

ONLINE RENTAL WEBSITE

Project Requirement

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1. Introduction

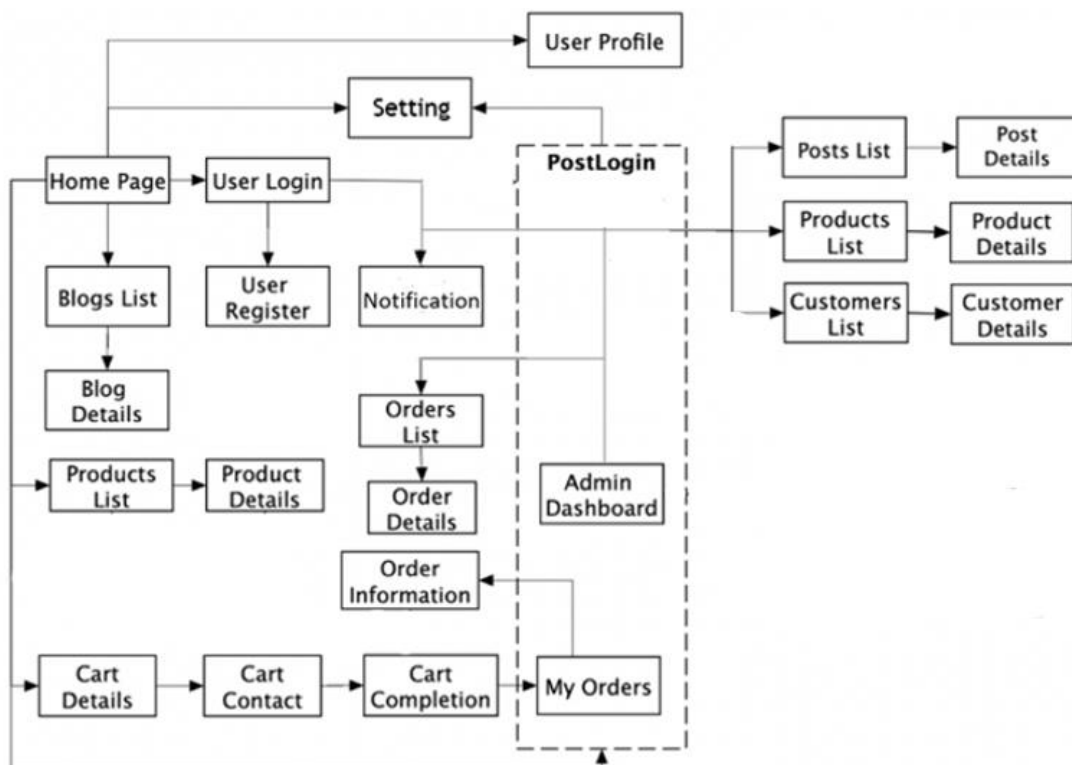
This project aims to develop an online store system that supports online rental for a store or any independent organization that wants to rent online. This system supports the following types of users:

- Guest: unregistered user.
- Customers: they are registered users, are actual customers or potential customers.
- Shop owners: members of the organization's rental business.
- Admin: the leader/manager of the organization, acting as the system administrator.

2. Functional Requirements

2.1 Overall Description

The to-be-developed system includes the 4 features with the functions for each feature are listed in the beneath sections. It needs to provide 24 user screens with the flow as the following diagram.



2.2 Public Feature

This feature includes screens used by Guests, as listed below:

- Home page: system start page
- Blogs List: a list of shared posts
- Blog detail: detailed content of the blog
- Product list: list of active products
- Product Details: detailed information of the selected product

2.3 Common Feature

The common functions/screens used for all types of users, as listed below.

- User Login: authenticate the user to give him/her to access authorized features later on.
- User Register: register new user into the system, verified by the registered email.
- Change Password: change user's login password.
- User Profile: view & edit/update user profile.
- User Authorization: authorize user into the system functions based on his/her role.

2.4 Customer Feature

This includes the screens used for system customers, as listed below

- My Orders: for customer to view his/her orders.
- Order Information: to show customer's order details order when it is still in the submitted status
- Notification: This page allows user a notification when an order lease expiration.

2.5 Admin Feature

The Admin feature includes the screens used for the organization manager and system administrator, as listed below:

- Products List: list, search, show, view, add new or edit existing product(s).
- Product Details: view & edit the details of a specific product.
- Orders List: list, search, show, hide, view, add new or edit existing assigned order(s). The shop owner can have accesses to all the orders.
- Order Details: view & edit the details of a specific assigned order. The shop owner can have accesses to all the orders.
- Customers List: list, filter, search, show, hide, view, add new or edit existing customer/contact(s).
- Customer Details: view & edit the details of a specific customer..
- Admin Dashboard: view general statistics & trends about the management-related data
- Notification: This page allows admin a notification when an order lease expiration.

3. Other requirements

3.1 Configuring information

- All the user-configured data (Post Product, User Roles, Admin Menu, etc.) are defined and stored as the system setting(s). Those are managed via the Settings List & Setting Details as mentioned above (in the part 2).

3.2 User Input data formats

The types & format (length, validation, etc) of the input data are suggested by the project team and need to be mentioned clearly in the analysing & designing documents.

