

LIBRARY MANAGEMENT SYSTEM

Group 1 – Software Requirement Specification

1 Overall Description

1.1 Introduction

Library Manager Application is a management application for librarian and staff to manage the library. With Library Manager, they can manage their book lenders (customers) and list of book in library more easily, the staff control all lent activities of the customers.

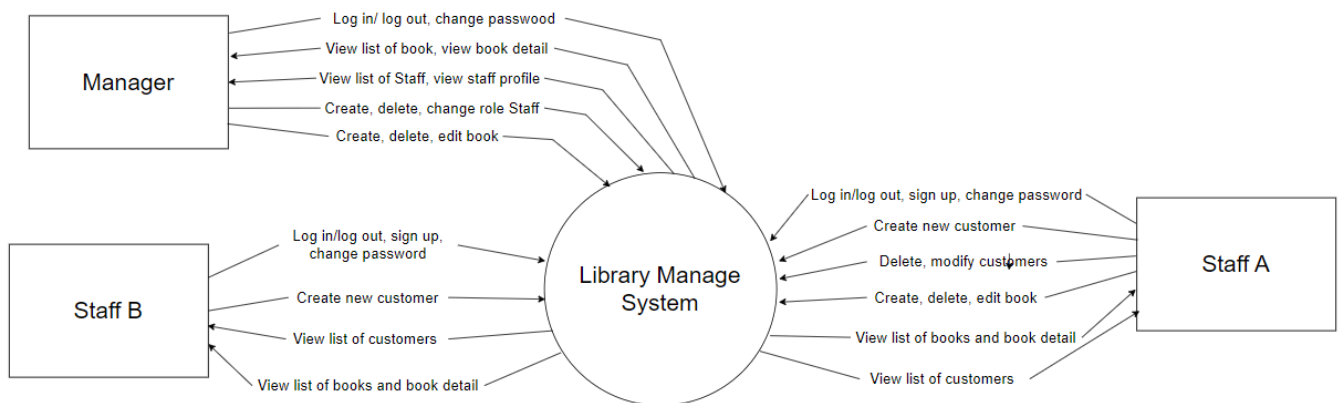


Figure 1: Library management system

1.2 Feature Descriptions

1.2.1 User Requirements

| # | Actor | Description |
|---|---------|--------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Manager | Someone who has an account to be able to manage all. accounts in system, manager book and all staff. They delegate authority to employees. |
| 2 | Staff A | Someone who has an account to be able to view, edit, add new, delete customers and list books. |
| 3 | Staff B | Someone who has an account to be able to view, add new and edit customers; view books. |

1.2.2 Screen Functions

| # | Feature | System Function | Description |
|----|----------------------------|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | User authentication | Verify login information and grant access. | Users enter login information to access the system. |
| 2 | Password recovery | Send password recovery information to the user. | Users can recover their password if they forget their login details. |
| 3 | Password modification | Allow users to change their password. | Users can change their password for security reasons. |
| 4 | Overview of system status. | Display key metrics and information. | Provides a snapshot of the system's current state. |
| 5 | Book inventory management | Add, edit, and manage book details. | Allows Employee A to oversee the list of available books. |
| 6 | List of available books | Display a comprehensive list of available books. | Employee A can view a catalogue of books, including such as title, author, and availability status, to facilitate easy browsing and selection. |
| 7 | Book details | Provide detailed information about a book. | Users can access specific details for a book, including its synopsis, author information, publication details, and user reviews. |
| 8 | Add/edit/delete books | Add, edit, delete and manage book. | Allow Employee A or Manager to add new books or modify existing book information in the book catalogue. |
| 9 | Book search | Search for specific books. | Users can find desired books by entering titles, or authors into the search bar. The system will display relevant results. |
| 10 | Reader management screen | Display list, add/edit Reader profile. | This screen acts as a central hub for managing readers. It provides a concise view of registered readers and allows seamless addition or modification of reader profiles. |
| 11 | List of Reader | View list of Reader. | Display a comprehensive list of individuals borrowing books. |
| 12 | Reader profile details | Present detailed information about a | Employees can view in-depth details about an individual borrower, including personal |

