of user
10	phone	String	phone number of user
11	starrating	int	average starpoint of user
12	roleid	int	role of user
13	accountBan	int	number for ban/unban user
14	createAT	datetime	create time
15	updateAT	datetime	update time

**Table 47: Users**

### 3.2.2 Posts

No	Attributes	Type	Description
01	ID	int	Unique identifier, auto increment
02	title	String	Title of product
03	CateID	int	Unique identifier by category, auto increment
04	StatusId	int	status of product
05	warrantyId	int	status warranty of product
06	originId	int	origin of product
07	description	string	description
08	free	boolean	free or no
09	price	bigint	price of product
10	activeId	int	
11	street	string	address of user who post the product
12	ward	string	address of user who post the product
13	district	string	address of user who post the product
14	city	string	address of user who post the product
15	userId	int	id of user post
16	likeCount	int	total likes of post
17	createdAt	datetime	time create post

18	updateAt	datetime	time update post
----	----------	----------	------------------

**Table 48: Posts**

### 3.2.3 Origins

No	Attributes	Type	Description
01	ID	int	Unique identifier, auto increment
02	countryName	string	country of manufacture of the product
03	RoleID	int	Unique identifier by role, auto increment
04	createdAt	datetime	time create post
05	updateAt	datetime	time update post

**Table 49: Origins**

### 3.2.4 PostImages

No	Attributes	Type	Description
01	ID	int	Unique identifier, auto increment
02	imagePath	int	link to image
03	postId	int	Unique identifier by post list
04	userId	id	Unique identifier by user list
05	createdAt	datetime	time create post
06	updateAt	datetime	time update post

**Table 50: PostImages**

### 3.2.5 Categories

No	Attributes	Type	Description
01	ID	int	Unique identifier, auto increment
02	Name	string	Name of category
03	cateImagePath	string	path of image category
04	cateParentId	int	Unique identifier by post list
05	createdAt	datetime	time create post
06	updateAt	datetime	time update post

**Table 51: Categories**

### 3.2.6 Likes

No	Attributes	Type	Description
01	ID	int	Unique identifier, auto increment
02	userId	string	Unique identifier by user list
03	postId	int	Unique identifier by post list
05	createdAt	datetime	time create post
06	updateAt	datetime	time update post

**Table 52: Likes**

### 3.2.7 PostCondition

No	Attributes	Type	Description
01	ID	int	Unique identifier, auto increment
02	Status	int	Status condition of product
03	createdAt	datetime	time create post
04	updateAt	datetime	time update post

**Table 53: PostCondition**

### 3.2.8 PostActive

No	Attributes	Type	Description
01	ID	int	Unique identifier, auto increment
02	Status	int	Status active of product
03	createdAt	datetime	time create post
04	updateAt	datetime	time update post

**Table 54: PostActive**

### 3.2.9 Warranties

No	Attributes	Type	Description
01	ID	int	Unique identifier, auto increment
02	Status	int	Status warranties of product
03	createdAt	datetime	time create post
04	updateAt	datetime	time update post

**Table 55: Warranties**

### 3.2.10 Carts

No	Attributes	Type	Description

01	ID	int	Unique identifier, auto increment
02	userId	string	Unique identifier by user list
03	postId	int	Unique identifier by post list
05	createdAt	datetime	time create post
06	updateAt	datetime	time update post

**Table 56: Carts**

### 3.2.11 Transactions

No	Attributes	Type	Description
01	ID	int	Unique identifier, auto increment
02	status	boolean	Status Transaction of product
03	userId	string	Unique identifier by user list
04	amount	bigint	amount product transaction
05	payment	string	Status of payment
06	paymentInfo	string	information of payment
07	message	string	message of user for product
08	createdAt	datetime	time create post
09	updateAt	datetime	time update post

**Table 57: Transactions**

### 3.2.12 Order

No	Attributes	Type	Description
01	ID	int	Unique identifier, auto increment
02	transactionId	int	Unique identifier by transaction
03	postId	int	Unique identifier by post
04	amount	string	amount product order
05	status	string	Status order of product
08	createdAt	datetime	time create post
09	updateAt	datetime	time update post

**Table 58: Order**

### 3.2.13 BidOrder

No	Attributes	Type	Description
01	ID	int	Unique identifier, auto increment
02	userId	string	Unique identifier by user list
03	postId	int	Unique identifier by post list
04	bidStartTime	timestamp	time start auctions
05	bidEndTime	timestamp	time end auctions
06	priceStart	bigint	price start auctions
07	priceCurrent	bigint	price current auctions

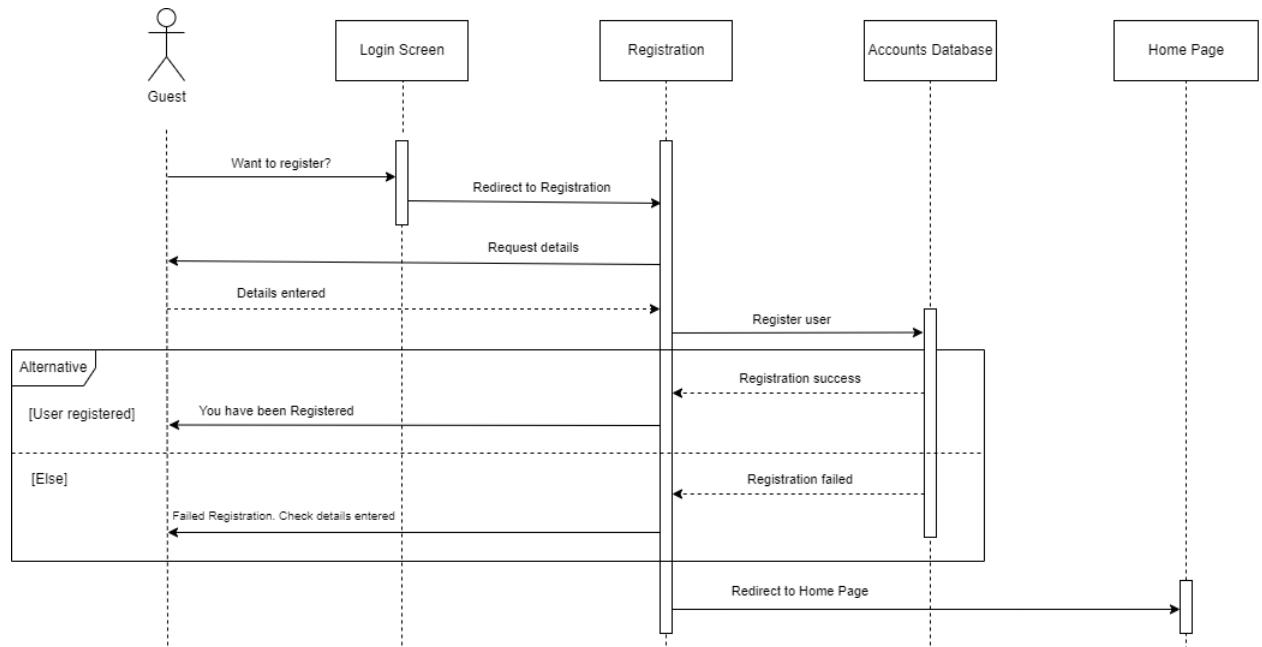
08	createdAt	datetime	time create post
09	updateAt	datetime	time update post

**Table 59: BidOrder**

### 3.3 Sequence Diagrams

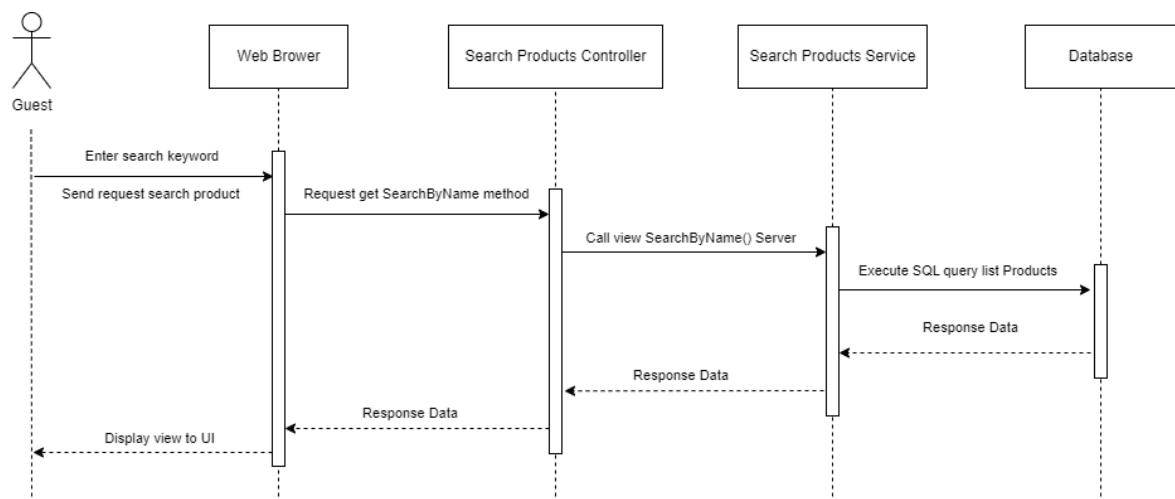
#### 3.3.1 Guest

##### 3.3.1.1 Register



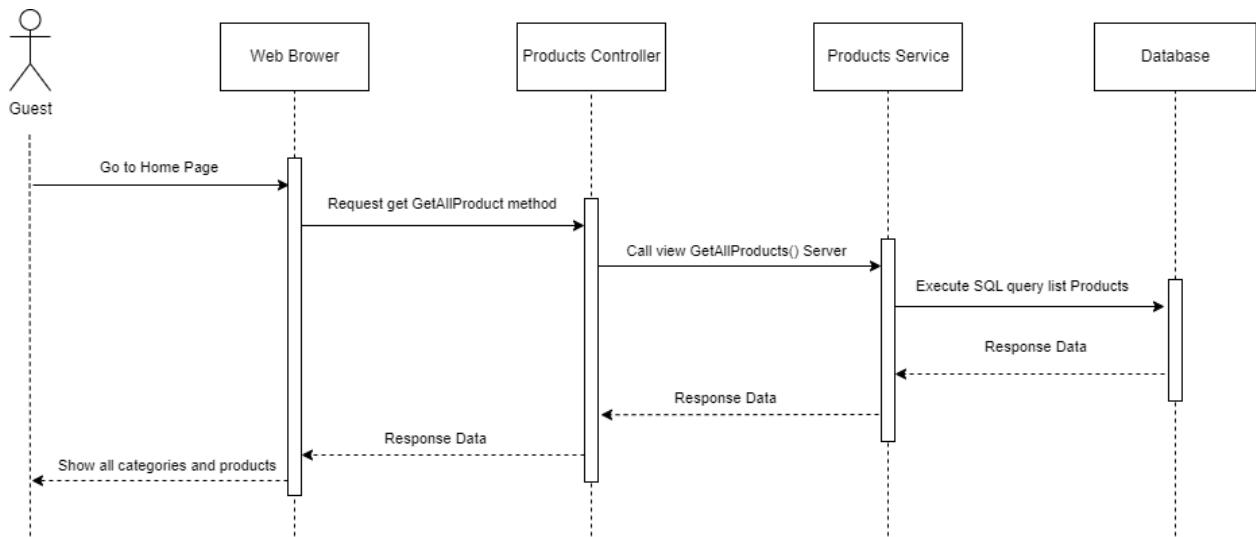
**Figure 57: Guest Register**

##### 3.3.1.2 Search product by name



**Figure 58: Guest Search product by name**

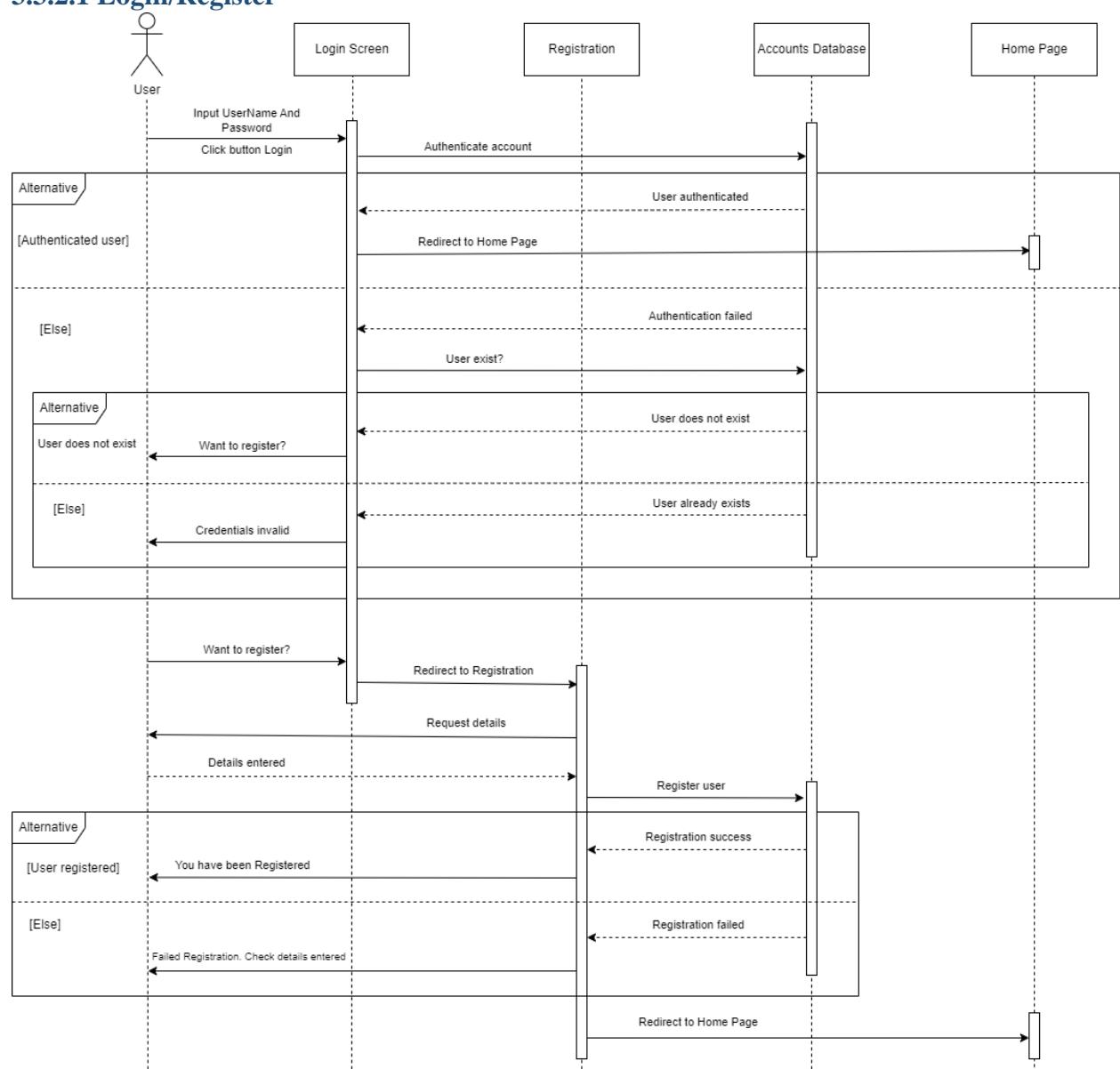
### 3.3.1.3 View product



**Figure 59: Guest View product**

### 3.3.2 User

#### 3.3.2.1 Login/Register



**Figure 60: User Login/Register**

### 3.3.2.2 Forgot password

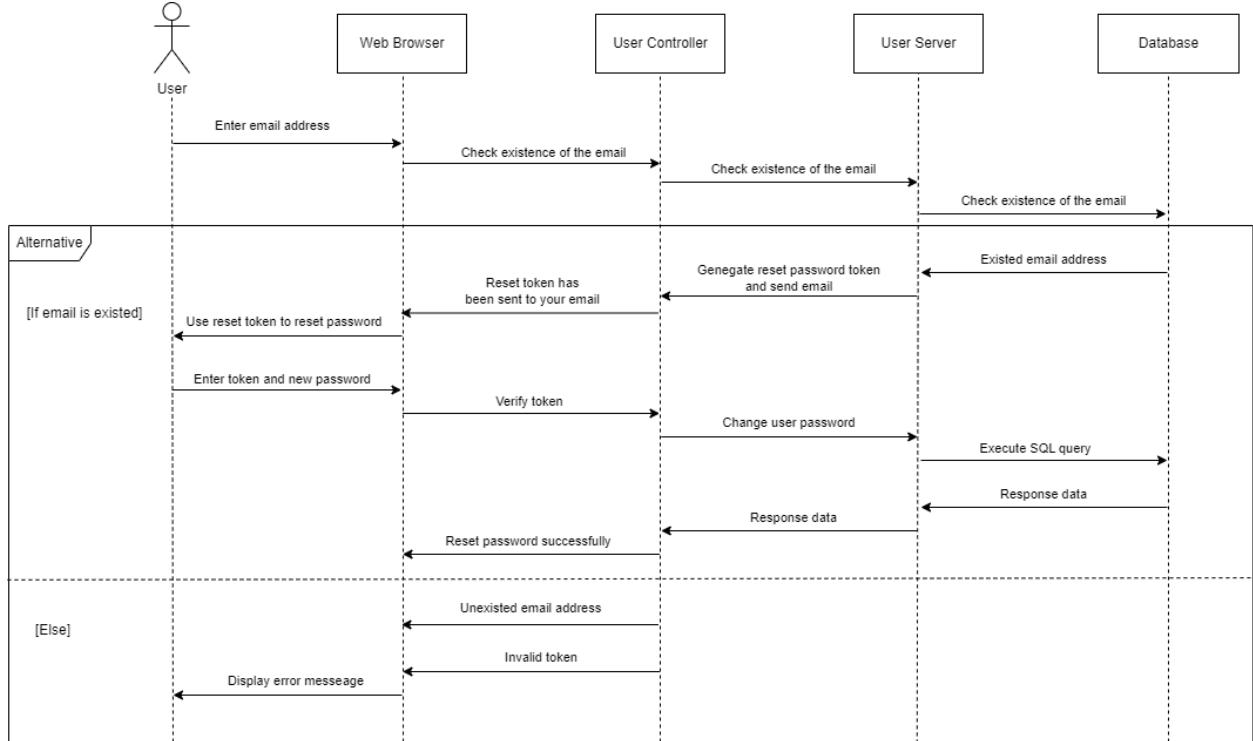


Figure 61: User Forgot password

### 3.3.2.3 Logout

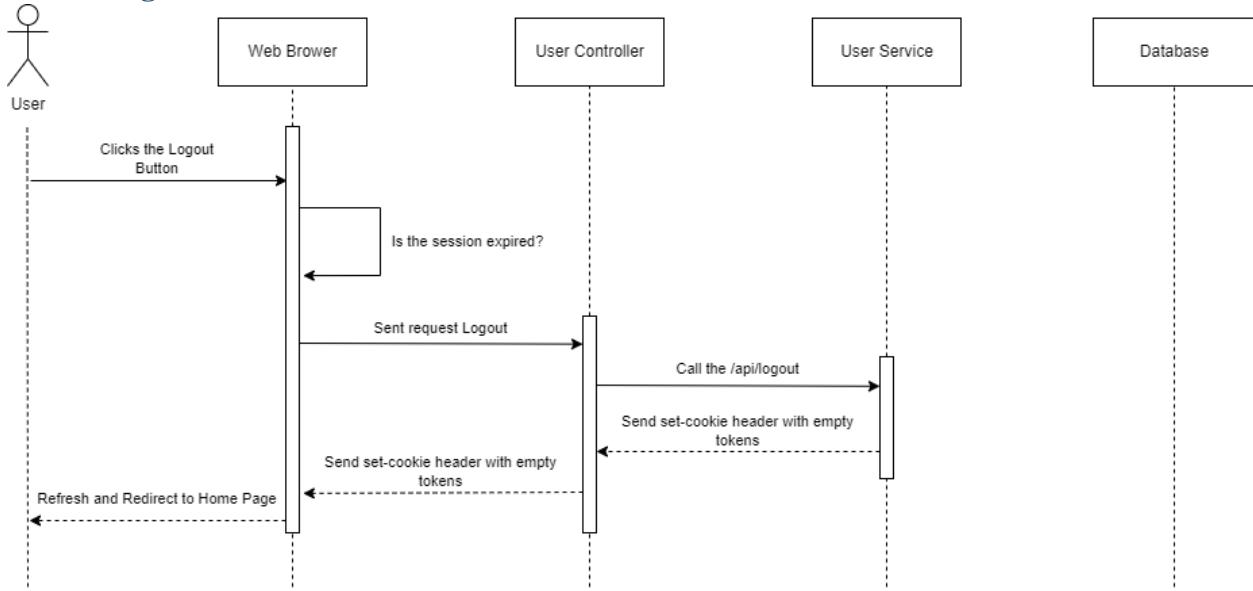
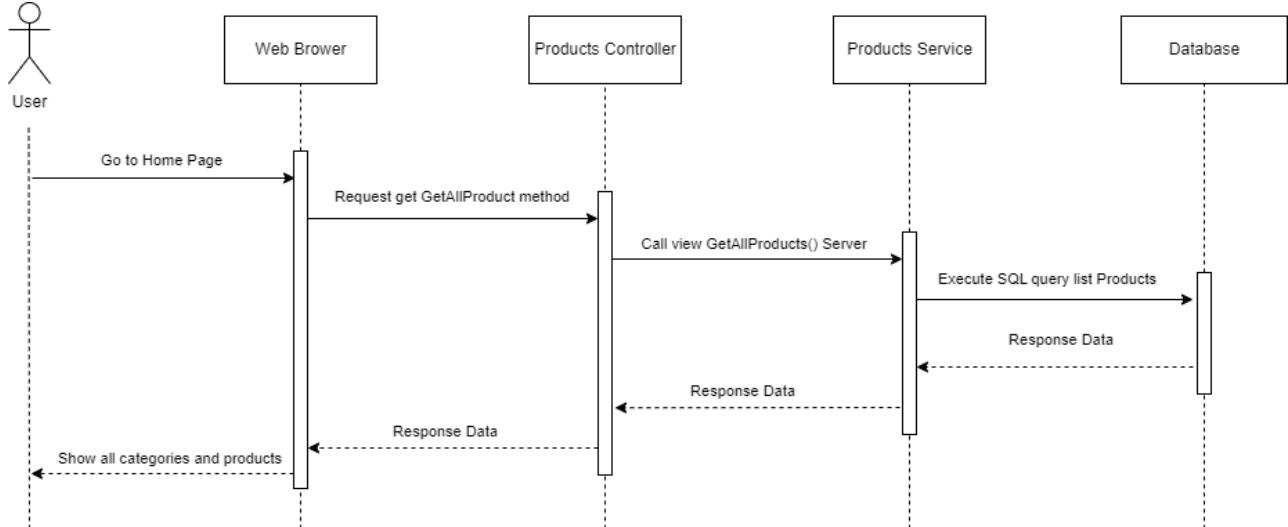


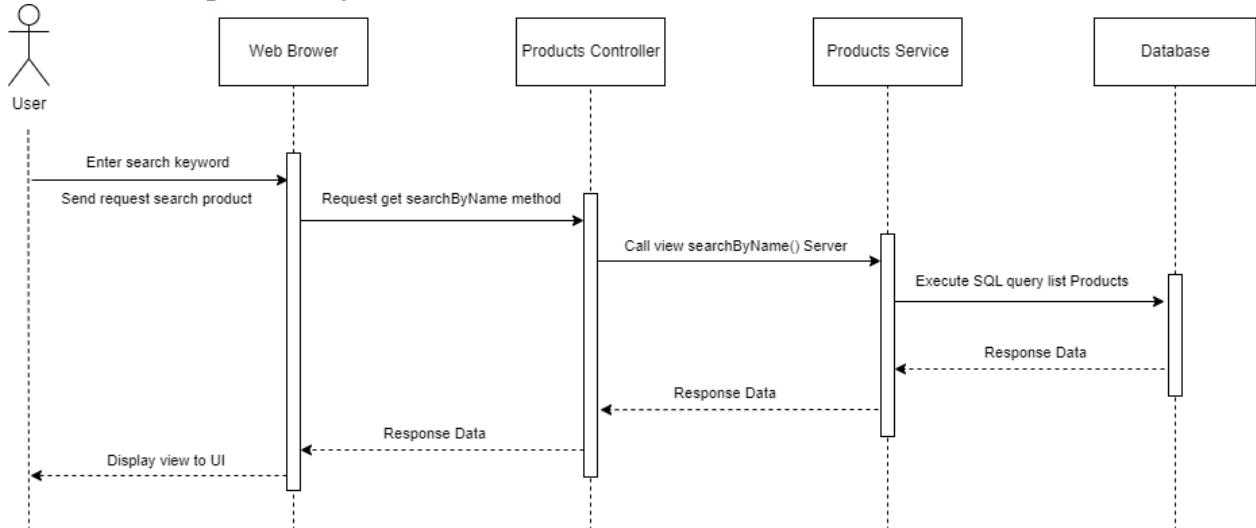
Figure 62: User Logout

### 3.3.2.4 View product



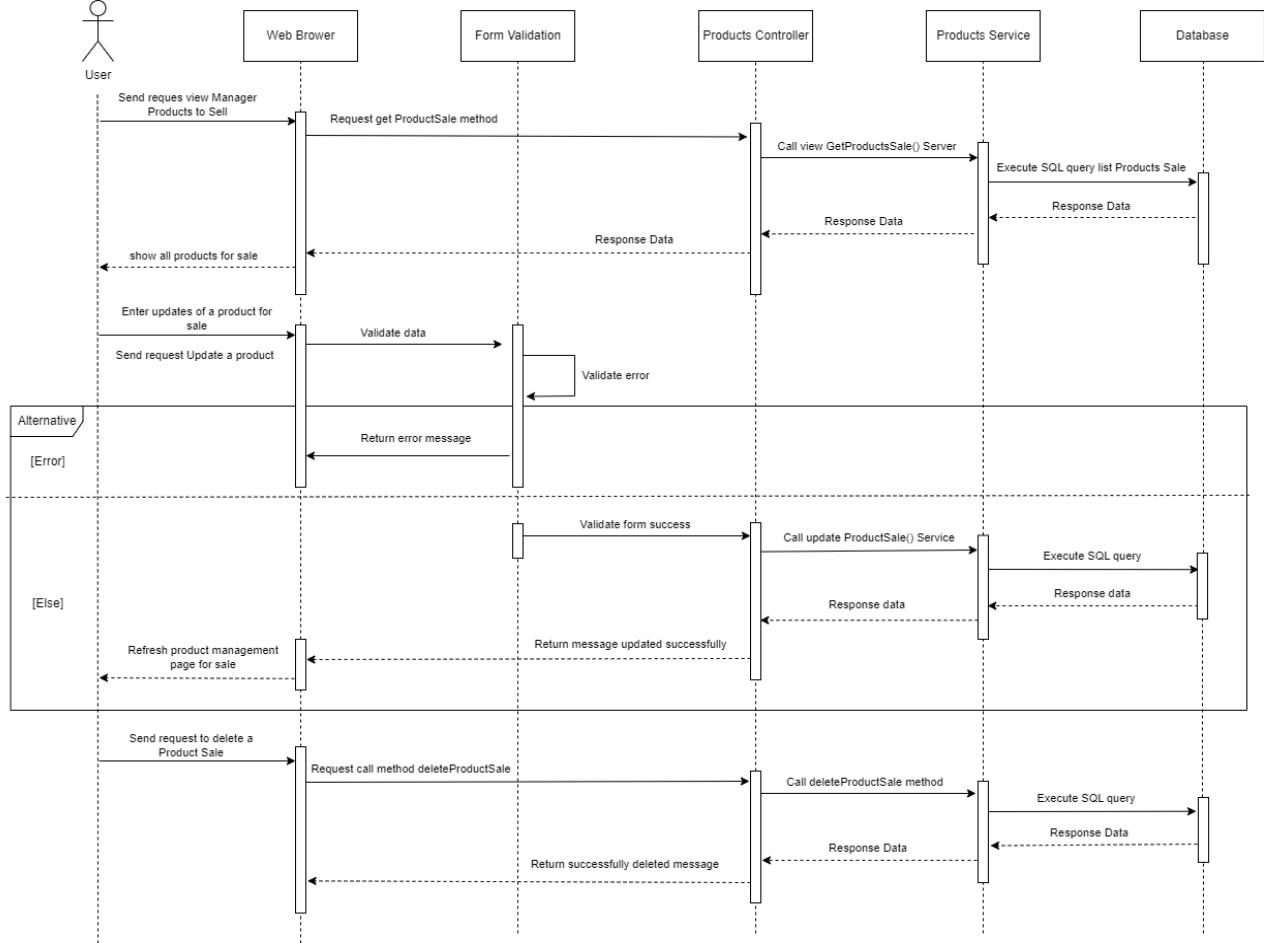
**Figure 63: User View product**

### 3.3.2.5 Search product by name



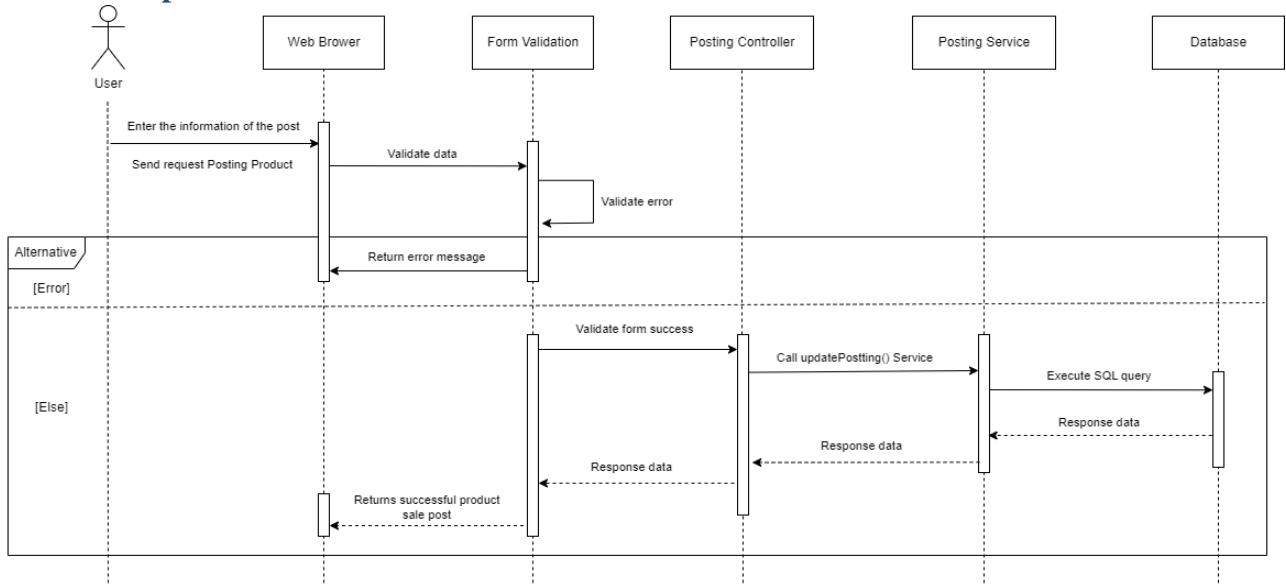
**Figure 64: User Search product by name**

### 3.3.2.6 Manage product to sell



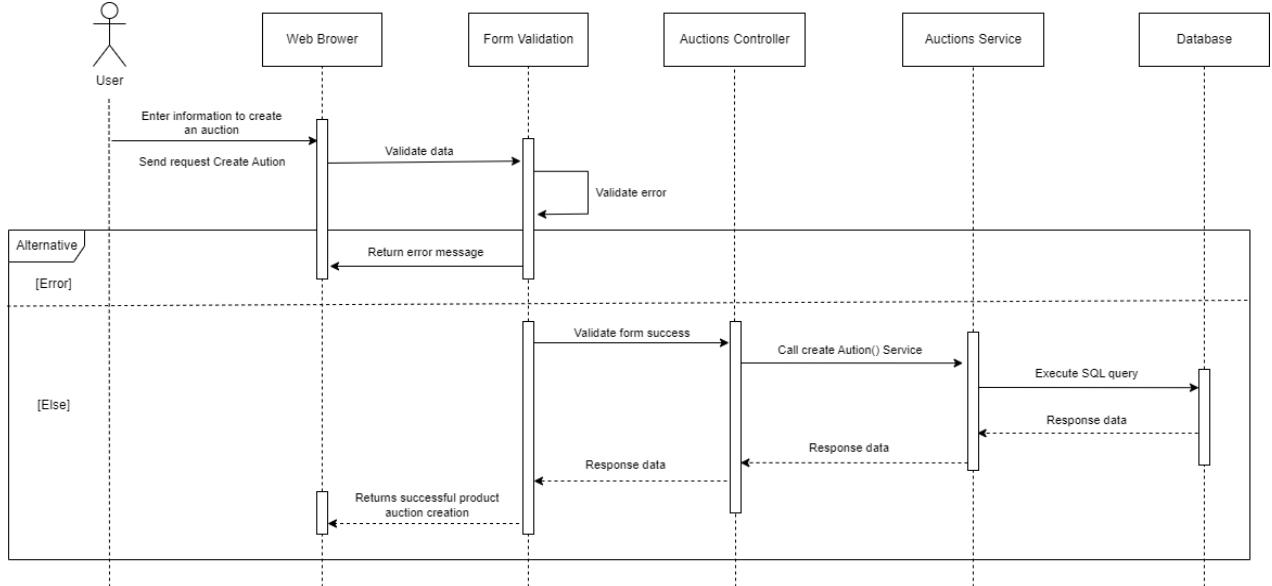
**Figure 65: User Manage product to sell**

### 3.3.2.7 Post product to sell



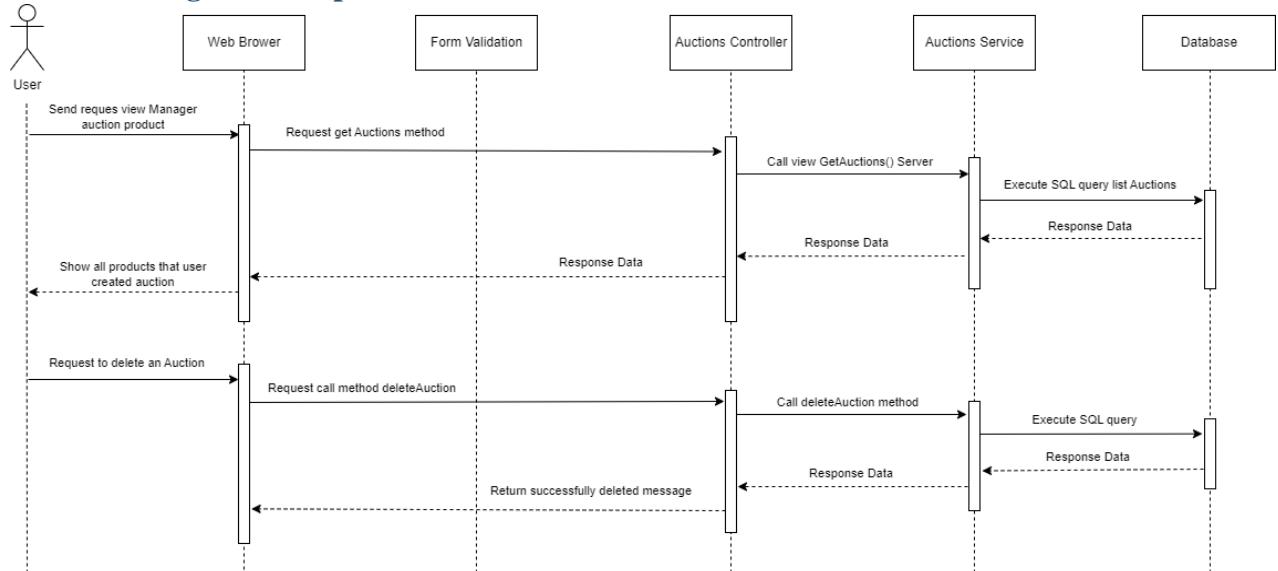
**Figure 66: User Post product to sell**