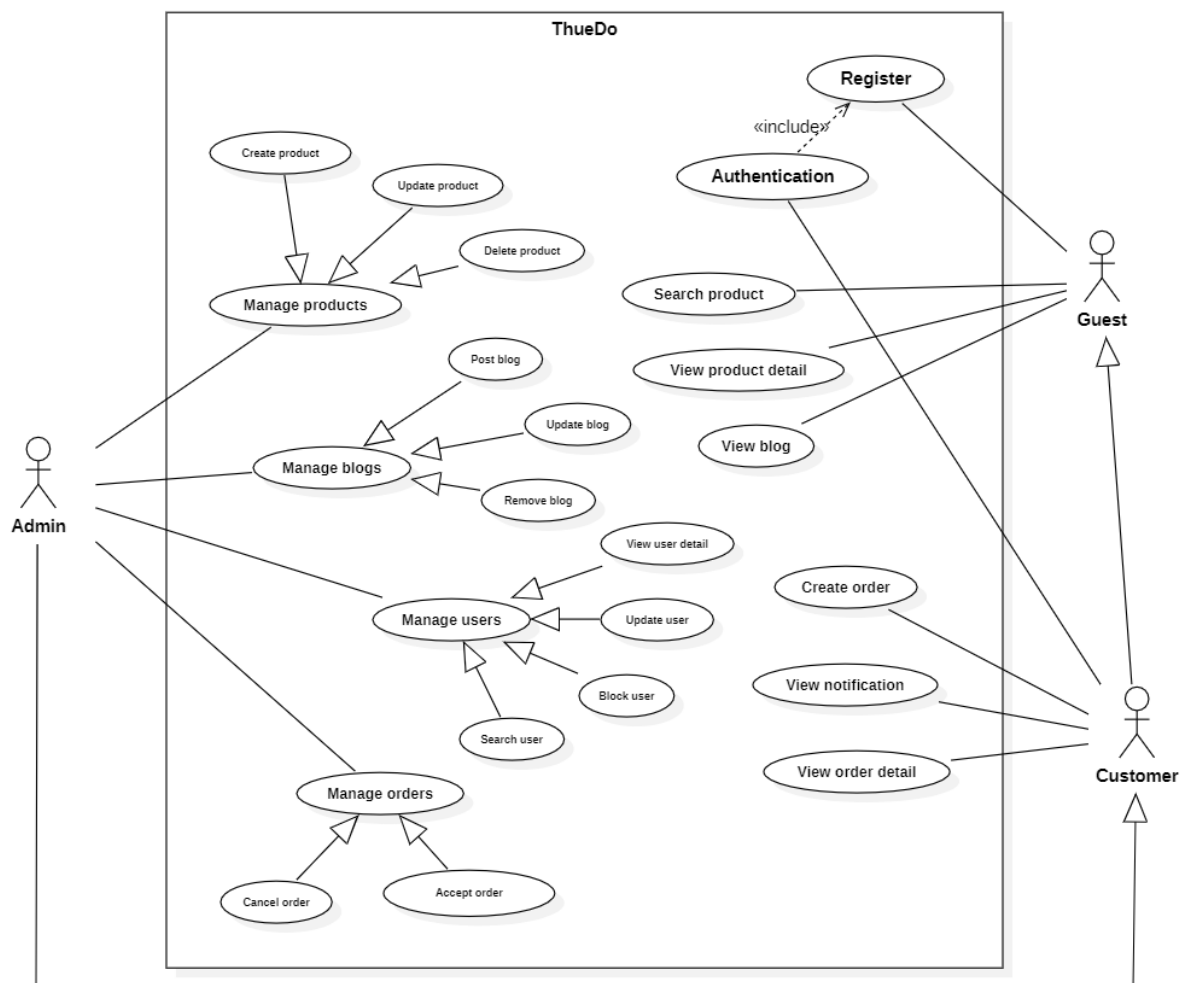
- Those must be agreed by the supervisor (teacher) before implementing.
- Once agreed, those must be implemented accordingly in the software input validating, data showing and in the system database.

4. User Requirements

4.1 Actors

| | | |
|---|----------|---|
| 1 | Guest | User who has not yet logged into the ThueDo system. |
| 2 | Customer | User who has logged into ThueDo system with role Customer. |
| 3 | Admin | User who has logged into the ThueDo system with role Admin. |

4.2 Use Cases Diagram:



4.3 Descriptions

4.3.1 Customer Web Application Descriptions

| ID | Actors | Use Case | Use Case Description | Secondary Actors |
|-------|----------|-----------------------------|---|------------------|
| UC.01 | Guest | Sign up | The user registers an account | N/A |
| UC.03 | Customer | Login username and password | The user login with username and password | N/A |
| UC.07 | Customer | View blog | The user views all blog | Guest |
| UC.08 | Customer | View product detail | The user views detail the product | Guest |
| UC.9 | Customer | View cart | The user view product in the cart | N/A |
| UC.10 | Customer | View profile | The user view profile | N/A |
| UC.11 | Customer | Create order | The user create order | N/A |
| UC.12 | Customer | View order detail | The user view order detail | N/A |
| UC.13 | Customer | Search | The user search product | N/A |
| UC.14 | Customer | Update customer's account | The user update account | N/A |
| UC.15 | Customer | Notification | View all notification | N/A |
| UC.16 | Customer | Logout | The user logout | N/A |

4.3.2 Admin Web Application Descriptions

| ID | Actors | Use Case | Use Case Description | Secondary Actors |
|----|--------|----------|----------------------|------------------|
|----|--------|----------|----------------------|------------------|

| | | | | |
|-------|-------|-------------------------|---|-----|
| UC.01 | Admin | Manage account | The admin views the list of management accounts, create an account, create many accounts, update account information, update account's status | N/A |
| UC.03 | Admin | Manage order type | The admin views the list of management order type, update order type's status | N/A |
| UC.04 | Admin | Manage product | The admin views the list of management product update product information, update product's status | N/A |
| UC.05 | Admin | Manage order | The admin views the list of management order, view supported seller, view customer | N/A |
| UC.06 | Admin | Manage blog | The admin views the list of management blog, create a blog, update blog information, update blog's status | N/A |
| UC.07 | Admin | Manage Profile Customer | The admin searches, views the customer or adds the customer to the system | N/A |

4.3.3 Use Case Discription

1. Sign up

| Use Case Specification | | | |
|------------------------|--|--------------------------------------|--|
| Use Case No.: | UC-01 | | |
| Use Case Name: | Sign up | | |
| Created By: | MinhHH | Date Created: | 23/03/2023 |
| Primary Actor: | Guest | Secondary Actors: | |
| Trigger: | Actor wants to sign up The system. | | |
| Description: | This feature allows users to sign up The system. | | |
| Preconditions: | Actor has not a account. | | |
| Post-conditions: | Success: Actor will be redirected to Login screen of the application. Failed: System inform “Đăng kí không thành công”. | | |
| Normal Flow: | Step | Actor Action | System Response |
| | 1 | Actor taps on “Đăng ký” | System redirects to Signup screen |
| | 2 | Actor fills in information | |
| | 3 | Actor taps on “Đăng ký” | System inform “Đăng ký thành công” [E1] |
| Alternative Flows: | N/A | | |
| Exceptions: | No | Cause | System Response |
| | 1 | Actor fills in existent information. | System inform “Tên người dùng đã tồn tại” or “Email người dùng đã tồn tại” |
| Priority: | High | | |
| Frequency of Use: | Usually | | |
| Business Rules: | 1. Name length limit must be larger than 5 characters. 2. Password length limit must be larger than 5 characters. | | |
| Other Information: | N/A | | |
| Assumptions: | Internet connection is available. | | |

2. Search product

| Use Case Specification | | | |
|------------------------|---|-------------------|------------|
| Use Case No.: | UC-02 | | |
| Use Case Name: | Search product | | |
| Created By: | MinhHH | Date Created: | 23/03/2023 |
| Primary Actor: | Customer | Secondary Actors: | Guest |
| Trigger: | Actor wants to search product. | | |
| Description: | This feature allows users to search product. | | |
| Preconditions: | N/A | | |
| Post-conditions: | Success: System showsss list of products. Failed: System inform “Không tìm thấy sản phẩm”. | | |

| | | | |
|---------------------------|-----------------------------------|--|---|
| Normal Flow: | Step | Actor Action | System Response |
| | 1 | Actor taps on "Search" text box. | |
| | 2 | Actor types keywords into Search textbox and search. | System show list of product that match with keywords. |
| Alternative Flows: | N/A | | |
| Exceptions: | No | Cause | System Response |
| | 1 | There are no match with condition or keyword which actor require | System informs "Không tìm thấy sản phẩm" |
| Priority: | High | | |
| Frequency of Use: | Always | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | Internet connection is available. | | |