| | | | |
|----|--------------------------------|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | specific reader's profile. | information, contact details, and borrowing history. |
| 13 | Add/edit Reader profile | Add new reader profiles or edit existing reader information. | This screen empowers library staff to efficiently manage borrower data by adding new profiles or updating existing information. |
| 14 | Reader search | Search for specific readers. | Employees can use the search functionality to quickly locate and retrieve information about specific readers. |
| 15 | Reader Borrowing History | Borrowing history of a specific reader. | This screen of a reader's past transactions, showcasing the books they have borrowed and returned. |
| 16 | General Reporting and Analysis | Reports and analysis for both book and reader | Display comprehensive reports and analysis for both book and user statistics. |
| 17 | Book Statistics Report | Report information related to books. | Allows managers to analyse book trends for informed inventory management. Reports on popular books, damaged books, and books with low borrowing frequency. |
| 18 | User Statistics Report | Report information related to readers. | Provide insights into users consistently borrowing overdue items, users currently holding overdue books, and users responsible for book damages. |
| 19 | App Settings Screen | Provides options to configure such as themes and fonts. | This screen acts as a control panel for users to customise. It includes features such as themes, font settings. |
| 20 | Theme Selection | List of available themes. | Allow users to choose from a variety of visual themes for the application interface. |
| 21 | Font Style Configuration | List of available fonts. | Enable users to customise the font style used throughout the application. |
| 22 | Notification configuration | Display overdue loan notifications. | Allows users to configure notification settings, including reader notification lists. |
| 23 | User Account Management | General user account settings | Includes user account management features, including profile viewing, password changing, and, specifically for managers, the ability to modify employee profiles. |
| 24 | View profiles | Displays user account information. | Allows users to access and review their account profiles, presenting details such as personal information, role, and contact details. |
| 25 | Change password | Change the password for the user. | Empowers users to modify their account passwords. |
| 26 | Change profile | Change user account information. | Exclusively available to managers, this function allows them to modify the profiles of other staff members. |
| 27 | Access Rights Configuration | Decentralise6r3 permissions to other staff accounts. | Enable managers to configure and assign access rights for other staff accounts. |
| 28 | Display employee list | | |

1.2.3 Non-Screen Functions

| # | Feature | System Function | Description |
|----|-----------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| 1 | User login security | Verify user credentials for secure access | Ensures that only authorised users can log in to the system. |
| 2 | Password retrieval | Provide a mechanism for users to recover forgotten passwords | Allows users to regain access to their accounts in case of forgotten passwords |
| 3 | Communication with users | Send notifications for overdue books, account updates, etc. | Keeps users informed about important events and updates |
| 4 | Persistent data storage | Store and retrieve information about books, users, and system settings | Ensures that data is securely stored and accessible when needed. |
| 5 | Manage user permissions | Control access levels for different user roles | Ensures that each user has appropriate access rights within the system. |
| 6 | Generate reports and analyse data | Process data to provide insights into book and user statistics. | Supports managerial decision-making with comprehensive data analysis. |
| 7 | Personalization options. | Allow users to customise themes, fonts, and notification settings | Enhances user experience by providing customization options. |
| 8 | Administer staff roles and permissions. | Add, modify, or remove staff members and assign appropriate roles. | Allows administrators to manage staff access and responsibilities. |
| 9 | Record system activities | Log user actions for security and accountability | Facilitates tracking and auditing of system events |
| 10 | Communication channel | Integrate with email for password recovery and notifications | Utilises email for communication between the system and users |

1.2.4 Common Requirements

Functional Requirements:

- User Authentication
 - The system must provide a secure and user-friendly login screen for all users.
 - Ensures controlled access to the system and protects user information.
- Password Management
 - The system must include screens for password recovery and password change for all users.
 - Enables users to recover or update their passwords securely.
- Dashboard
 - A dashboard must be available for all users, displaying key metrics and information relevant to their role.
 - Provides users with a quick overview of system status and important data.