### 3.3.2.8 Create auction



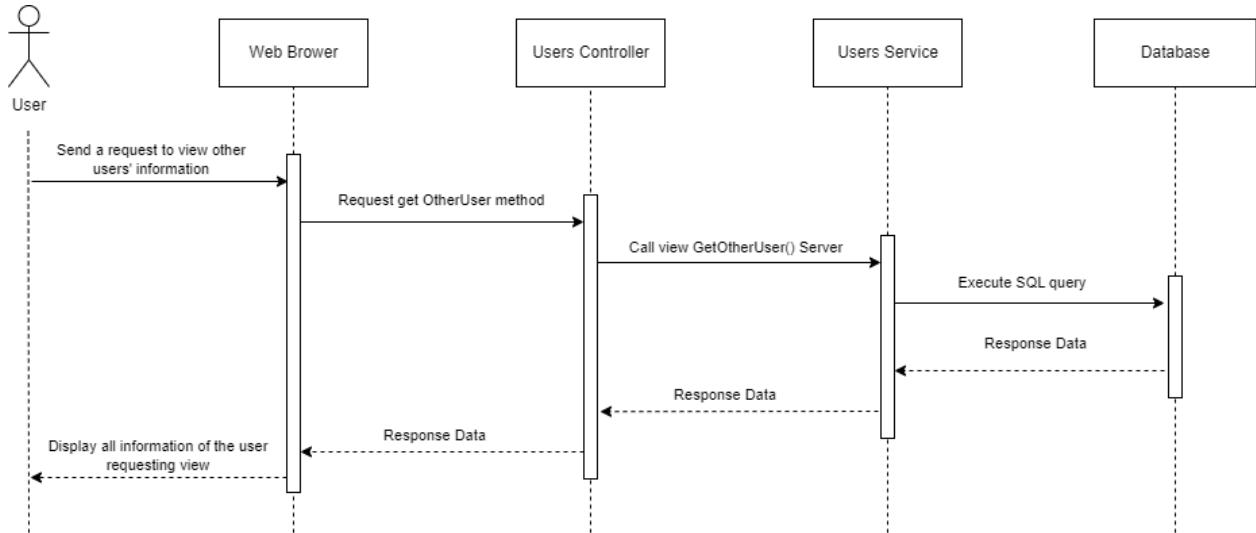
**Figure 67: User Create auction**

### 3.3.2.9 Manage auction product



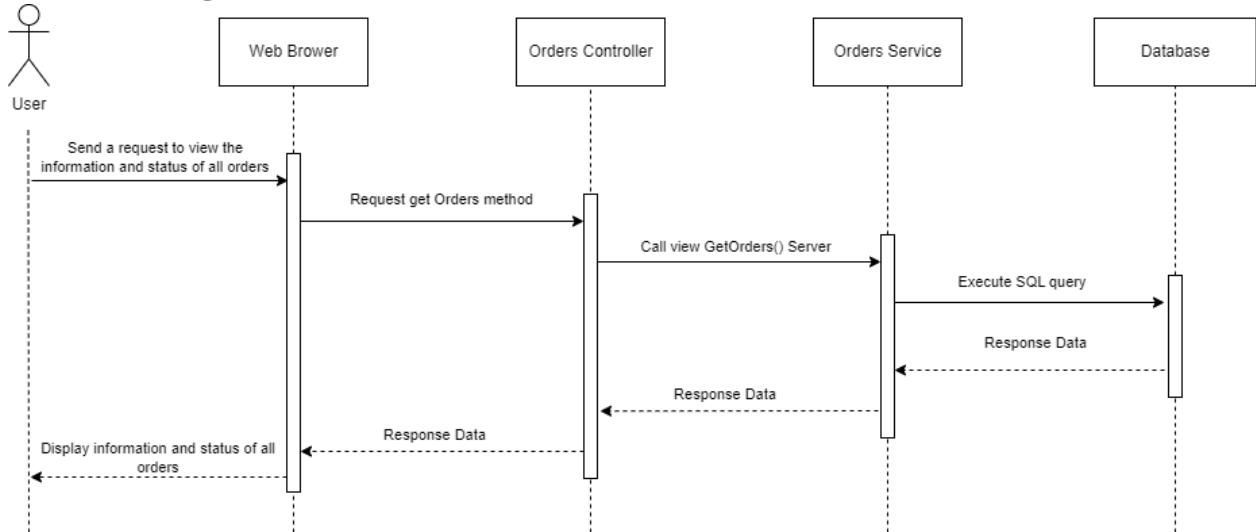
**Figure 68: User Manage auction product**

### 3.3.2.10 View other user's account information



**Figure 69: User View other user's account infomation**

### 3.3.2.11 Manage order



**Figure 70: User Manage order**

### 3.3.2.12 Buy product

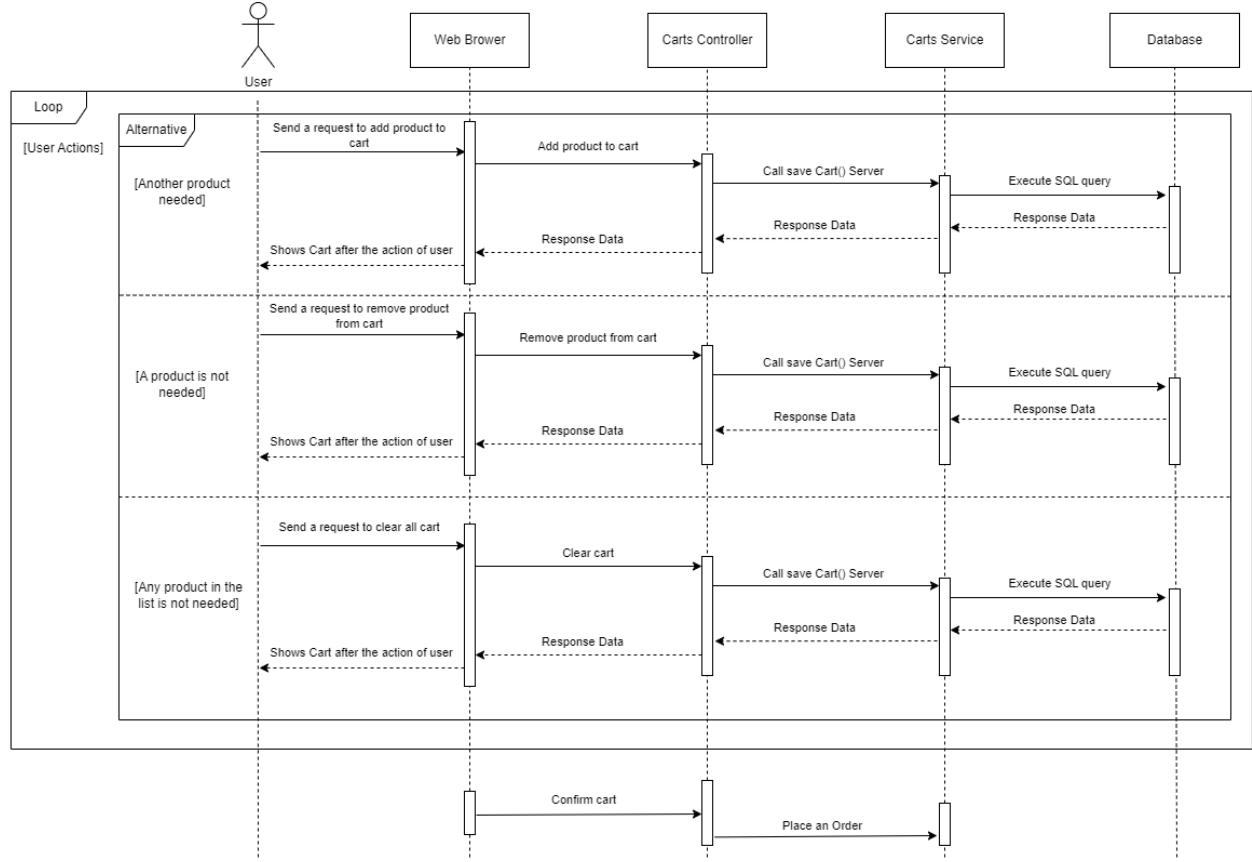


Figure 71: User Buy product

### 3.3.2.13 Payment

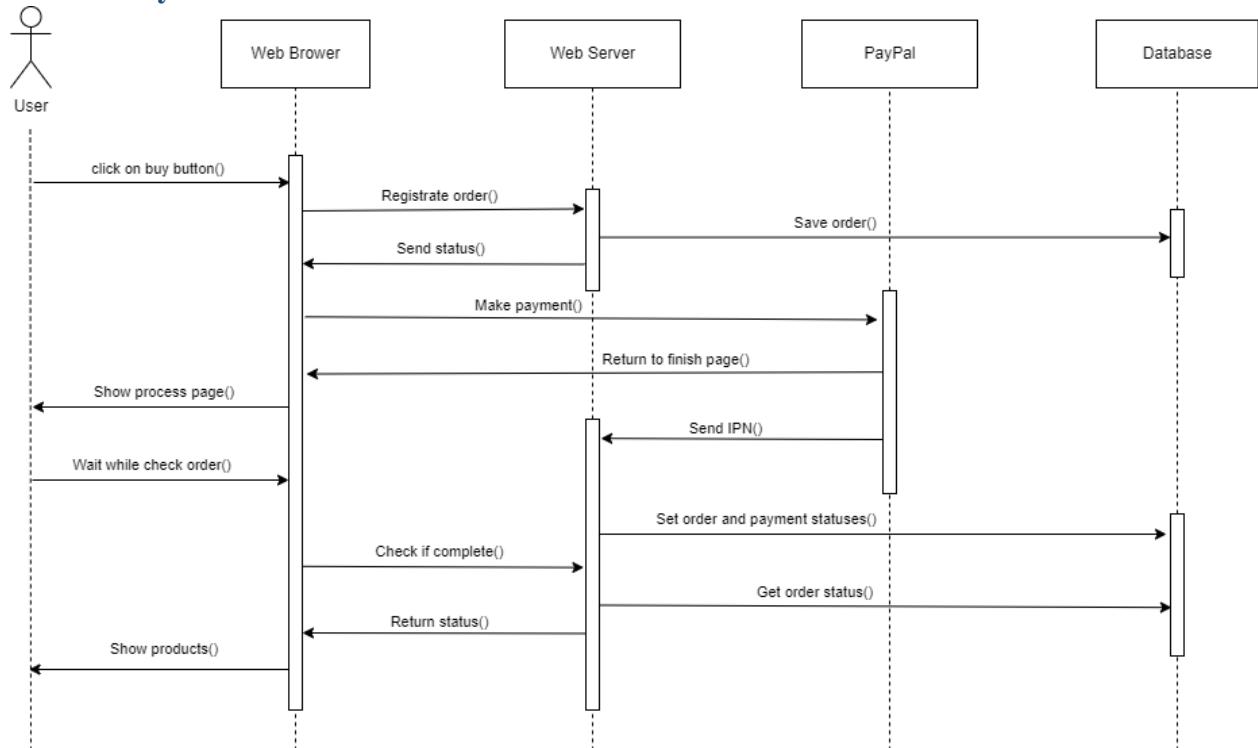


Figure 72: User Payment

### 3.3.2.14 Add favorite product

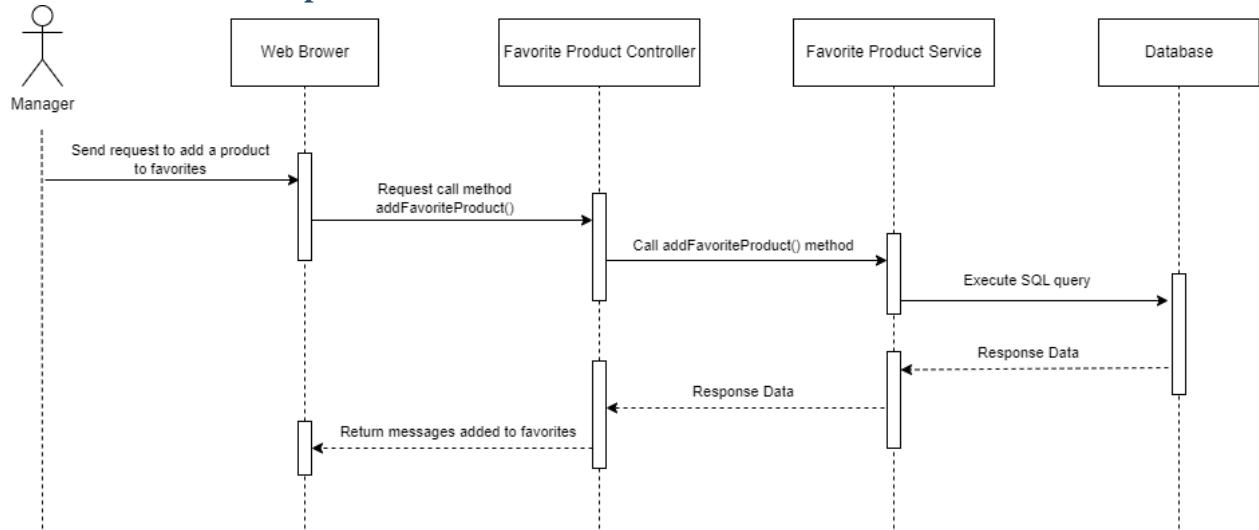


Figure 73: User Add favourite product

### 3.3.2.15 Mange favorite product list

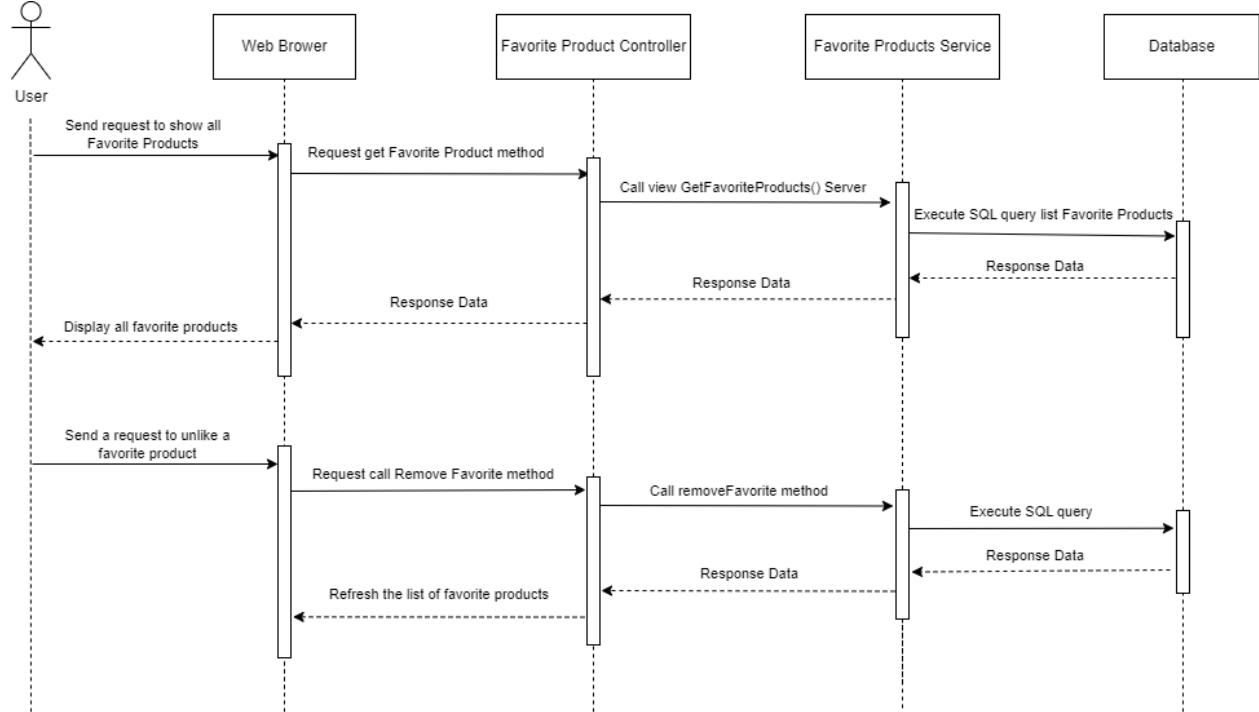


Figure 74: User Manage favourite product list

### 3.3.2.16 Manage account

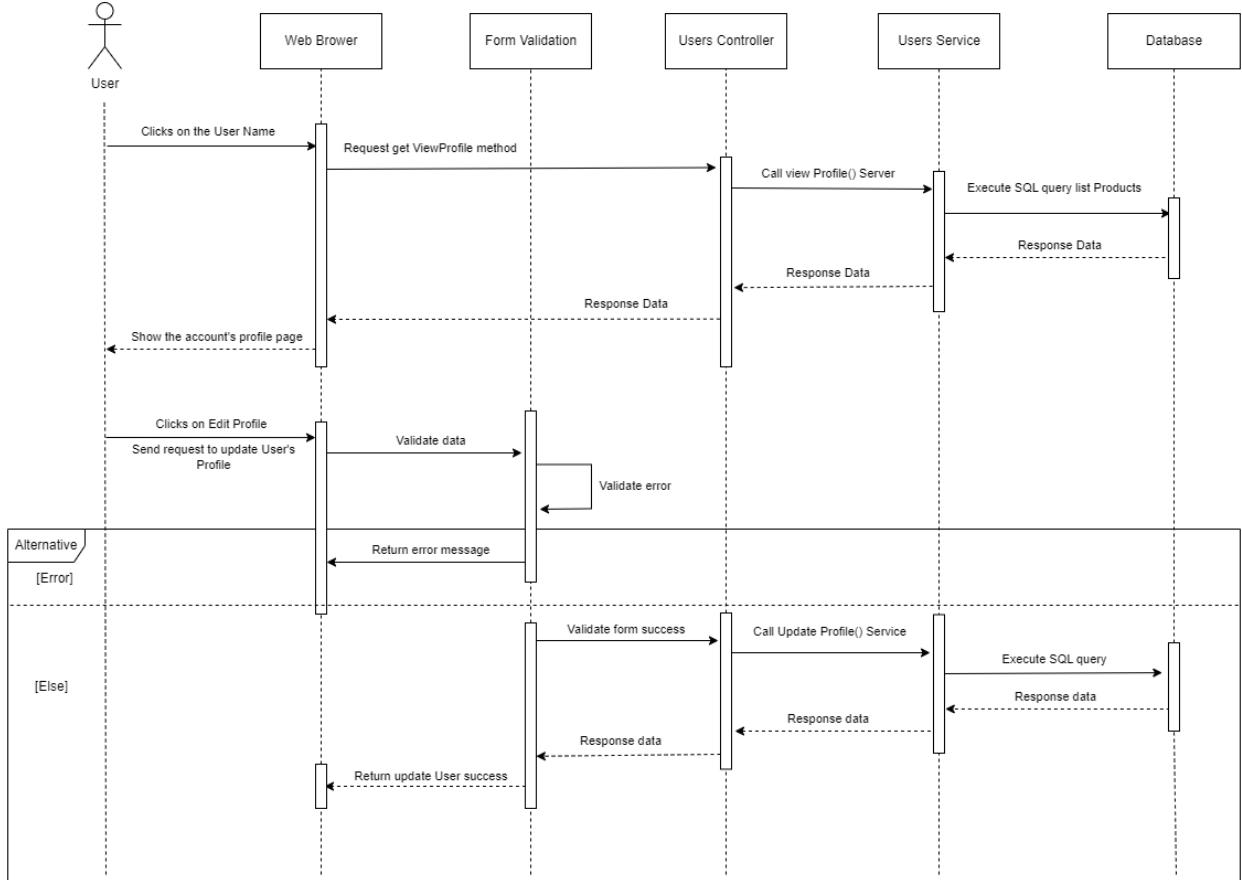


Figure 75: User Manage account

### 3.3.3 Manager

#### 3.3.3.1 Login

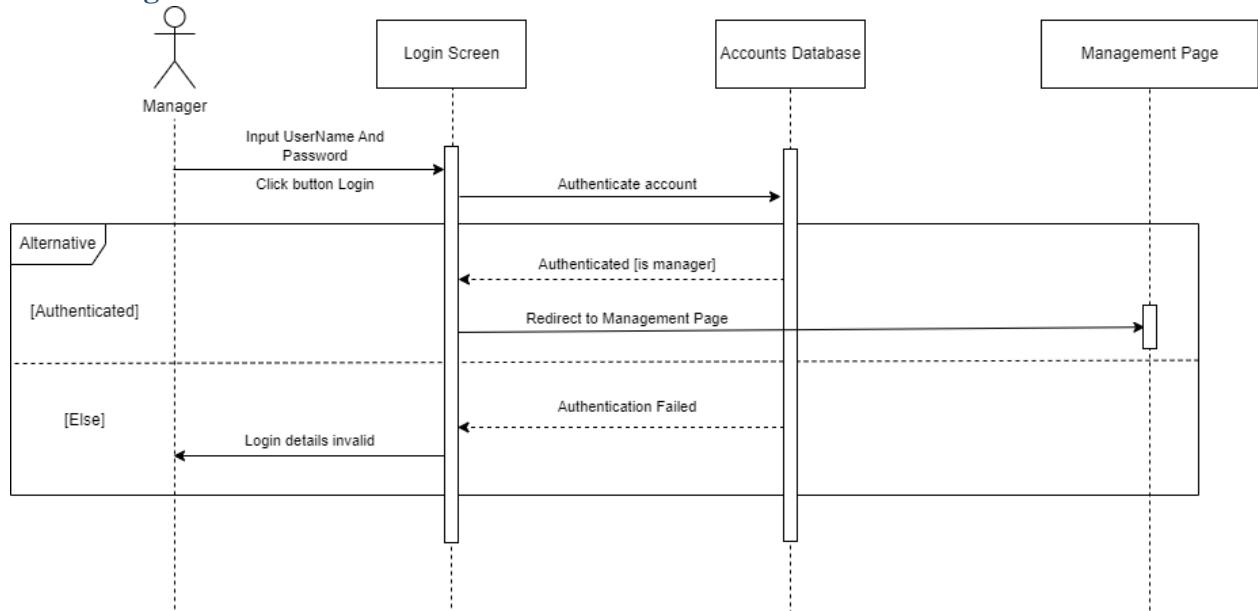


Figure 76: Manager Login

### 3.3.3.1 Logout

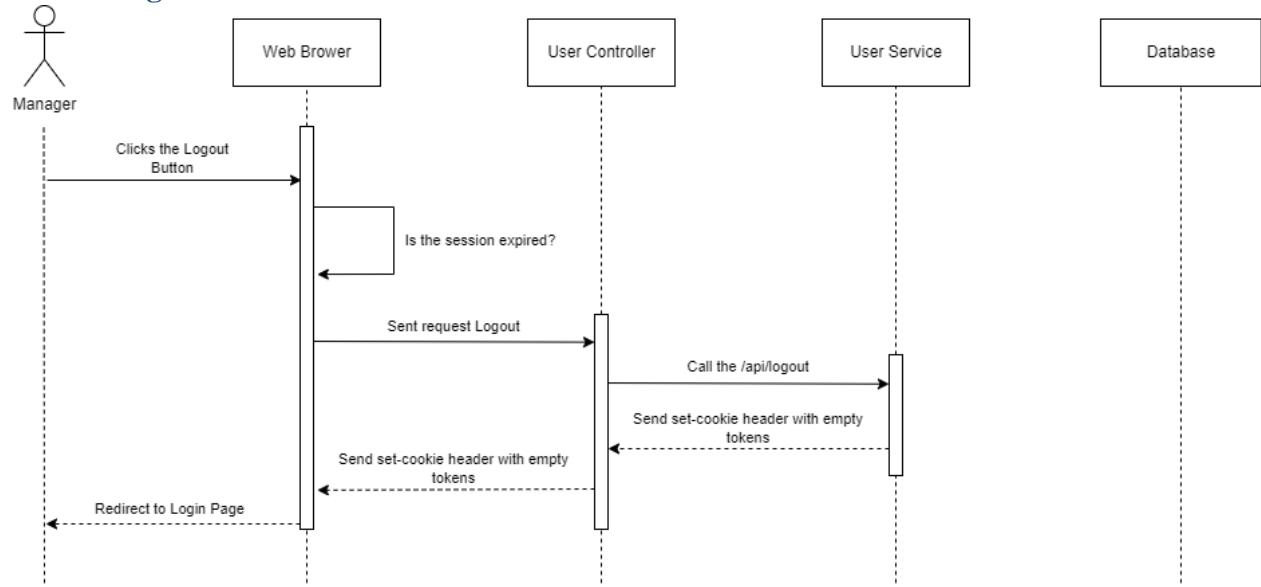


Figure 77: Manager Logout

### 3.3.3.1 Manage category

#### 3.3.3.1.1 View Category

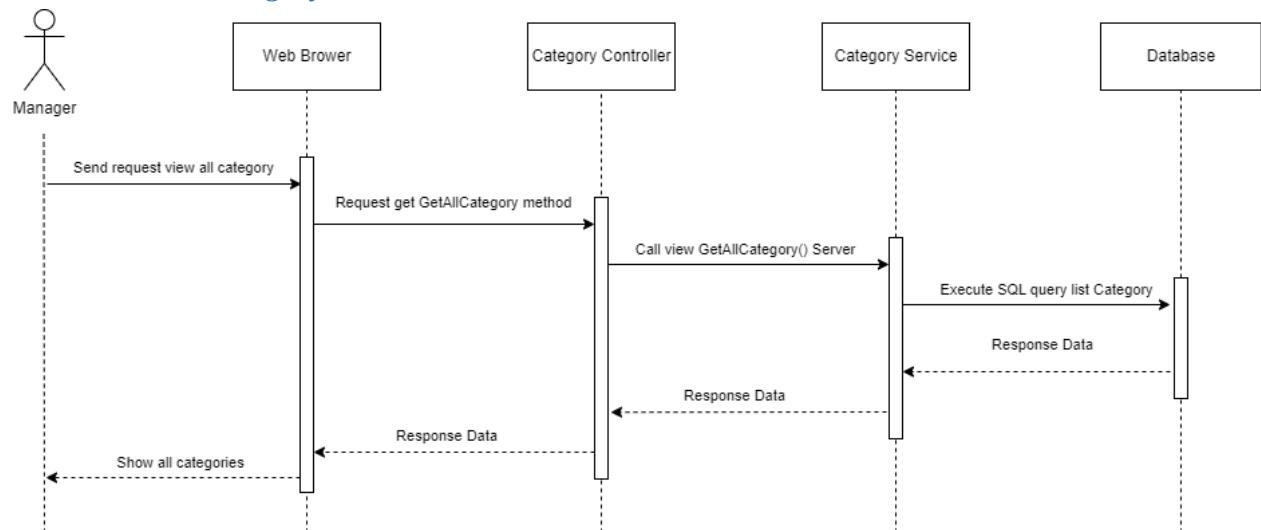
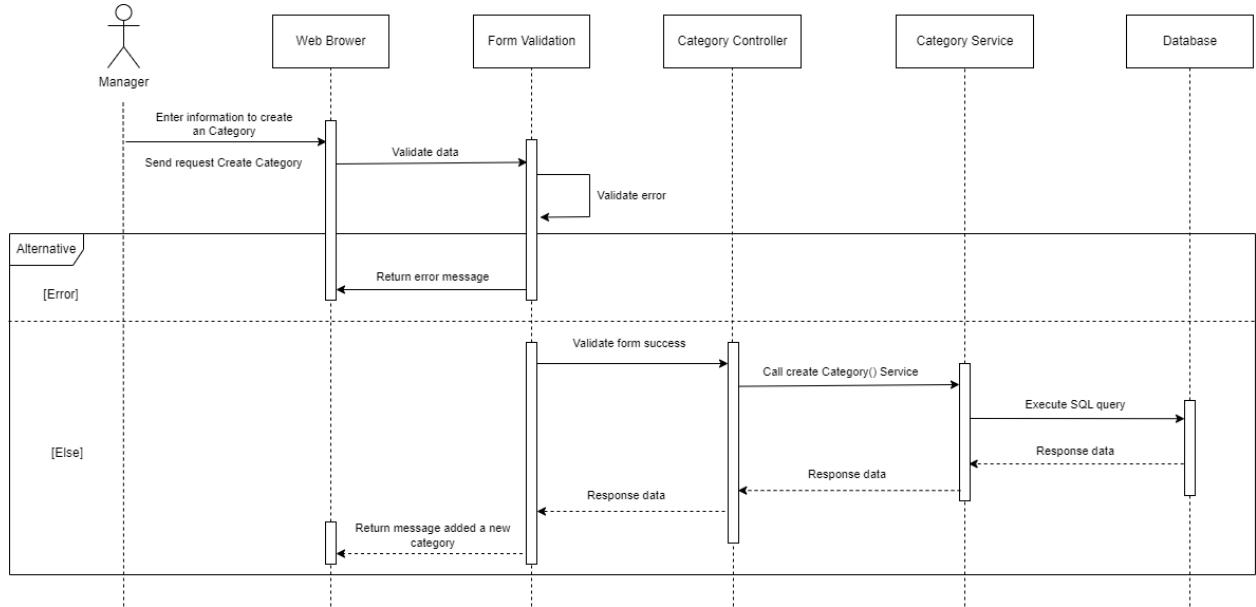