3. View blog

| Use Case Specification | | | |
|---------------------------|---|--------------------------------|----------------------------|
| Use Case No.: | UC-03 | | |
| Use Case Name: | View blog | | |
| Created By: | MinhHH | Date Created: | 23/03/2023 |
| Primary Actor: | Customer | Secondary Actors: | Administrator/guest |
| Trigger: | Actor wants to view blog. | | |
| Description: | This feature allows users to view blog. | | |
| Preconditions: | N/A | | |
| Post-conditions: | Success: System redirects to Blog screen | | |
| Normal Flow: | Step | Actor Action | System Response |
| | 1 | Actor clicks on "Blog" button. | System shows list of blogs |
| Alternative Flows: | N/A | | |
| Exceptions: | N/A | | |
| Priority: | Medium | | |
| Frequency of Use: | Sometimes | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | Internet connection is available. | | |

4. View product

| Use Case Specification | |
|------------------------|--------------|
| Use Case No.: | UC-04 |
| Use Case Name: | View product |

| | | | |
|---------------------------|--|-----------------------------------|-------------------------------|
| Created By: | MinhHH | Date Created: | 23/03/2023 |
| Primary Actor: | Customer | Secondary Actors: | Administrator/Guest |
| Trigger: | Actor wants to view all product. | | |
| Description: | This feature allows users to view all product. | | |
| Preconditions: | N/A | | |
| Post-conditions: | Success: System shows list of products | | |
| Normal Flow: | Step | Actor Action | System Response |
| | 1 | Actor clicks on “Sản phẩm” button | System shows list of products |
| Alternative Flows: | N/A | | |
| Exceptions: | N/A | | |
| Priority: | Medium | | |
| Frequency of Use: | Sometimes | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | Internet connection is available. | | |

5. Login

| Use Case Specification | | | |
|---------------------------|--|-----------------------------------|---|
| Use Case No.: | UC-05 | | |
| Use Case Name: | Login | | |
| Created By: | MinhHH | Date Created: | 23/03/2023 |
| Primary Actor: | Customer | Secondary Actors: | Administrator |
| Trigger: | Actor wants to login into the system. | | |
| Description: | This feature allows users to login in into the system. | | |
| Preconditions: | Actor's account is still available. | | |
| Post-conditions: | Success: System redirectes to Home screen of the application. Failed: System informs “Sai tài khoản hoặc mật khẩu”, actor will not be redirected to Home screen of the application. | | |
| Normal Flow: | Step | Actor Action | System Response |
| | 1 | Actor taps on “Đăng nhập” | System redirects to Login screen |
| | 2 | Actor fills in information | |
| | | Actor taps on “Đăng nhập” | System informs “Đăng nhập thành công”, redirects to Home screen. [E1] |
| Alternative Flows: | N/A | | |
| Exceptions: | No | Cause | System Response |
| | 1 | Actor fills in wrong information. | System inform “Sai tài khoản hoặc mật khẩu” |
| Priority: | High | | |
| Frequency of Use: | Usually | | |
| Business Rules: | N/A | | |

| | |
|---------------------------|-----------------------------------|
| Other Information: | N/A |
| Assumptions: | Internet connection is available. |

6. View cart

| Use Case Specification | | | |
|---------------------------|--|---------------------------------|-------------------------------------|
| Use Case No.: | UC-06 | | |
| Use Case Name: | View cart | | |
| Created By: | MinhHH | Date Created: | 23/03/2023 |
| Primary Actor: | Customer | Secondary Actors: | Administrator |
| Trigger: | Actor wants to view shopping cart. | | |
| Description: | This feature allows users to view shopping cart. | | |
| Preconditions: | Actor has logged into the system and the product is not in the cart. | | |
| Post-conditions: | Success: System shows shopping cart details. | | |
| Normal Flow: | Step | Actor Action | System Response |
| | 1 | Actor clicks on “Giỏ hàng” icon | System shows shopping cart details. |
| Alternative Flows: | N/A | | |
| Exceptions: | N/A | | |
| Priority: | Medium | | |
| Frequency of Use: | Usually | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | Internet connection is available. | | |

7. View profile

| Use Case Specification | | | |
|---------------------------|--|------------------------------------|-------------------------------|
| Use Case No.: | UC-07 | | |
| Use Case Name: | View profile | | |
| Created By: | MinhHH | Date Created: | 23/03/2023 |
| Primary Actor: | Customer | Secondary Actors: | Administrator |
| Trigger: | Actor wants to view profile. | | |
| Description: | This feature allows users to view profile. | | |
| Preconditions: | Actor has logged into the system. | | |
| Post-conditions: | Success: Actor will be redirected to Profile screen of the application. | | |
| Normal Flow: | Step | Actor Action | System Response |
| | 1 | Actor clicks on “View profile” tab | System shows profile details. |
| Alternative Flows: | N/A | | |
| Exceptions: | N/A | | |
| Priority: | Low | | |

| | |
|---------------------------|-----------------------------------|
| Frequency of Use: | Sometimes |
| Business Rules: | N/A |
| Other Information: | N/A |
| Assumptions: | Internet connection is available. |

8. Create order

| Use Case Specification | | | |
|---------------------------|--|---|--|
| Use Case No.: | UC-08 | | |
| Use Case Name: | Create order | | |
| Created By: | MinhHH | Date Created: | 23/03/2023 |
| Primary Actor: | Customer | Secondary Actors: | Administrator |
| Trigger: | Actor wants to create order. | | |
| Description: | This feature allows users to create order. | | |
| Preconditions: | Actor has logged into the system. | | |
| Post-conditions: | Success: Order is created successfully. | | |
| Normal Flow: | Step | Actor Action | System Response |
| | 1 | Actor chooses desired product then taps "Thêm vào giỏ hàng" (A1) | System display "Thêm vào giỏ thành công" message |
| | 2 | Actor clicks on "Giỏ hàng" tab | System shows shopping cart details. |
| | 3 | Actor clicks on "Thuê" button | System shows order details. |
| | 4 | Actor clicks on "Chọn ngày" button to select rental time and fills in information. (E1) | |
| | 5 | Actor clicks on "Thanh toán" button | System display "Đặt hàng thành công" message |
| Alternative Flows: | A1. Actor taps "Thuê ngay" 1. Actor taps "Thuê ngay" 2. System shows shopping cart details. 3. Return to step NF 3.0 | | |
| Exceptions: | No | Cause | System Response |
| | 1 | Actor enters missing information. | System informs "Vui lòng nhập đầy đủ thông tin" |
| Priority: | Medium | | |
| Frequency of Use: | Usually | | |
| Business Rules: | Phone number length limit must be 10 characters. | | |
| Other Information: | N/A | | |
| Assumptions: | Internet connection is available. | | |