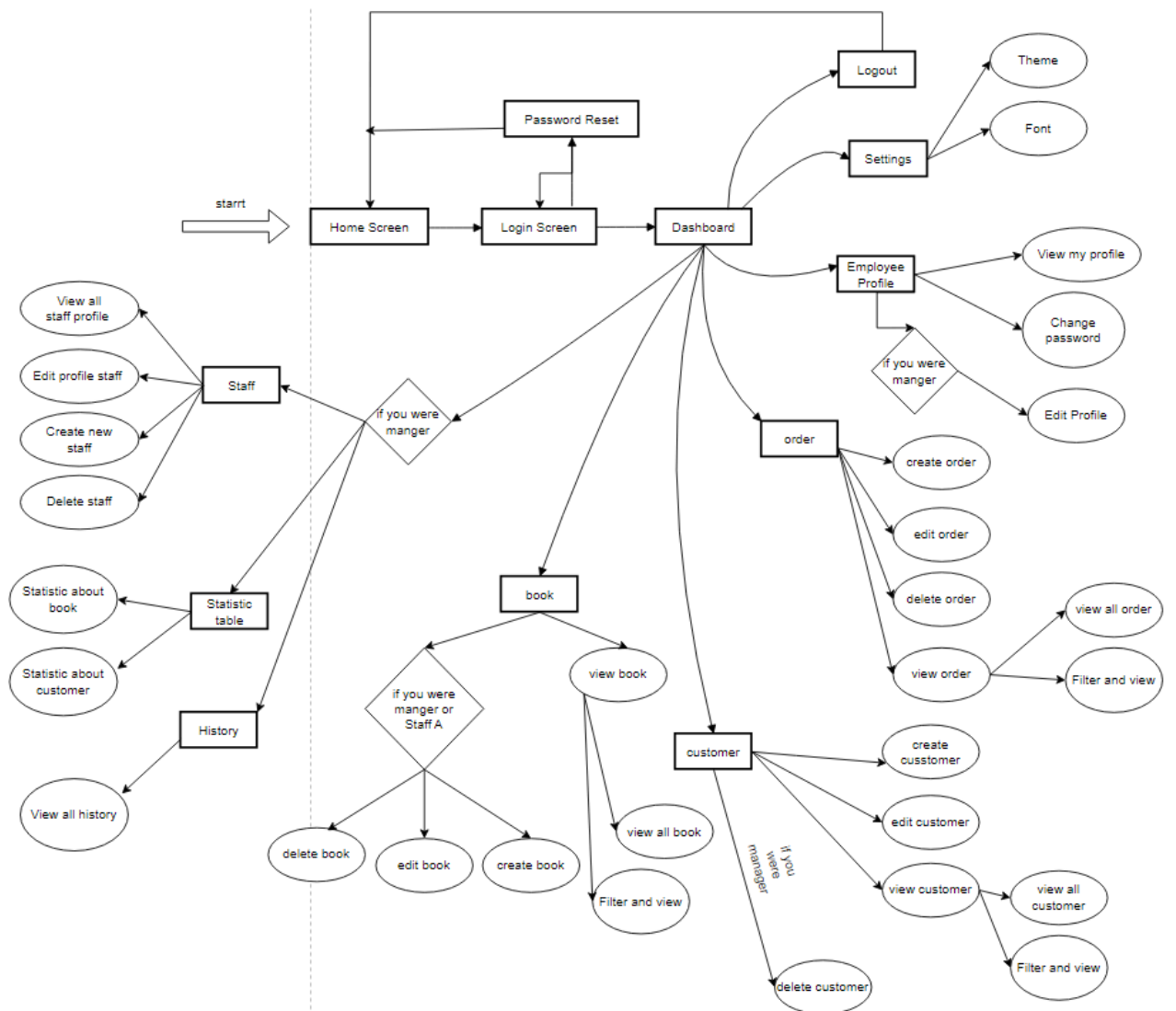
- Book Management
 - All users (including staff and managers) must have access to screens for managing books, including viewing, adding, editing, searching, and accessing detailed information.
 - Facilitates efficient management of the library's book inventory.
- Borrower Management
 - All users (including staff and managers) must have access to screens for managing borrowers, including viewing, adding, editing, searching, and accessing detailed information.
 - Facilitates efficient management of borrower profiles and interactions.
- Borrowing History
 - A screen must display the borrowing history of a borrower, showing details of borrowed books.
 - Provides transparency and historical context for borrowers' interactions with the library.
- Reporting and Analysis
 - Manager must have access to screens for generating reports and analyzing data related to book and user statistics.
 - Supports data-driven decision-making and strategic planning.
- System Configuration
 - User must be able to access screens for system configuration, including theme selection, font preferences, and notification settings.
 - Allows users to customize their system experience for improved usability.
- User Account Settings
 - Only Manager can have access to screens for updating their profile information, changing passwords, and viewing their profiles and staff only change password.
 - Enables manager and staff to manage their personal information and account settings.

Non-Functional Requirements:

- User Interface:
 - The user interface must be consistent, intuitive, and responsive across all screens.
 - Ensures a positive and efficient user experience.
- Performance:
 - The system must provide responsive performance for data retrieval, reporting, and analytics.
 - Ensures timely access to information for effective decision-making.
 - Protects against unauthorized access and maintains data integrity.

1.3 Screen Description

1.3.1 Screen Flow



1.3.2 Screen Details

| # | Feature | Screen | Description |
|----|--------------------|------------------|-------------------------------------------------------------------------------------------------------------|
| 1 | General | Home screen | The first page a user sees |
| 2 | General | User login | Users login to their account to access |
| 3 | General | Password reset | Screen for the user to recovery the account password |
| 4 | General | Dashboard | Display key metrics and information of the role for the user, overview of system status and important data. |
| 5 | General | Setting | Provides options to configure such as themes and fonts |
| 6 | General | Notification | Users have the option to enable or disable notifications. |
| 7 | General | Employee Profile | Display the details of staff and provide staff functions. |
| 8 | General | Change password | Users can change the password. |
| 9 | Manager | Edit profile | Managers can modify information of accounts under other authority. |
| 10 | General | Order | Provides all of the order functions . |
| 11 | General | Create order | Users can create new orders. |
| 12 | General | Edit order | Users can edit or delete placed orders. |
| 13 | General | View order | Users can view details of placed orders. |
| 14 | General | Customer | Provides all of the customer functions . |
| 15 | General | Create customer | Users can create new customers. |
| 16 | General | Edit customer | Users can edit or delete customers. |
| 17 | General | View customer | Users can view customer details. |
| 18 | General | Book | Provides all of the order functions. |
| 19 | Manager or staff A | Create book | Manager or staff A can create new books. |
| 20 | Manager or staff A | Edit book | Manager or staff A can edit or delete books. |
| 21 | General | View book | Users can view book details. |
| 22 | Manager | Staff | Provides all of the functions related to managing employees for the manager |
| 23 | Manager | Create staff | Manager can create new staff. |