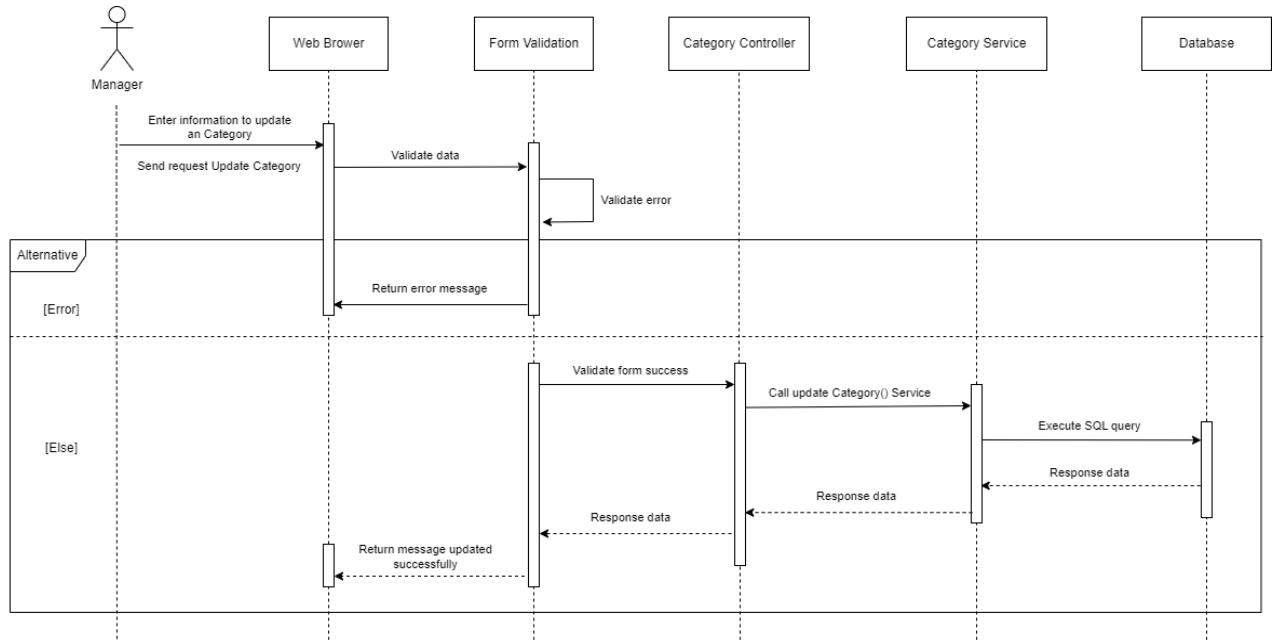
Figure 78: Manage View category

### 3.3.3.1.2 Create Category



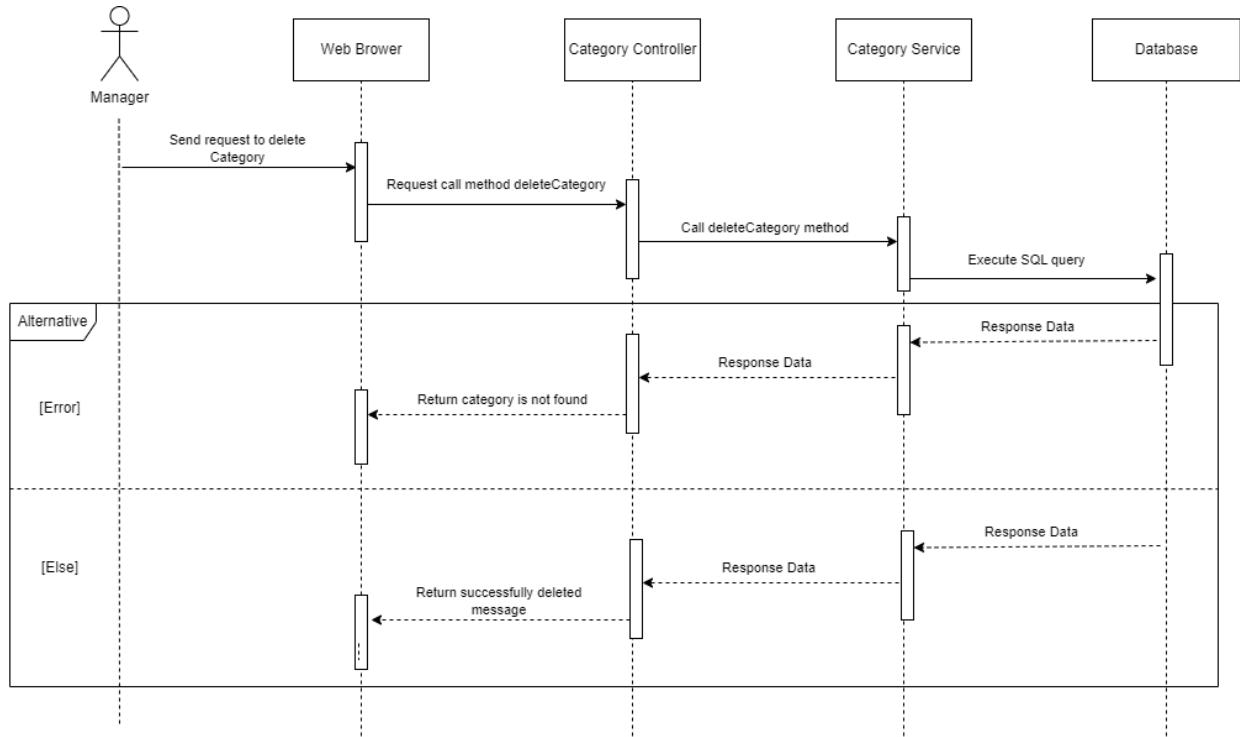
**Figure 79: Manage Create category**

### 3.3.3.1.3 Update Category



**Figure 80: Manager Update category**

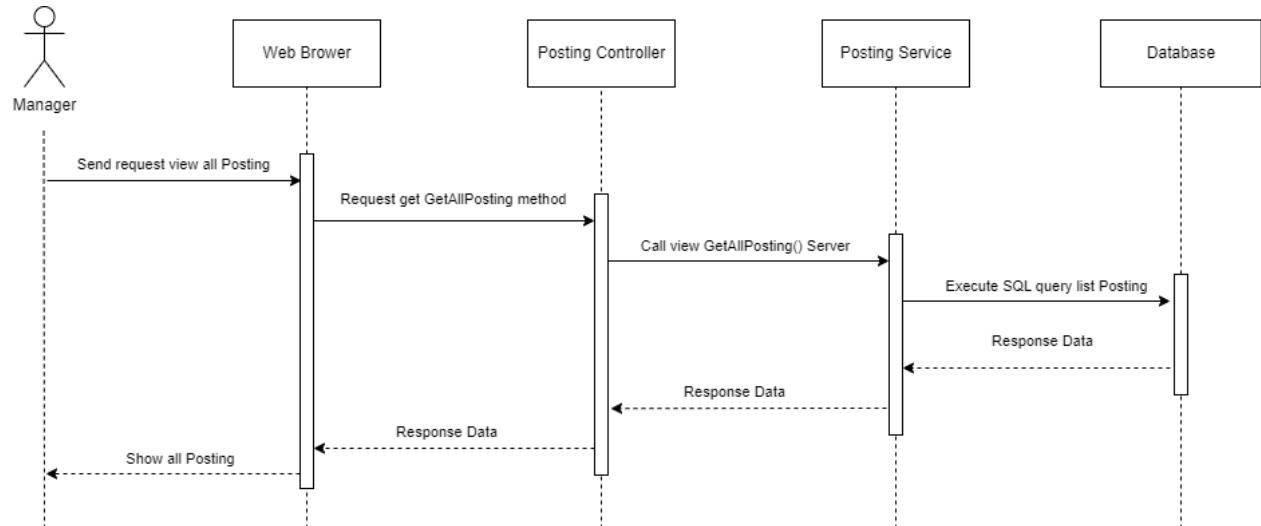
#### 3.3.3.1.4 Delete Category



**Figure 81: Manager Delete category**

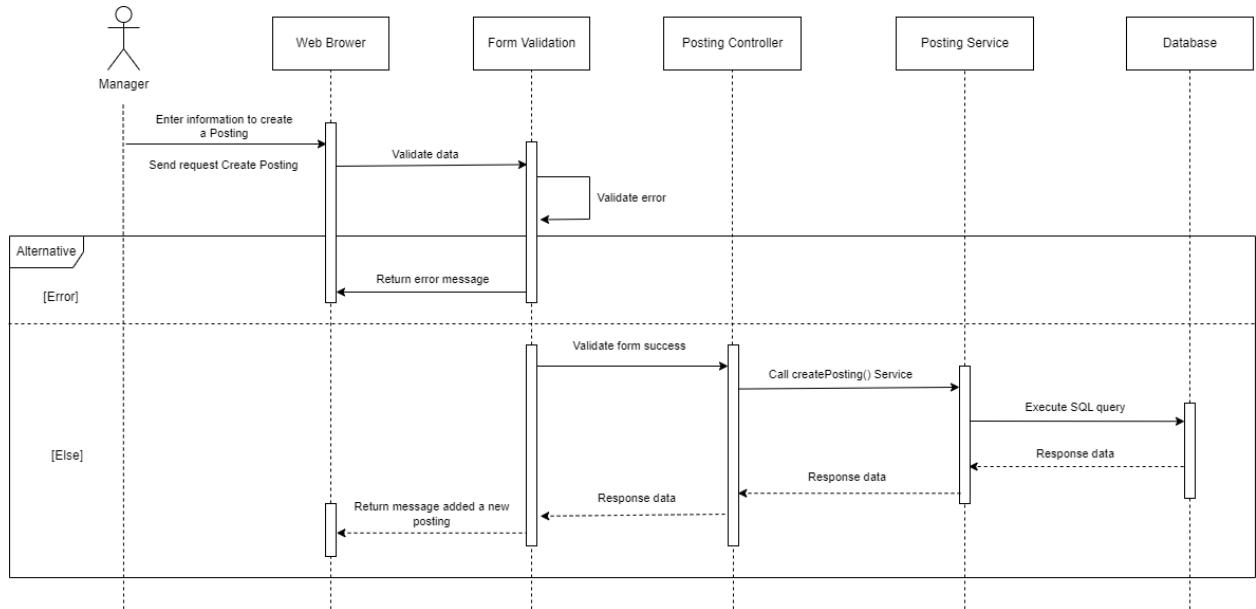
#### 3.3.3.1 Manage all posting

##### 3.3.3.1.1 View all posting



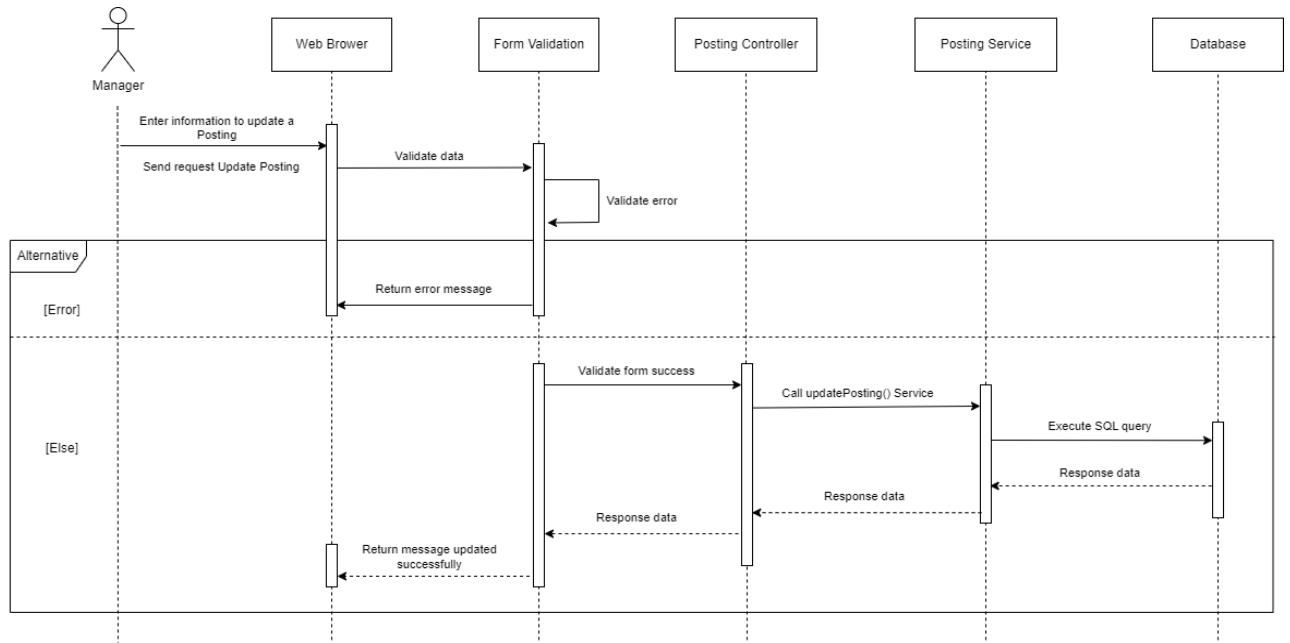
**Figure 82: Manager View all posting**

### 3.3.3.1.2 Create posting



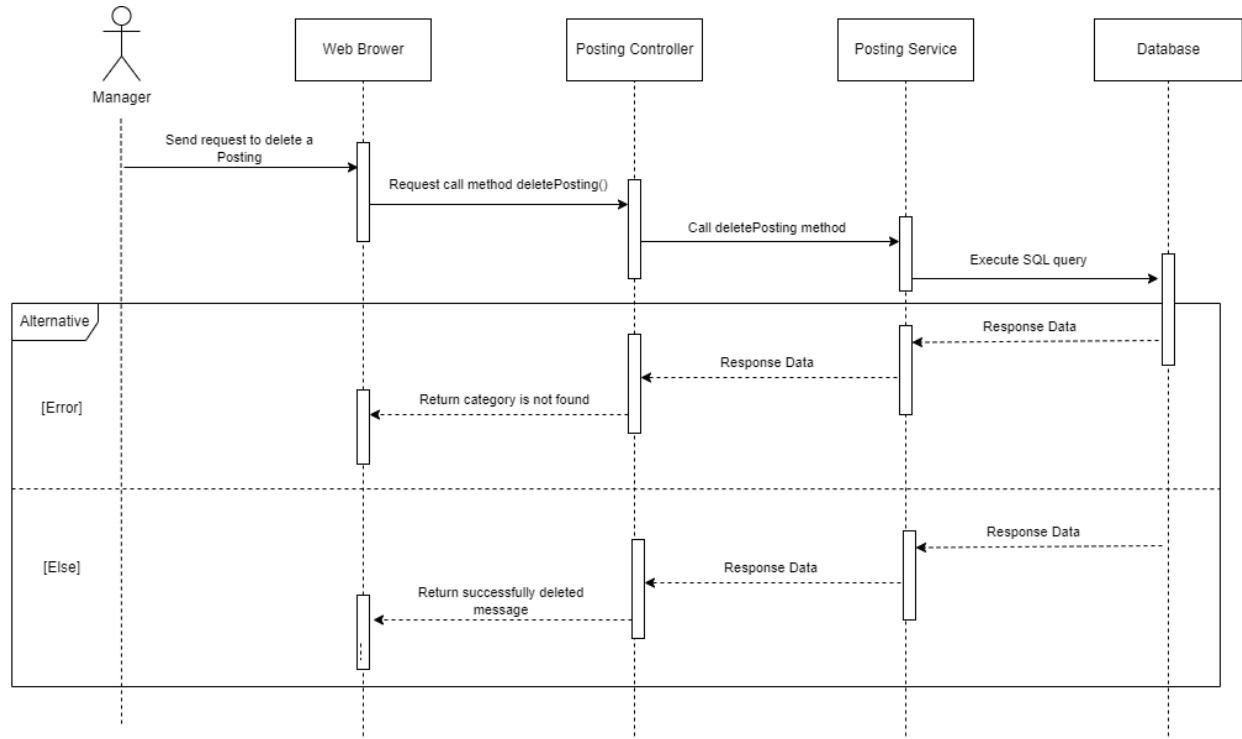
**Figure 83: Manager Create posting**

### 3.3.3.1.3 Update posting



**Figure 84: Manager Update posting**

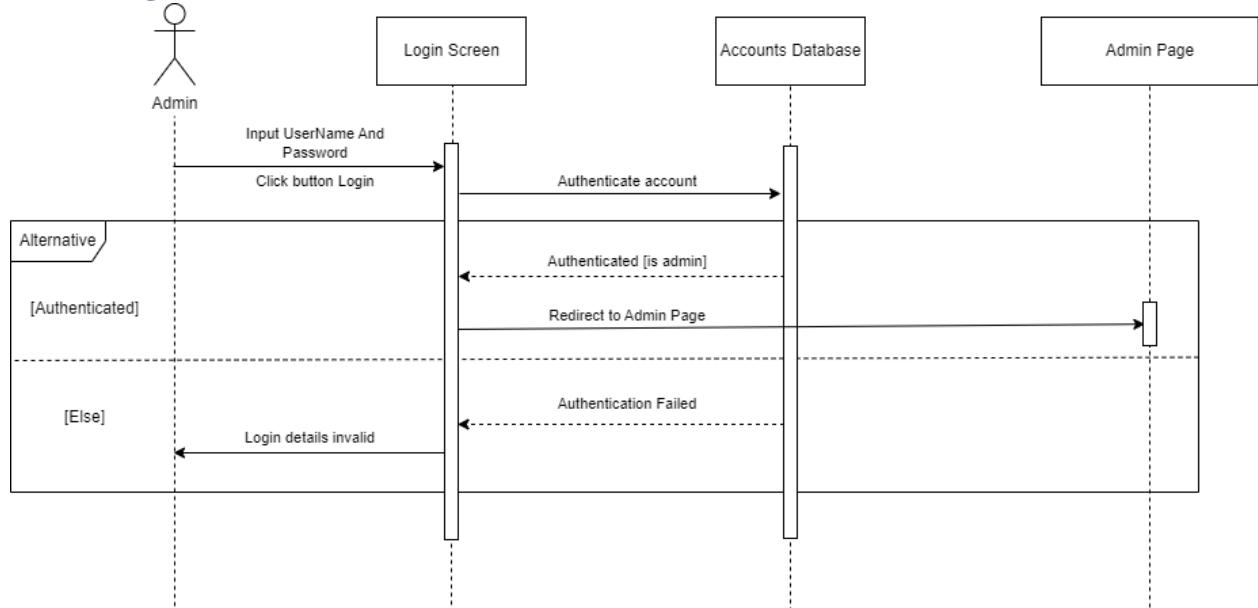
### 3.3.3.1.4 Delete posting



**Figure 85: Manager Delete posting**

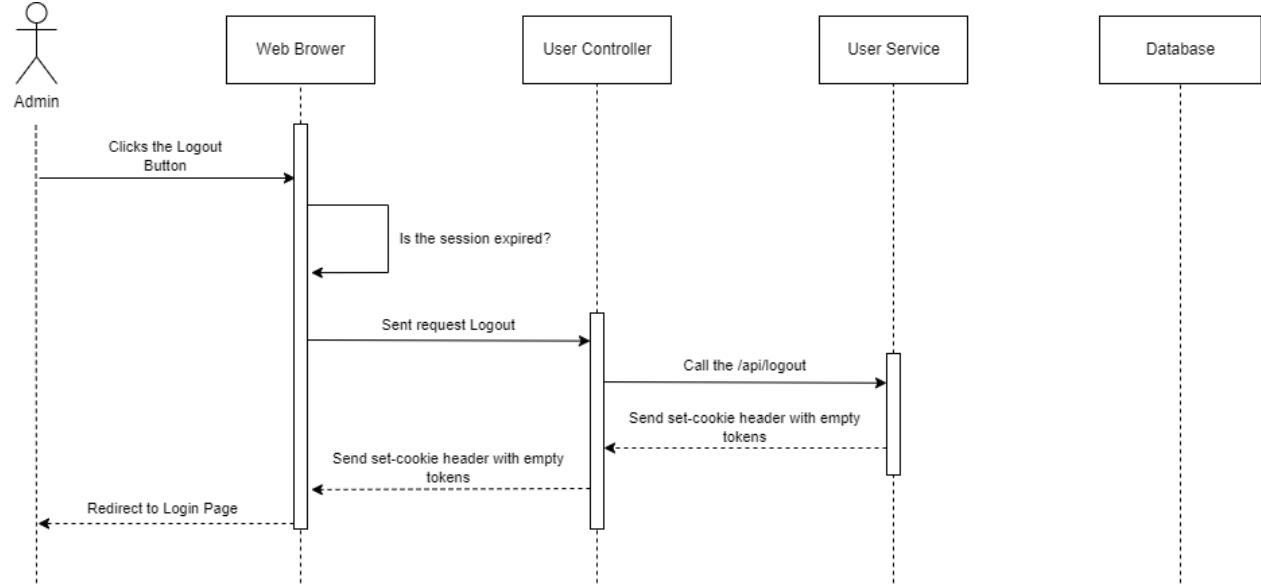
### 3.3.4 Admin

#### 3.3.4.1 Login



**Figure 86: Admin Login**

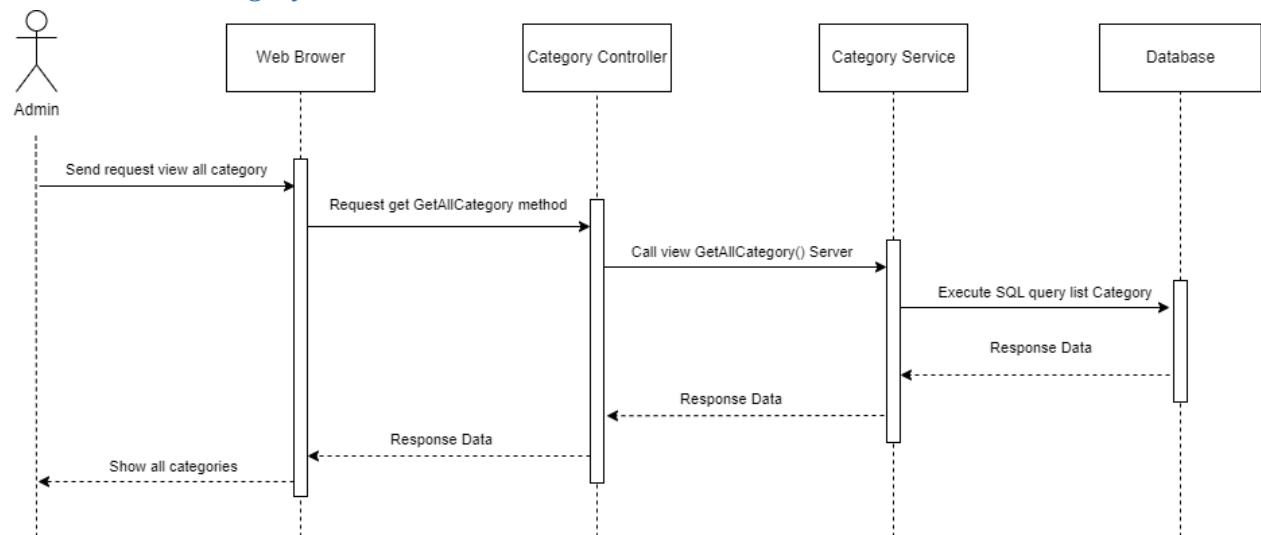
### 3.3.4.2 Logout



**Figure 87: Manager Logout**

### 3.3.4.3 Manage Category

#### 3.3.4.3.1 View Category



**Figure 88: Admin View category**

### 3.3.4.3.2 Create Category

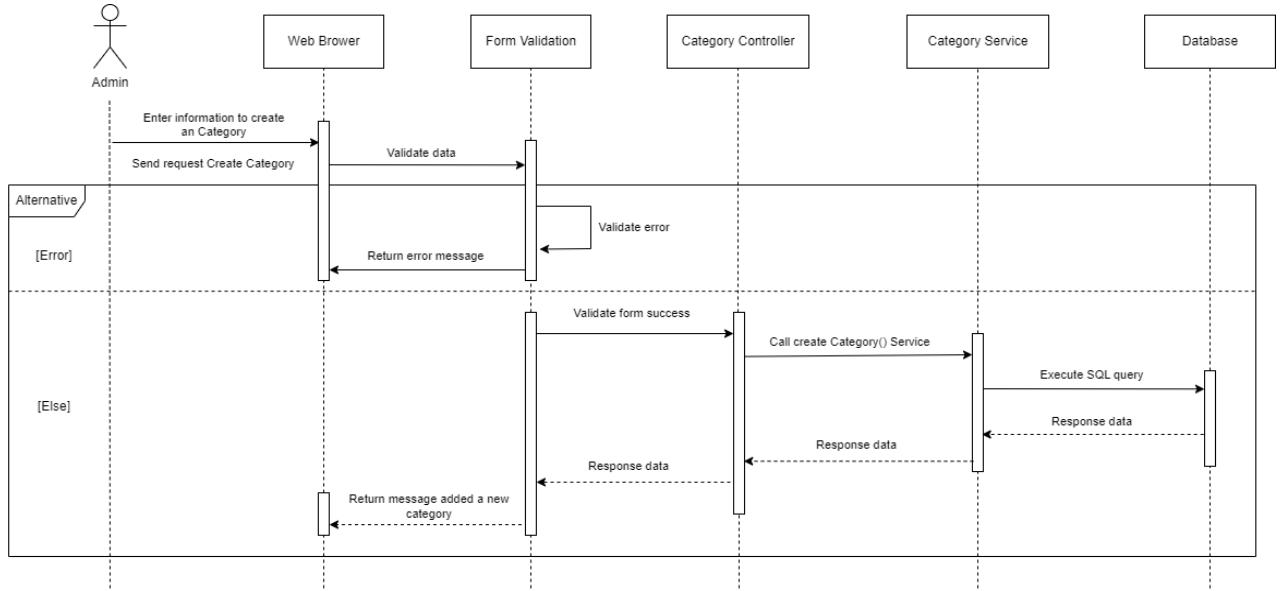


Figure 89: Admin Create category

### 3.3.4.3.3 Update Category

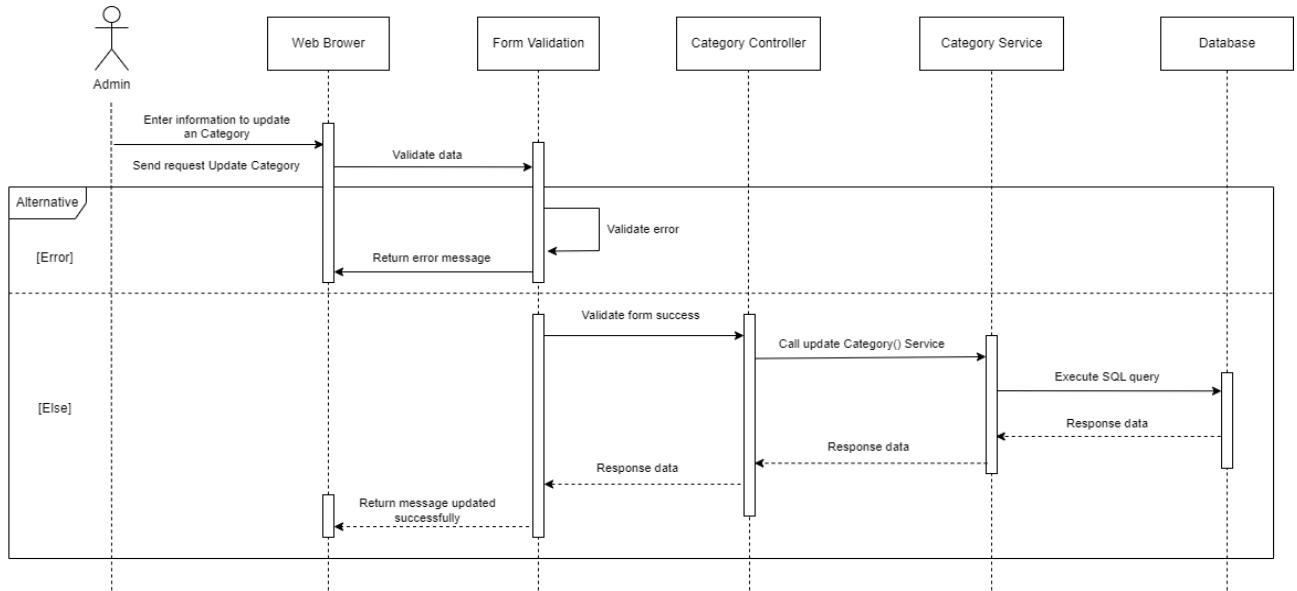
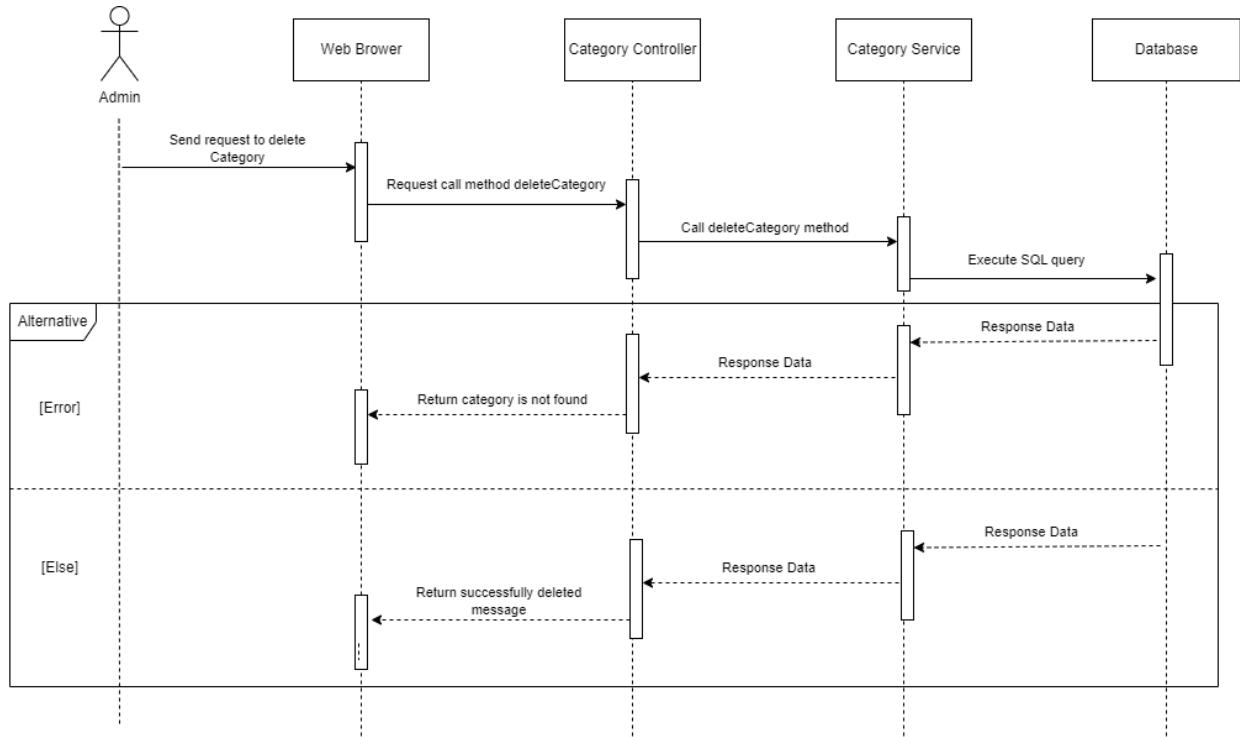


Figure 90: Admin Update category

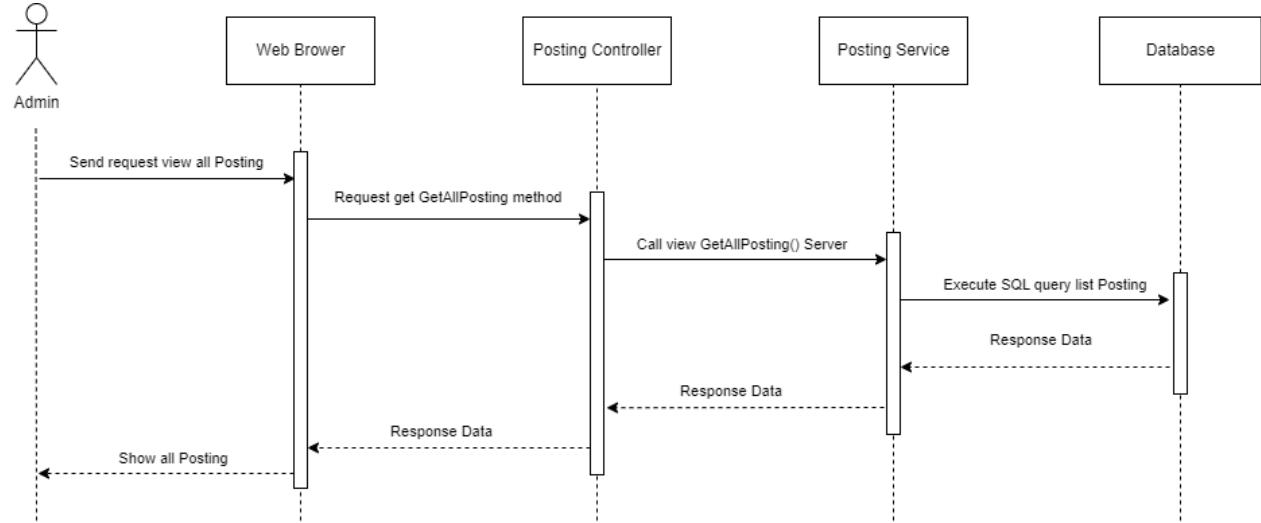
### 3.3.4.3.4 Delete Category



**Figure 91: Admin Delete Category**

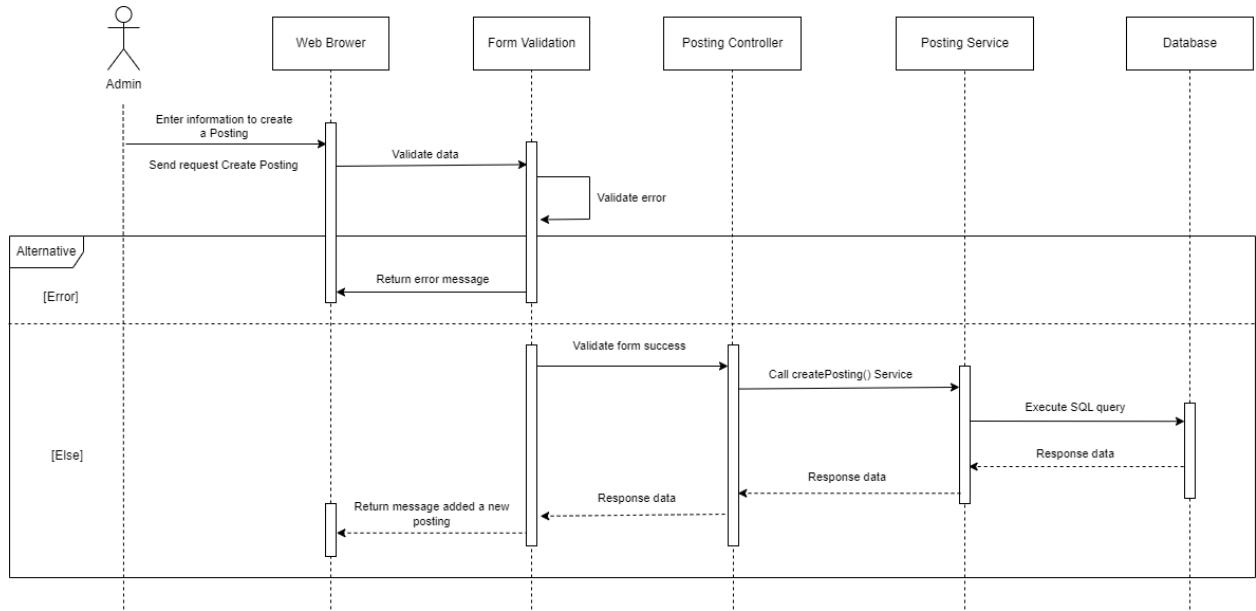
### 3.3.4.4 Manage all posting

#### 3.3.4.4.1 View all posting



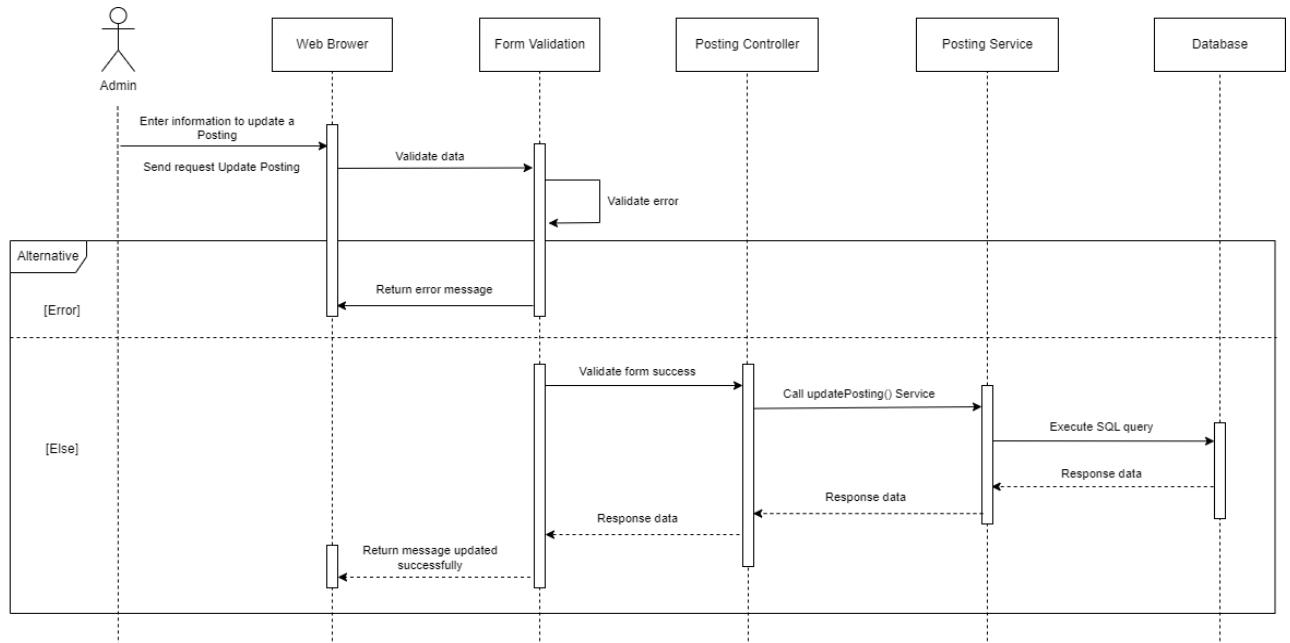
**Figure 92: Admin View all posting**

### 3.3.4.4.2 Create posting



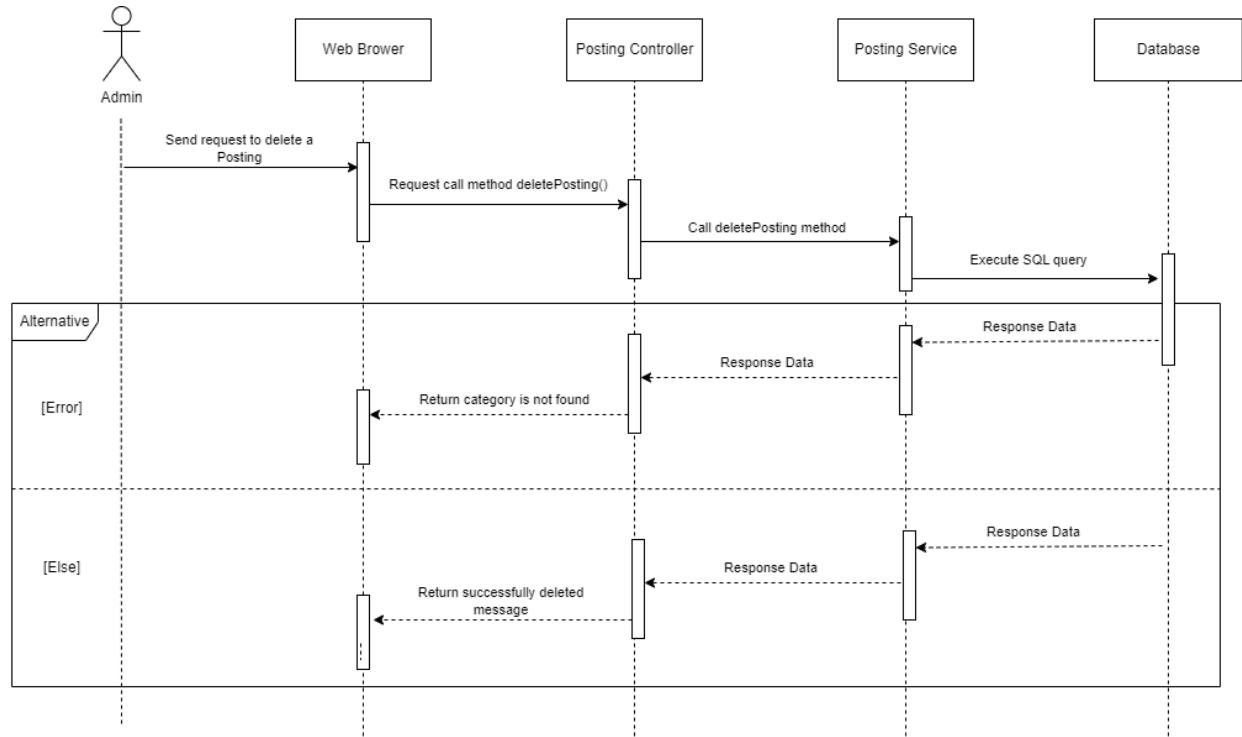
**Figure 93: Admin Create posting**

### 3.3.4.4.3 Update posting



**Figure 94: Admin Update posting**

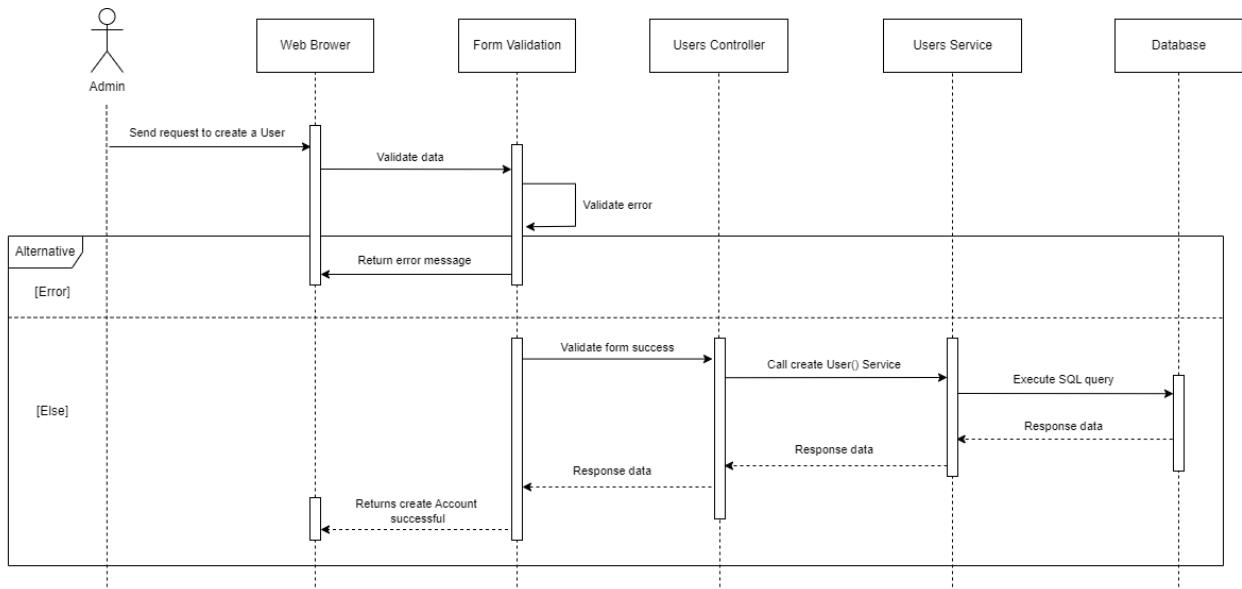
#### 3.3.4.4 Delete posting



**Figure 95: Admin Delete posting**

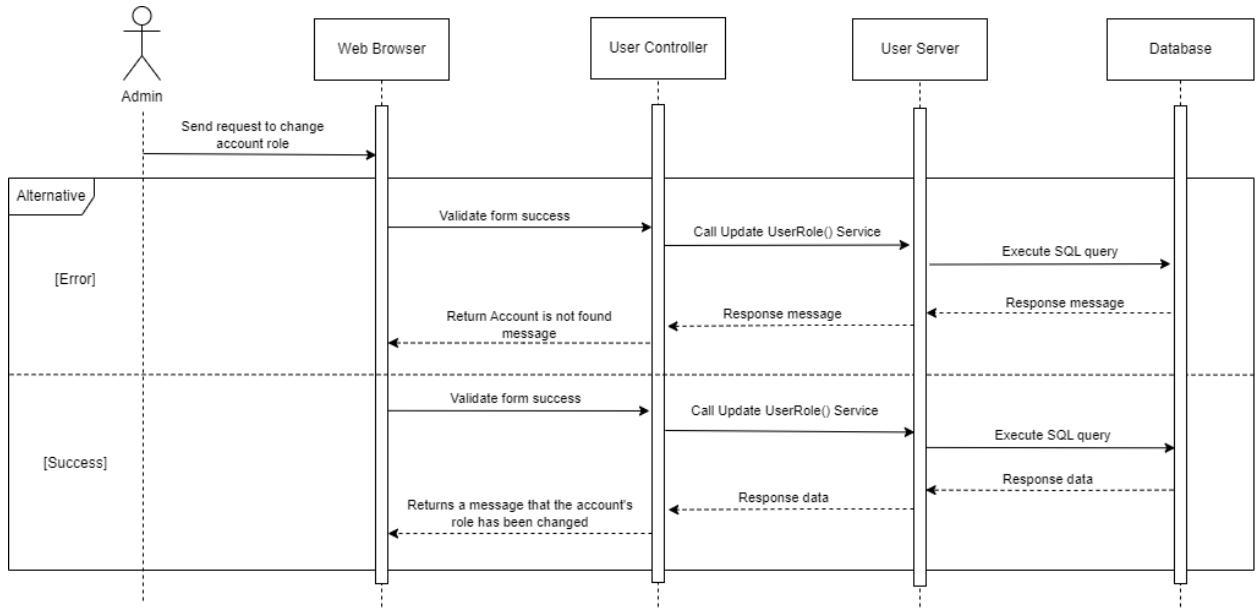
#### 3.3.4.5 Manage all account User and Manager

##### 3.3.4.5.1 Create Account



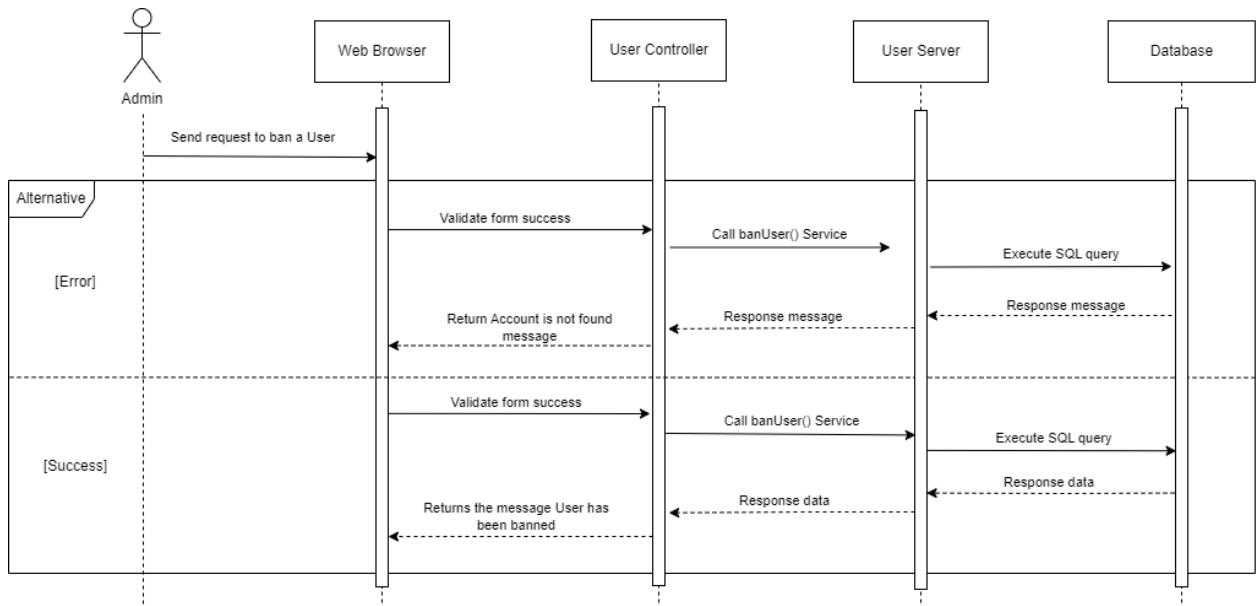
**Figure 96: Admin Create Account**

### 3.3.4.5.2 Update Account Role



**Figure 97: Admin Update account role**

### 3.3.4.5.3 Ban Account



**Figure 98: Admin Ban Account**

## VII. Testing Documentation

### 1. Scope of Testing

In the scope of the project, there are 3 testing phases: Unit testing, Integration testing, and System testing.