9. View order detail

| Use Case Specification | | | |
|---------------------------|---|------------------------------------|-------------------------------|
| Use Case No.: | UC-09 | | |
| Use Case Name: | View order detail | | |
| Created By: | MinhHH | Date Created: | 23/03/2023 |
| Primary Actor: | Customer | Secondary Actors: | Administrator |
| Trigger: | Actor wants to view order detail. | | |
| Description: | This feature allows users to view order detail. | | |
| Preconditions: | 1. Actor has logged into the system. 2. Already have at least 1 order in the system. | | |
| Post-conditions: | Success: System shows order details. | | |
| Normal Flow: | Step | Actor Action | System Response |
| | 1 | Actor clicks on "View profile" tab | System shows profile details. |
| | 2 | Actor clicks on "Lịch sử" tab | System shows order details. |
| Alternative Flows: | N/A | | |
| Exceptions: | N/A | | |
| Priority: | Low | | |
| Frequency of Use: | Sometimes | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | Internet connection is available. | | |

10. Update customer's account

| Use Case Specification | | | |
|-------------------------|---|----------------------------------|---|
| Use Case No.: | UC-10 | | |
| Use Case Name: | Update customer's account | | |
| Created By: | MinhHH | Date Created: | 23/03/2023 |
| Primary Actor: | Customer | Secondary Actors: | Administrator |
| Trigger: | Actor wants to update profile. | | |
| Description: | This feature allows users to update profile. | | |
| Preconditions: | Actor has logged into the system. | | |
| Post-conditions: | Success: New information is updated. System informs "Thay đổi thông tin thành công". | | |
| Normal Flow: | Step | Actor Action | System Response |
| | 1 | Actors taps on "Settings" button | System redirects to Update Profile screen |
| | 2 | Actors taps on "Thay đổi" button | System shows Update Profile detail form |
| | 4 | Actors edits information | |

| | | | |
|---------------------------|--|----------------------------------|--|
| | 5 | Actors taps on “Thay đổi” button | System informs “Thay đổi thông tin thành công” message |
| Alternative Flows: | Step | Actor Action | System Response |
| | 1 | Actors taps on “ H ử y ” button | System redirects back to Update Profile screen |
| Exceptions: | N/A | | |
| Priority: | Medium | | |
| Frequency of Use: | Sometimes | | |
| Business Rules: | 1. Phone number length limit must be 10 characters. 2. Email must be filled in. | | |
| Other Information: | N/A | | |
| Assumptions: | Internet connection is available. | | |

11. Notification

| Use Case Specification | | | |
|---------------------------|--|------------------------------------|-------------------------------------|
| Use Case No.: | UC-11 | | |
| Use Case Name: | Notification | | |
| Created By: | MinhHH | Date Created: | 23/03/2023 |
| Primary Actor: | Customer | Secondary Actors: | Administrator |
| Trigger: | Actor wants to view notification. | | |
| Description: | This feature allows users to view notification. | | |
| Preconditions: | Actor has logged into the system. | | |
| Post-conditions: | Success: System shows notification details. | | |
| Normal Flow: | Step | Actor Action | System Response |
| | 1 | Actor clicks on “Thông báo” button | System shows list of notifications. |
| | 2 | Actor clicks on “Chi tiết” button | System shows notifications details. |
| Alternative Flows: | N/A | | |
| Exceptions: | N/A | | |
| Priority: | Low | | |
| Frequency of Use: | Sometimes | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | Internet connection is available. | | |

12. Logout

| Use Case Specification | |
|------------------------|--------|
| Use Case No.: | UC-12 |
| Use Case Name: | Logout |

| | | | |
|---------------------------|--|----------------------------------|---------------------------------|
| Created By: | MinhHH | Date Created: | 23/03/2023 |
| Primary Actor: | Customer | Secondary Actors: | Administrator |
| Trigger: | Actor wants to logout The system. | | |
| Description: | This feature allows users to log out The system. | | |
| Preconditions: | Actor has logged into the system. | | |
| Post-conditions: | Success: System redirects to Home screen | | |
| Normal Flow: | Step | Actor Action | System Response |
| | 1 | Actor taps on “Tài khoản” button | |
| | 2 | Actor taps on “Log out” button | System redirects to Home screen |
| Alternative Flows: | N/A | | |
| Exceptions: | N/A | | |
| Priority: | Medium | | |
| Frequency of Use: | Sometimes | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | Internet connection is available. | | |

13. Create product

| Use Case Specification | | | |
|---------------------------|---|--------------------------------------|---|
| Use Case No.: | UC-13 | | |
| Use Case Name: | Create Product | | |
| Created By: | MinhHH | Date Created: | 23/03/2023 |
| Primary Actor: | Administrator | Secondary Actors: | |
| Trigger: | Actor wants to create a product. | | |
| Description: | This use case describes how actor creates a product. | | |
| Preconditions: | 1. Actor must first login into the system. 2. Actor clicks title “Sản phẩm”. | | |
| Post-conditions: | The new product is successfully saved into system database | | |
| Normal Flow: | Step | Actor Action | System Response |
| | 1 | Actor taps on “Thêm sản phẩm” button | System display Product detail form |
| | 2 | Actor enters Product information | System display “Thêm sản phẩm thành công” message |
| Alternative Flows: | N/A | | |
| Exceptions: | No | Cause | System Response |
| | 1 | Actor enters missing information. | System informs “Vui lòng nhập đầy đủ thông tin” |
| Priority: | Low | | |
| Frequency of Use: | Usually | | |
| Business Rules: | N/A | | |

| | |
|---------------------------|-----------------------------------|
| Other Information: | N/A |
| Assumptions: | Internet connection is available. |

14. Update product

| Use Case Specification | | | |
|---------------------------|---|---|---|
| Use Case No.: | UC-14 | | |
| Use Case Name: | Update product | | |
| Created By: | MinhHH | Date Created: | 23/03/2023 |
| Primary Actor: | Administrator | Secondary Actors: | |
| Trigger: | Actor wants to update a product. | | |
| Description: | This use case describes how the actor updates a product. | | |
| Preconditions: | 1. Actor must first login into the system. 2. Actor clicks title "Sản phẩm". | | |
| Post-conditions: | The desired product detail is successfully updated into system database | | |
| Normal Flow: | Step | Actor Action | System Response |
| | 1 | Actor taps on "Quản lý sản phẩm" tabs | System redirects to Manage Product screen |
| | 2 | Actor taps on "Edit" button | System shows product detail form |
| | 3 | Actor edits information that want to change and taps on "Thay đổi" button | System displays "Thay đổi sản phẩm thành công" message. |
| Alternative Flows: | Step | Actor Action | System Response |
| | 1 | Actors taps on " H ủy " button | System redirects back to Manage Product screen |
| Exceptions: | N/A | | |
| Priority: | Low | | |
| Frequency of Use: | Sometimes | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | Internet connection is available. | | |