| | | | |
|----|---------|--------------------------|----------------------------------------------------------------|
| 24 | Manager | Edit staff | Manager can edit or delete staff. |
| 25 | Manager | View staff | Manager can view staff details. |
| 26 | Manager | Statistic table | Managers can control staff and books in the library |
| 27 | Manager | Statistic about book | Statistics on books currently available in the library. |
| 28 | Manager | Statistic about customer | Library customer statistics. |
| 29 | Manager | History | Managers can check the history of borrowing or returning books |

1.3.3 User Authorization

| Screen | Staff A | Staff B | Manager |
|-----------------|---------|---------|---------|
| Login | X | X | X |
| Home | X | X | X |
| Dashboard | X | X | X |
| Change password | X | X | X |
| Setting | X | X | X |
| Staff profile | X | X | X |
| View profile | X | X | X |
| Theme | X | X | X |
| Font | X | X | X |
| List Book | X | X | X |
| List Customer | X | X | X |
| List Staff | | | X |
| Statistic book | | | X |

| | | | |
|--------------------|---|---|---|
| Order history | | | X |
| Create order | X | X | X |
| Customer profile | X | X | X |
| Add book | X | X | X |
| Update book | X | | X |
| Delete book | X | | X |
| Search book | X | X | X |
| View order detail | X | X | X |
| Update order | X | | X |
| Delete order | X | | X |
| View order | X | X | X |
| Add Staff | | | X |
| Update Staff | | | X |
| Delete Staff | | | X |
| Edit Staff | | | X |
| Logout | X | X | X |
| Filter and view | X | X | X |
| Statistic customer | | | X |