No.	Test stages	Description	Implementer
1	Unit testing	Unit testing is written and executed by developers.	Developers
2	Integration testing	Integration testing allows a tester to combine several units and test them as a group. We use this testing level to expose faults in the interaction between integrated components. It is advantageous to evaluate how efficiently the units are running together.	Testers
3	System testing	System testing is the level of testing in which the complete application is tested as a whole. The goal is to evaluate the system's compliance with its specified requirements.	Testers, Technical Leader
4	Acceptance testing	In this stage, customers verify if the system meets their actual needs.	Customer, BA

Table 60: Scope of Testing

### 2. Test Strategy

#### 2.1 Testing Types

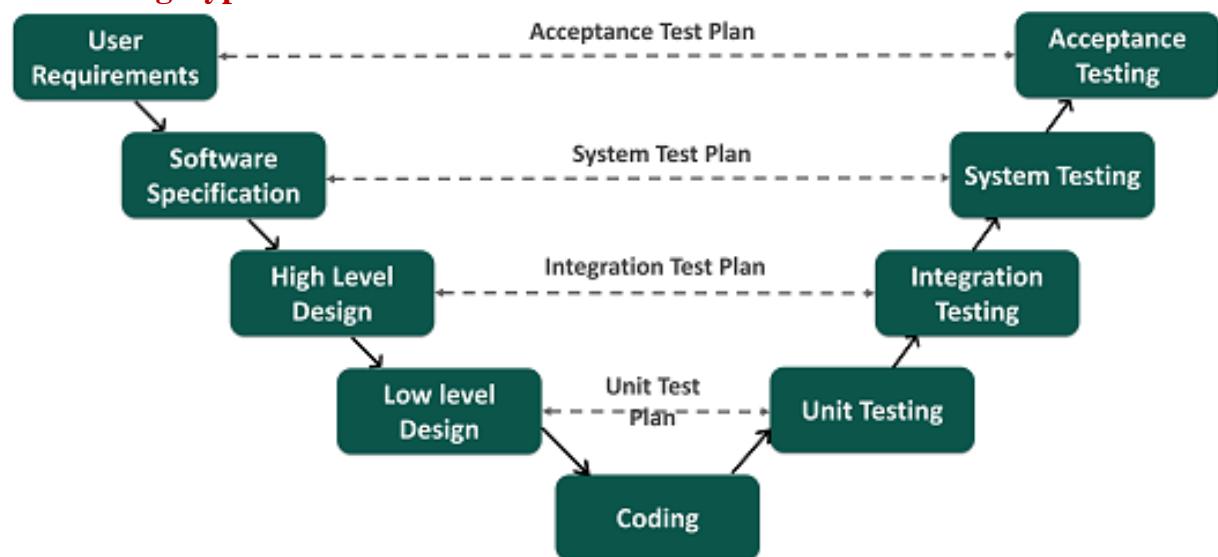


Figure 99: Test model

The V-model is an extension of the waterfall model. V model Testing is done in parallel to development. It is also called a Validation and Verification Model.

Advantage:

- Simple and easy to use.
- Testing activities like planning, test designing happens before coding. Consequently, we can avoid several defects in the system.
- Works well for our projects where requirements are easily understood.

## 2.2 Test Levels

Type of Tests	Test Level			
	Unit	Integration	System	Acceptance
Unit Test	X			
Integration Test		X		
System Testing			X	X
Acceptance Testing			X	X

Table 61: Test Levels

## 2.3 Supporting Tools

### 2.3.1 Hardware

Purpose	Tool	Vendor/In-house	Detail
Device executing test	Dell XPS 9550 15inch	Dell	<ul style="list-style-type: none"> <li>• CPU: i7 7700HQ 3.6 GHz</li> <li>• RAM: 16GB</li> <li>• SSD: 512GB + HDD 1TB</li> <li>• GPU: GTX 1060 4GB</li> </ul>
Device executing test	Huawei Nova 3i	Huawei	<ul style="list-style-type: none"> <li>• CPU: Kirin 710 8</li> <li>• RAM: 4GB</li> </ul>

Table 62: Hardware

### 2.3.2 Software

Purpose	Tool	Vendor/In-house	Version
Keep tracking defects	Excel	Microsoft	2020.10.1.14395-production
Test plan	Microsoft Word	Microsoft	2016
Test case, Test Report	Microsoft Excel	Microsoft	2016
Test coverage	Visual Studio code IDE	IBM	4.23.0

Table 63: Software

### 2.4 Test Processes

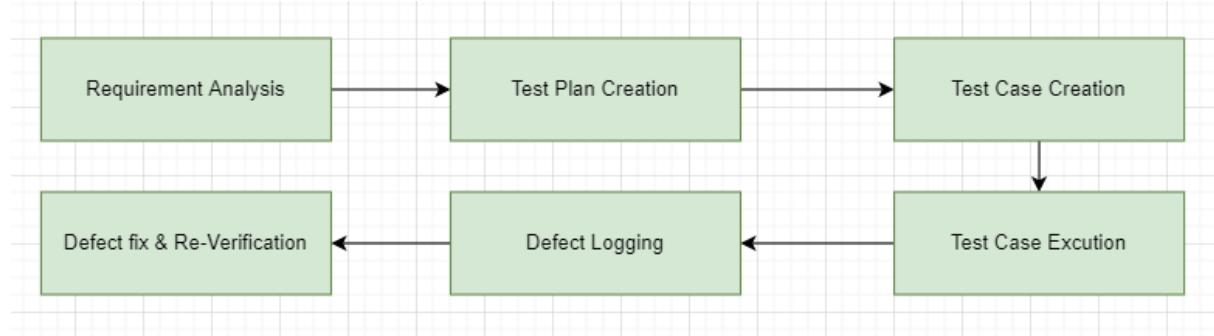


Figure 100: Test Processes

## 3. Test Plan

### 3.1 Human Resources

Worker/Doer	Role	Specific Responsibilities/Comments
Diệp Thế Sang	Frontend Developer, Leader	<ul style="list-style-type: none"> <li>Reviewing test case and report.</li> </ul>
Hoàng Hải Đăng	FrontEnd Developer, Tester	<ul style="list-style-type: none"> <li>Performing system testing.</li> <li>Managing test resource and assign test tasks.</li> <li>Creating a test plan.</li> <li>Creating test cases.</li> <li>Creating a test report.</li> <li>Executing test and log defect.</li> </ul>

Nguyễn Phúc Ngọc Thành	BackEnd Developer	<ul style="list-style-type: none"> <li>Writing and executing unit test.</li> <li>Fixing bugs</li> </ul>
Trần Thành Long	FrontEnd Developer	<ul style="list-style-type: none"> <li>Writing and executing unit test.</li> <li>Fixing bugs</li> </ul>

**Table 64: Human Resources**

### 3.2 Test Environment

Purpose	Tool	Provider	Version
System Testing	Windows	Microsoft	Window 10
Detect Log Bug	Excel	Microsoft	2016

**Table 65: Test Environment**

### 3.3 Test Milestones

Milestone Task	Start Date	End Date
<i>Iteration 1:</i>	15/11/2022	18/11/2022
Unit Testing	15/11/2022	16/11/2022
Intergration Testing	15/11/2022	16/11/2022
System testing	17/11/2022	18/11/2022
Accepting testing	17/11/2022	18/11/2022
<i>Iteration 2:</i>	22/11/2022	27/11/2022
Unit Testing	22/11/2022	23/11/2022
Intergration Testing	23/11/2022	24/11/2022
System testing	24/11/2022	26/11/2022

Accepting testing	26/11/2022	27/11/2022
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**Table 66: Test Milestones**

## 4. Test Cases

### 4.1 Integration and System Test

Detail test cases will be described in [SCH] Test Case - v1.5.xlsx file.

As a standard definition, SPCS defines that a test case is:

- A set of test data and their expected results. A test case validates one or more system requirements and generates a pass or fail.
- A good test case should follow two basic aspects, the Contents and the Style. Test cases for functional testing are derived from the target of test's use cases. Test cases should be developed for each use case scenario. The use case scenarios are identified by describing the paths through the use case that traverse the basic flow and alternate flows start to finish through the use case.

Module Code	Log in						
Test requirement	Test function relate to log in						
Tester	DangHH						
Pass	Fail	Untested	N/A	Number of Test cases			
13	0	0	0	13			
ID	Test Case Description	Test Case Procedure	Expected Output	Inter-test case Dependence	Result	Test date	Note
<b>Function log in</b>							
[Log in-]	Test viewing "Log in" form	1. Click on "Đăng nhập" item in account dropdown	1. Display log in form with "Đăng nhập" button, "Facebook" and "Google" button and fields to enter information		Pass	24/11/2022	
[Log in-1]	Log in with a Google account which is existed in database	1. Click on "Đăng nhập" item in account dropdown 2. Click on "Google" button	1. Display log in form with "Đăng nhập" button, "Facebook" and "Google" button and fields to enter information 2. Log in with Google successfully.		Pass	24/11/2022	
[Log in-2]	Log in with a Google account which is not existed in database	1. Click on "Đăng nhập" button in Homepage 2. Click on "Google" button 3. Choose an account	1. Display log in form with "Đăng nhập" button, "Facebook" and "Google" button and fields to enter information 2. Display Google screen to choose an account		Pass	24/11/2022	
[Log in-3]	Log in with a Facebook account which is existed in database	1. Click on "Đăng nhập" item in account dropdown 2. Click on "Facebook" button	1. Display log in form with "Đăng nhập" button, "Facebook" and "Google" button and fields to enter information 2. Log in with Facebook successfully. Redirect to Homepage		Pass	24/11/2022	
[Log in-4]	Log in with a Facebook account which is not existed in database	1. Click on "Đăng nhập" button in Homepage	1. Display log in form with "Đăng nhập" button, "Facebook" and a		Pass	24/11/2022	
<a href="#">«</a> <a href="#">»</a> ...   Register <a href="#">Log in</a>		Log out   Forgot password   Search Product by Name   View products   Filter product by categor ...	<a href="#">(+)</a>				

**Table 67: Integration and System Test**

## 5. Detect Log:

Excel is used to manage bugs, more details: [SCH] Integration and System Bug Log.xlsx

Processes:

- During the testing process, when a bug is found, testers access Defect Log file to log it. The bug must be described as detailed as possible with screenshots. The issue is then assigned to a developer, who is in charge of developing that module.
- Assigned developer checks out the issue in Defect Log file and fixes it. Once the bug is resolved, the assigned developer changes the issue status to “DONE” and assigns it to a tester, whose responsibility is to check the bug again.
- Tester will then verify if the bug is completely resolved. If the bug is fixed, tester will change the status to “DONE”. If the bug is not fixed, tester will change the status to “NOT DONE” and assign it to developer again.

No.	ID	Test Case Description	Test Case Procedure	Expected Output	Result	Test date	Note	Assigned to	
1	[Register-1]	Check not enter username	1. Not enter username and click on "Đăng ký" button	1. Display message "Vui lòng nhập tên đăng nhập"	Fail	15/11/2022		DangHH	
2	[Register-2]	Check not enter display name	1. Not enter display name and click on "Đăng ký" button	1. Display message "Vui lòng nhập tên hiển thị"	Fail	15/11/2022		DangHH	
3	[Register-3]	Check not enter phone number	1. Not enter phone number and click on "Gửi mã" button	1. Display message "Vui lòng nhập số điện thoại"	Fail	15/11/2022		DangHH	
4	[Register-4]	Check not enter verification code	1. Not enter verification code and click on "Đăng ký" button	1. Display message "Vui lòng nhập mã xác thực"	Fail	15/11/2022		DangHH	
5	[Register-5]	Check not enter password	1. Not enter password in text field "Mật khẩu"	1. Display message "Vui lòng nhập mật khẩu"	Fail	15/11/2022		DangHH	
6	[Register-6]	Check not re-enter password	1. Not re-enter password in text field "Nhập lại mật khẩu"	1. Display message "Vui lòng nhập lại mật khẩu"	Fail	15/11/2022		DangHH	
7	[Register-7]	Check username has at least 6 characters	1. Enter username with less than 6 characters	1. Display message "Tên đăng nhập phải chứa ít nhất 6 ký tự và là chữ, số hoặc kí tự gạch dưới."	Fail	15/11/2022		DangHH	
8	[Register-8]	Check not choose a role	1. Not choose role and click on "Đăng ký" button	1. Display message "Vui lòng chọn vai trò"	Fail	15/11/2022		DangHH	
9	[Register-9]	Check account already exists when register with username	1. Enter username and click on "Đăng ký" button	1. Display message "Tên đăng nhập đã được sử dụng"	Fail	15/11/2022		DangHH	
10	[Register-10]	Check invalid password	1. Input invalid password	1. Display message "Mật khẩu phải chứa tối thiểu 6 ký tự, bao gồm chữ thường, chữ hoa, chữ	Fail	15/11/2022		DangHH	

Table 68: Detect Log

## 6. Test Reports

### 6.1 Unit Test Report 1

Module	Class	Method	Status	Date	Done By
AccountController	AccountController	getCurrentAccountInformation()	OK	22/03/2022	SangDT
AccountController	AccountController	inactiveAccount(accountIds)	OK	22/03/2022	SangDT

AccountController	AccountController	getActiveAccount()	<b>OK</b>	22/03/2022	SangDT
AccountController	AccountController	getProducts()	<b>OK</b>	22/03/2022	SangDT
AccountEntity	Account	addPost(subject)	<b>OK</b>	22/03/2022	SangDT
AccountEntity	Account	removePost(subject)	<b>OK</b>	22/03/2022	SangDT
AccountEntity	Account	addCategory(category)	<b>OK</b>	22/03/2022	SangDT
AccountEntity	Account	removeCategory(category)	<b>OK</b>	22/03/2022	SangDT
AccountEntity	Account	removeAuction(auctions)	<b>OK</b>	22/03/2022	SangDT
AccountService	AccountService	create(request)	<b>OK</b>	22/03/2022	SangDT
AccountService	AccountService	importRegister(file)	<b>OK</b>	22/03/2022	SangDT
AccountService	AccountService	generateEmail(name)	<b>OK</b>	22/03/2022	SangDT
AccountService	AccountService	generateShortName(name)	<b>OK</b>	22/03/2022	SangDT
AccountService	AccountService	removeAccent(string)	<b>OK</b>	22/03/2022	SangDT
AccountService	AccountService	String generateRandomString()	<b>OK</b>	22/03/2022	SangDT
AccountService	AccountService	generateAccountId(khoa, roleId)	<b>OK</b>	22/03/2022	SangDT
AccountService	AccountService	generateNumberId(searchCode)	<b>OK</b>	22/03/2022	SangDT
AccountService	AccountService	findLastAccountId(id)	<b>OK</b>	22/03/2022	SangDT
AccountService	AccountService	findById(id)	<b>OK</b>	22/03/2022	SangDT
AccountService	AccountService	delete(id)	<b>OK</b>	22/03/2022	SangDT

AccountService	AccountService	changePassword(request)	<b>OK</b>	22/03/2022	SangDT
AccountService	AccountService	getCurrentAccount()	<b>OK</b>	22/03/2022	SangDT
AccountService	AccountService	setupVerifyToken(email)	<b>OK</b>	22/03/2022	SangDT
AccountService	AccountService	updatePassword(request)	<b>OK</b>	22/03/2022	SangDT
AccountService	AccountService	verifyToken(email, token)	<b>OK</b>	22/03/2022	SangDT
AccountService	AccountService	inactiveAccount(accountIds)	<b>OK</b>	22/03/2022	SangDT
AccountService	AccountService	getActiveAccounts()	<b>OK</b>	22/03/2022	SangDT
AccountService	AccountService	getUser()	<b>OK</b>	22/03/2022	SangDT
AccountService	AccountService	getProducts()	<b>OK</b>	22/03/2022	SangDT
AccountRepository	AccountRepository	findByEmail(email)	<b>OK</b>	22/03/2022	SangDT
AccountRepository	AccountRepository	findTop1ByEmailIgnoreCaseContains(email,sort)	<b>OK</b>	22/03/2022	SangDT
AccountRepository	AccountRepository	findTop1ByIdIgnoreCaseContains(id, sort)	<b>OK</b>	22/03/2022	SangDT
AccountRepository	AccountRepository	findByIsActived(isActived)	<b>OK</b>	22/03/2022	SangDT
AppController	AppController	success()	<b>OK</b>	24/03/2022	ThanhNPN
AppController	AppController	register (request)	<b>OK</b>	24/03/2022	ThanhNPN
AppController	AppController	changePassword (request)	<b>OK</b>	24/03/2022	ThanhNPN
AppController	AppController	importRegister (file)	<b>OK</b>	24/03/2022	ThanhNPN

AppController	AppController	getTotal()	<b>OK</b>	24/03/2022	ThanhNPN
AuctionLogController	AuctionLogController	takeAuction(request)	<b>OK</b>	24/03/2022	ThanhNPN
AuctionLogController	AuctionLogController	takeAuction(requests)	<b>OK</b>	24/03/2022	ThanhNPN
AuctionLogController	AuctionLogController	getByCartId(cartId)	<b>OK</b>	24/03/2022	ThanhNPN
AuctionLogRepository	AuctionLogRepository	findByCartId(cartId)	<b>OK</b>	24/03/2022	ThanhNPN
AuctionLogRepository	AuctionLogRepository	deleteByCartId(cartId)	<b>OK</b>	24/03/2022	ThanhNPN
AuctionLogRepository	AuctionLogRepository	findByCartIdAndProductId(cartId, ProductId)	<b>OK</b>	24/03/2022	ThanhNPN
AuctionLogRepository	AuctionLogRepository	countByCartId(cartId)	<b>OK</b>	24/03/2022	ThanhNPN
AuctionLogService	AuctionLogService	getLogByCartId(cartId)	<b>OK</b>	24/03/2022	ThanhNPN
AuctionLogService	AuctionLogService	importProductIntoCartLog(cartId, auctionId, description)	<b>OK</b>	24/03/2022	ThanhNPN
AuctionLogService	AuctionLogService	deleteLogByCartId(cartId)	<b>OK</b>	24/03/2022	ThanhNPN
AuctionLogService	AuctionLogService	takeAuction(ProductId, cartId, status, description)	<b>OK</b>	24/03/2022	ThanhNPN
AuctionLogService	AuctionLogService	getByCartIdAndProductId(ProductId, cartId)	<b>OK</b>	24/03/2022	ThanhNPN
AuctionLogService	AuctionLogService	updateLog(request)	<b>OK</b>	24/03/2022	ThanhNPN
AuctionController	AuctionController	getAll()	<b>OK</b>	25/03/2022	DangHH
AuctionController	AuctionController	getById(id)	<b>OK</b>	25/03/2022	DangHH

AuctionController	AuctionController	addAuction(request)	<b>OK</b>	25/03/2022	DangHH
AuctionController	AuctionController	addProduct(request)	<b>OK</b>	25/03/2022	DangHH
AuctionController	AuctionController	addCourseForAuction(request)	<b>OK</b>	25/03/2022	DangHH
AuctionController	AuctionController	deleteCourseOutAuction(auctionId, subjectId)	<b>OK</b>	25/03/2022	DangHH
AuctionController	AuctionController	deleteProductOutAuction(auctionId, accountId)	<b>OK</b>	25/03/2022	DangHH
AuctionController	AuctionController	getOnGoing()	<b>OK</b>	25/03/2022	DangHH
AuctionController	AuctionController	convertToLocalDateTimeViaInstant(dateToConvert)	<b>OK</b>	25/03/2022	DangHH
AuctionController	AuctionController	convertToDateViaInstant(dateToConvert)	<b>OK</b>	25/03/2022	DangHH
AuctionEntity	Auction	addProduct(manager)	<b>OK</b>	25/03/2022	DangHH
AuctionEntity	Auction	removeProduct(Product)	<b>OK</b>	25/03/2022	DangHH
AuctionEntity	Auction	addCategory(category)	<b>OK</b>	25/03/2022	DangHH
AuctionEntity	Auction	removeCategory(category)	<b>OK</b>	25/03/2022	DangHH
AuctionService	AuctionService	getById(auctionId)	<b>OK</b>	25/03/2022	DangHH
AuctionService	AuctionService	create(request)	<b>OK</b>	25/03/2022	DangHH
AuctionService	AuctionService	addProduct(request)	<b>OK</b>	25/03/2022	DangHH
AuctionService	AuctionService	generateNumberId(searchCode)	<b>OK</b>	25/03/2022	DangHH
AuctionService	AuctionService	findLastAuctionId(id)	<b>OK</b>	25/03/2022	DangHH

AuctionService	AuctionService	findById(auctionId)	<b>OK</b>	25/03/2022	DangHH
AuctionService	AuctionService	getAll()	<b>OK</b>	25/03/2022	DangHH
AuctionService	AuctionService	addCourse(request)	<b>OK</b>	25/03/2022	DangHH
ProfileController	ProfileController	getProfile()	<b>OK</b>	25/03/2022	DangHH
ProfileController	ProfileController	getById(id)	<b>OK</b>	25/03/2022	DangHH
ProfileController	ProfileController	update accountId, request)	<b>OK</b>	25/03/2022	DangHH
CategoryController	CategoryController	getOnGoingCategory()	<b>OK</b>	25/03/2022	DangHH
CategoryController	CategoryController	getUpcomingCategory()	<b>OK</b>	25/03/2022	DangHH
CategoryController	CategoryController	create request)	<b>OK</b>	25/03/2022	DangHH
CategoryController	CategoryController	update cartId, request)	<b>OK</b>	25/03/2022	DangHH
CategoryController	CategoryController	importCategory(request)	<b>OK</b>	25/03/2022	DangHH
CategoryController	CategoryController	getCategoryByAccountId( accountId)	<b>OK</b>	25/03/2022	DangHH
CategoryController	CategoryController	getCategoryById(@Id)	<b>OK</b>	25/03/2022	DangHH
CategoryController	CategoryController	delete(id)	<b>OK</b>	25/03/2022	DangHH
CategoryService	CategoryService	create(request)	<b>OK</b>	25/03/2022	DangHH
CategoryService	CategoryService	update(cartId, request)	<b>OK</b>	25/03/2022	DangHH
CategoryService	CategoryService	getGoingOnCategory()	<b>OK</b>	25/03/2022	DangHH
CategoryService	CategoryService	getUpcomingCategory()	<b>OK</b>	25/03/2022	DangHH

CategoryService	CategoryService	importCategory(request)	<b>OK</b>	25/03/2022	DangHH
CategoryService	CategoryService	convertToLocalDateTimeViaInstant(dateToConvert)	<b>OK</b>	25/03/2022	DangHH
CategoryService	CategoryService	convertToDateViaInstant(LocalDateTime dateToConvert)	<b>OK</b>	25/03/2022	DangHH
CategoryService	CategoryService	getByAccountId(accountId)	<b>OK</b>	25/03/2022	DangHH
CategoryService	CategoryService	getByAuctionId(auctionId)	<b>OK</b>	25/03/2022	DangHH
CategoryService	CategoryService	delete(id)	<b>OK</b>	25/03/2022	DangHH
SpecializationController	SpecializationController	getAll()	<b>OK</b>	25/03/2022	LongTT
SpecializationController	SpecializationController	getById(id)	<b>OK</b>	25/03/2022	LongTT
SpecializationController	SpecializationController	create(request)	<b>OK</b>	25/03/2022	LongTT
SpecializationController	SpecializationController	update(request)	<b>OK</b>	25/03/2022	LongTT
SpecializationEntity	Specialization	addPost(subject)	<b>OK</b>	25/03/2022	LongTT
SpecializationEntity	Specialization	removePost(subject)	<b>OK</b>	25/03/2022	LongTT
SpecializationService	SpecializationService	findById(id)	<b>OK</b>	25/03/2022	LongTT
SpecializationService	SpecializationService	getNameCode(id)	<b>OK</b>	25/03/2022	LongTT
SpecializationService	SpecializationService	create(request,Post)	<b>OK</b>	25/03/2022	LongTT
SpecializationService	SpecializationService	update(request, Post)	<b>OK</b>	25/03/2022	LongTT

SpecializationService	SpecializationService	delete(id)	OK	25/03/2022	LongTT
SpecializationService	SpecializationService	findByName(name)	OK	25/03/2022	LongTT
SpecializationService	SpecializationService	getAll()	OK	25/03/2022	LongTT
SpecializationService	SpecializationService	getById(id)	OK	25/03/2022	LongTT
SubjectController	SubjectController	getAll()	OK	25/03/2022	LongTT
SubjectController	SubjectController	getById( id)	OK	25/03/2022	LongTT
SubjectController	SubjectController	create(request)	OK	25/03/2022	LongTT
SubjectController	SubjectController	update(subjectId, request)	OK	25/03/2022	LongTT
SubjectController	PostController	delete(postId)	OK	25/03/2022	LongTT
PostEntity	Post	addCategory(category)	OK	25/03/2022	LongTT
PostEntity	Post	removeCategory(category)	OK	25/03/2022	LongTT
PostEntity	Post	addSpec(specification)	OK	25/03/2022	LongTT
PostEntity	Post	removeSpec(specification)	OK	25/03/2022	LongTT
PostEntity	Post	addManager(manager)	OK	25/03/2022	LongTT
PostEntity	Post	removeManager(manager)	OK	25/03/2022	LongTT
Postservice	Postservice	create(request)	OK	25/03/2022	LongTT
Postservice	Postservice	findById(postId)	OK	25/03/2022	LongTT

Postservice	Postservice	getAll()	<b>OK</b>	25/03/2022	Long TT
Postservice	Postservice	update(postId, request)	<b>OK</b>	25/03/2022	Long TT
Postservice	Postservice	delete(postId)	<b>OK</b>	25/03/2022	Long TT
Postservice	Postservice	save(post)	<b>OK</b>	25/03/2022	Long TT
Total Test Case		<b>126</b>	<b>OK</b>		

**Table 69: Unit Test Report 1**

## 6.2 API Testing

### 6.2.1 Framework And Tool: Open API

**Open API Specification** (formerly known as Swagger Specification) is an open-source format for describing and documenting APIs. The Specification was originally developed in 2010 by Reverb Technologies (formerly Wordnik) as a way to keep the API design and documentation in sync. It has since become a de-facto standard for designing and describing RESTful APIs, and is used by millions of developers and organizations for developing their APIs, be it internal or client facing.

The screenshot shows the Swagger UI interface for a 'subject-controller' endpoint. At the top, there's a navigation bar with the Swagger logo, a dropdown for 'Servers' containing 'http://capstone-web-server-nabati.herokuapp.com - Generated server url', and a 'Explore' button. Below the navigation is a search bar with the path '/v3/api-docs'. The main area displays the 'subject-controller' endpoint with five listed operations: GET /subject, PUT /subject, POST /subject, DELETE /subject, and GET /subject/byid/{id}. Each operation is represented by a colored button (blue for GET, orange for PUT, green for POST, red for DELETE, and blue for the last one) followed by its method and URL path.

**Table 70: Open API UI**

The screenshot shows the Open API Requests UI interface. At the top, there is a blue header bar with the text "GET /subject". Below this, there are sections for "Parameters" (which is collapsed), "Responses", and "Execute".

**Responses:**

Code	Description	Links
200	OK	No links

**Example Value | Schema**

```
[  
  {  
    "id": 0,  
    "name": "string",  
    "semester": 0,  
    "subjectCode": "string",  
    "teachers": [  
      {  
        "accountId": "string",  
        "name": "string",  
        "avatar": "string",  
        "password": "string",  
        "email": "string",  
        "age": 0,  
        "address": "string",  
        "gender": 0,  
        "personalEmail": "string"  
      },  
      {  
        "specializations": [  
          "string"  
        ],  
        "classes": [  
          "string"  
        ]  
      }  
    ]  
  }  
]
```

Table 71: Open API Requests UI

The screenshot shows the Open API Responses UI interface. At the top, there is a "Curl" section with a command-line example:

```
curl -X 'GET' \
'http://capstone-web-server-nabati.herokuapp.com/subject' \
-H 'accept: */*'
```

Below this is a "Request URL" field containing the URL: <http://capstone-web-server-nabati.herokuapp.com/subject>.

**Server response:**

Code	Details
200	Response body

**Response body:**

```
[  
  {  
    "id": 0,  
    "name": "Database",  
    "semester": 0,  
    "subjectCode": "DBW301",  
    "teachers": [],  
    "specializations": [  
      "SE"  
    ],  
    "classes": []  
  },  
  {  
    "id": 1,  
    "name": "Working in Group",  
    "semester": 0,  
    "subjectCode": "SSG101",  
    "teachers": [],  
    "specializations": [  
      "SE"  
    ],  
    "classes": []  
  },  
  {  
    "id": 2,  
    "name": "Connecting to Computer Science",  
    "semester": 0,  
    "subjectCode": "CSI101",  
    "teachers": []  
  }  
]
```

**Response headers:**

```
cache-control: no-cache,no-store,max-age=0,must-revalidate  
connection: keep-alive  
content-type: application/json  
date: Mon, 04 Apr 2022 07:09:24 GMT  
expires: 0  
pragma: no-cache  
server: Cowboy  
transfer-encoding: chunked  
vary: Origin,Access-Control-Request-Method,Access-Control-Request-Headers  
via: 1.1  
x-content-type-options: nosniff  
x-frame-options: DENY  
x-xss-protection: 1; mode=block
```

Figure 101: Open API Responses UI

## 6.3 System Test Case Reports

### TEST STATISTICS

<b>Project Name</b>	<Project Name>	<b>Creator</b>		
<b>Project Code</b>	<Project Code>	<b>Reviewer/Approver</b>		
<b>Document Code</b>	<Project Code>_Test Report_vx.x	<b>Issue Date</b>		<Date when this test report is created>
<b>Notes</b>	<List modules included in this release> ex: Release 1 includes 2 modules: Module1 and Module2			

No	Module code	Passed	Failed	Pending	N/A	Number of test cases
1	Teacher Management	18	0	0	0	18
2	Manager Management	24	1	0	0	24
3	Student Management	13	0	0	0	13
4	Testing API	37	4	0	0	41
	<b>Sub total</b>	<b>92</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>96</b>

Test coverage **96.88 %**  
 Test successful coverage **95.83 %**

Figure 102: Intergration System Test Report

<b>Feature</b>	Manager Management														
<b>Test requirement</b>	Testing Action Of Manager User														
<b>Number of TCs</b>	25														
<b>Testing Round</b>	<b>Passed</b>	<b>Failed</b>	<b>Pending</b>	<b>N/A</b>											
Round 1	25	0	0	0											
Round 2	25	0	0	0											
Round 3	25	0	0	0											
<b>Test Case ID</b>	<b>Test Case Description</b>	<b>Test Case Procedure</b>	<b>Expected Results</b>	<b>Pre-conditions</b>	<b>Round 1</b>	<b>Test date</b>	<b>Tester</b>	<b>Round 2</b>	<b>Test date</b>	<b>Tester</b>	<b>Round 3</b>	<b>Test date</b>	<b>Tester</b>	<b>Note</b>	
(ID1)	Login the system with Manager Role.	1. Login the system with Manager role.	This system will navigate to Dashboard Screen as Default	Login successfully	Passed	Mar-01-2022		Pending			Pending				
<b>Viewing Information</b>															
(ID2)	Test viewing DashBoard	1. Login the system with Manager Role	This system will navigate to Dashboard Screen as Default - The Dashboard Screen is played with these information: • Overall • Students: Number of Students • Teachers: Number of Teachers • Classes : Number of Classes • On-going Classes: • Room • Class • Level • Subject • Calendar: Showing Date of Log-in Time - Recently Online (List of account are using Application) - User status with green dot • User name	Login successfully	Passed	Mar-01-2022		Pending			Pending				
(ID3)	Test viewing Manage Schedule	1. Login the system with Manager Role	The Manage Schedules Screen is displayed	Login successfully	Passed	Mar-01-2022		Pending			Pending				

Figure 103: Intergration System Test Report

<b>Feature</b>	Student Management														
<b>Test requirement</b>	Testing Action Of Student User														
<b>Number of TCs</b>	17														
<b>Testing Round</b>	<b>Passed</b>	<b>Failed</b>	<b>Pending</b>	<b>N/A</b>											
Round 1	14	0	0	0											
Round 2	14	0	0	0											
Round 3	14	0	0	0											
<b>Test Case ID</b>	<b>Test Case Description</b>	<b>Test Case Procedure</b>	<b>Expected Results</b>	<b>Pre-conditions</b>	<b>Round 1</b>	<b>Test date</b>	<b>Tester</b>	<b>Round 2</b>	<b>Test date</b>	<b>Tester</b>	<b>Round 3</b>	<b>Test date</b>	<b>Tester</b>	<b>Note</b>	
(ID8)	Test viewing Change Student Password Able State	1.Login the system with Student Role 2.Click Attendance in Attendance 3.Click Change Password Button in Avatar Bar 4.Fill all input fields	The Change Password Screen is displayed with these information: - Avatar box - Student avatar - Student name - Student ID - Input Fields (All Filling, The outline Color will be blue) - Old Password Fields - New Password Fields - Confirm New Password Fields - Change Password Button (Color will be allowed to Click)		Passed			Pending			Pending				
(ID9)	Test viewing Attendance Screen	1.Login the system with Student Role 2.Click Attendance in Attendance	The Change Password Screen is displayed with these information: - Avatar box - Student avatar - Student name - Student ID - On-going Class: - List Class is in on-going state - Take Attendance Button is able to Click - Up-Coming		Passed			Pending			Pending				

Figure 104: Intergration System Test Report

Report5\_Test Report\_Version1.0.0.xls

## VIII. Release Package & User Guides

### 1. Deliverable Package

No.	Deliverable Item	Description
1	Source Codes	Second-hand-market-Frontend
		Second-hand-market-Backend
2	Database Script	MySQL
3	Final Report Document	Report7_Final Project Report.docx

Table 72: Deliverable Package

### 2. Installation Guides

#### 2.1 System Requirements

##### 2.1.1. Hardware Requirements

Name	Minimum Required	Recommend
Operating System	Window 7, Linux (Ubuntu 18.04 LTS) (32-bit)	Window 10, Linux (Ubuntu 20.04 LTS) (64-bit)
Computer Processor	>= 2 core 3.0 GHz Intel CPU	Intel® CoreTM i7 Processors
Computer Memory	4 GB	8 GB
Storage Space	128 GB SSD	256 GB SSD or more

Table 73: Hardware Requirements

##### 2.1.2. Software Requirement

No.	Name	Version	Description
1	Web browser	Chrome, Firefox, Microsoft Edge	Using for development
2	Modelling tool	Draw.io	Software modeling tool
3	Visual Studio Code	1.73.1	Code Editor
4	Github	2.37.1	Version control

Table 74: Software Requirement

#### 2.2 Installation Instruction

- Set up Operating System.
- Configure environment variables.