15. Delete product

| Use Case Specification | | | |
|------------------------|--|--------------------------|------------|
| Use Case No.: | UC-15 | | |
| Use Case Name: | Delete product | | |
| Created By: | MinhHH | Date Created: | 23/03/2023 |
| Primary Actor: | Administrator | Secondary Actors: | |
| Trigger: | Actor wants to delete product. | | |
| Description: | This feature allows users to delete product. | | |

| | | | |
|---------------------------|---|---|---|
| Preconditions: | Actor has logged into the system. Product already exists in the system. | | |
| Post-conditions: | Success: Desired product no longer exists in the system | | |
| Normal Flow: | Step | Actor Action | System Response |
| | 1 | Actor taps on “Delete” button | System display “Bạn có chắc chắn là muốn xóa sản phẩm này?” message |
| | 2 | The administrator taps on “Đồng ý” button | System display “Xóa sản phẩm thành công” message |
| Alternative Flows: | Step | Actor Action | System Response |
| | 1 | Actors taps on “Hủy bỏ” button | System redirects back to Manage Product screen |
| Exceptions: | N/A | | |
| Priority: | Medium | | |
| Frequency of Use: | Sometimes | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | Internet connection is available. | | |

16. Post blog

| Use Case Specification | | | |
|---------------------------|---|-----------------------------------|---|
| Use Case No.: | UC-16 | | |
| Use Case Name: | Post blog | | |
| Created By: | MinhHH | Date Created: | 23/03/2023 |
| Primary Actor: | Administrator | Secondary Actors: | |
| Trigger: | Actor wants to post a blog. | | |
| Description: | This use case describes how actor posts a blog. | | |
| Preconditions: | 1. Actor must first login into the system. 2. Actor clicks title “Blog”. | | |
| Post-conditions: | The blog details is created successfully. | | |
| Normal Flow: | Step | Actor Action | System Response |
| | 1 | Actor taps on “Đăng blog” tab | System display blog detail form |
| | 2 | Actor enters blog information | System displays “Thêm blog thành công” message |
| Alternative Flows: | | | |
| Exceptions: | No | Cause | System Response |
| | 1 | Actor enters missing information. | System informs “Vui lòng nhập đầy đủ thông tin” |
| Priority: | Low | | |
| Frequency of Use: | Sometimes | | |
| Business Rules: | Fill in full information of blog | | |
| Other Information: | N/A | | |
| Assumptions: | Internet connection is available. | | |

17. Update blog

| Use Case Specification | | | |
|---------------------------|---|---|---|
| Use Case No.: | UC-17 | | |
| Use Case Name: | Update blog | | |
| Created By: | MinhHH | Date Created: | 23/03/2023 |
| Primary Actor: | Administrator | Secondary Actors: | |
| Trigger: | Actor wants to update a blog. | | |
| Description: | This use case describes how the actor updates a blog. | | |
| Preconditions: | 1. Actor must first login into the system. 2. Actor clicks title "Blog". | | |
| Post-conditions: | The desired product detail is successfully updated into system database | | |
| Normal Flow: | Step | Actor Action | System Response |
| | 1 | Actor taps on "Quản lý blog" tabs | System redirects to Manage Blog screen |
| | 1 | Actor taps on "Edit" button | System shows blog detail form |
| | 2 | Actor edits information that want to change and taps on "Thay đổi" button | System displays "Thay đổi blog thành công" message. |
| Alternative Flows: | Step | Actor Action | System Response |
| | 1 | Actors taps on " H ử y " button | System redirects back to Manage Blog screen |
| Exceptions: | N/A | | |
| Priority: | Low | | |
| Frequency of Use: | Sometimes | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | Internet connection is available. | | |

18. Remove blog

| Use Case Specification | | | |
|-------------------------|--|--------------------------|------------------------|
| Use Case No.: | UC-18 | | |
| Use Case Name: | Remove blog | | |
| Created By: | MinhHH | Date Created: | 23/03/2023 |
| Primary Actor: | Administrator | Secondary Actors: | |
| Trigger: | Actor wants to delete blog. | | |
| Description: | This feature allows users to delete blog. | | |
| Preconditions: | Actor has logged into the system. Blog already exists in the system. | | |
| Post-conditions: | Success: Systems updates status of blog to "deleted" | | |
| Normal Flow: | Step | Actor Action | System Response |
| | | | |

| | | | |
|---------------------------|-----------------------------------|---|---|
| | 1 | Actor taps on "Delete" button | System display "Bạn có chắc chắn là muốn xóa blog này?" message |
| | 2 | The administrator taps on "Đồng ý" button | System redirects to Manage Blog screen |
| Alternative Flows: | Step | Actor Action | System Response |
| | 1 | Actors taps on "Hủy bỏ" button | System redirects back to Manage Blog screen |
| Exceptions: | N/A | | |
| Priority: | Low | | |
| Frequency of Use: | Sometimes | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | Internet connection is available. | | |

19. View user account

| Use Case Specification | | | |
|---------------------------|--|----------------------------------|-------------------------------------|
| Use Case No.: | UC-19 | | |
| Use Case Name: | View user account | | |
| Created By: | MinhHH | Date Created: | 23/03/2023 |
| Primary Actor: | Administrator | Secondary Actors: | |
| Trigger: | Actor wants to view user detail. | | |
| Description: | This feature allows users to view detail. | | |
| Preconditions: | Actor has logged into the system. | | |
| Post-conditions: | Success: System shows list of user accounts | | |
| Normal Flow: | Step | Actor Action | System Response |
| | 1 | Actor clicks on "Người dùng" tab | System shows list of user accounts. |
| Alternative Flows: | N/A | | |
| Exceptions: | N/A | | |
| Priority: | Low | | |
| Frequency of Use: | Sometimes | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | Internet connection is available. | | |

20. Lock user account

| Use Case Specification | | | |
|------------------------|-----------------------------------|--------------------------|------------|
| Use Case No.: | UC-20 | | |
| Use Case Name: | Lock user account | | |
| Created By: | MinhHH | Date Created: | 23/03/2023 |
| Primary Actor: | Administrator | Secondary Actors: | |
| Trigger: | Actor wants to lock user account. | | |

| | | | |
|---------------------------|--|---------------------------------------|--|
| Description: | This feature allows users to lock user account. | | |
| Preconditions: | Actor has logged into the system. User account already exists in the system. | | |
| Post-conditions: | Success: Systems updates status of product to “Locked” | | |
| Normal Flow: | Step | Actor Action | System Response |
| | 1 | Actor taps on “Khóa tài khoản” button | System display “Bạn có chắc chắn là muốn khóa user này?” message |
| | 2 | Actor taps on “Đồng ý” button | System display “Khóa người dùng thành công” message |
| Alternative Flows: | Step | Actor Action | System Response |
| | 1 | Actors taps on “Hủy bỏ” button | System redirects back to Manage User account screen |
| Exceptions: | N/A | | |
| Priority: | Medium | | |
| Frequency of Use: | Sometimes | | |
| Business Rules: | The user violates the rules | | |
| Other Information: | N/A | | |
| Assumptions: | Internet connection is available. | | |