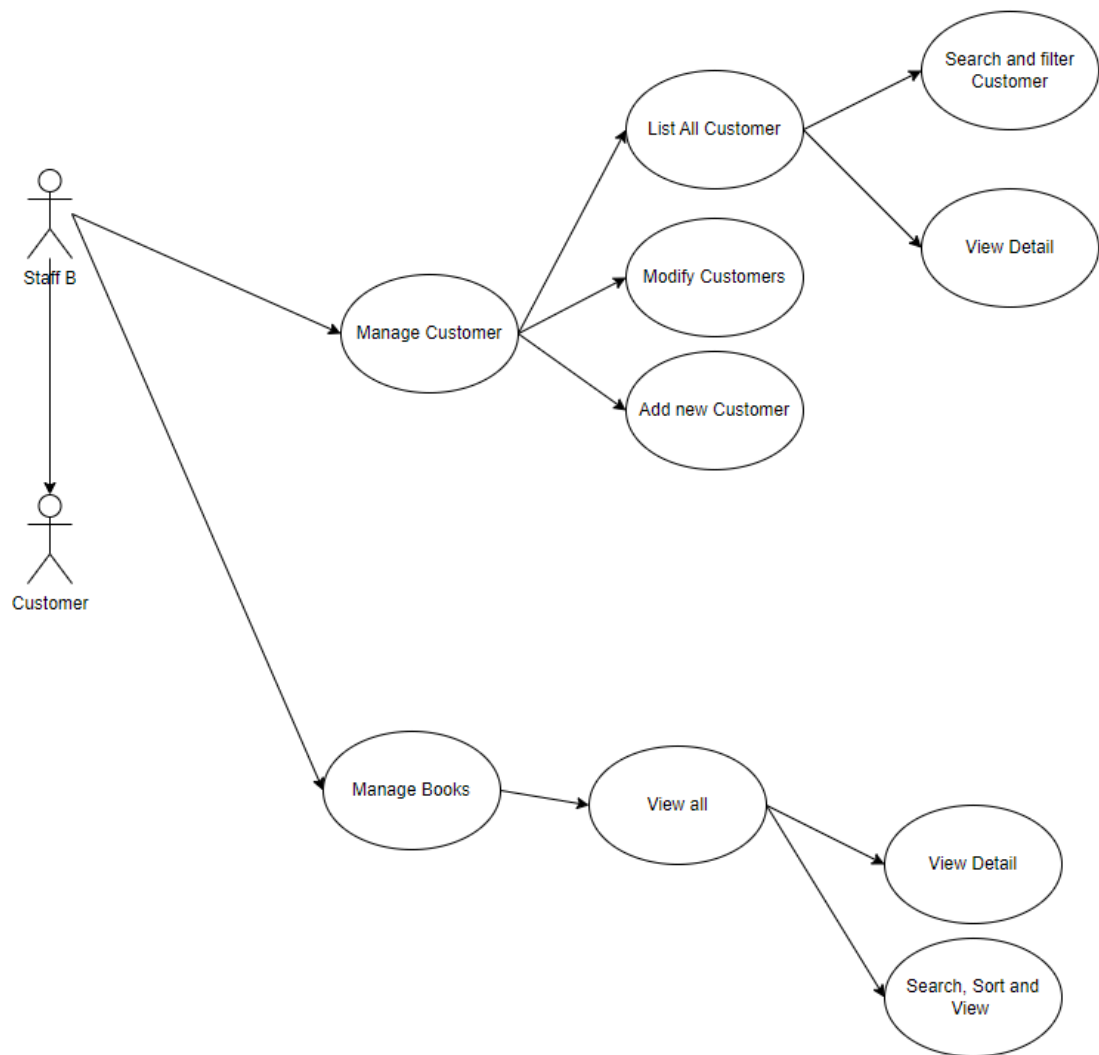
2 System Features

2.2.1 Use Cases

2.2.2.1. Staff A



2.2.2.2 Staff B



2.2.2.3 Manager



2 System Features

2.1 <<Feature Name 1>>

2.1.1.1 Home Screen

2.1.1.1.1 Screen Design

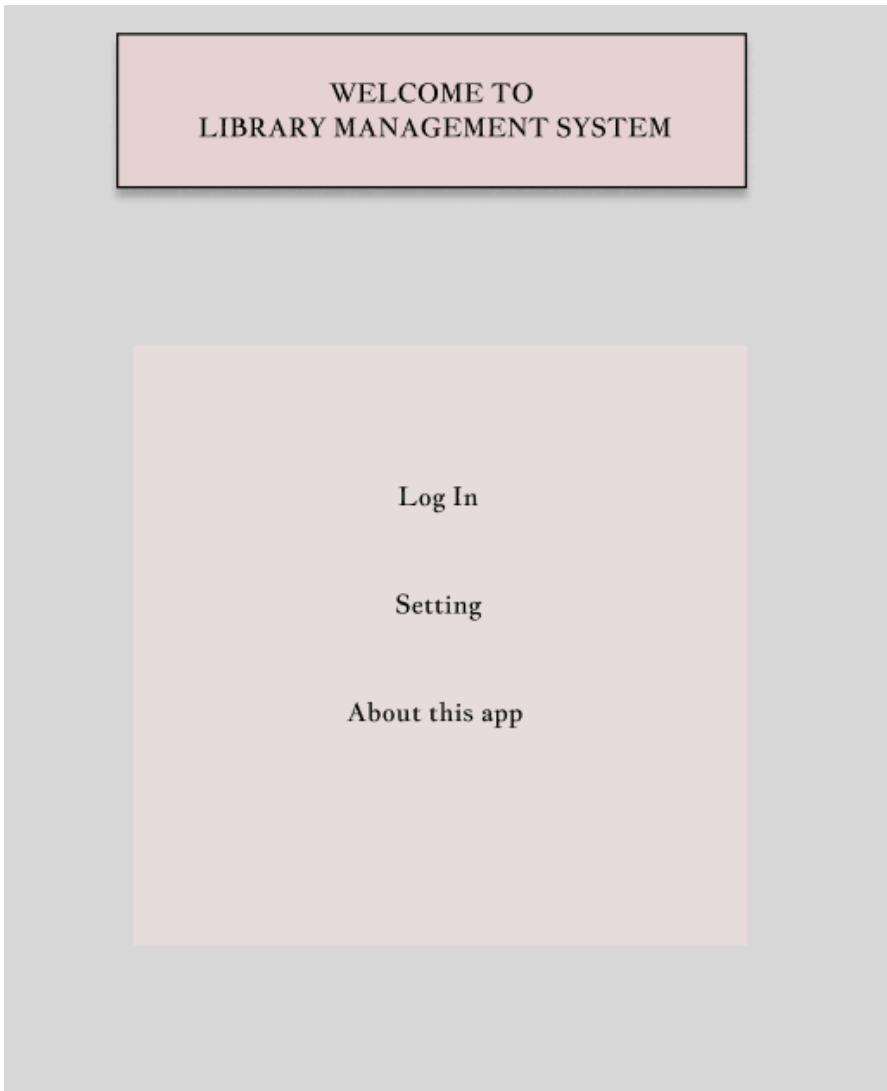


Table 1-1 Screen Definition

| # | Field Name | Type | Mandatory | Max Length | Description |
|---|------------|--------|-----------|------------|--------------------|
| 1 | Setting | Button | | | Go to setting page |
| 2 | Log In | Button | | | Go to home page |

| | | | | | |
|---|----------------|--------|--|--|------------------------|
| 3 | About this app | Button | | | Go to description page |
|---|----------------|--------|--|--|------------------------|