- Go to folder remo:
  - + cd Second-hand-market-Frontend
  - + Terminal npm start
  - + cd Second-hand-market-Backend
  - + Terminal npm start

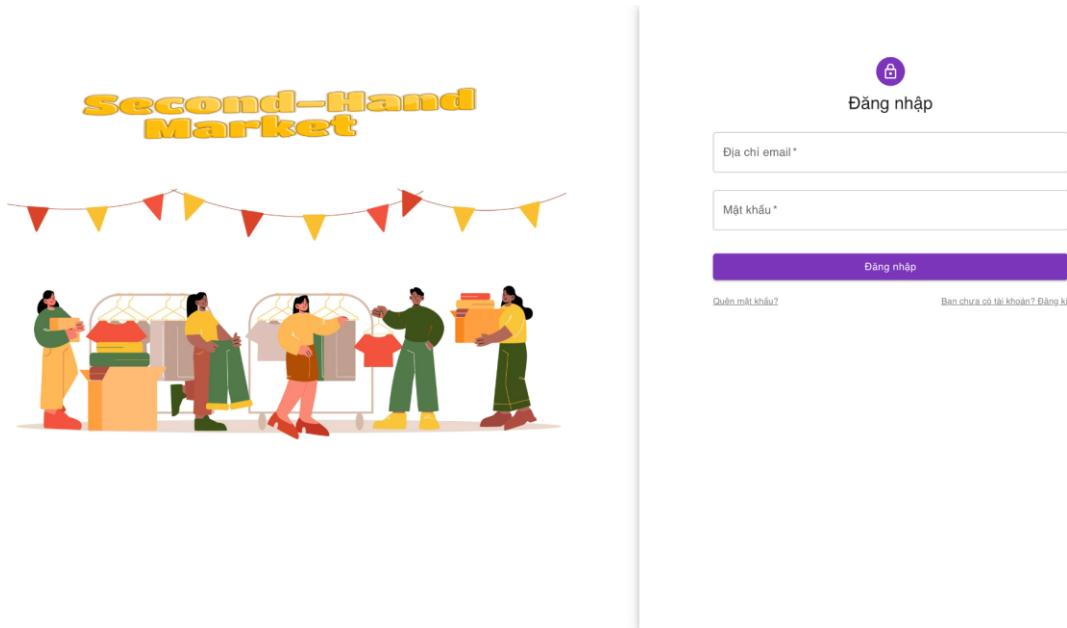
### 3. User Manual

#### 3.1 Web Feature

##### 3.1.2 Register

This is the function to register a new user account.

- Step 1: Go into the login page of the system with the following link:



**Figure 105: Step 1 in the Register**

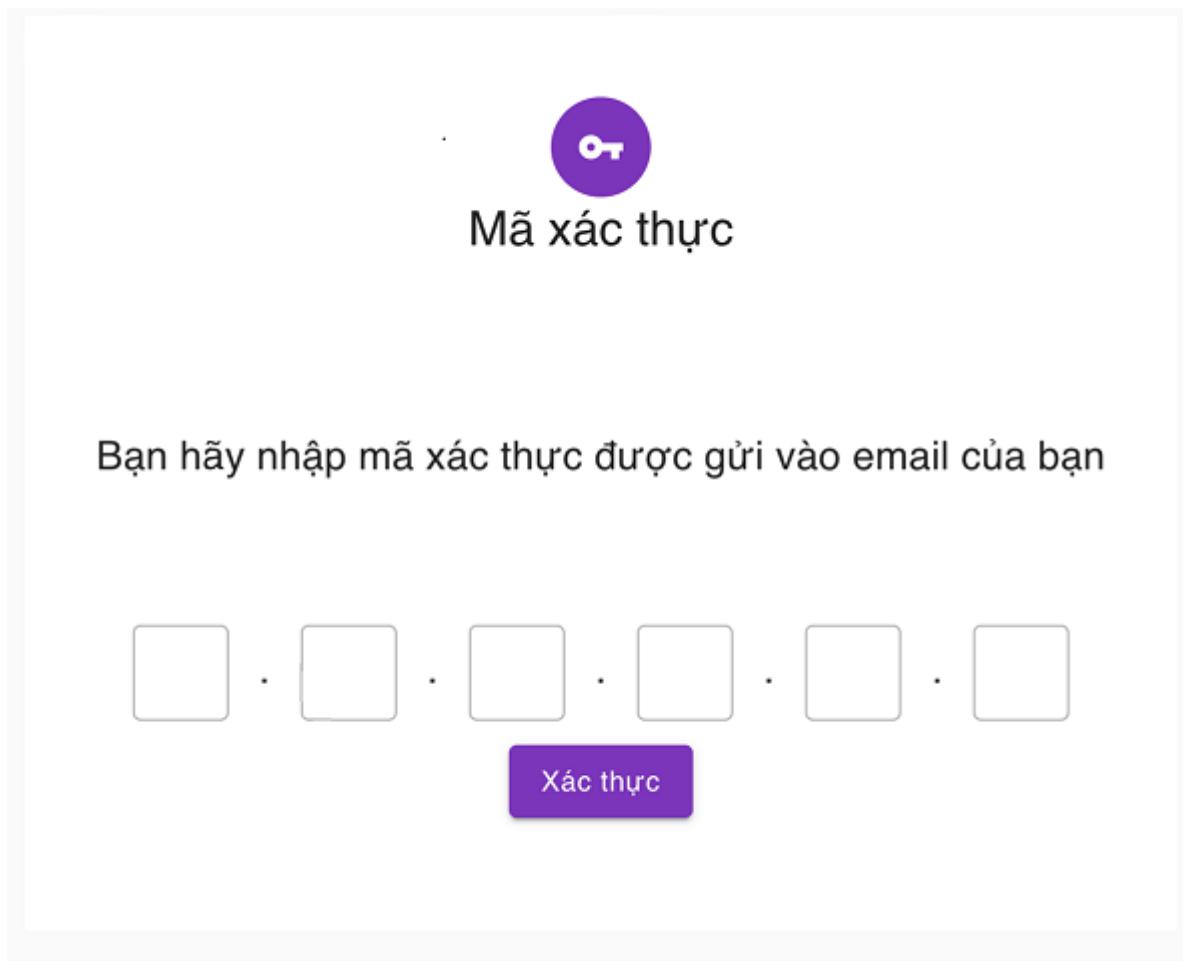
- Step 2: Click on “Bạn chưa có tài khoản? Đăng ký”
- Step 3: Type in the all information of the account requested.

- Step 4: Press enter key on keyboard or Click "Gửi OTP" button.

The image shows a registration form titled 'Đăng ký' (Register) with a small user icon above it. The form consists of several input fields: 'Họ\*' (Last Name), 'Tên\*' (Name), 'Địa chỉ email\*' (Email address), 'Mật khẩu\*' (Password), and 'Xác nhận mật khẩu\*' (Confirm password). Below these fields is a large purple button labeled 'Gửi OTP' (Send OTP). At the bottom left of the form, there is a link 'Bạn đã có tài khoản? Đăng nhập' (Already have an account? Log in).

**Figure 106: Step 4 in the Register**

- Step 5: Input OTP from your email to register

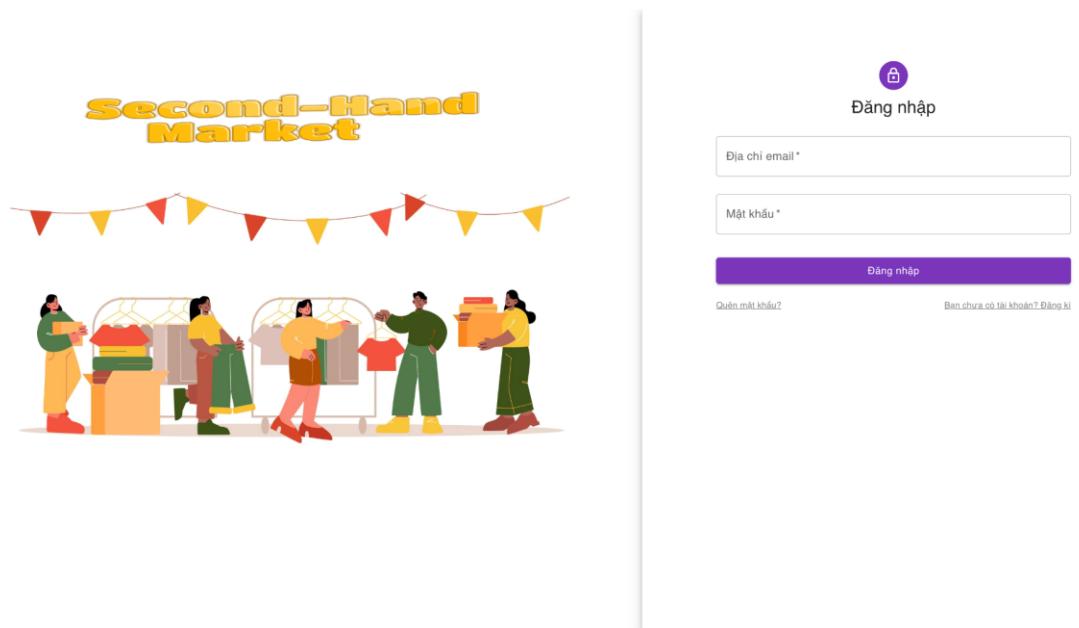


**Figure 107: Step 5 in the Reigster**

### 3.1.1 Login

- Step 1: Access into SecondHand Market Web System

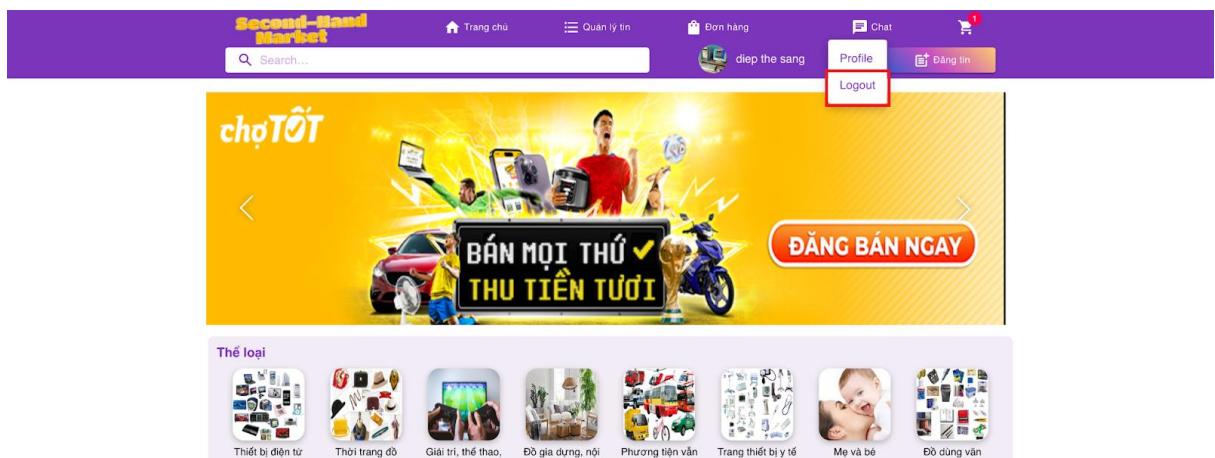
- Step 2: Enter “Email” and “Password” then Click Login Button



**Figure 108: Step 2 in the Login**

### 3.1.3 Logout

- Click DownArrow Icon Left to Avatar
- Selected Log Out



### 3.1.4 Search Product

- Step 1: Click on

- Step 2: Input name product to search

- Step 3: Search results are displayed

The screenshot shows a web application interface for a second-hand market. At the top, there is a purple header bar with the title "Second-Hand Market". Below the header, a search bar contains the query "mac". The main content area displays two search results for "macbook air 2020". Each result includes a small thumbnail image of a laptop, the product name, price (13,000,000 and 15,000,000), and a timestamp (2022-12-01T15:49:33.000Z and 2022-12-01T15:52:06.000Z). The footer of the page includes the website's name, social media links for Facebook, Instagram, and Twitter, and a copyright notice: "Product by Nhóm 5 © 2022".

macbook air 2020  
13000000  
2022-12-01T15:49:33.000Z

macbook air 2020  
15000000  
2022-12-01T15:52:06.000Z

Second-hand Market  
Facebook Instagram Twitter  
Product by Nhóm 5 © 2022

**Figure 109: Step 3 in the Search product**

### 3.1.5 View Product

- Step 1: At the home screen, the user can see the displayed products.

The screenshot shows the homepage of the Second-hand Market website. At the top, there is a purple header bar with the website's name "Second-hand Market" and several navigation links: "Trang chủ", "Quản lý tin", "Đơn hàng", "Chat", and a user profile section. A search bar is located below the header. A large promotional banner in the center features a collection of electronic devices (laptops, phones, and accessories) against a yellow background. The banner text includes "Combo Phụ Kiện Giá Sốc", "MUA NHIỀU GIẢM NHIỀU", and "Giảm đến 15%". Below the banner, there is a section titled "Thể loại" (Categories) with eight icons: Thiết bị điện tử, Thời trang đồ dùng cá nhân, Giải trí, thể thao, sở thích, Đồ gia dụng, nội thất, cây cảnh, Phương tiện vận chuyển ô tô, xe máy, Trang thiết bị y tế, Mẹ và bé, and Đồ dùng văn phòng. The main content area is divided into several sections: "Tin đăng dành cho bạn" (Ads for you), "Sản phẩm đang đấu giá" (Products being bid on), and other sections displaying various items like cameras, laptops, and shoes. Each item listing includes a small image, the product name, the price (e.g., "Đầu giá" or starting price), and the location ("23 Giờ Trước Thành phố Đà Nẵng").

Figure 110: Step 1 in the View product

- Step 2: Click on any of the displayed posts.

**Tin đăng dành cho bạn**



Máy in cannon cũ  
**Đấu giá**  
23 Giờ Trước-Thanh phố Đà Nẵng



Bàn ghế văn phòng  
**Đấu giá**  
23 Giờ Trước-Thanh phố Đà Nẵng



samsung galaxy y  
**Đấu giá**  
23 Giờ Trước-Thanh phố Đà Nẵng



cannon 550D  
**Đấu giá**  
23 Giờ Trước-Thanh phố Đà Nẵng



cannon 550D  
**Đấu giá**  
23 Giờ Trước-Thanh phố Đà Nẵng



laptop dell  
**Đấu giá**  
23 Giờ Trước-Thanh phố Đà Nẵng



giày nike chính hãng  
**Đấu giá**  
23 Giờ Trước-Thanh phố Đà Nẵng



lan đột biến 5 cánh trắng  
**Đấu giá**  
23 Giờ Trước-Thanh phố Đà Nẵng



đồng hồ apple watch seri 3  
**Đấu giá**  
23 Giờ Trước-Thanh phố Đà Nẵng



laptop dell cũ  
**Đấu giá**  
23 Giờ Trước-Thanh phố Đà Nẵng



test bid  
**6.200.000 đ**  
23 Giờ Trước-Thanh phố Đà Nẵng



giay nike cu  
**8.000.000 đ**  
23 Giờ Trước-Thanh phố Đà Nẵng

< 1 2 >

**Sản phẩm đang đấu giá**



laptop dell  
**Đang đấu giá**  
23 Giờ Trước-Thanh phố Đà Nẵng



cannon 550D  
**Đang đấu giá**  
23 Giờ Trước-Thanh phố Đà Nẵng



cannon 550D  
**Đang đấu giá**  
23 Giờ Trước-Thanh phố Đà Nẵng



samsung galaxy y  
**Đang đấu giá**  
23 Giờ Trước-Thanh phố Đà Nẵng



Bàn ghế văn phòng  
**Đang đấu giá**  
23 Giờ Trước-Thanh phố Đà Nẵng



Máy in cannon cũ  
**Đang đấu giá**  
23 Giờ Trước-Thanh phố Đà Nẵng

**Figure 111: Step 2 in the View product**

- Step 3: The user was able to see a detailed post describing the product.

The screenshot shows a product listing on the 'Second-Hand Market' website. The main product image is a black JBL Bluetooth speaker. The listing details are as follows:

- Name:** loa bluetooth
- Price:** 8.000.000 đ
- Condition:** Sản phẩm cũ (đã sửa chữa)
- Seller Information:** diep the sang (1133111139), Xem trang, Nhắn tin với người bán, MUA
- Location:** 169 Mẹ Thứ - Phường Tân Chính - Quận Thanh Khê - Thành phố Đà Nẵng
- Product Details:** Bảo hành: Hết bảo hành
- Category:** Sàn xuất tại: Trung Quốc, Thể loại: Tivi, Tủ lạnh, thiết bị âm thanh

Below the main listing, there are sections for 'Tin đăng khác' (Other listings) and 'Tin đăng tương tự' (Similar listings), each displaying several thumbnail images of various items like cameras, laptops, and shoes.

Figure 112: Step 3 in the View product

### 3.1.6 Filter product

#### 3.1.6.1 Filter product by location

This is a function to filter posts by a location close to the user.

- When the user first logs into the account and accesses the system. The system will display 3 locations (Hanoi Capital, Da Nang City, and Ho Chi Minh City) for users to choose the nearest location. Then the diplomas posted near that location will be prioritized to be displayed to that user.

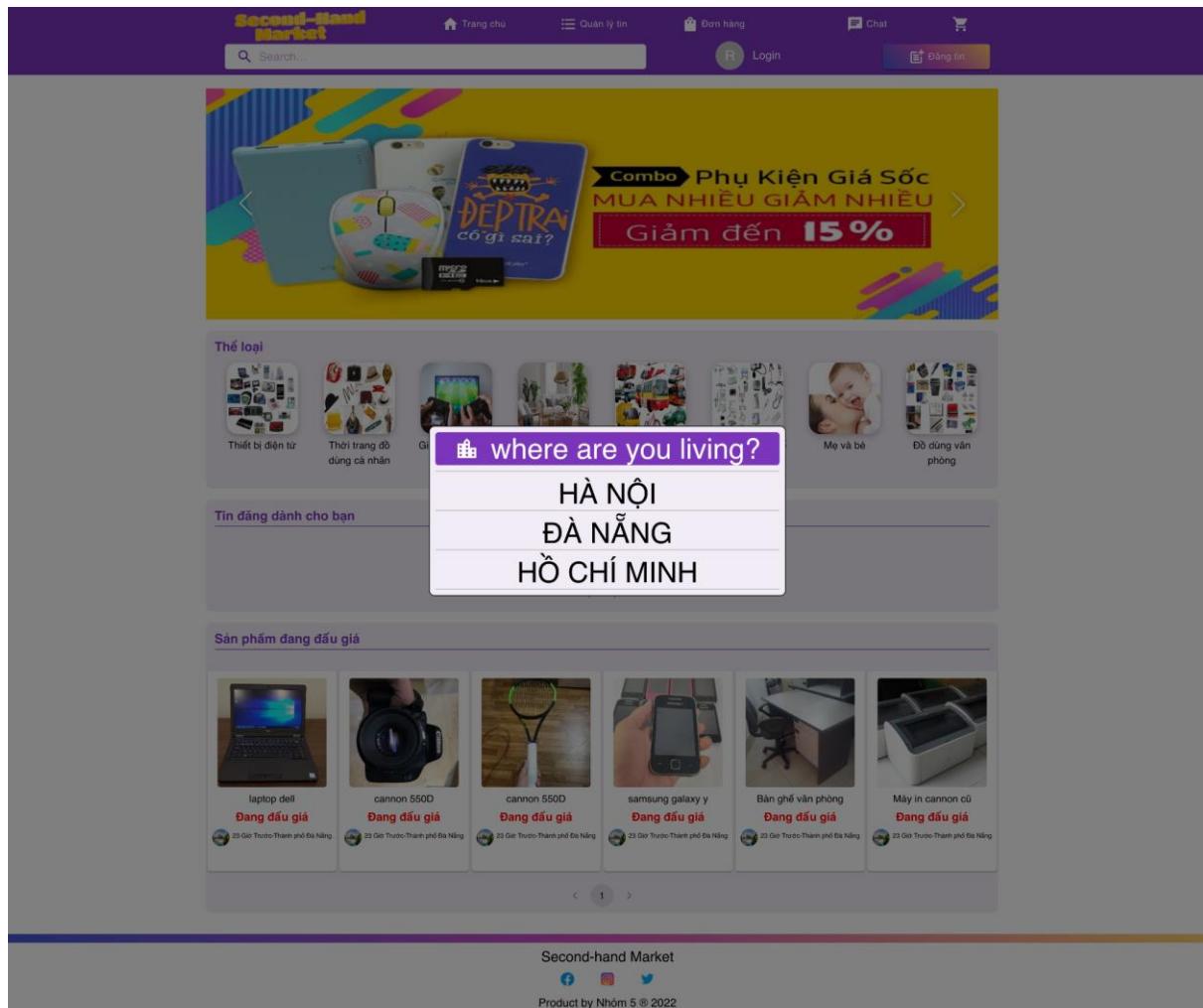


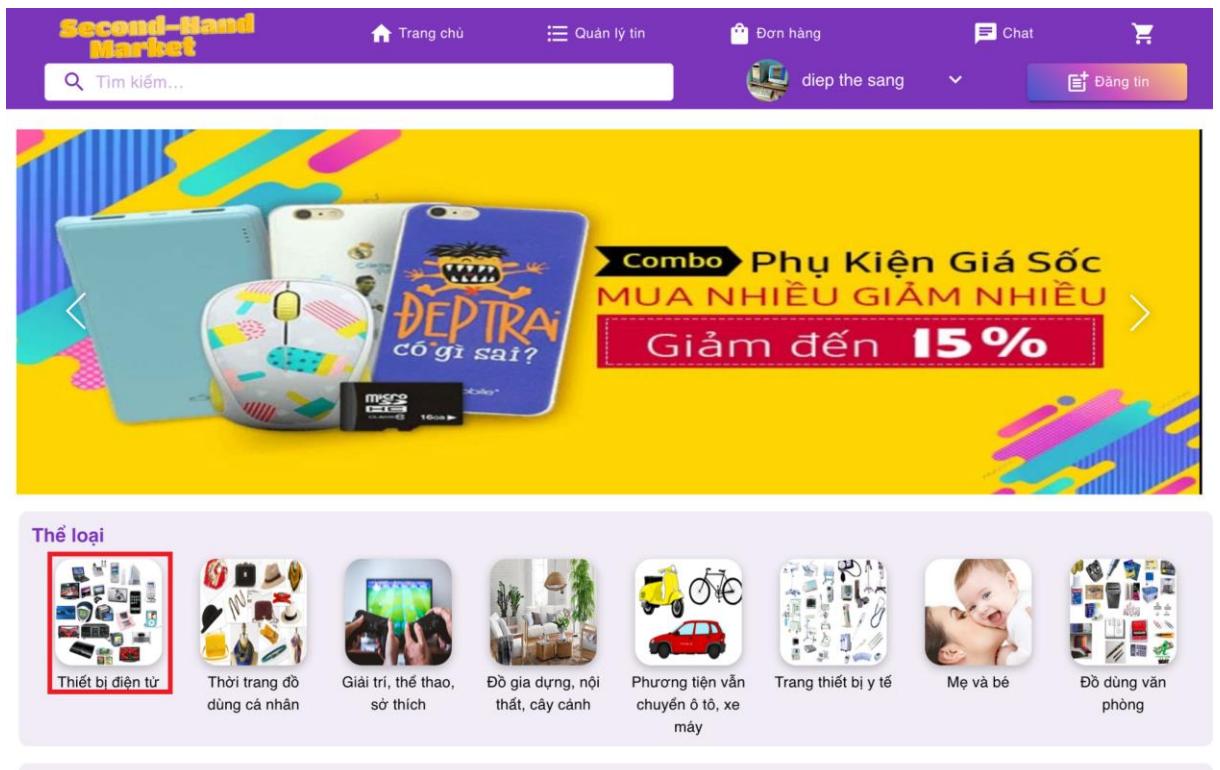
Figure 113: Filter product by location

### 3.1.6.2 Filter product by category

- Step 1: At the home screen, the user can filter by the desired category. By entering select a "Thể loại".

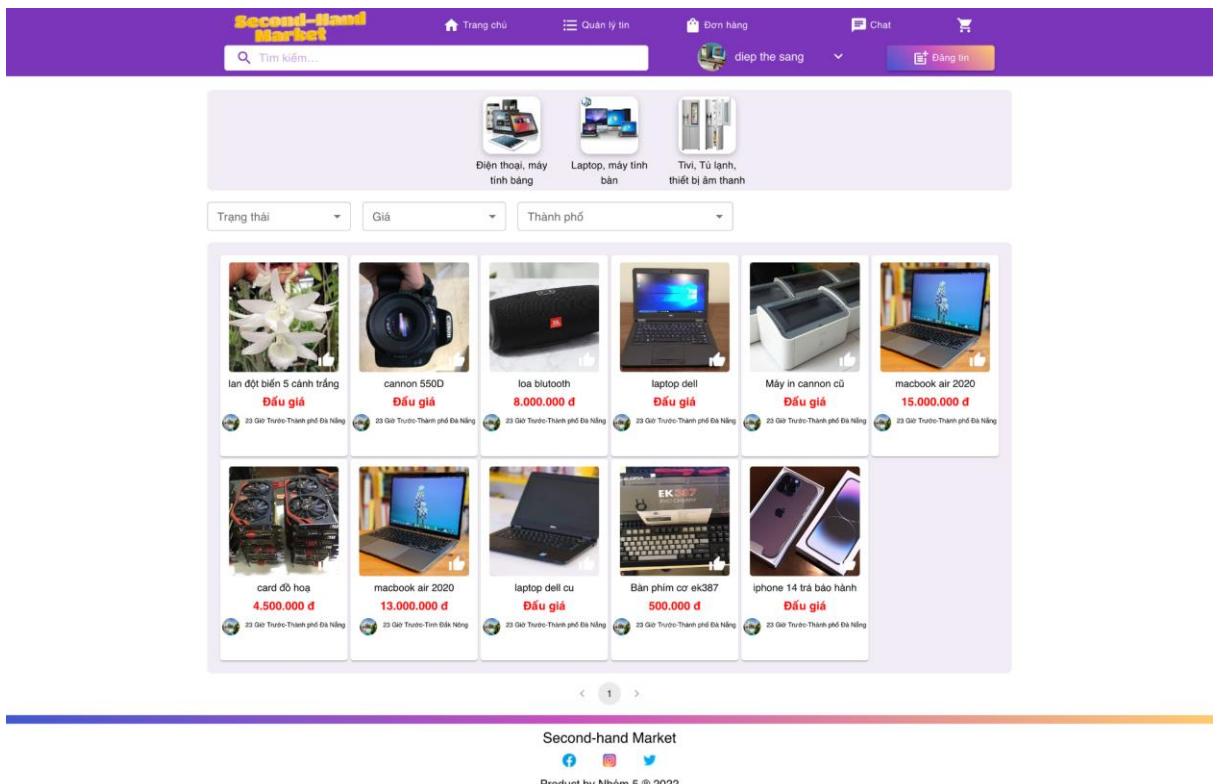
The screenshot shows the homepage of the Second-hand Market website. At the top, there's a purple header bar with the site's name and various navigation links. Below the header is a large yellow promotional banner for a sale. Underneath the banner, there's a section titled "Thể loại" (Categories) with icons for different product types. The main content area features a grid of products with images, names, and prices. At the bottom, there's a section for "Sản phẩm đang đấu giá" (Products being auctioned) with a grid of items like laptops and cameras.

**Figure 114: Step 1 in the Filter product by category 1**



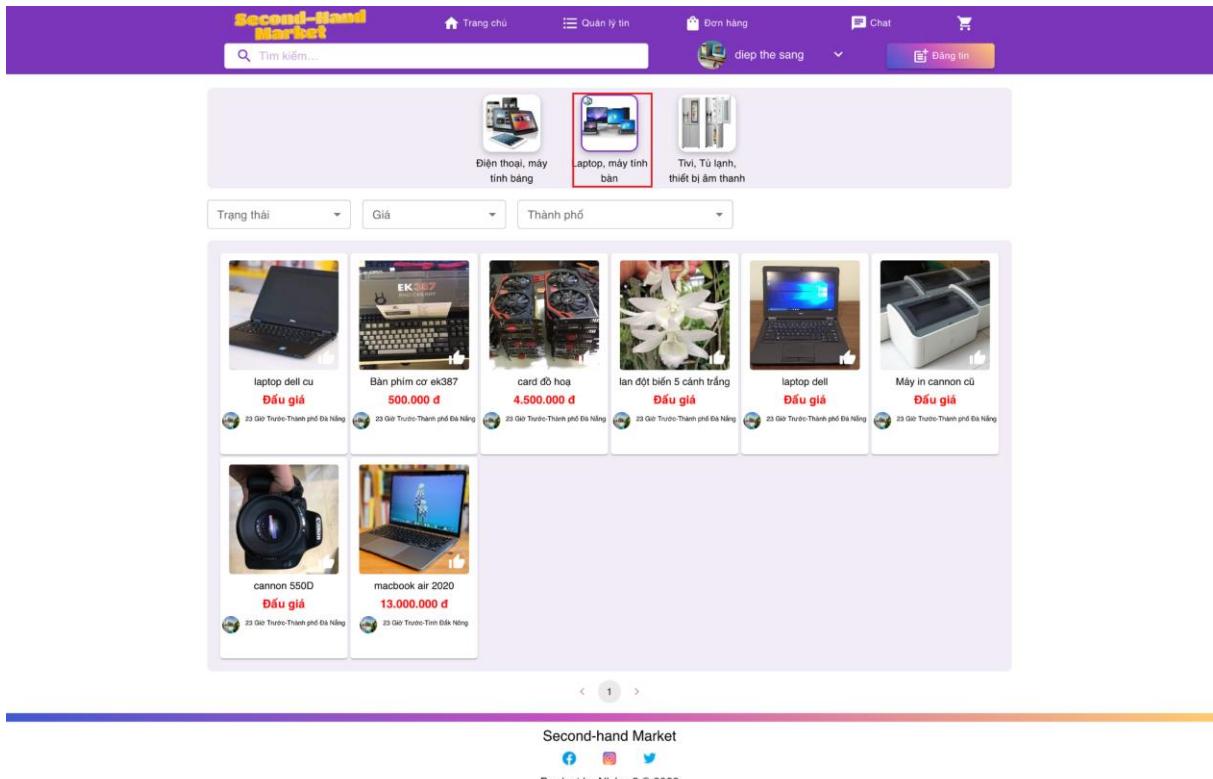
**Figure 115: Step 1 in the Filter product by category 2**

- Step 2: After clicking select 1 "Thể loại". Users can see products by that category.



**Figure 116: Step 2 in the Filter product by category**

- Step 3: At the screen, the list of posts has been filtered by category. Users can further filter posts by subcategory. By clicking on any subcategory.



**Figure 117: Step 3 in the Filter product by category**

- Step 4: After the user has filtered product posts by subcategory. Users can still filter in more detail such as filtering by “Trạng thái”, “Giá” and “Thành phố”.

*Filter by product status*

The screenshot shows the 'Second-Hand Market' website interface. At the top, there's a purple header bar with the site name, navigation links for 'Trang chủ', 'Quản lý tin', and 'Đơn hàng', and a search bar. Below the header, there are three main category icons: 'Điện thoại, máy tính bảng' (Smartphones, tablets), 'Laptop, máy tính bàn' (Laptops, desktops), and 'Tivi, Tủ lạnh, thiết bị âm thanh' (Televisions, refrigerators, audio equipment). A red box highlights the 'Trạng thái' (Status) filter dropdown, which is set to 'Tin Mới' (New). To the right of this are two other dropdown filters: 'Giá' (Price) set to 'Giá từ thấp tới cao' (Low to high) and 'Thành phố' (City) set to 'Thành phố Đà Nẵng' (Da Nang City). The main content area displays three product cards: a keyboard ('Bàn phím cơ ek387' for 500,000đ), a graphics card ('card đồ họa' for 4,500,000đ), and a laptop ('macbook air 2020' for 13,000,000đ). Each card includes a small image, the product name, price, a thumbs-up like icon, and a timestamp indicating it was posted 23 hours ago from Da Nang City or Dak Nong province.

**Figure 118: Step 4 in the Filter product by category 1**

*Filter by product price*

The screenshot shows the homepage of the "Second-Hand Market" website. At the top, there is a purple header bar with the site's name in yellow, a search bar with a magnifying glass icon, and several navigation links: "Trang chủ", "Quản lý tin", "Đơn hàng", and a user profile icon.

Below the header, there are three category icons: "Điện thoại, máy tính bảng" (Smartphones, tablets), "Laptop, máy tính bàn" (Laptops, desktops), and "Tivi, Tủ lạnh, thiết bị âm thanh" (Televisions, refrigerators, audio equipment).

On the left, there is a dropdown menu for "Trạng thái" (Status) set to "Tin Mới". On the right, there is a dropdown menu for "Thành phố" (City) set to "Thành phố Đà Nẵng".

A red box highlights a dropdown menu titled "Giá" (Price) with two options: "Giá từ thấp tới cao" (Low to High) and "Giá từ cao tới thấp" (High to Low). The "Giá từ thấp tới cao" option is selected.

Two product listings are shown:

- Bàn phím cơ ek387** - **500.000 đ** - 23 Giờ Trước-Thành phố Đà Nẵng
- card đồ họa** - **4.500.000 đ** - 23 Giờ Trước-Thành phố Đà Nẵng

**Figure 119: Step 4 in the Filter by category 2**

*Filter by city*

The screenshot shows the homepage of the Second-Hand Market website. At the top, there is a purple header bar with the site's logo 'Second-Hand Market' and navigation links for 'Trang chủ', 'Quản lý tin', 'Đơn hàng', and a user icon. Below the header is a search bar labeled 'Tim kiếm...'. The main content area features three categories with icons: 'Điện thoại, máy tính bảng' (Smartphones, tablets), 'Laptop, máy tính bàn' (Laptops, desktops), and 'Tivi, Tủ lạnh, thiết bị âm thanh' (Televisions, refrigerators, audio equipment). Below these are two dropdown filters: 'Trạng thái' (Status) and 'Giá' (Price). A red box highlights the 'Trạng thái' dropdown, which is set to 'Tin Mới' (New). Another red box highlights the 'Giá' dropdown, which is set to 'Giá từ thấp tới cao' (Price from low to high). To the right of these dropdowns is a third dropdown labeled 'Thành phố' (City), which is set to 'Thành phố Đà Nẵng'. A red box also highlights this dropdown. Below the dropdowns are three product cards: a keyboard labeled 'Bàn phím cơ ek387 500.000 đ', a graphics card labeled 'card đồ họa 4.500.000 đ', and a laptop labeled 'macbook air 2020 13.000.000 đ'. The entire screenshot is framed by a thick red border.

**Figure 120: Step 4 in the Filter by category 3**

- Step 5: If the user wants to filter by product status "Sản phẩm cũ". All product posts that are in the old state of that category are displayed.

This screenshot shows the filtered results on the Second-Hand Market website. The top navigation and search bar are identical to Figure 120. The 'Trạng thái' dropdown is now set to 'Đang đấu giá' (Auctioning). The 'Giá' dropdown remains at 'Giá từ thấp tới cao'. The 'Thành phố' dropdown is still set to 'Thành phố Đà Nẵng'. The main content area displays three auction items: a keyboard ('Bàn phím cơ ek387 500.000 đ'), a graphics card ('card đồ họa 4.500.000 đ'), and a laptop ('macbook air 2020 13.000.000 đ'). The footer of the page includes the text 'Second-hand Market', social media links, and a copyright notice 'Product by Nhóm 5 © 2022'.