21. Lock user account

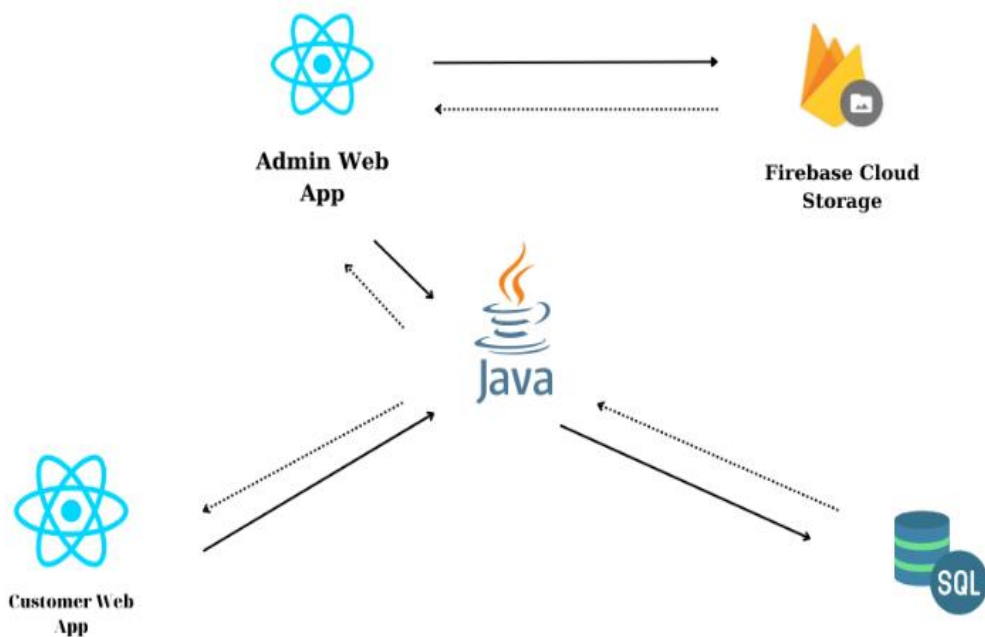
| Use Case Specification | | | |
|---------------------------|--|--|---|
| Use Case No.: | UC-21 | | |
| Use Case Name: | Lock user account | | |
| Created By: | MinhHH | Date Created: | 23/03/2023 |
| Primary Actor: | Administrator | Secondary Actors: | |
| Trigger: | Actor wants to unlock user account. | | |
| Description: | This feature allows users to unlock user account. | | |
| Preconditions: | Actor has logged into the system. User account already locked in the system. | | |
| Post-conditions: | Success: Systems updates status of product to “Unlock” | | |
| Normal Flow: | Step | Actor Action | System Response |
| | 1 | Actor taps on “Mở khóa tài khoản” button | System display “Bạn có chắc chắn là muốn mở khóa user này?” message |
| | 2 | Actor taps on “Đồng ý” button | System display “Mở khóa người dùng thành công” message |
| Alternative Flows: | Step | Actor Action | System Response |
| | 1 | Actors taps on “Hủy bỏ” button | System redirects back to Manage User account screen |
| Exceptions: | N/A | | |
| Priority: | Medium | | |
| Frequency of Use: | Sometimes | | |
| Business Rules: | The user violates the rules | | |
| Other Information: | N/A | | |
| Assumptions: | Internet connection is available. | | |

22. View dashboard

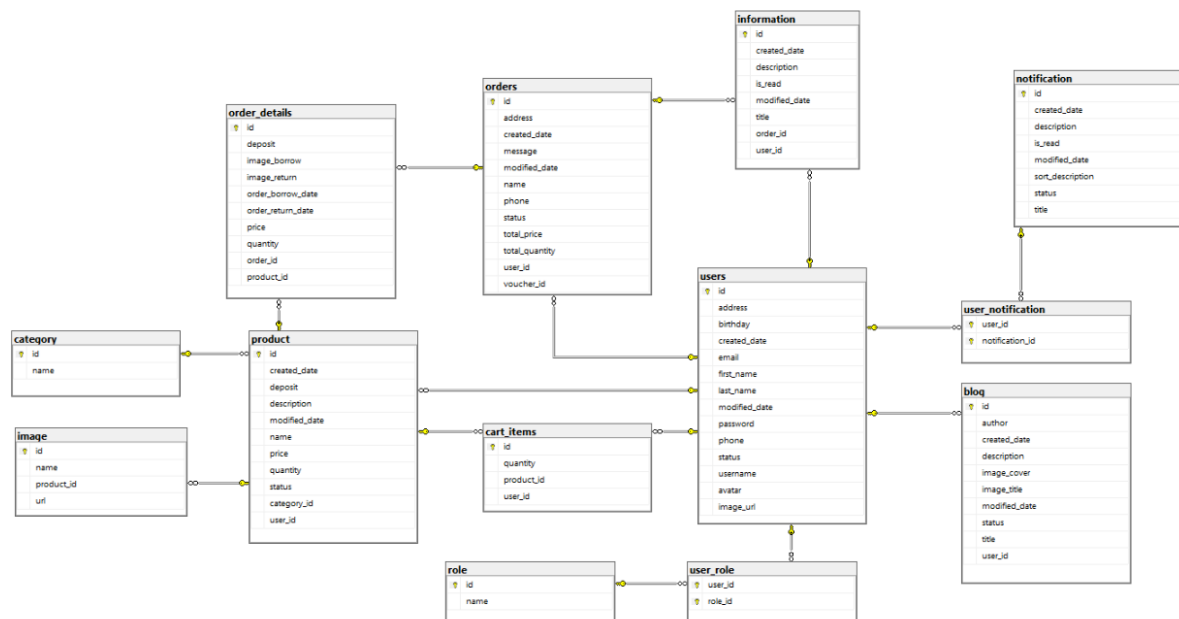
| Use Case Specification | | | |
|---------------------------|---|---|---------------------------------|
| Use Case No.: | UC-22 | | |
| Use Case Name: | View dashboard | | |
| Created By: | MinhHH | Date Created: | 23/03/2023 |
| Primary Actor: | Administrator | Secondary Actors: | |
| Trigger: | Actor wants to view dashboard. | | |
| Description: | This feature allows users to view dashboard. | | |
| Preconditions: | Actor has logged into the system. | | |
| Post-conditions: | Success: System shows dashboard details. | | |
| Normal Flow: | Step | Actor Action | System Response |
| | 1 | Actor clicks on “Thông báo” tab or “Thống kê” tab | System shows dashboard details. |
| Alternative Flows: | N/A | | |
| Exceptions: | N/A | | |
| Priority: | Low | | |
| Frequency of Use: | Sometimes | | |
| Business Rules: | N/A | | |
| Other Information: | N/A | | |
| Assumptions: | Internet connection is available. | | |