2.1.1.1.2 Use case Specification

| | | | | | |
|----------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-----|------|------------|
| Use Case ID | UC01 | Use Case Name | | Home | |
| Author | BaoTQ | Version | 1.0 | Date | 28/01/2024 |
| Actor | System, User | | | | |
| Description | The function allows a user to be able to go to login, setting, about page. | | | | |
| Precondition | PRE-01: PRE-02: | | | | |
| Trigger | TRG-01: | | | | |
| Post-Condition | POS-01: | | | | |
| Main flows | | | | | |
| Step | Actor | Action | | | |
| 1 | User | Click on app | | | |
| 2 | System | Display message welcome and show buttons: <ul style="list-style-type: none">- Login- Setting- About this app | | | |

Alternative flows

| | | |
|----------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| AT1 | At step 1 in the main flows, if there is an internal error in the system, | |
| Sub step | Actor | Action |
| 1.1 | System | Display "Error" page with message "Internal System Error, please contact with administrator" |

2.1.1.2 User Login

2.1.1.2.1 Screen Design



The image shows a user login screen design. At the top, there is a light gray rectangular button labeled "LOG IN". Below this, the text "User Name:" is followed by a white text input field. Underneath that, the text "Password:" is followed by another white text input field. To the right of the password field, there is a link labeled "Forgot password". At the bottom center, there is a white rectangular button labeled "Sign In". The entire form is set against a light gray background.

Table 1-2: Screen Definition

| # | Field Name | Type | Mandatory | Max Length | Description |
|---|------------|------|-----------|------------|-------------|
| 1 | User Name | Text | Yes | 20 | |

| | | | | | |
|---|-----------------|--------|-----|----|----------------------------------------|
| 2 | Password | Text | Yes | 20 | Display "*" instead of clear character |
| 3 | Sign In | Button | | | Go to home page |
| 4 | Forgot password | Button | | | Go to Forgot Password page |

2.1.1.2.2 Use case Specification

| | | | | | |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-----|-------|------------|
| Use Case ID | UC02 | Use Case Name | | Login | |
| Author | ThanhNT | Version | 1.0 | Date | 28/01/2024 |
| Actor | System, User | | | | |
| Description | The function allows a user to be able to login in the software when he/she has registered an account and his/her account is still active. | | | | |
| Precondition | PRE-01: PRE-02: | | | | |
| Trigger | TRG-01: Click button Login on Home Screen | | | | |
| Post-Condition | POS-01: | | | | |
| Main flows | | | | | |
| Step | Actor | Action | | | |
| 1 | System | Display Login screen with the following fields: - User Name - Password - Sign In and Forgot password button | | | |

| | | |
|---|--------|------------------------------------------------------------------------------------------------------------------|
| 2 | User | Enter username & password into Username & Password fields on the Login screen, then click on the Sign In button. |
| 3 | System | Validate the entered user name & password and then display Home screen |

Alternative flows

| | | |
|----------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| AT1 | At step 2 in the main flows, if there is an internal error in the system, | |
| Sub step | Actor | Action |
| 2.1 | System | Display "Error" page with message "Internal System Error, please contact with administrator" |

| | | |
|----------|--------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| AT2 | At step 3 in the main flows, if the user enters the wrong username or password | |
| Sub step | Actor | Action |
| 3.1 | System | Go back to Login page and display "Wrong password or username, try again" |

2.1.1.3 Reset Password

2.1.1.3.1 Screen Design

The image shows a web form for resetting a password. It features a light gray background. At the top, there is a pink rectangular box with the text 'Reset Password' centered inside. Below this, there is a larger, lighter pink rectangular area containing the form elements. Inside this area, the word 'Email' is followed by a white input field. At the bottom of the form area, there are two buttons: 'Reset password' and 'Back to Login page', both with a light blue background and dark text.

Table 1-3: Screen Definition

| # | Field Name | Type | Mandatory | Max Length | Description |
|---|--------------------|--------|-----------|------------|-----------------------------------------|
| 1 | Email | Text | Yes | 100 | |
| 2 | Back to Login page | Button | | | Go to login page |
| 3 | Reset password | Button | | | Reset pass and send it in a mai to user |

2.1.1.3.2 Use case Specification

| | | | | | |
|----------------|----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-----|----------------|------------|
| Use Case ID | UC03 | Use Case Name | | Reset password | |
| Author | ThanhNT | Version | 1.0 | Date | 28/01/2024 |
| Actor | System, User | | | | |
| Description | The function allows a user to be able to reset password. | | | | |
| Precondition | PRE-01: PRE-02: | | | | |
| Trigger | TRG-01: Click button Forgot password on Login Screen | | | | |
| Post-Condition | POS-01: | | | | |
| Main flows | | | | | |
| Step | Actor | Action | | | |
| 1 | User | Click Forgot password button on Login Page | | | |
| 2 | System | Display Reset password screen with the following fields: - Email - Reset and Back to Login page button | | | |
| 3 | User | Enter email, then click on the Reset password button. | | | |
| 4 | System | Validate the entered email and send email with new password to user | | | |