**Figure 121: Step 5 in the Filter by category**

### 3.1.7 Manage product to sell

#### 3.1.7.1 Manage post

- Step 1: Click on “Quản Lý Tin” on header

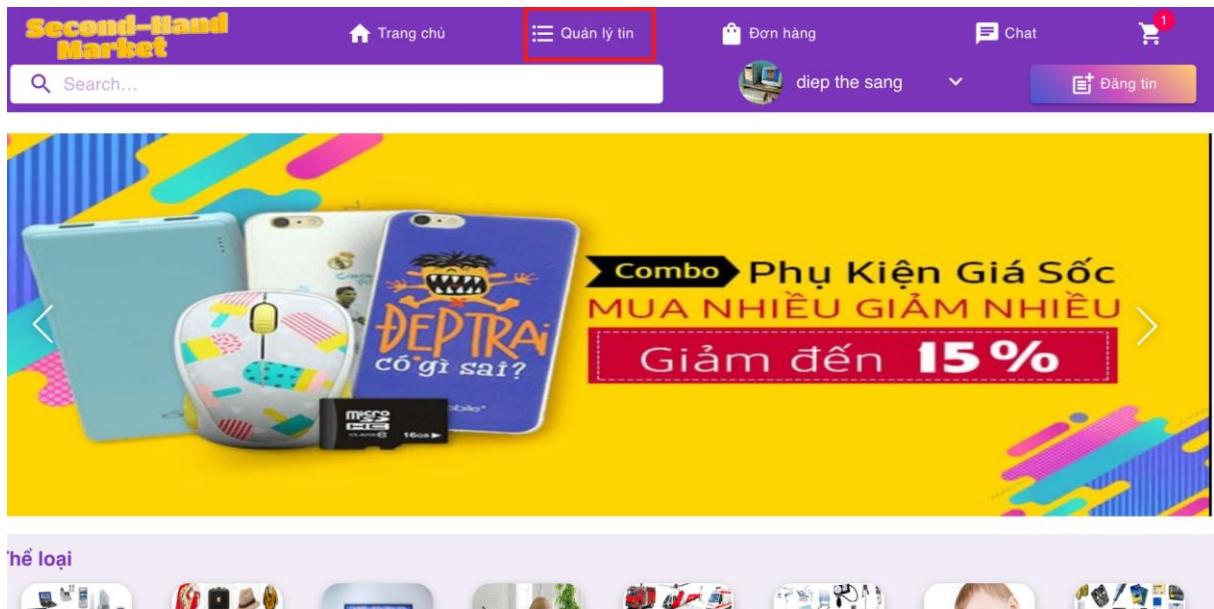


Figure 122: Step 1 in the Post management of Product management for sale

- Step 2: Posted posts are displayed below

The screenshot shows a web application interface for a second-hand market. At the top, there is a purple header bar with the title "Second-Hand Market". Below the header is a search bar with the placeholder "Search...". The main content area displays a list of posted items under the heading "diep the sang". Each item is shown in a card format with a thumbnail image, item ID, name, price, and a timestamp. There are also buttons for editing ("Sửa"), marking as favorite ("Ám"), and deleting ("Xoá"). A red border highlights the list of items.

ID	Item Name	Price	Timestamp	Action Buttons
424	macbook air 2020	13000000	2022-12-01T15:49:33.000Z	Sửa Ám Xoá
426	macbook air 2020	15000000	2022-12-01T15:52:06.000Z	Sửa Ám Xoá
428	card đồ họa	4500000	2022-12-01T15:54:34.000Z	Sửa Ám Xoá
429	Bàn phím cơ ek38	500000	2022-12-01T15:56:01.000Z	Sửa Ám Xoá
431	sách đặc nhân tâm	40000	2022-12-01T15:58:00.000Z	Sửa Ám Xoá

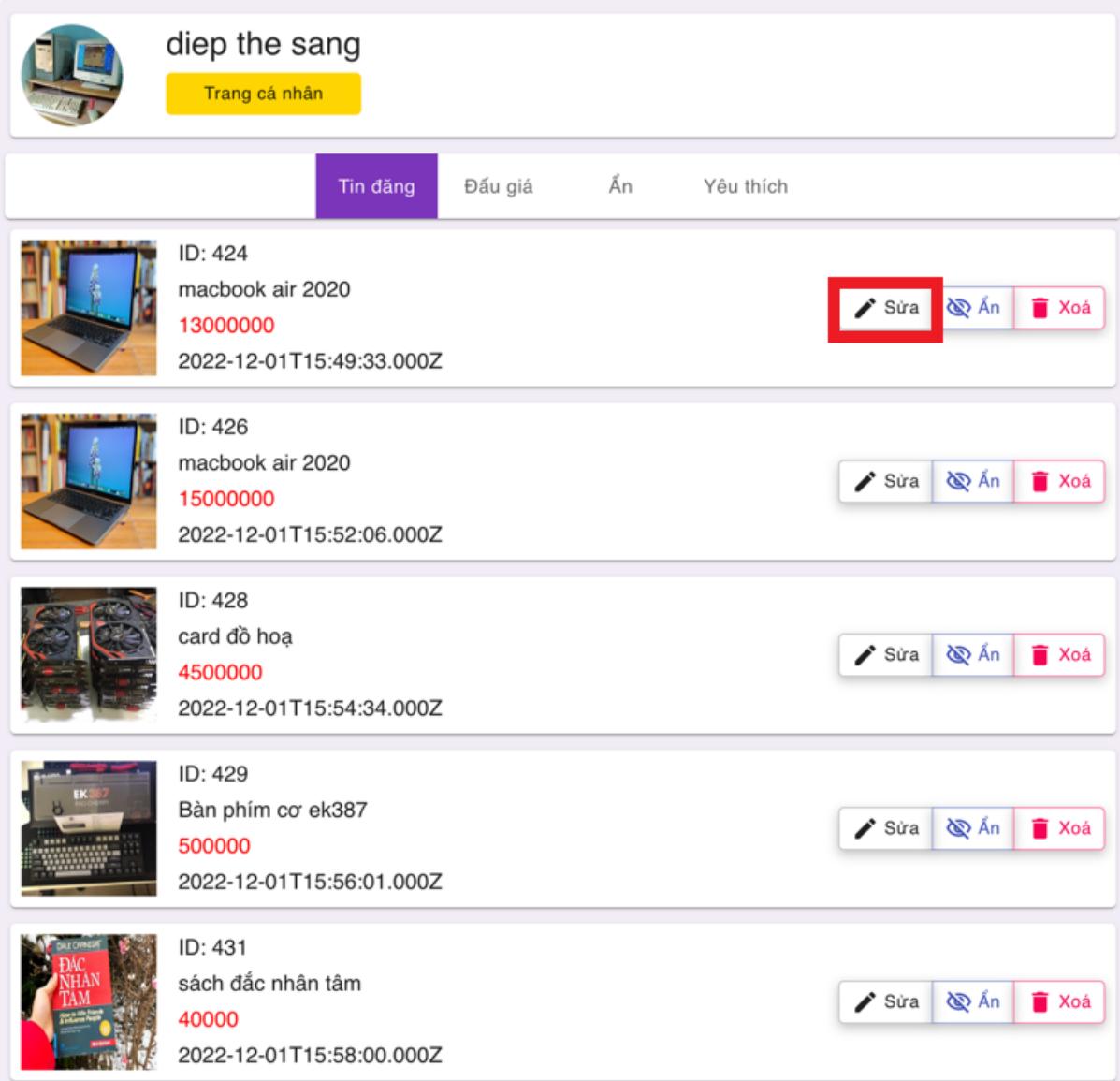
< 1 2 3 >

Second-hand Market  
Product by Nhóm 5 © 2022

**Figure 123: Step 2 in the Post management of Product management for sale**

- Step 3: Users can use the functions of editing posts, hiding posts, and deleting posts.
- + This is the post editor function.

*From the results when clicking on the post. Click "Sửa" to use the post editing function*



The screenshot shows a list of five posts from a product management system. Each post includes a thumbnail image, a unique ID, the product name, its price, and a timestamp. To the right of each post is a horizontal button bar containing three options: 'Sửa' (highlighted with a red box), 'Ẩn', and 'Xoá'.

ID	Product Name	Price	Date	Action Buttons
424	macbook air 2020	13000000	2022-12-01T15:49:33.000Z	Sửa (highlighted), Ẩn, Xoá
426	macbook air 2020	15000000	2022-12-01T15:52:06.000Z	Sửa, Ẩn, Xoá
428	card đồ họa	4500000	2022-12-01T15:54:34.000Z	Sửa, Ẩn, Xoá
429	Bàn phím cơ ek387	500000	2022-12-01T15:56:01.000Z	Sửa, Ẩn, Xoá
431	sách đắc nhân tâm	40000	2022-12-01T15:58:00.000Z	Sửa, Ẩn, Xoá

**Figure 124: Step 3 in the Post management of Product management for sale**

*Users can edit the information in the post.*

The screenshot shows a product listing form with the following fields:

- Thể loại:** Thiết bị điện tử
- Điện thoại, máy tính bảng:** iPhone 14 cũ
- Tên sản phẩm:** iPhone 14 cũ
- Trạng thái sản phẩm:** Sản phẩm cũ (chưa sửa chữa)
- Bảo hành:** Còn bảo hành
- Sản xuất tại:** Trung Quốc
- Mô tả:** Điện thoại mới còn sử dụng tốt, chỉ bị trầy xước nhẹ
- Checkboxes:**
  - Sản phẩm dùng để cho tặng
  - Đấu giá
- Giá:** 25000000
- Tỉnh/Thành phố:** Thành phố Đà Nẵng
- Huyện/Quận:** Quận Cẩm Lệ
- Xã/Phường:** Phường Hòa Xuân
- Đường:** 169 Mẹ Thứ

**TAO BÀI VIẾT** button at the bottom right.

**Figure 125: Step 3 in the Manage Post of Product management for sale 1**

- + This is the function to hide the post. Users can hide their posts so others can't see their posts. Click "Ẩn" to use the post hiding function

The screenshot shows a list of five posts on a platform. Each post includes a thumbnail image, a unique ID, the product name, its price, and a timestamp. To the right of each post is a horizontal button bar containing three icons: 'Sửa' (Edit), 'Ẩn' (Hide), and 'Xoá' (Delete). The 'Ẩn' icon is highlighted with a red border in the third post from the top.

ID	Product Name	Price	Date	Action Buttons
424	macbook air 2020	13000000	2022-12-01T15:49:33.000Z	
426	macbook air 2020	15000000	2022-12-01T15:52:06.000Z	
428	card đồ họa	4500000	2022-12-01T15:54:34.000Z	
429	Bàn phím cơ ek387	500000	2022-12-01T15:56:01.000Z	
431	sách đắc nhân tâm	40000	2022-12-01T15:58:00.000Z	

**Figure 126: Step 3 in the Manage Post of Product management for sale 2**

*That post will go to the hidden post list item*

The screenshot shows a user interface for managing posts. At the top, there's a profile picture and the name "diep the sang" next to a yellow button labeled "Trang cá nhân". Below this is a navigation bar with tabs: "Tin đăng" (white), "Đấu giá" (white), "Ẩn" (purple, indicating it's selected), and "Yêu thích" (white). The main area displays three posts, each with a thumbnail image, ID, product name, price, and a "Hiển thị" (Show) button.

ID	Product Name	Price	Action
ID: 423	iphone 11	11000000	Hiển thị
ID: 424	macbook air 2020	13000000	Hiển thị
ID: 439	iphone 14 cũ	Đấu giá	Hiển thị

**Figure 127: Step 3 in the Manage Post of Product management for sale 3**

+ This is the post delete function. Click "Xóa" to use the post deleting function

The screenshot shows a list of five posts in a product management system. Each post includes a thumbnail image, a unique ID, the product name, its price, and a timestamp. To the right of each post is a horizontal button bar containing three icons: 'Sửa' (Edit), 'Ẩn' (Hide), and 'Xoá' (Delete). The 'Xoá' button for the first post is highlighted with a red border.

ID	Product Name	Price	Date	Action Buttons
424	macbook air 2020	13000000	2022-12-01T15:49:33.000Z	Sửa   Ẩn   Xoá
426	macbook air 2020	15000000	2022-12-01T15:52:06.000Z	Sửa   Ẩn   Xoá
428	card đồ họa	4500000	2022-12-01T15:54:34.000Z	Sửa   Ẩn   Xoá
429	Bàn phím cơ ek387	500000	2022-12-01T15:56:01.000Z	Sửa   Ẩn   Xoá
431	sách đắc nhân tâm	40000	2022-12-01T15:58:00.000Z	Sửa   Ẩn   Xoá

Figure 128: Step 3 in the Manage Post of Product management for sale 4

*Click on “có” to yes, click on “Không” to reject*

The screenshot shows a list of five posts for sale. Each post includes a thumbnail image, a unique ID, the product name, its price, and a timestamp. To the right of each post is a set of three buttons: 'Sửa' (Edit), 'Ẩn' (Hide), and 'Xoá' (Delete). A modal dialog box is overlaid on the third post, containing the message "Bạn có chắc muốn xoá bài viết này!" (Are you sure you want to delete this post?). It features two buttons: "Có" (Yes) in a purple box and "Không" (No) in a grey box.

ID	Product Name	Price	Date	Action Buttons
424	macbook air 2020	13000000	2022-12-01T15:49:33.000Z	Sửa Ẩn Xoá
426	macbook air 2020	15000000	2022-12-01T15:49:33.000Z	Sửa Ẩn Xoá
428	card đồ họa	4500000	2022-12-01T15:54:34.000Z	Sửa Ẩn Xoá
429	Bàn phím cơ ek387	500000	2022-12-01T15:56:01.000Z	Sửa Ẩn Xoá
431	sách đắc nhân tâm	40000	2022-12-01T15:58:00.000Z	Sửa Ẩn Xoá

**Figure 129: Step 3 in the Manage Post of Product management for sale 5**

### 3.1.7.2 Manage auction

- Step 1: Click on “Quản Lý Tin” on header

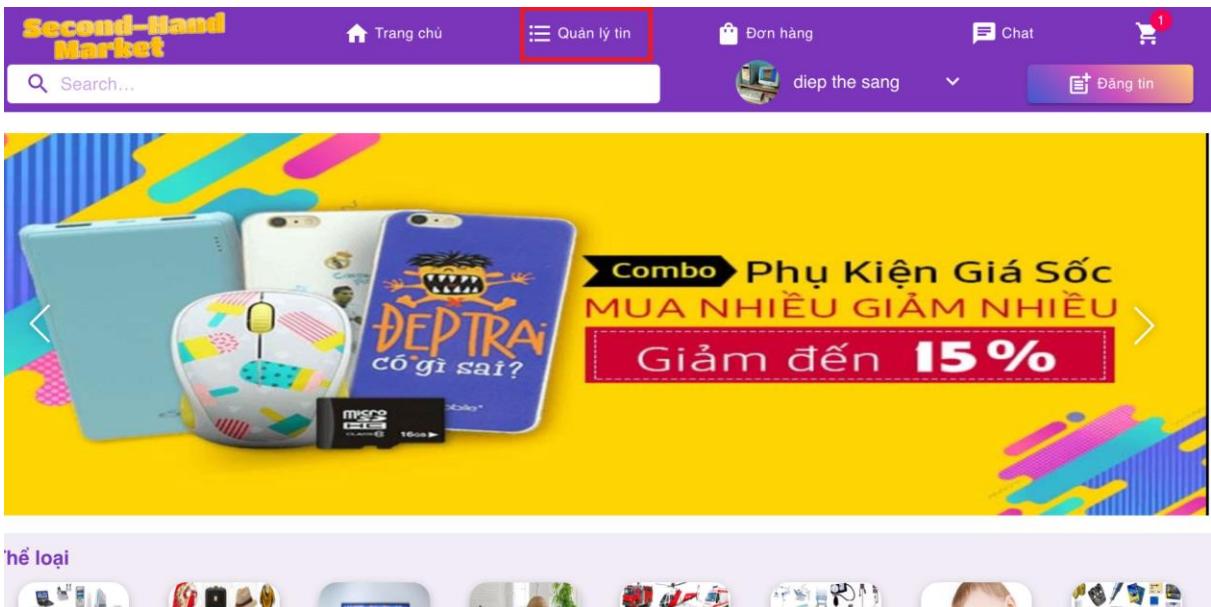


Figure 130: Step 1 in the Manage auction of Product management for sale

- Step 2: Screen results when switching to posting management. Click "Đấu giá" to view and manage auction posts.

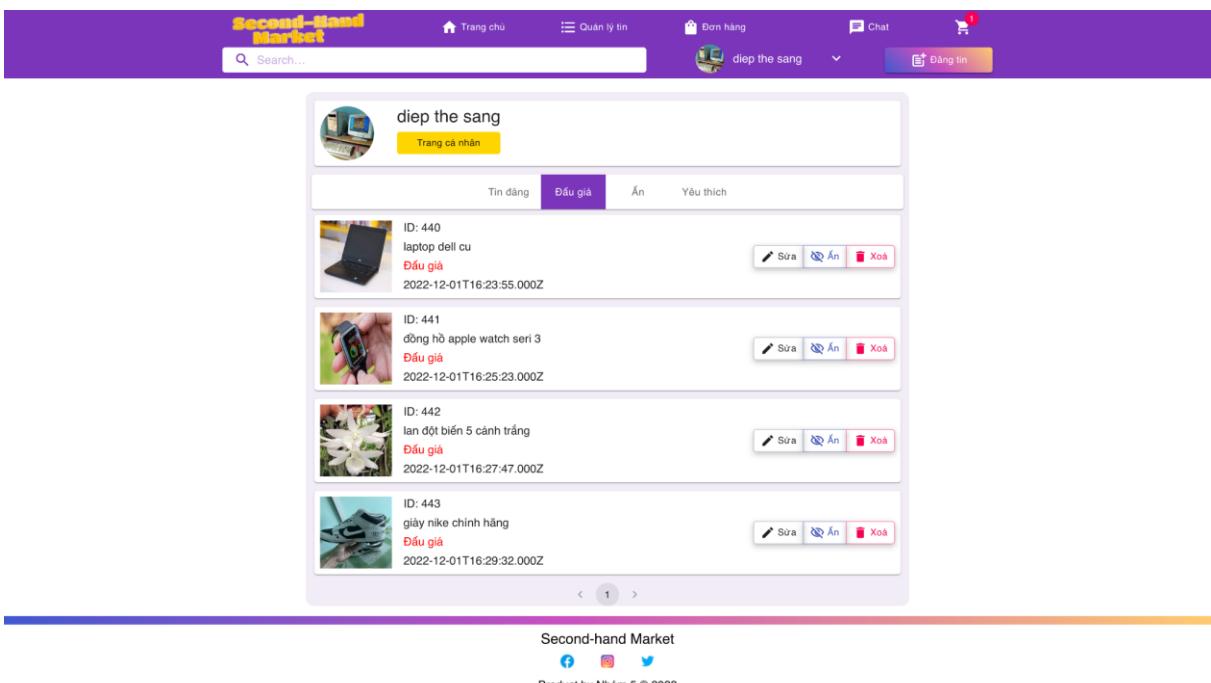


Figure 131: Step 2 in the Manage auction of Product management for sale

- Step 3: At the auction management screen, users can perform the functions of product management for sale such as editing posts, hiding posts, and deleting posts.
  - + This is the auction post editing function. Click "Sửa" to use the post editing function

The screenshot shows a mobile application interface for managing auction posts. At the top, there is a profile section for 'diep the sang' with a profile picture and a yellow 'Trang cá nhân' button. Below this is a navigation bar with tabs: 'Tin đăng' (listing), 'Đấu giá' (auction), 'Ẩn' (hidden), and 'Yêu thích' (favorites). The main content area displays four auction posts:

- Post 1:** ID: 440, laptop dell cu, Đấu giá, 2022-12-01T16:23:55.000Z. Actions: Sửa (highlighted with a red box), Ẩn, Xoá.
- Post 2:** ID: 441, đồng hồ apple watch seri 3, Đấu giá, 2022-12-01T16:25:23.000Z. Actions: Sửa, Ẩn, Xoá.
- Post 3:** ID: 442, lan đột biến 5 cánh trắng, Đấu giá, 2022-12-01T16:27:47.000Z. Actions: Sửa, Ẩn, Xoá.
- Post 4:** ID: 443, giày nike chính hãng, Đấu giá, 2022-12-01T16:29:32.000Z. Actions: Sửa, Ẩn, Xoá.

At the bottom of the list, there are navigation arrows for page 1.

**Figure 132: Step 3 in the Manage auction of Product management for sale 1**

*Enter the edit information to update the auction post.*

The screenshot shows a user interface for updating an auction post. On the left, there is a placeholder for an image with a camera icon and the text "Thêm hình ảnh". To the right, there are several input fields and dropdown menus:

- Thể loại:** Thiết bị điện tử
- Điện thoại, máy tính bảng:** Điện thoại
- Tên sản phẩm:** iphone 14 cũ
- Trạng thái sản phẩm:** Sản phẩm cũ (chưa sửa chữa)
- Bảo hành:** Còn bảo hành
- Sản xuất tại:** Trung Quốc
- Mô tả:** Điện thoại mới còn sử dụng tốt, chỉ bị trầy xước nhẹ

Below the description, there are two checkboxes:

- Sản phẩm dùng để cho tặng
- Đấu giá

Under the "Đấu giá" checkbox, there are more input fields:

- Giá \***: 25000000
- Tỉnh/Thành phố:** Thành phố Đà Nẵng
- Huyện/Quận:** Quận Cẩm Lệ
- Xã/Phường:** Phường Hòa Xuân
- Đường:** 169 Mẹ Thú

A purple button at the bottom right is labeled "TAO BÀI VIẾT" (Create Post).

**Figure 133: Step 3 in the Manage auction of Product management for sale 2**

- + This is an arbitrary auction post-hiding function. Users can click the "Ẩn" button at the auction post management screen. And can unhide to show the auction post again when clicking the "Hiển thị" button on the hidden post management screen.

The screenshot shows a web-based application for managing auction posts. At the top, there's a header with a user profile icon and the text "diep the sang". Below the header is a yellow button labeled "Trang cá nhân". The main content area has a light purple background and displays three auction posts in a list format. Each post includes a thumbnail image, item details, and a "Hiển thị" (Show) button.

	ID	Item Description	Date	Status
	ID: 423	iphone 11 11000000	2022-11-01T15:41:36.000Z	<span style="background-color: #800080; color: white; padding: 2px;">Ẩn</span>
	ID: 424	macbook air 2020 13000000	2022-12-01T15:49:33.000Z	<span style="border: 1px solid #0070C0; border-radius: 5px; padding: 2px;">Hiển thị</span>
	ID: 439	iphone 14 cũ Đấu giá	2022-12-01T16:22:10.000Z	<span style="border: 1px solid #0070C0; border-radius: 5px; padding: 2px;">Hiển thị</span>

**Figure 134: Step 3 in the Manage auction of Product management for sale 3**

+ This is the function to delete the auction post. Click "Xóa" to use the post deleting function

The screenshot shows a list of four auction posts managed by a user named 'diep the sang'. Each post includes a thumbnail image, an ID, the item name, the creation date, and a control bar with three buttons: 'Sửa' (Edit), 'Ẩn' (Hide), and 'Xoá' (Delete). The 'Xoá' button for the first post is highlighted with a red box.

ID	Item Name	Creation Date	Control Bar
440	laptop dell cũ	2022-12-01T16:23:55.000Z	Sửa Ẩn Xoá
441	đồng hồ apple watch seri 3	2022-12-01T16:25:23.000Z	Sửa Ẩn Xoá
442	lan đột biến 5 cánh trắng	2022-12-01T16:27:47.000Z	Sửa Ẩn Xoá
443	giày nike chính hãng	2022-12-01T16:29:32.000Z	Sửa Ẩn Xoá

Figure 135: Step 3 in the Manage auction of Product management for sale 4

*Click on “có” to yes, click on “Không” to reject*

The screenshot shows a web-based application for managing products. At the top, there's a profile picture of a person named 'diep the sang' and a yellow button labeled 'Trang cá nhân'. Below the header, there are four tabs: 'Tin đăng' (highlighted in purple), 'Đấu giá', 'Ẩn', and 'Yêu thích'. The main content area displays five product items:

- ID: 424  
macbook air 2020  
13000000  
2022-12-01T15:49:33.000Z
- ID: 426  
macbook air 2020  
15000000  
2022-12-01T15:49:33.000Z
- ID: 428  
card đồ họa  
4500000  
2022-12-01T15:54:34.000Z
- ID: 429  
Bàn phím cơ ek387  
500000  
2022-12-01T15:56:01.000Z
- ID: 431  
sách đắc nhân tâm  
40000  
2022-12-01T15:58:00.000Z

A modal dialog box is centered over the second item (ID 426). It contains the message 'Bạn có chắc muốn xoá bài viết này?' (Are you sure you want to delete this post?). Below the message are two buttons: 'Có' (Yes) in a purple box and 'Không' (No) in a grey box. To the right of the dialog, there are three buttons: 'Sửa' (Edit), 'Ẩn' (Hide), and 'Xoá' (Delete), each with its corresponding icon.

**Figure 136: Step 3 in the Manage auction of Product management for sale 5**

### 3.1.7.2 Manage hide post

- Step 1: Click on “Quản Lý Tin” on header

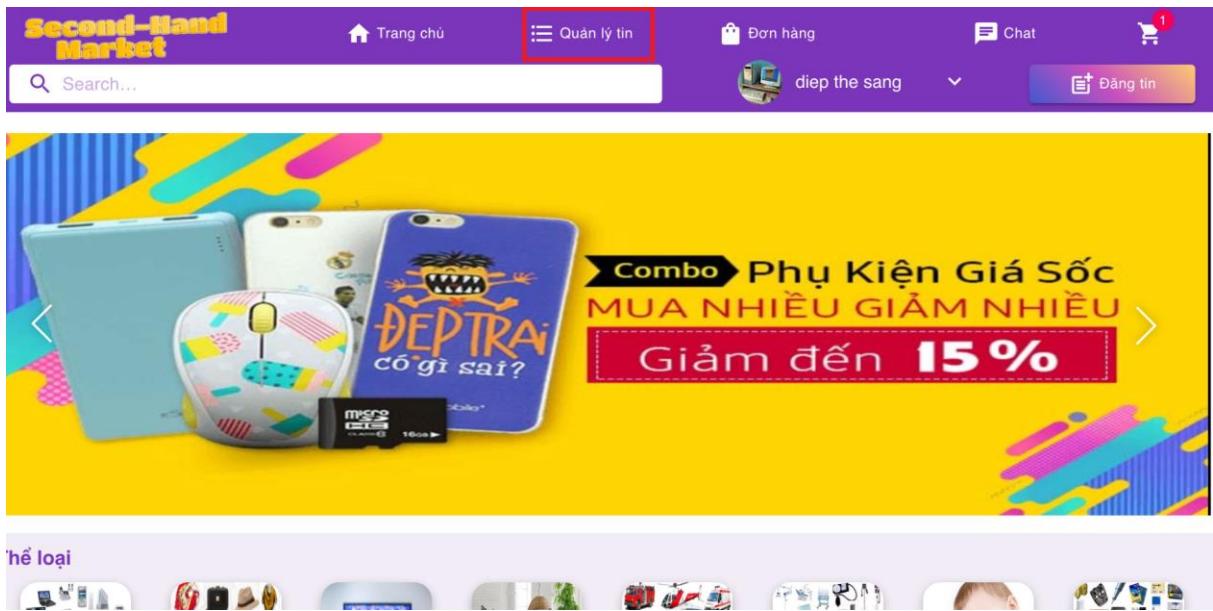


Figure 137: Step 1 in the Manage hide post of Product management for sale

- Step 2: Screen results when switching to message management

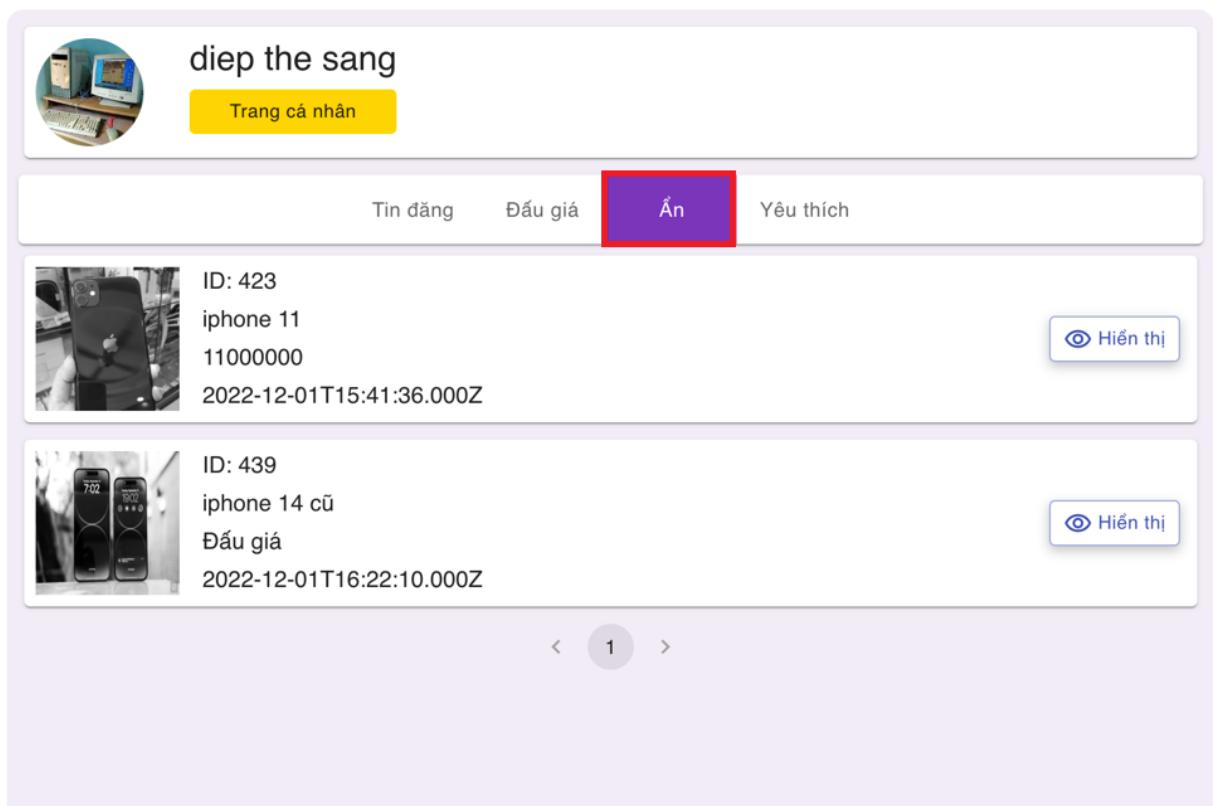
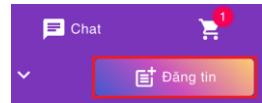


Figure 138: Step 2 in the Manage hide post of Product management for sale

### 3.1.8 Post product to sell

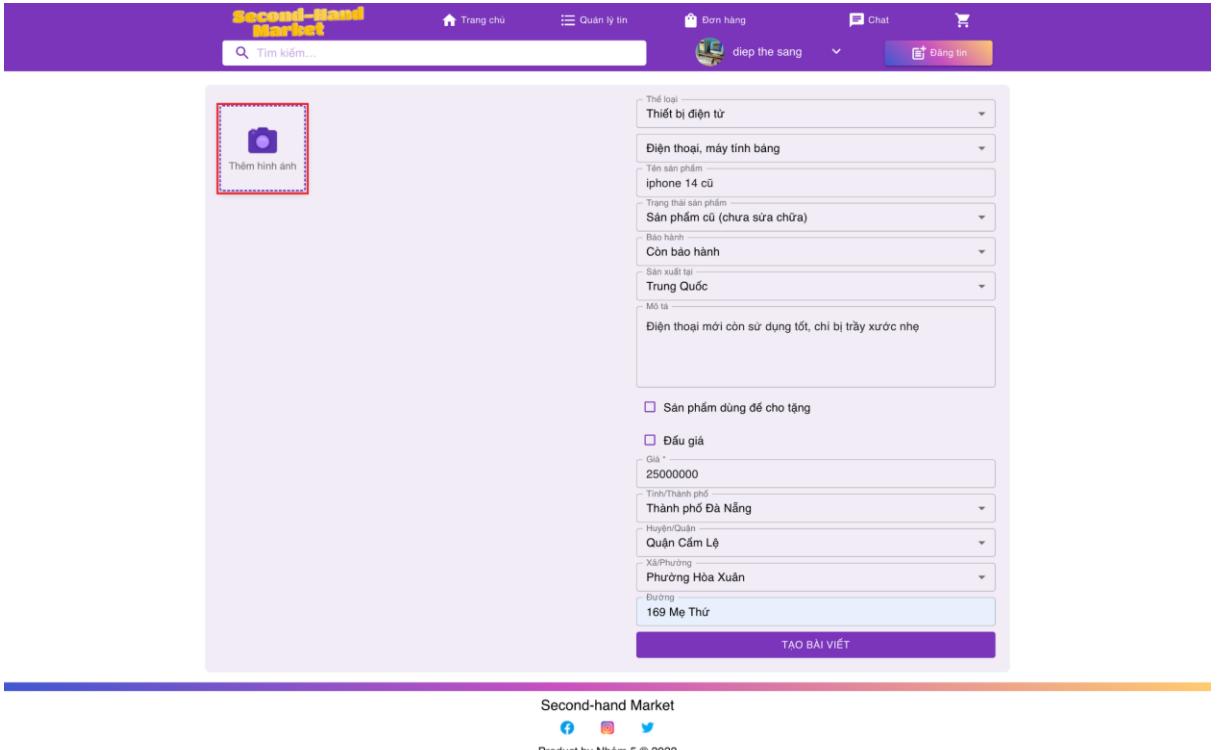


- Step 1: Click "Đăng tin"
- Step 2: Enter all product post information including category, subcategory, product name, product status, warranty, origin, product description, price, and address.

*Note: You can click on "Sản phẩm dùng để cho tặng" if you want to post products priced at 0 VND. You can click on "Đấu giá" if you want to post products to create an auction. Do not select any if you want to post the product as a regular post.*

**Figure 139: Step 2 in the Post product to sell**

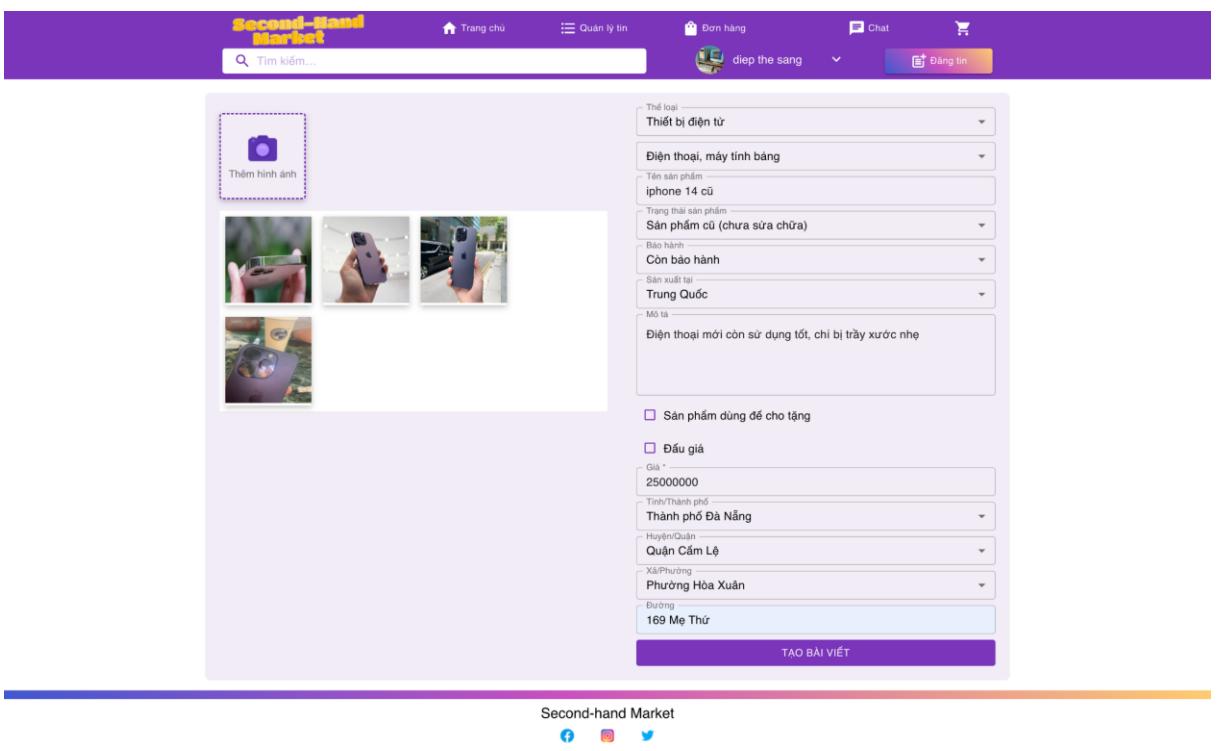
- Step 3: Enter complete product information and click "Thêm Hình Ảnh"



The screenshot shows the product posting interface on the Second-Hand Market website. The top navigation bar includes links for Trang chủ, Quản lý tin, Đơn hàng, Chat, and Đăng tin. A search bar is present. The main form is for posting a second-hand item. The item type is selected as 'Thiết bị điện tử'. The product name is 'Điện thoại, máy tính bảng' and the specific model is 'iphone 14 cũ'. The status is 'Sản phẩm cũ (chưa sửa chữa)'. The location is 'Trung Quốc'. The description is 'Điện thoại mới còn sử dụng tốt, chỉ bị trầy xước nhẹ'. There are checkboxes for 'Sản phẩm dùng để cho tặng' and 'Đầu giá'. The price is listed as '25000000'. The delivery information shows 'Thành phố Đà Nẵng', 'Quận Cẩm Lệ', 'Phường Hòa Xuân', and 'Đường 169 Mệ Thứ'. At the bottom is a purple 'TAO BÀI VIẾT' button.