5. Software Design Document

5.1 System Architecture



5.2 Database Design



5.2.1 Blog Table

| Field Name | Type | Description | Unique | Not Null |
|---------------|---------------|-----------------------|--------|----------|
| Id | int | Define of Blog | No | Yes |
| description | nvarchar(MAX) | Description of blog | No | No |
| Author | nvarchar(100) | Author of blog | No | No |
| Created_date | datetime2(7) | Created date of blog | No | No |
| Image_title | varchar(255) | Image title of blog | No | No |
| Image_cover | varchar(255) | Image cover of blog | No | No |
| Modified_date | datetime2(7) | Modified date of blog | No | No |
| Status | varchar(255) | Status of blog | No | No |
| Title | nvarchar(250) | Title of blog | No | No |
| User_id | bigint | Define of user | No | Yes |

5.2.2 Category Table

| Field Name | Type | Description | Unique | Not Null |
|------------|------|-------------|--------|----------|
|------------|------|-------------|--------|----------|

| | | | | |
|------|---------------|--------------------|-----|-----|
| Id | bigint | Define of category | Yes | Yes |
| Name | nvarchar(200) | Name of category | NO | NO |

5.2.3 Product Table

| Field Name | Type | Description | Unique | Not Null |
|---------------|---------------|--------------------------|--------|----------|
| Id | bigint | Define of product | Yes | Yes |
| Create_date | datetime2(7) | Create date of product | NO | NO |
| Deposit | float | Deposit of product | NO | NO |
| Description | nvarchar(MAX) | Description of product | NO | NO |
| Modified_date | datetime2(7) | Modified date of product | NO | NO |
| Name | nvarchar(250) | Name of product | NO | NO |
| Price | float | Price of product | NO | NO |
| Quantity | int | Quantity of product | NO | NO |
| Status | varchar(255) | Status of product | NO | NO |
| category_id | bigint | Define of category | NO | NO |
| user_id | bigint | Define of user | NO | NO |

5.2.4 Order Table

| Field Name | Type | Description | Unique | Not Null |
|---------------|---------------|------------------------|--------|----------|
| id | bigint | Define of order | Yes | Yes |
| address | nvarchar(300) | Address of order | NO | NO |
| created_date | datetime2(7) | Create date of order | NO | NO |
| message | nvarchar(MAX) | Message of order | NO | NO |
| modified_date | datetime2(7) | Modified date of order | NO | NO |
| name | nvarchar(500) | Name of user | NO | NO |
| phone | varchar(200) | Phone of user | NO | NO |

| | | | | |
|----------------|--------------|-------------------------|----|----|
| status | varchar(255) | Status of order | NO | NO |
| total_price | float | Total price of order | NO | NO |
| total_quantity | int | Total quantity of order | NO | NO |
| user_id | bigint | Define of user | NO | NO |
| voucher_id | bigint | Define of voucher | NO | NO |

5.2.5 Order Detail Table

| Field Name | Type | Description | Unique | Not Null |
|-------------------|--------------|----------------------------|--------|----------|
| Id | bigint | Define of order detail | Yes | Yes |
| deposit | float | Deposit of order | NO | NO |
| image_borrow | varchar(255) | Image borrow of order | NO | NO |
| image_return | varchar(255) | Image return of order | NO | NO |
| order_borrow_date | datetime2(7) | Order borrow date of order | NO | NO |
| order_return_date | datetime2(7) | Order return date of order | NO | NO |
| price | float | Price of order | NO | NO |
| quantity | int | Quantity of product | NO | NO |
| order_id | bigint | Define of order | NO | NO |
| product_id | bigint | Define of order product | NO | NO |

5.2.6 User Table

| Field Name | Type | Description | Unique | Not Null |
|------------|--------|----------------|--------|----------|
| id | bigint | Define of user | Yes | Yes |

| | | | | |
|---------------|---------------|-----------------------|----|-----|
| address | nvarchar(250) | Address of user | NO | NO |
| birthday | datetime2(7) | Birthday of user | NO | NO |
| created_date | datetime2(7) | Create date of user | NO | NO |
| email | varchar(254) | Email of user | NO | NO |
| first_name | nvarchar(60) | First name of user | NO | NO |
| last_name | nvarchar(250) | Last name of user | NO | NO |
| modified_date | datetime2(7) | Modified date of user | NO | NO |
| password | varchar(255) | Password of user | NO | Yes |
| phone | varchar(255) | Phone of user | NO | NO |
| status | varchar(255) | Status of user | NO | NO |
| username | varchar(255) | Username of user | NO | Yes |
| avatar | nvarchar(MAX) | Avatar of user | NO | NO |
| image_url | nvarchar(MAX) | Image URL | NO | NO |

5.2.7 Cart Items Table

| Field Name | Type | Description | Unique | Not Null |
|------------|--------|----------------------------|--------|----------|
| id | bigint | Define of cart | Yes | Yes |
| quantity | int | Define quantity of product | NO | NO |
| product_id | bigint | Define of product | NO | NO |
| user_id | bigint | Define of user | NO | NO |

5.2.8 Notification Table

| Field Name | Type | Description | Unique | Not Null |
|--------------|--------------|-----------------------------|--------|----------|
| id | bigint | Define of notification | Yes | Yes |
| created_date | datetime2(7) | Create date of notification | NO | NO |

| | | | | |
|------------------|---------------|----------------------------------|----|----|
| description | nvarchar(MAX) | Description of notification | NO | NO |
| modified_date | datetime2(7) | Modified date of notification | NO | NO |
| sort_description | nvarchar(250) | Sort description of notification | NO | NO |
| status | varchar(255) | Status of notification | NO | NO |
| title | nvarchar(250) | Title of notification | NO | NO |

5.2.9 Role Table

| Field Name | Type | Description | Unique | Not Null |
|------------|-------------|----------------|--------|----------|
| id | bigint | Define of role | Yes | Yes |
| name | varchar(50) | Name of role | NO | Yes |

5.2.10 Infomation Table

| Field Name | Type | Description | Unique | Not Null |
|---------------|---------------|------------------------------|--------|----------|
| id | bigint | Define of information | Yes | Yes |
| created_date | datetime2(7) | Create date of information | NO | NO |
| description | nvarchar(MAX) | Description of information | NO | NO |
| modified_date | datetime2(7) | Modified date of information | NO | NO |
| title | nvarchar(250) | Title of information | NO | NO |
| order_id | bigint | Define of order | NO | NO |
| user_id | bigint | Define of user | NO | NO |