Alternative flows

| | |
|-----|----------------------------------------------------------------------|
| AT1 | At step 3 in the main flows, if user click Back to login page button |
|-----|----------------------------------------------------------------------|

| Sub step | Actor | Action |
|----------|--------|--------------------|
| 3.1 | System | Back to Login page |

2.1.1.4 Dash Board screen

2.1.1.4.1 Screen Design

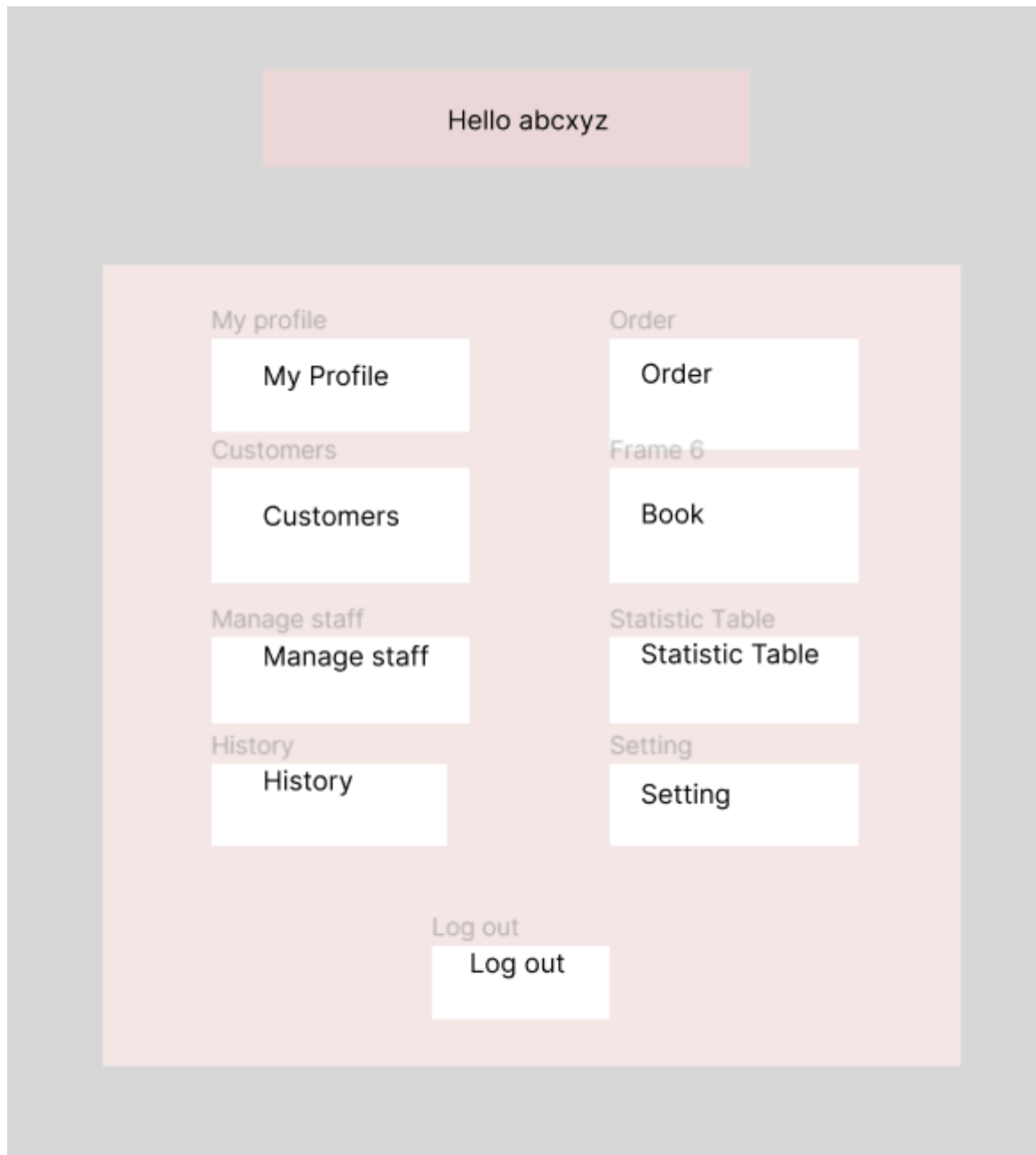


Table 1-4: Screen Definition

| # | Field Name | Type | Mandatory | Max Length | Description |
|---|-----------------|--------|-----------|------------|---------------------------------|
| 1 | My profile | Button | | | Go to profile page |
| 2 | Order | Button | | | Go to order page |
| 3 | Customers | Button | | | Go to customers page |
| 4 | Book | Button | | | Go to book page |
| 5 | Manage staff | Button | | | Go to manage staff page |
| 6 | Statistic table | Button | | | Go to statistic table page |
| 7 | History | Button | | | Go to history page |
| 8 | Setting | Button | | | Go to Setting page |
| 9 | Log out | Button | | | Log out and back to home screen |