**Figure 140: Step 3 Post product to sell 1**

After adding the image will show as below



This screenshot shows the same product posting form as Figure 140, but with three images of the iPhone 14 added under the 'Thêm hình ảnh' section. The images show the phone from different angles, including a close-up of the screen and back. The rest of the form fields are identical to Figure 140.

**Figure 141: Step 3 Post product to sell 2**

- Step 4: Click on “Tạo Bài Viết”

Thể loại: Thiết bị điện tử

Điện thoại, máy tính bảng

Tên sản phẩm: iphone 14 cũ

Trạng thái sản phẩm: Sản phẩm cũ (chưa sửa chữa)

Bảo hành: Còn bảo hành

Sản xuất tại: Trung Quốc

Mô tả: Điện thoại mới còn sử dụng tốt, chỉ bị trầy xước nhẹ

Sản phẩm dùng để cho tặng

Đấu giá

Giá: 25000000

Tỉnh/Thành phố: Thành phố Đà Nẵng

Huyện/Quận: Quận Cẩm Lệ

Xã/Phường: Phường Hòa Xuân

Đường: 169 Mệ Thứ

**TẠO BÀI VIẾT**

**Figure 142: Step 4 in the Post product to sell 1**

*After successful creation, the message will be displayed*

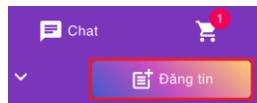


After successful creation will go to the product detail screen

The screenshot shows a product detail page for an iPhone 14. At the top, there's a purple header bar with the website logo "Second-Hand Market". Below the header, the main content area has a large image of a hand holding a purple iPhone 14. To the right of the image, the seller's profile "diep the sang" is shown, featuring a small profile picture, a 5-star rating, and a green button labeled "Nhắn tin với người bán" (Send message). Below the profile, there's a yellow button labeled "MUA" (Buy). The product title "iphone 14 cũ" is displayed, along with its price "25.000.000 đ". A short description follows: "Điện thoại mới còn sử dụng tốt, chỉ bị trầy xước nhẹ". Underneath the description are several filters: "Tình trạng: Sản phẩm cũ (chưa sửa chữa)" (Status: Used product (not repaired)), "Bảo hành: Còn bảo hành" (Warranty: Still valid), "Sản xuất tại: Trung Quốc" (Manufactured in: China), and "Thể loại: Điện thoại, máy tính bảng" (Category: Phone, tablet). The address "169 Mè Thú - Phường Hòa Xuân - Quận Cẩm Lệ - Thành phố Đà Nẵng" is listed. Below the main product details, there's a section titled "Tin đăng khác" (Other ads) which shows thumbnails for various items like cameras, laptops, and phones. At the bottom, there's another section titled "Tin đăng tương tự" (Similar ads) with thumbnails for a MacBook Air 2020 and two iPhone 14 models.

**Figure 143: Step 4 in the Post product to sell 2**

### 3.1.9 Create auction



- Step 1: Click "Đăng tin"
- Step 2: Enter all product post information including category, subcategory, product name, product status, warranty, origin, product description, price, and address.

*Note: You can click on "Sản phẩm dùng để cho tặng" if you want to post products priced at 0 VND. You can click on "Đấu giá" if you want to post products to create an auction. Do not select any if you want to post the product as a regular post.*

The form consists of several input fields and dropdown menus:

- Image upload area: "Thêm hình ảnh" with a camera icon.
- Category: "Thể loại" dropdown.
- Product Name: "Tên sản phẩm" input field.
- Status: "Trạng thái sản phẩm" dropdown.
- Warranty: "Bảo hành" dropdown.
- Origin: "Sản xuất tại" dropdown.
- Description: "Mô tả" text area.
- Checkboxes:
  - Sản phẩm dùng để cho tặng
  - Đấu giá
- Location Fields:
  - "Giá \*": Input field.
  - "Tỉnh/Thành phố": Dropdown.
  - "Huyện/Quận": Dropdown.
  - "Xã/Phường": Dropdown.
  - "Đường": Input field.
- Bottom Button: "TẠO BÀI VIẾT" (Create Post) in a purple button.

**Figure 144: Step 2 in the Create auction 1**

*Enter complete product information (tick on “Đấu Giá”) and click "Thêm Hình Ảnh"*

The screenshot shows the second step of creating an auction on the Second-hand Market website. The interface is in Vietnamese.

**Product Information:**

- Thể loại: Thiết bị điện tử
- Tên sản phẩm: iPhone 14 cũ
- Trạng thái sản phẩm: Sản phẩm cũ (chưa sửa chữa)
- Bảo hành: Còn bảo hành
- Sản xuất tại: Trung Quốc
- Mô tả: Điện thoại mới còn sử dụng tốt, chỉ bị trầy xước nhẹ

**Auction Details:**

- Sản phẩm dùng để cho tặng
- Đấu giá

Thời gian kết thúc đấu giá: 12/04/2022 09:30 PM

**Address:**

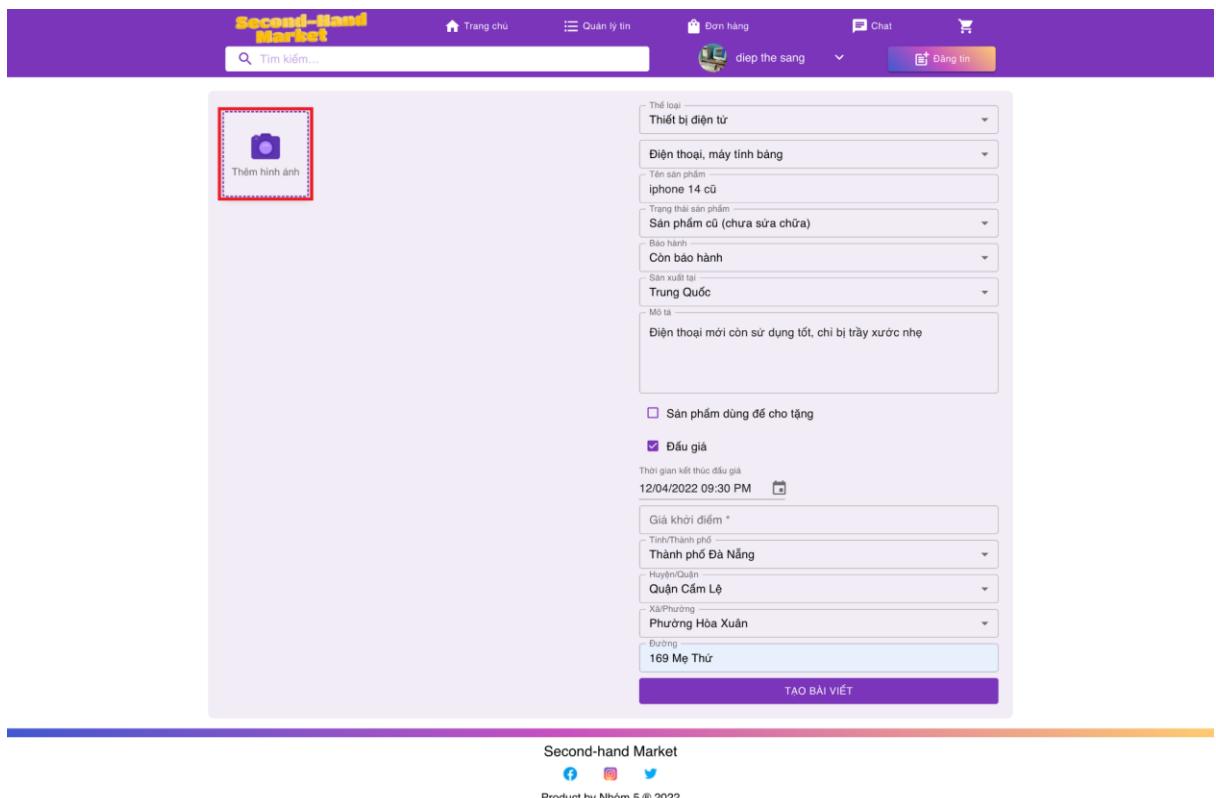
- Giá khởi điểm \*
- Tỉnh/Thành phố: Thành phố Đà Nẵng
- Huyện/Quận: Quận Cẩm Lệ
- Xã/Phường: Phường Hòa Xuân
- Đường: 169 Mẹ Thủ

**Buttons:**

- TAO BÀI VIẾT (Create Post)

**Figure 145: Step 2 in the Create auction 2**

- Step 3: More detailed pictures



The screenshot shows the 'Second-Hand Market' website's auction creation form. At the top, there's a purple header bar with links for 'Trang chủ', 'Quản lý tin', 'Đơn hàng', 'Chat', and 'Đăng tin'. Below the header is a search bar with placeholder text 'Tim kiếm...'. The main form area has a light gray background.

**Step 3: More detailed pictures**

**Product Information:**

- Thể loại: Thiết bị điện tử
- Điện thoại, máy tính bảng
- Tên sản phẩm: iphone 14 cũ
- Trạng thái sản phẩm: Sản phẩm cũ (chưa sửa chữa)
- Bảo hành: Còn bảo hành
- Sản xuất tại: Trung Quốc
- Mô tả: Điện thoại mới còn sử dụng tốt, chỉ bị trầy xước nhẹ

**Checkboxes:**

- Sản phẩm dùng để cho tặng
- Đầu giá

**Date and Time:** Thời gian kết thúc đấu giá: 12/04/2022 09:30 PM

**Address:**

- Giá khởi điểm \*
- Tỉnh/Thành phố: Thành phố Đà Nẵng
- Huyện/Huyện: Quận Cẩm Lệ
- Xã/Phường: Phường Hòa Xuân
- Đường: 169 Mè Thú

**Buttons:**

- TAO BÀI VIẾT (Create Post)

**Figure 146: Step 3 in the Create auction 1**

After uploading the image will appear as follows

The screenshot shows the 'Second-hand Market' website's auction creation page. At the top, there is a purple header bar with the site's logo and navigation links: Trang chủ, Quản lý tin, Đơn hàng, Chat, and Đăng tin. Below the header is a search bar with placeholder text 'Tìm kiếm...'. The main form area has several sections:

- Thể loại:** Thiết bị điện tử
- Điện thoại, máy tính bảng:** iPhone 14 cũ
- Tên sản phẩm:** iPhone 14 cũ
- Trạng thái sản phẩm:** Sản phẩm cũ (chưa sửa chữa)
- Bảo hành:** Còn bảo hành
- Bản xuất xứ:** Trung Quốc
- Mô tả:** Điện thoại mới còn sử dụng tốt, chỉ bị trầy xước nhẹ
- Sản phẩm dùng để cho tặng
- Đầu giá
- Thời gian kết thúc đấu giá:** 12/04/2022 09:30 PM
- Giá khởi điểm:** 25000000
- Tỉnh/Thành phố:** Thành phố Đà Nẵng
- Huyện/Huyện:** Quận Cẩm Lệ
- Xã/Phường:** Phường Hòa Xuân
- Đường:** 169 Mệ Thứ

At the bottom right of the form is a large purple button labeled 'TAO BÀI VIẾT'.

Figure 147: Step 3 in the Create auction 2

- Step 4: Click on “Tạo Bài Viết”

The screenshot shows a mobile application interface for creating an auction. On the left, there's a camera icon with a dashed border and the text "Thêm hình ảnh". Below it are four small images of a purple iPhone 14. To the right is a detailed product listing form:

- Thể loại:** Thiết bị điện tử
- Điện thoại, máy tính bảng:** iPhone 14 cũ
- Tên sản phẩm:** iPhone 14 cũ
- Trạng thái sản phẩm:** Sản phẩm cũ (chưa sửa chữa)
- Bảo hành:** Còn bảo hành
- Sản xuất tại:** Trung Quốc
- Mô tả:** Điện thoại mới còn sử dụng tốt, chỉ bị trầy xước nhẹ
- Sản phẩm dùng để cho tặng
- Đấu giá
- Thời gian kết thúc đấu giá:** 12/04/2022 09:30 PM
- Giá khởi điểm:** 25000000
- Tỉnh/Thành phố:** Thành phố Đà Nẵng
- Huyện/Quận:** Quận Cẩm Lệ
- Xã/Phường:** Phường Hòa Xuân
- Đường:** 169 Mẹ Thứ

A red box highlights the blue button at the bottom labeled "TẠO BÀI VIẾT".

**Figure 148: Step 4 in the Create auction 1**

After successful creation, the message will be displayed



*After successful creation will go to the product detail screen*

The screenshot shows a product detail page for an iPhone 14. At the top, there's a purple header bar with the website's logo and navigation links: Trang chủ, Quản lý tin, Đơn hàng, Chat, and Đăng tin. A search bar is also present. Below the header, the main content area features a large image of the iPhone 14's camera module and a yellow coffee cup. The product title is "iphone 14 cũ". To the right of the image, there's a user profile for "diep the sang" with a 5-star rating, 1133111139 reviews, and a green "ĐẦU GIÁ" button. Below the profile, there's a section for "Giá khởi điểm: 25.000.000 đ". The main product description includes the following details:

- Đầu giá**
- Điện thoại mới còn sử dụng tốt, chỉ bị trầy xước nhẹ
- Tình trạng: Sản phẩm cũ (chưa sửa chữa)
- Bảo hành: Còn bảo hành
- Sản xuất tại: Trung Quốc
- Thể loại: Điện thoại, máy tính bảng

The address listed is 169 Mẹ Thứ - Phường Hòa Xuân - Quận Cẩm Lệ - Thành phố Đà Nẵng.

**Tin đăng khác**

Bộ bàn ghế gamming 2.000.000 đ 23 Giờ Trước · Thành phố Đà Nẵng	Lều cắm trại 40.000 đ 23 Giờ Trước · Thành phố Đà Nẵng	Sách đặc nhân tâm 40.000 đ 23 Giờ Trước · Thành phố Đà Nẵng	Bàn phím cơ ek387 500.000 đ 23 Giờ Trước · Thành phố Đà Nẵng	Card đồ họa 4.500.000 đ 23 Giờ Trước · Thành phố Đà Nẵng	macbook air 2020 15.000.000 đ 23 Giờ Trước · Thành phố Đà Nẵng
---	--	---	--	--	--

**Tin đăng tương tự**

macbook air 2020 15.000.000 đ 23 Giờ Trước · Thành phố Đà Nẵng	iphone 14 trả bảo hành Đầu giá 23 Giờ Trước · Thành phố Đà Nẵng	iphone 14 cũ 25.000.000 đ 23 Giờ Trước · Thành phố Đà Nẵng	iphone 14 cũ Đầu giá 23 Giờ Trước · Thành phố Đà Nẵng
--	---	--	---

At the bottom of the page, there's a footer with the text "Second-hand Market", social media icons for Facebook, Instagram, and Twitter, and the text "Product by Nhóm 5 © 2022".

**Figure 149: Step 4 in the Create auction 2**

### 3.1.10 Manage auction product

- Step 1: Click on “Quản Lý Tin” on header

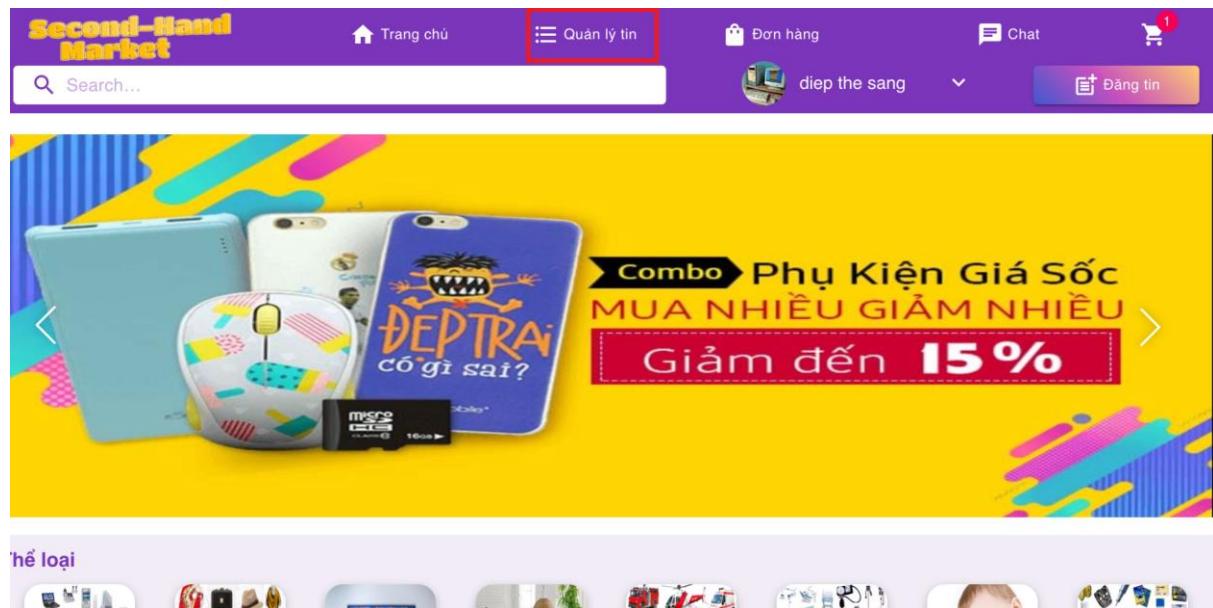


Figure 150: Step 1 in the Manage auction product

- Step 2: Screen results when switching to posting management. Click "Đấu giá" to view and manage auction posts.

ID	Product Description	Status	Action Buttons
440	laptop dell cũ Đấu giá	2022-12-01T16:23:55.000Z	
441	đồng hồ apple watch seri 3 Đấu giá	2022-12-01T16:25:23.000Z	
442	lan đột biến 5 cánh trắng Đấu giá	2022-12-01T16:27:47.000Z	
443	giày nike chính hãng Đấu giá	2022-12-01T16:29:32.000Z	
445	laptop dell Đấu giá	2022-12-02T07:33:51.000Z	

< 1 2 3 >

**Figure 151: Step 2 in the Manage auction product**

- Step 3: At the auction management screen, users can perform the functions of product management for sale such as editing posts, hiding posts, and deleting posts.
- + This is the auction post editing function. Click "Sửa" to use the post editing function

The screenshot shows a web-based auction management system. At the top, there's a user profile picture and the name "diep the sang". Below the profile is a yellow button labeled "Trang cá nhân". The main area has a light blue header with tabs: "Tin đăng" (listing), "Đấu giá" (bid), "Ẩn" (hidden), and "Yêu thích" (favorites). The "Đấu giá" tab is currently selected and highlighted in purple.

The main content area displays four auction items:

- Item 1:** ID: 440, laptop dell cu. Status: Đấu giá. Date: 2022-12-01T16:23:55.000Z. Actions: Sửa (highlighted with a red box), Ẩn, Xoá.
- Item 2:** ID: 441, đồng hồ apple watch seri 3. Status: Đấu giá. Date: 2022-12-01T16:25:23.000Z. Actions: Sửa, Ẩn, Xoá.
- Item 3:** ID: 442, lan đột biến 5 cánh trắng. Status: Đấu giá. Date: 2022-12-01T16:27:47.000Z. Actions: Sửa, Ẩn, Xoá.
- Item 4:** ID: 443, giày nike chính hãng. Status: Đấu giá. Date: 2022-12-01T16:29:32.000Z. Actions: Sửa, Ẩn, Xoá.

At the bottom of the list, there are navigation arrows: <, 1, and >.

**Figure 152: Step 3 in the Manage auction product 1**

*Enter the edit information to update the auction post.*

The screenshot shows a user interface for managing a product listing. On the left, there is a placeholder for an image with a camera icon and the text "Thêm hình ảnh". To the right, there are several input fields:

- Thể loại: Thiết bị điện tử
- Điện thoại, máy tính bảng
- Tên sản phẩm: iphone 14 cũ
- Trạng thái sản phẩm: Sản phẩm cũ (chưa sửa chữa)
- Bảo hành: Còn bảo hành
- Sản xuất tại: Trung Quốc
- Mô tả: Điện thoại mới còn sử dụng tốt, chỉ bị trầy xước nhẹ

Below the description, there are two checkboxes:

- Sản phẩm dùng để cho tặng
- Đấu giá

Under the "Đấu giá" checkbox, there are more fields:

- Giá \*: 25000000
- Tỉnh/Thành phố: Thành phố Đà Nẵng
- Huyện/Quận: Quận Cẩm Lệ
- Xã/Phường: Phường Hòa Xuân
- Đường: 169 Mẹ Thứ

At the bottom right is a purple button labeled "TAO BÀI VIẾT".

**Figure 153: Step 3 in the Manage auction product 2**

- + This is an arbitrary auction post-hiding function. Users can click the "Ẩn" button at the auction post management screen. And can unhide to show the auction post again when clicking the "Hiển thị" button on the hidden post management screen.

	ID: 440 laptop dell cu <b>Đấu giá</b> 2022-12-01T16:23:55.000Z	<b>Sửa</b>	<b>Ẩn</b>	Xoá
	ID: 441 đồng hồ apple watch seri 3 <b>Đấu giá</b> 2022-12-01T16:25:23.000Z	<b>Sửa</b>	<b>Ẩn</b>	Xoá
	ID: 442 lan đột biến 5 cánh trắng <b>Đấu giá</b> 2022-12-01T16:27:47.000Z	<b>Sửa</b>	<b>Ẩn</b>	Xoá
	ID: 443 giày nike chính hãng <b>Đấu giá</b> 2022-12-01T16:29:32.000Z	<b>Sửa</b>	<b>Ẩn</b>	Xoá

**Figure 154: Step 3 in the Manage auction product 3**

diep the sang

Trang cá nhân

Tin đăng Đấu giá Ẩn Yêu thích

ID: 423  
iphone 11  
11000000  
2022-11-01T15:41:36.000Z Hiển thị

ID: 424  
macbook air 2020  
13000000  
2022-12-01T15:49:33.000Z Hiển thị

ID: 439  
iphone 14 cũ  
Đấu giá  
2022-12-01T16:22:10.000Z Hiển thị

**Figure 155: Step 3 in the Manage auction product 4**

+ This is the function to delete the auction post. Click "Xóa" to use the post deleting function .

ID	Item Name	Status	Creation Date	Action
440	laptop dell cũ	Đấu giá	2022-12-01T16:23:55.000Z	Sửa Ăn Xóa
441	đồng hồ apple watch seri 3	Đấu giá	2022-12-01T16:25:23.000Z	Sửa Ăn Xóa
442	lan đột biến 5 cánh trắng	Đấu giá	2022-12-01T16:27:47.000Z	Sửa Ăn Xóa
443	giày nike chính hãng	Đấu giá	2022-12-01T16:29:32.000Z	Sửa Ăn Xóa

Figure 156: Step 3 in the Manage auction product 5

Click on “có” to yes. Click on “Không” to reject

The screenshot shows a list of auction items on a mobile application. The items are listed vertically with their details: ID, name, price, and timestamp. Each item has a 'Sửa' (Edit), 'Ẩn' (Hide), and 'Xoá' (Delete) button at the bottom right.

- ID: 424  
macbook air 2020  
13000000  
2022-12-01T15:49:33.000Z
- ID: 426  
macbook air 2020  
15000000  
2022-12-01T15:49:33.000Z
- ID: 428  
card đồ họa  
4500000  
2022-12-01T15:54:34.000Z
- ID: 429  
Bàn phím cơ ek387  
500000  
2022-12-01T15:56:01.000Z
- ID: 431  
sách đắc nhân tâm  
40000  
2022-12-01T15:58:00.000Z

A modal dialog box is overlaid on the screen, centered over the second item. It contains the message "Bạn có chắc muốn xoá bài viết này!" (Are you sure you want to delete this post?) and two buttons: "Có" (Yes) and "Không" (No).

**Figure 157: Step 3 in the Manage auction product 6**

### 3.1.11 Schedule product auction

- Step 1: Click on a product that says “đang đấu giá”

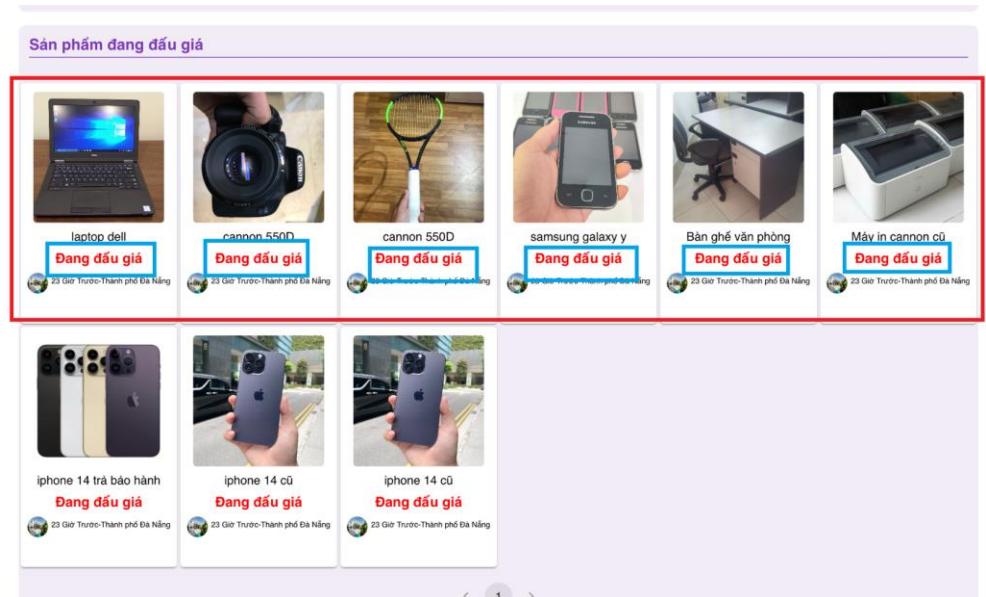


Figure 158: Step 1 in the Schedule product auction

- Step 2: After clicking on the auction will appear as below

The screenshot shows a product listing for an iPhone 14 cũ (used). The listing includes:

- Image:** A close-up photo of the iPhone 14's camera module.
- Title:** iphone 14 cũ
- Description:** Điện thoại mới còn sử dụng tốt, chỉ bị trầy xước nhẹ.
- Condition:** Sản phẩm cũ (chưa sửa chữa)
- Warranty:** Bảo hành: Còn bảo hành
- Origin:** Sản xuất tại: Trung Quốc
- Type:** Thẻ loại: Điện thoại, máy tính bảng
- Address:** 169 Mẹ Thứ - Phường Hòa Xuân - Quận Cẩm Lệ - Thành phố Đà Nẵng
- Bidding:** Giá khởi điểm: 25.000.000 đ. Tối đa: Số tiền bạn trả phải trên: 25000000 đ. ĐẦU GIÁ
- Seller Information:** diep the sang (Rating: ★★★★☆, 1133111139, 0 Ngày- 0 Giờ- 17 Phút- 34 Giây)

**Tin đăng khác**

Bộ bàn ghế gaming 2.000.000 đ 23 Giờ Trước · Thành phố Đà Nẵng	Lều cắm trại 40.000 đ 23 Giờ Trước · Thành phố Đà Nẵng	Sách đặc nhân tâm 40.000 đ 23 Giờ Trước · Thành phố Đà Nẵng	Bàn phím cơ ek387 500.000 đ 23 Giờ Trước · Thành phố Đà Nẵng	Card đồ họa 4.500.000 đ 23 Giờ Trước · Thành phố Đà Nẵng	macbook air 2020 15.000.000 đ 23 Giờ Trước · Thành phố Đà Nẵng
--	--	---	--	--	--

**Tin đăng tương tự**

macbook air 2020 15.000.000 đ 23 Giờ Trước · Thành phố Đà Nẵng	iphone 14 trả bảo hành Đầu giá 23 Giờ Trước · Thành phố Đà Nẵng	iphone 14 cũ 25.000.000 đ 23 Giờ Trước · Thành phố Đà Nẵng	iphone 14 cũ Đầu giá 23 Giờ Trước · Thành phố Đà Nẵng
--	---	--	---

Second-hand Market

Figure 159: Step 2 in the Schedule product auction

- Step 3: Enter the amount in the "Tôi trả" textfield



**iphone 14 cũ**

**Đấu giá**

Điện thoại mới còn sử dụng tốt, chỉ bị trầy xước nhẹ

Tình trạng: Sản phẩm cũ (chưa sửa chữa)     Bảo hành: Còn bảo hành  
 Sản xuất tại: Trung Quốc     Thể loại: Điện thoại, máy tính bảng

169 Mệ Thứ - Phường Hòa Xuân - Quận Cẩm Lệ - Thành phố Đà Nẵng


**diep the sang**  
[Xem trang](#)

★★★★★

1133111139

Nhắn tin với người bán

0 Ngày- 0 Giờ- 17 Phút- 34 Giây

Giá khởi điểm: 25.000.000 đ

Tôi trả  
Số tiền bạn trả phải trên: 25000000 đ

ĐẤU GIÁ

#### Tin đăng khác



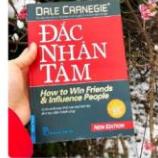
Bàn ghế gamming  
**2.000.000 đ**

23 Giờ Trước · Thành phố Đà Nẵng



Lều cắm trại  
**40.000 đ**

23 Giờ Trước · Thành phố Đà Nẵng



sách đặc nhân tâm  
**40.000 đ**

23 Giờ Trước · Thành phố Đà Nẵng



Bàn phím cơ ek387  
**500.000 đ**

23 Giờ Trước · Thành phố Đà Nẵng



card đồ họa  
**4.500.000 đ**

23 Giờ Trước · Thành phố Đà Nẵng



macbook air 2020  
**15.000.000 đ**

23 Giờ Trước · Thành phố Đà Nẵng

**Figure 160: Step 3 in the Schedule product auction 1**

*After entering, the amount of bidders will be displayed*

The screenshot shows a product listing for an iPhone 14. The main image displays the back of the phone, which is dark blue or black, held by a person's hand. The background shows a street scene with a car and buildings. A timestamp '1 giờ trước' (1 hour ago) is visible at the bottom right of the image.

**iphone 14 cũ**

**Đấu giá**

Điện thoại mới còn sử dụng tốt, chỉ bị trầy xước nhẹ

Tình trạng: Sản phẩm cũ (chưa sửa chữa)

Bảo hành: Còn bảo hành

Sân xuất tại: Trung Quốc

Thể loại: Điện thoại, máy tính bảng

Địa chỉ: 169 Mê Thứ - Phường Hòa Xuân - Quận Cẩm Lệ - Thành phố Đà Nẵng

diep the sang  
Xem trang

5 ★★★★★

1133111139

Nhắn tin với người bán

0 Ngày - 0 Giờ - 4 Phút - 42 Giây

Giá khởi điểm: 25.000.000 đ

Tôi trả —  
28000000

Số tiền bạn trả phải trên: 25000000 đ

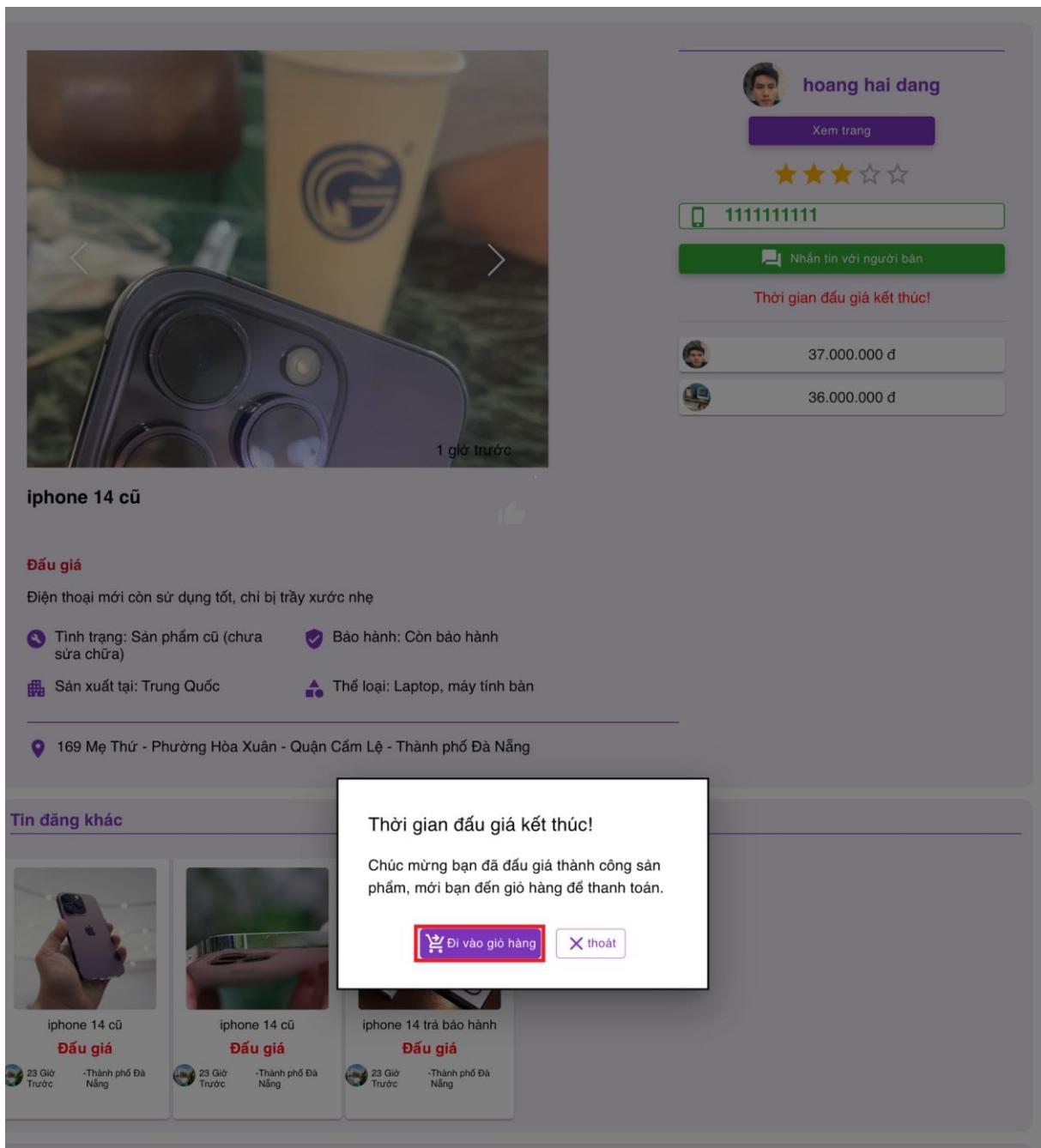
Bạn đã ra giá: 28.000.000 đ

**ĐẤU GIÁ**

	30.000.000 đ
	28.000.000 đ

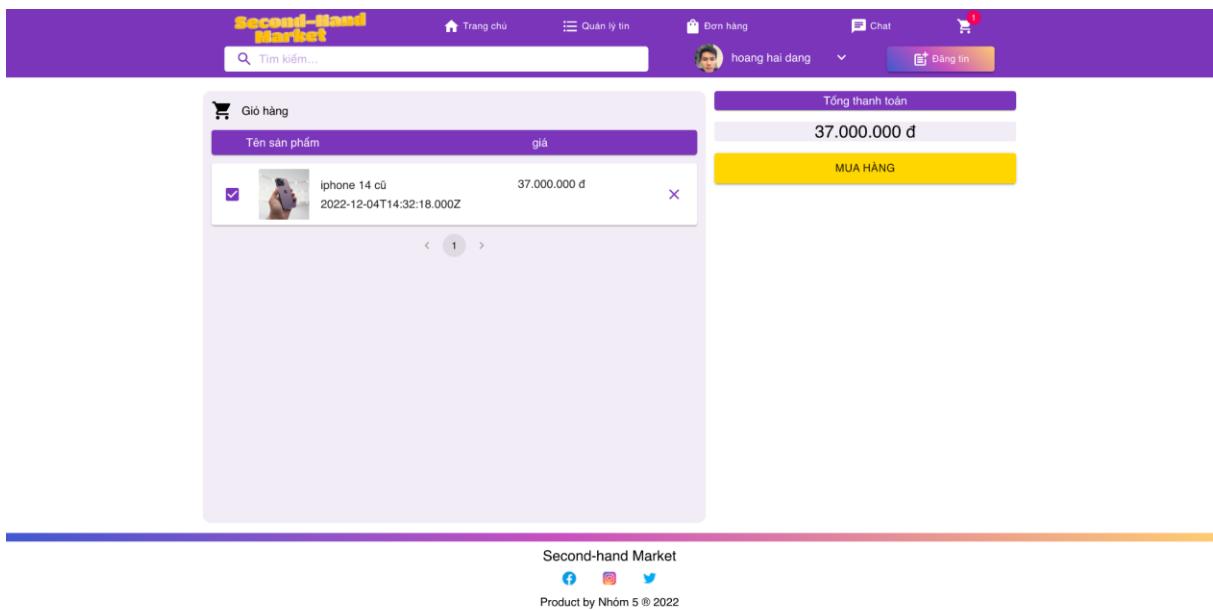
**Figure 161: Step 3 in the Schedule product auction 2**

*When you bid the highest, you will become the winner and will show the popup like below*



**Figure 162: Step 3 in the Schedule product auction 3**

*Click on "đi đến giỏ hàng" to pay product*



**Figure 163: Step 3 in the Schedule product auction 4**

### 3.1.12 View other user's account

- When clicking on another user's avatar. Users can view his/her personal information.