5.2.11 Image Table

| Field Name | Type | Description | Unique | Not Null |
|------------|--------|-----------------|--------|----------|
| id | bigint | Define of image | Yes | Yes |

| | | | | |
|------------|---------------|-------------------|----|----|
| name | nvarchar(200) | Name of image | NO | NO |
| url | nvarchar(MAX) | URL of image | NO | NO |
| product_id | bigint | Define of product | NO | NO |

6. Screen Descriptions

6.1 Admin Web Application Screen Flow

| # | Feature | Screen | Description |
|---|--------------------|--------------------|--|
| 1 | Login | Login Page | This page allows the admin to sign in with a username/ email and password for verifying the account before using functions of the system. |
| 2 | View data | Dashboard | This page allows admin to view total orders , total revenue. |
| 3 | Mange account user | Account management | This page allows admin update user account, update information user account, update status of user account, search account and display list account user |
| 4 | Manage product | Product management | This page allows admin to update status of products, search and display list products |
| 5 | Create product | Create product | This page allows admin create new products. |
| 6 | View Order | Order management | This page allows admin to view list of orders. |
| 7 | Notification | View notification | This page allows admin a notification when an order lease expiration. |
| 8 | Manage blog | Blog management | This page allows admin, update status of a blog, delete blog, search and display list of blogs. |

| | | | |
|---|-------------|-------------|---|
| 9 | Create blog | Create blog | This page allows the admin to create a new blog |
|---|-------------|-------------|---|

6.1 Customer Web Application Screen Flow

| # | Feature | Screen | Description |
|----|--------------------------|--------------------------|---|
| 1 | Login | Login Page | This page allows the customer to sign in with a username and password for verifying the account before using functions of the system. |
| 2 | Register | Register | Register a new account for using application. |
| 3 | User information | User information | Contains user information. |
| 4 | Order history | Order history | Contains all order history. |
| 5 | Order detail | Order detail | Contains all order detail. |
| 6 | Product list | Product list | Show all product. |
| 7 | Product list by category | Product list by category | Show all product by category. |
| 8 | Product detail | Product detail | Show specific product detail. |
| 9 | Blog list | Blog list | Show all blog. |
| 10 | Blog detail | Blog detail | Show specific blog detail. |
| 11 | Cart | Cart page | Contains cart detail. |
| 12 | Checkout | Checkout | Contains payment method. |
| 13 | Payment | Payment | Payment Successfully. |

6.2 Screen Authorization

Admin and User Web Application Screen Authorization

| Screen | Admin | User |
|-------------------------|-------|------|
| Login Page | X | X |
| Register | X | X |
| Home | X | X |
| Product list | X | X |
| Blog list | X | X |
| Product detail | X | X |
| Blog detail | X | X |
| Cart page | X | X |
| Order detail | X | X |
| User information | X | X |
| Notification | X | X |
| Dashboard | X | |
| Account user management | X | |
| View all order | X | |
| Product management | X | |
| Update product | X | |
| Create product | X | |
| Delete blog | X | |
| User updates status | X | |
| Order management | X | |
| Blog management | X | |
| Profile management | X | |
| Order history | X | X |

| | | |
|------------|---|---|
| Order list | X | |
| Checkout | | X |

7. Non-Functional Requirements

7.1 External Interfaces

7.1.1 User Interfaces

- UI-01: UI supports Vietnamese.
- UI-02: GUI is clear and easy to understand.
- UI-03: The information is displayed clearly, and is easy to understand.
- UI-04: Need a confirmation before performing important tasks.
- UI-05: Notify the user of the result after performing an action.

7.1.2 Software Interfaces

- SI-01: Web application: browser Google Chrome (version 70 or higher) and Firefox (version 60 or higher), Internet Explorer (version 10 or higher), or any web browser that supports HTML5 & CSS3.
- SI-02: System handler: Windows 10 (Professional edition version 1909) or higher

7.1.3 Hardware Interfaces

- HI-01: Desktop or laptop (Connecting to the internet)

7.2 Quality Attributes

7.2.1 Usability

- For customers, it is easy to use the application without going through the GUI.
- For admins can use the application after reading the GUI.
- The user interface is designed to be easy to use, even for non-IT staff.

7.2.2 Reliability

- Needs thorough testing to prevent serious errors that can affect the system.
- Admins should need less than one week of training to be productive with the system.

7.2.3 Performance

All common response time is under 2 seconds.

7.2.4 Security

- Each role can only use its own functionality.

- Before saving data to the database, all input is validated.
- All user information provided to the system is confidential.
- Passwords are always encrypted before saving to the database.

7.2.5 Supportability

- Should apply RESTful Web API standard.
- Should follow the coding convention.
- All development tools should be listed with attached documents

8 Requirement Appendix

8.1 Application Messages List

| # | Message code | Message Type | Context | Content |
|---|--------------|----------------------------|--|------------------------------------|
| 1 | MSG_LG_01 | In red, under the text box | Input value length < min length Input value length > max length | Tên người dùng phải lớn hơn 5 |
| 2 | MSG_LG_02 | In red, under the text box | Input value length < min length Input value length > max length | Mật khẩu người dùng phải lớn hơn 5 |
| 3 | MSG_LG_03 | Toast message | No input correct information | Vui lòng nhập đầy đủ thông tin |
| 4 | MSG_LG_04 | In red, under the text box | Not input correct email format | Địa chỉ email không hợp lệ |
| 5 | MSG_LG_05 | Toast message | Not input correct phone number format | Số điện thoại không hợp lệ! |
| 6 | MSG_LG_06 | In line | Username or password is not correct when clicking sign-in | Sai tài khoản hoặc mật khẩu |
| 7 | MSG_LG_07 | Toast message | Duplicate rental products | Sản phẩm này đã có người thuê |

| | | | | |
|-----------|-----------|---------------|--------------------------------------|---|
| 8 | MSG_LG_08 | Toast message | Create order successfully | Đặt hàng thành công |
| 9 | MSG_LG_09 | Toast message | Duplicate in the cart product | Sản phẩm này đang có trong giỏ hàng của bạn |
| 10 | MSG_LG_10 | Toast message | Not input correct product in search | Không tìm thấy sản phẩm |
| 11 | MSG_LG_11 | Toast message | When admin cancel order successfully | Đã hủy đơn hàng |
| 12 | MSG_LG_12 | Toast message | Confirm the order | Xác nhận đơn hàng |
| 13 | MSG_LG_13 | Toast message | The order is error. | Đơn hàng bị lỗi |
| 14 | MSG_LG_14 | Toast message | When server is disconnect. | Can't connect to the server |