The screenshot shows a user profile page for 'diep the sang'. The profile picture is a small image of a computer setup. The user has a rating of 4 stars. Below the profile information, there is a section titled 'Tin đang đăng' (Posts being published) which lists six recent items:

- giày nike chính hãng
- Đầu giá
- 2022-12-01T16:29:32.000Z

- lan đột biến 5 cánh trắng
- Đầu giá
- 2022-12-01T16:27:47.000Z

- dong hồ apple watch seri 3
- Đầu giá
- 2022-12-01T16:25:23.000Z

- laptop dell cũ
- Đầu giá
- 2022-12-01T16:23:55.000Z

- test bid
- 6200000
- 2022-12-01T16:15:09.000Z

- loa bluetooth
- 8000000
- 2022-12-01T16:13:03.000Z

At the bottom of the page, there is a navigation bar with icons for social media (Facebook, Instagram, Twitter) and a copyright notice: 'Product by Nhóm 5 © 2022'.

**Figure 164: View other user's account**

*Figure 3.2.12.2 other user's profile Screen*

### 3.1.13 Manage order

- Step 1: Click on “Đơn hàng” on header

The screenshot shows the homepage of the "Second-Hand Market" website. At the top, there is a purple header bar with the site's name "Second-Hand Market". Below it is a search bar with the placeholder "Search...". On the right side of the header, there are several buttons: "Trang chủ" (Home), "Quản lý tin" (Manage news), "Đơn hàng" (Order) which is highlighted with a red border, "Chat", and a shopping cart icon with a "1" notification. Below the header, there is a large yellow banner featuring a collection of electronic devices like phones and a mouse, along with a cartoon character. The banner includes promotional text: "Combo Phụ Kiện Giá Sốc" (Super discount accessories), "MUA NHIỀU GIẢM NHIỀU" (Buy more, get more), and "Giảm đến 15%" (Up to 15% off). Below the banner, there is a section titled "Thể loại" (Categories) with eight categories listed: Thiết bị điện tử, Thời trang đồ dùng cá nhân, Giải trí, thể thao, sở thích, Đồ gia dụng, nội thất, cây cảnh, Phương tiện vẫn chuyển ô tô, xe máy, Trang thiết bị y tế, Mẹ và bé, and Đồ dùng văn phòng.

Figure 165: Step 1 in the Manage order

- Step 2: After clicking on "Đơn" will display dropdown as below. Click on "Đơn Mua"

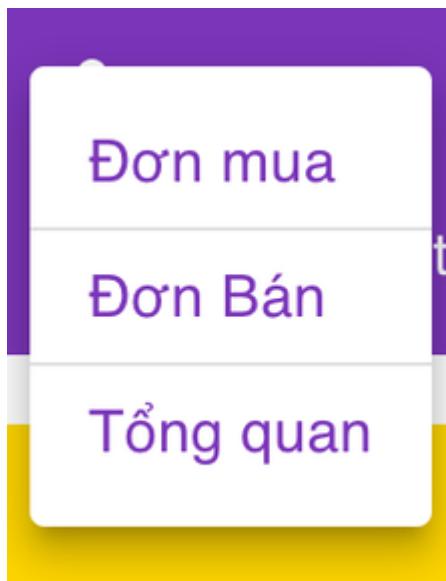


Figure 166: Step 2 in the Manage order

- Step 3: After clicking on "Đơn mua" you can see the pending application for confirmation

The screenshot shows a user interface for managing orders. At the top, there is a purple header bar with the website's logo and navigation links: Trang chủ, Quản lý tin, Đơn hàng, Chat, and Đăng tin. A shopping cart icon with a red notification is also present. Below the header is a search bar with placeholder text "Tìm kiếm...". The main content area has a light gray background and displays a table of purchase applications. The table has columns: Chờ xác nhận, Đang xử lý, Đang giao, Đã giao, and Hoàn tiền/dã hủy. The rows show details for a product listed by "hoang hai dang": Bô bàn ghế gamming, quantity 2000000, status Chờ xác nhận, and a button labeled "Xác nhận". Below the table, there is a footer section with the website name "Second-hand Market" and social media links for Facebook, Instagram, and Twitter. It also includes a copyright notice: "Product by Nhóm 5 ® 2022".

**Figure 167: Step 3 in the Manage order**

- Step 4: Click on "Đang xử lý" to view pending orders from the seller

The screenshot shows a list of pending orders from sellers. The top part of the page is identical to Figure 167, featuring the purple header bar, search bar, and footer. The main content area displays a table of pending orders. The table has columns: Sản phẩm, Tổng đơn hàng, Trạng thái, Vận chuyển, and a button labeled "Chuẩn bị hàng". The rows show products listed by different sellers: "diep the sang" (loa bluetooth, 8000000, Đang đóng gói), "diep the sang" (dàn guitar acoustic, 900000, Đang đóng gói), "diep the sang" (macbook air 2020, 15000000, Đang đóng gói), "diep the sang" (dàn guitar acoustic, 900000, Đang đóng gói), "diep the sang" (macbook air 2020, 15000000, Đang đóng gói), "diep the sang" (giày nike air, 6200000, Đang đóng gói), "diep the sang" (loa bluetooth, 8000000, Đang đóng gói), and "hoang hai dang" (Bô bàn ghế gamming, 2000000, Đang đóng gói). Each row includes a small thumbnail image of the product.

**Figure 168: Step 4 in the Manage order**

### 3.1.15 Buy product

- Step 1: On the main page, click on any product

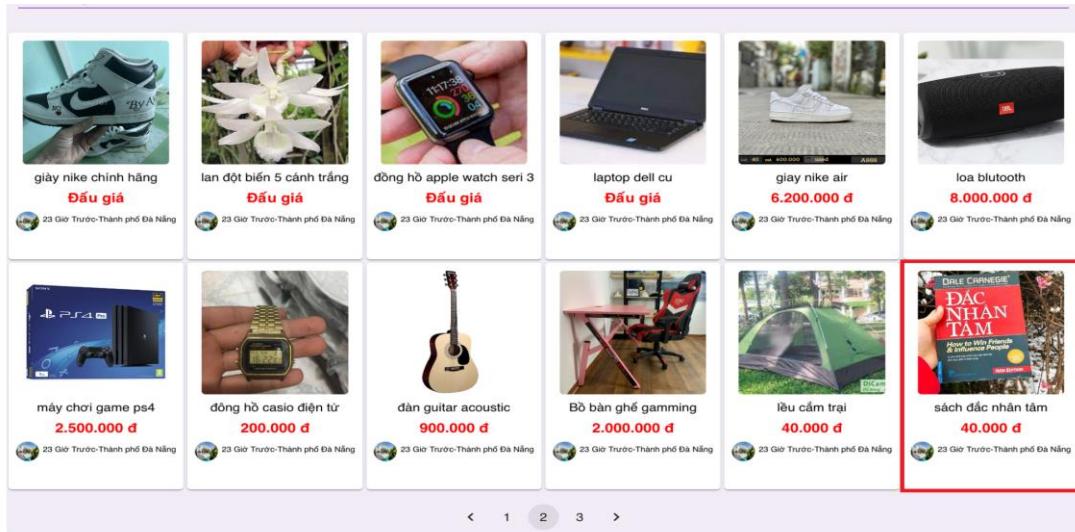


Figure 169: Step 1 in the Buy product

- Step 2: When you click on any product, you will go to the product detail screen, click on "Mua"

Second-hand Market

Trang chủ Quản lý tin Đơn hàng Chat diep the sang Đăng tin

Tìm kiếm...

ĐẮC NHÂN TÂM

How to Win Friends & Influence People

40.000 đ

hang moi chat luong cao

Tình trạng: Sản phẩm cũ (đã sửa chữa)

Sản xuất tại: Hoa Kỳ

Bảo hành: Hết bảo hành

Thể loại: Nước hoa

169 Mẹ Thủ - Phường Hòa Hiệp Bắc - Quận Liên Chiểu - Thành phố Đà Nẵng

cannon 550D

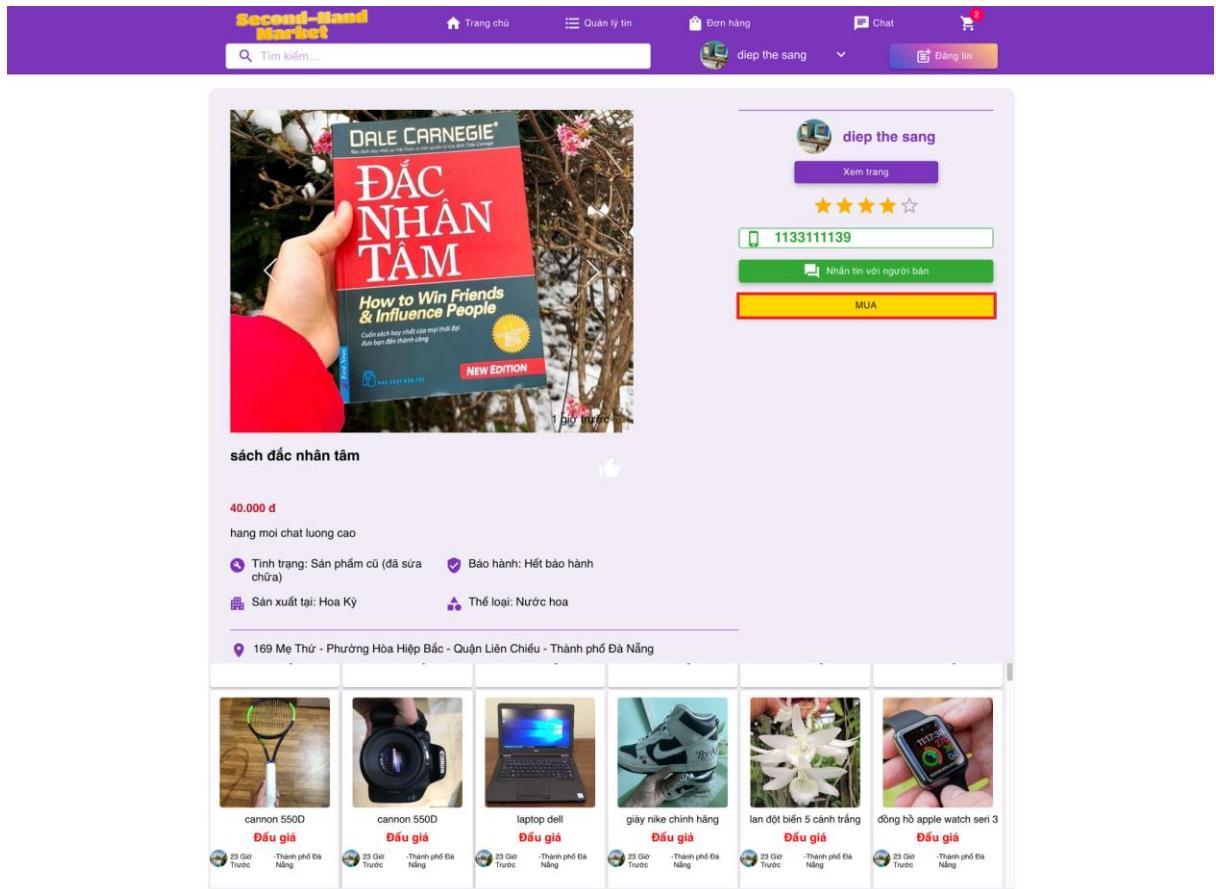
laptop dell

giày nike chính hãng

lan đột biến 5 cánh trắng

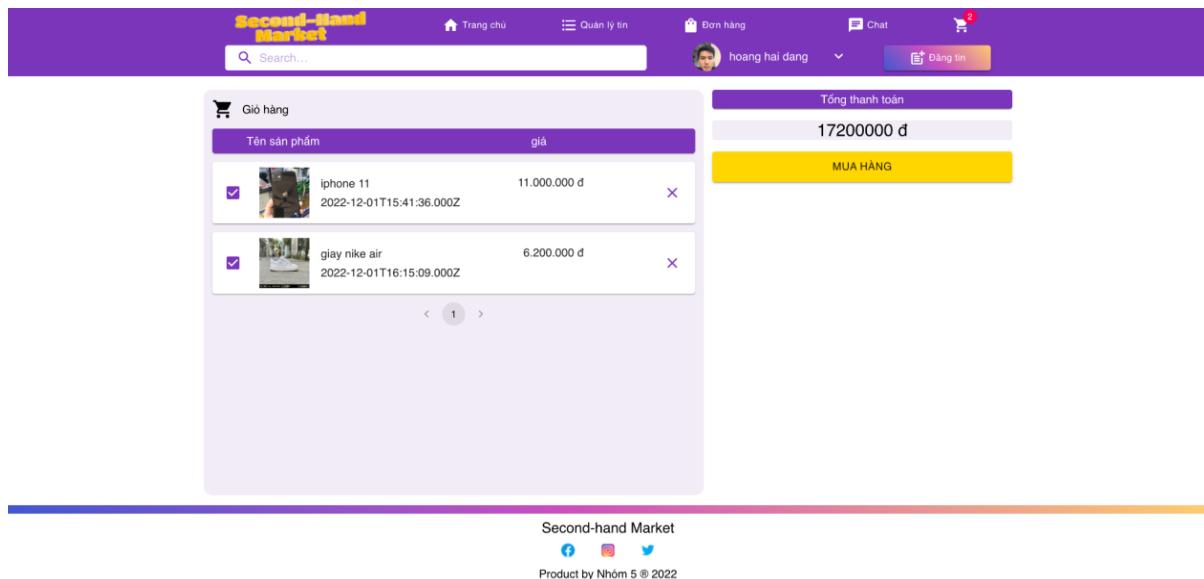
đồng hồ apple watch seri 3

- Step 3: Click on "Mua" to add product to cart



**Figure 170: Step 3 in the Buy product**

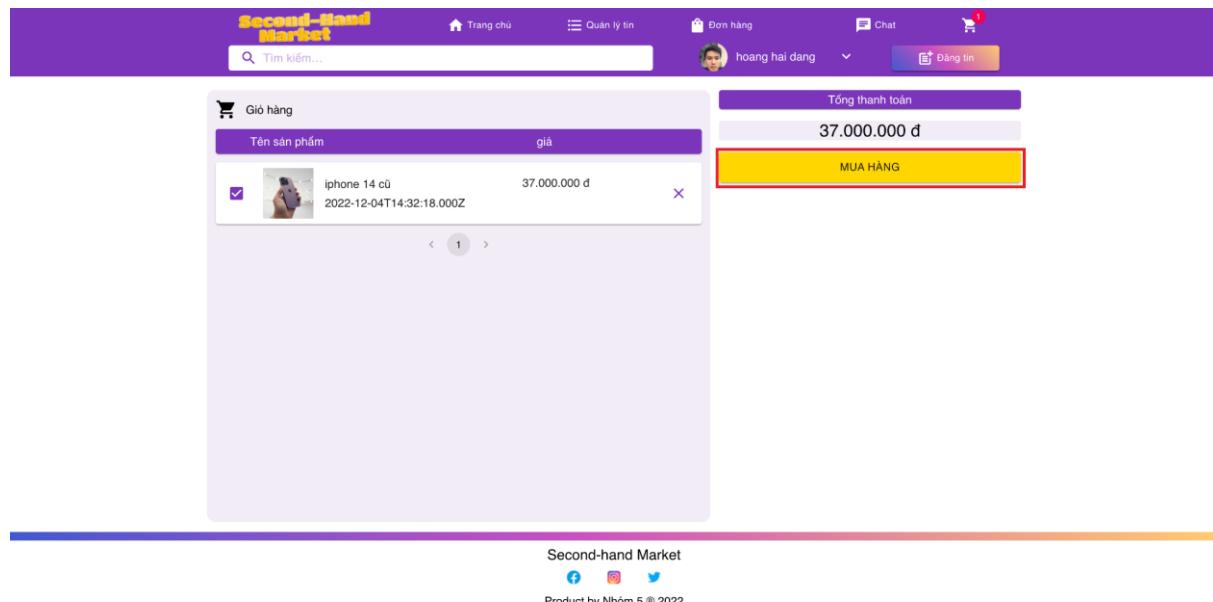
- Step 4: After clicking "buy" the product will be added to the cart as shown below



**Figure 171: Step 4 in the Buy product**

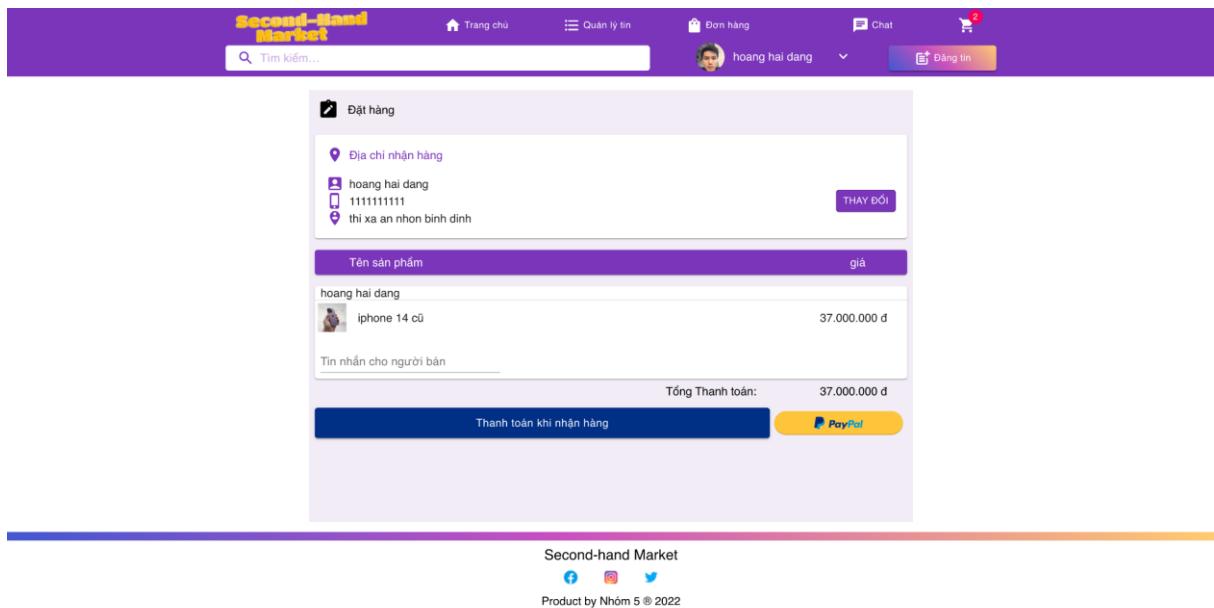
### 3.1.16 Payment

- Step 1: From the shopping cart screen, click on "Purchase" to pay



**Figure 172: Step 1 in the Payment**

- Step 2: After clicking "buy" will go to the payment screen



**Figure 173: Step 2 in the Payment**

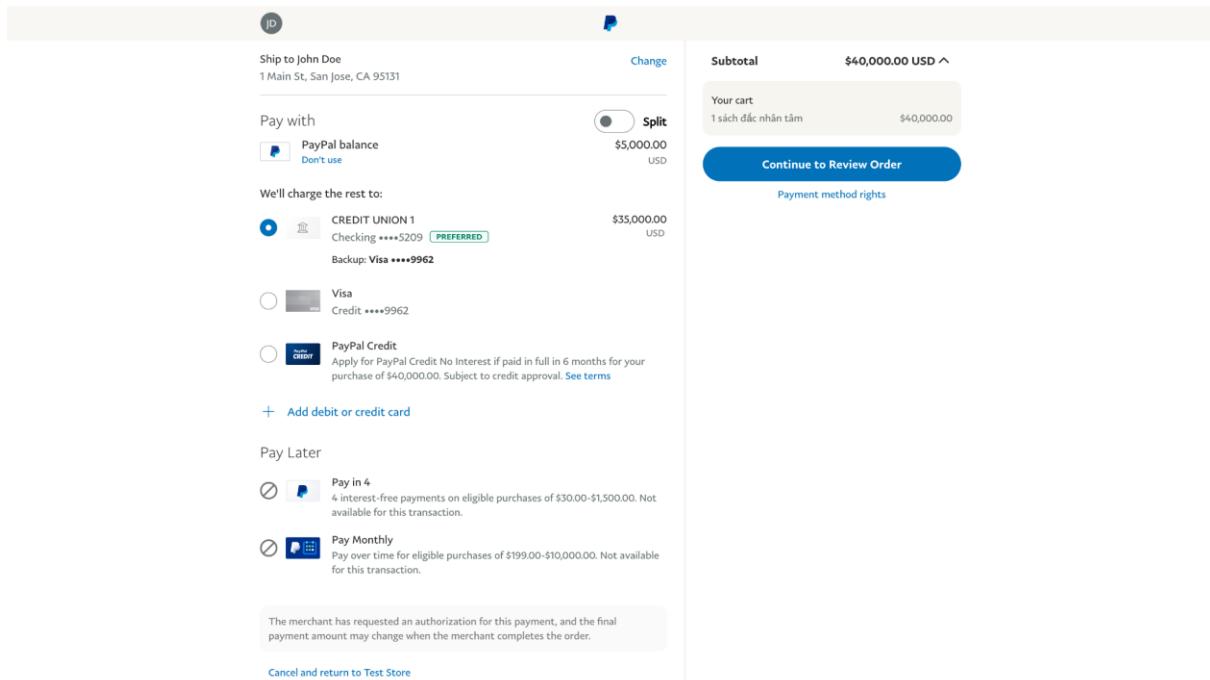
- Step 3: Click on “Thanh toán khi nhận hàng” for shipping COD

Thanh toán khi nhận hàng

- Step 4: Click on “Paypal” to Online payment

PayPal

- Step 5: After clicking on "paypal" will display the paypal screen below

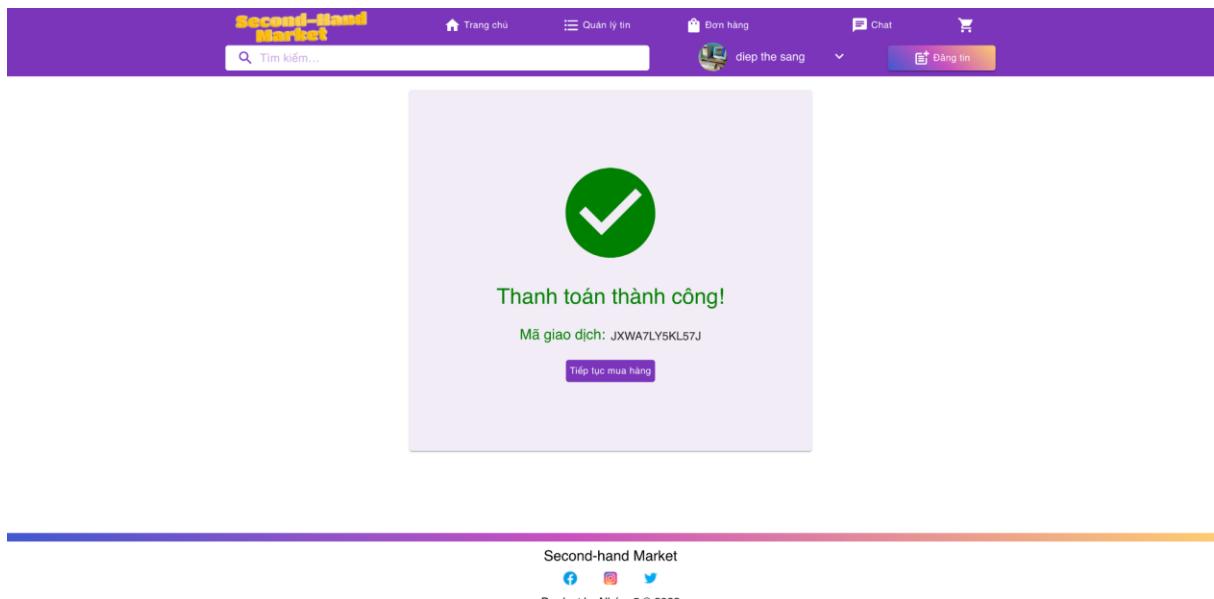


**Figure 174: Step 5 in the Payment**

- Step 6: Click on “Continue to review oder” to finish payment

**Continue to Review Order**

*After successful payment, you will be redirected to the page below*



**Figure 175: Step 6 in the Payment**

### 3.1.17 Add Favourite product

- Step 1: From home screen, click on any product
- Step 2: Click on icon “like” to add product to favorite product list

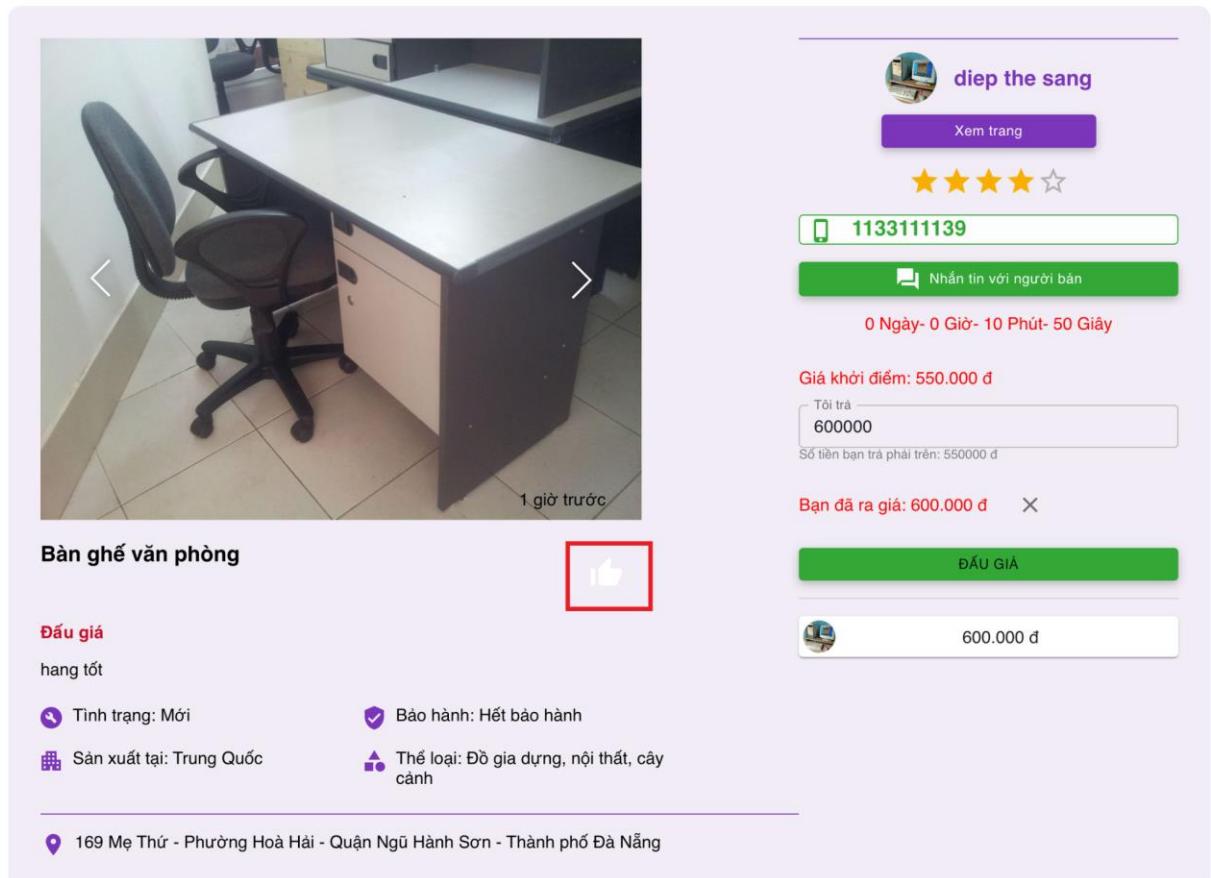


Figure 176: Step 2 in the Add favourite product

### 3.1.18 Manage favourite product list

- Step 1: Click on “Quản lý tin” on header

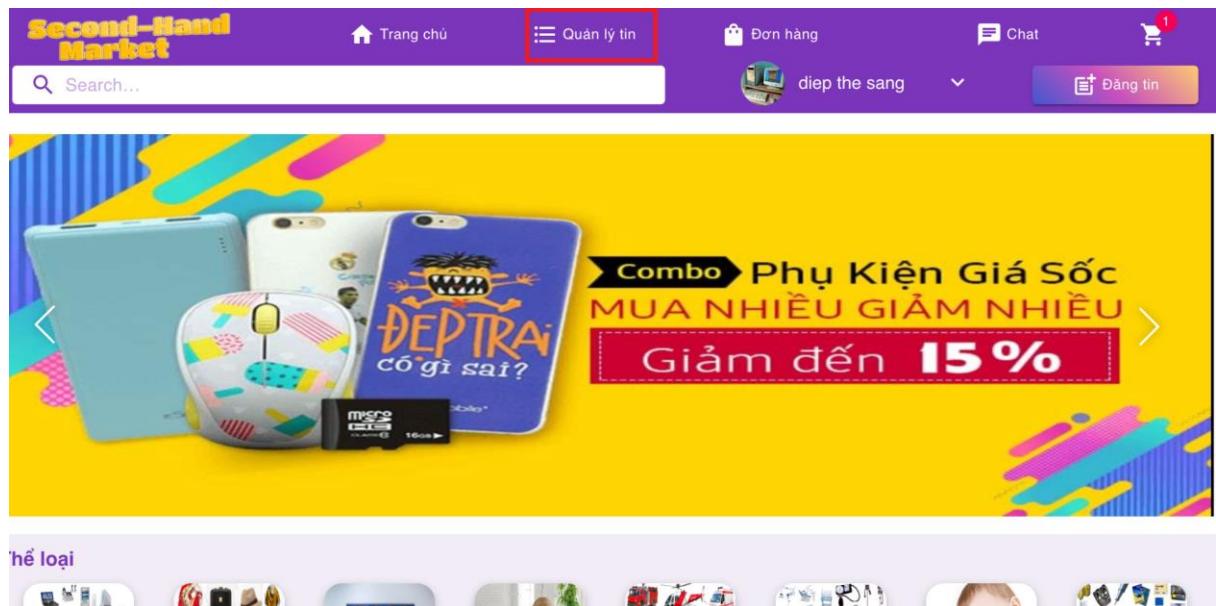


Figure 177: Step 1 in the Manage favorite product list

- Step 2: Click on "Yêu Thích"

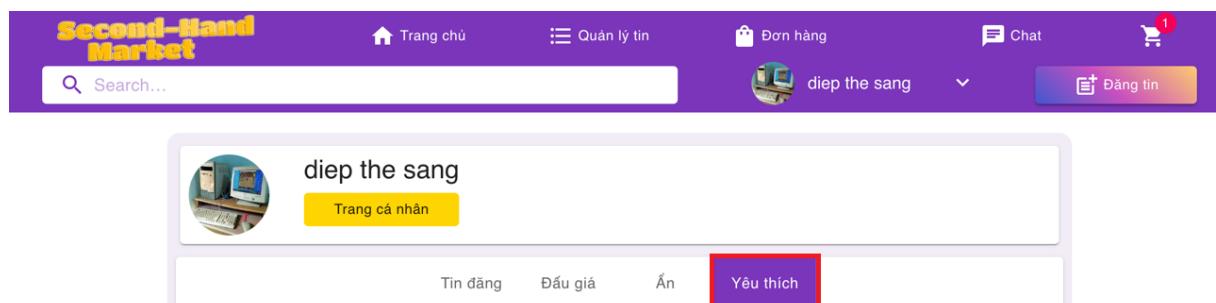
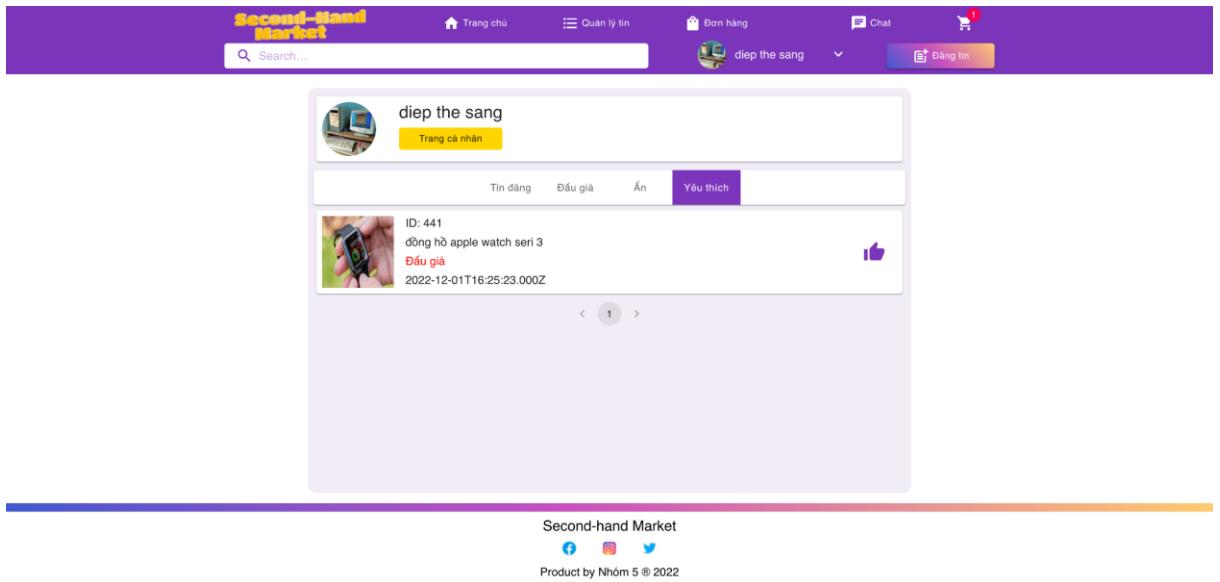


Figure 178: Step 2 in the Manage favourite product list

- Step 3: After clicking on "Yêu thích" your favorite product will appear as below



**Figure 179: Step 3 in the Manage favourite product list**

### 3.1.19 Admin manage account

- Step 1: When logged in with the admin account. select "Quản lý người dùng" item will display as below

Tim kiếm							
First name	Last name	Phone	Address	Star	Status	Action	
hoang	hai dang	1111111111	thị xã an nhơn bình định	★★★★☆☆	Active	⋮	
nguyen	phuc ngoc thanh			☆☆☆☆☆	Active	⋮	
diep	the sang	1133111139	169 Mệ Thứ - Hòa Xuân - Cẩm Lệ - tp ho chí minh	★★★★★☆	Active	⋮	

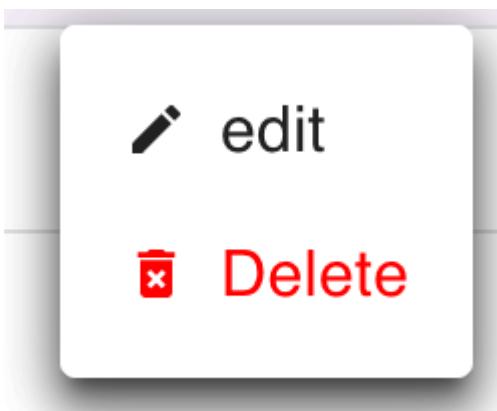
**Figure 180: Step 1 in the Admin manage account**

- Step 2: You can manage users by clicking on the icon as shown below

Tim kiếm							
First name	Last name	Phone	Address	Star	Status	Action	
hoang	hai dang	1111111111	thị xã an nhơn bình định	★★★★☆☆	Active	⋮	
nguyen	phuc ngoc thanh			☆☆☆☆☆	Active	⋮	
diep	the sang	1133111139	169 Mệ Thứ - Hòa Xuân - Cẩm Lệ - tp ho chí minh	★★★★★☆	Active	⋮	

**Figure 181: Step 2 in the Admin manage account**

- Step 3: You can edit or delete an account from the system
  - + Choose edit to edit user
  - + Choose delete to remove the user from the system



**Figure 182: Step 3 in the Admin manage account**

## IX. Conclusion

### 1. Summary of the results of the project have been achieved

Small-scale, short-term software development projects and groups, or from written management, using tools such as tools and excel to software, find that:

Easier to interact with members

User-friendly interface, easy to use, necessary functions are distributed very logically and logically, thus reducing the time of create product to sell, User management, Auction forms, ...

Customers appreciate the professionalism and thoroughness at in buying and selling.

### 2. Advantages and disadvantages of the software/solution compared to the set goals

#### 2.1 Advantages

- Reduce time and costs when managing buying and selling.
- Friendly interface, easy to use with users.
- Relatively complete functionality for a project.
- Increase the ability to communicate and connect between user.

#### 2.2 Disadvantages

- The project is too simple compared to other applications in terms of functionality. For example, For example, the project is not financially able to work with the shipper, ...

### 3. In the next stage

- The product will be improved in terms of functions and shortcomings.
- The currency used in the system will have more uses.
- Develop more functions in terms of project security.

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