2.1.1.4.2 Use case Specification

| Use Case ID | UC04 | Use Case Name | | Dashboard screen | |
|-------------|--------------|---------------|-----|------------------|------------|
| Author | VietHQ | Version | 1.0 | Date | 28/01/2024 |
| Actor | System, User | | | | |

| | | |
|-----------------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | | The function shows all available functions and allows a user to be able to choose functions they want. |
| Precondition | | PRE-01: Login successful PRE-02: |
| Trigger | | TRG-01: |
| Post-Condition | | POS-01: |
| Main flows | | |
| Step | Actor | Action |
| 1 | System | Display Dashboard screen with the following fields: - Welcome message - My profile, order, book, customers, manage staff, statistic table, history, setting, logout button |
| 2 | User | Choose one of the buttons on screen |
| 3 | System | Direct with button was chosen |

Alternative flows

| | | |
|-----------------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| AT1 | At step 1 in the main flows, if there is an internal error in the system, | |
| Sub step | Actor | Action |
| 1.1 | System | Display "Error" page with message "Internal System Error, please contact with administrator" |

2.1.1.5 Setting screen

2.1.1.5.1 Screen Design

Setting

Font

☐ font 1

☐ font 1

Theme

☐ Theme 1

☐ Theme 2

Back to Dashboard

Table 1-5: Screen Definition

| # | Field Name | Type | Mandatory | Max Length | Description |
|---|------------|-------|-----------|------------|------------------------|
| 1 | Font | Radio | Yes | | Choose font for system |

| | | | | | |
|---|-------------------|--------|-----|--|---------------------------|
| 2 | Theme | Radio | Yes | | Choose theme for system |
| 3 | Back to Dashboard | Button | | | Go back to Dashboard page |

2.1.1.5.2 Use case Specification

| | | | | | |
|----------------|---------------------------------------------------|--------------------------------------------------------------------------------------------------|-----|----------------|------------|
| Use Case ID | UC05 | Use Case Name | | Setting screen | |
| Author | VietHQ | Version | 1.0 | Date | 28/01/2024 |
| Actor | System, User | | | | |
| Description | The function shows all available option settings. | | | | |
| Precondition | PRE-01: Login successful PRE-02: | | | | |
| Trigger | TRG-01: Click button Setting | | | | |
| Post-Condition | POS-01: | | | | |
| Main flows | | | | | |
| Step | Actor | Action | | | |
| 1 | System | Display Setting screen with the following fields: - Font, Theme - Back to dashboard button | | | |
| 2 | User | Setting what they want. | | | |
| 3 | System | Reinstall the system according to the user's setting. | | | |

Alternative flows

| | | |
|----------|----------------------------------------------------------------------------------|--------------------------------|
| AT1 | At step 2 in the main flows, if user don't want set any thing, back to dashboard | |
| Sub step | Actor | Action |
| 2.1 | User | Click Back to Dashboard button |
| 2.2 | System | Go back dashboard page |

2.1.1.6 Notification

2.1.1.6.1 Screen Design



Table 1-6: Screen Definition

| # | Field Name | Type | Mandatory | Max Length | Description |
|---|-------------------|--------|-----------|------------|---------------------------|
| 1 | News | List | | | Display all news |
| 2 | Back to Dashboard | Button | | | Go back to Dashboard page |

2.1.1.5.2 Use case Specification

| | | | | | |
|----------------|------------------------------------------------------------------------|------------------------------------------------------------------------------|-----|---------------------|------------|
| Use Case ID | UC06 | Use Case Name | | Notification screen | |
| Author | DucTV | Version | 1.0 | Date | 28/01/2024 |
| Actor | System, User | | | | |
| Description | The function shows all news such as: people who return books late,.... | | | | |
| Precondition | PRE-01: Login successful PRE-02: | | | | |
| Trigger | TRG-01: Click button Notification | | | | |
| Post-Condition | POS-01: | | | | |
| Main flows | | | | | |
| Step | Actor | Action | | | |
| 1 | System | Display Notification screen with all news: people who return books late,.... | | | |

Alternative flows

| | | |
|-----------------|-----------------------------------------------------------------------------------------|---------------------------------------|
| AT1 | At step 1 in the main flows, if user don't want set any thing, back to dashboard | |
| Sub step | Actor | Action |
| 1.1 | User | Click Back to Dashboard button |
| 1.2 | System | Go back dashboard page |

1.1.7 Employee Profile

1.1.7.1 Employee Profile

Theme

Picture here

User name

Date of birth:

26/01/2002

Address:

Ha Noi

Email:

manh3btq@gmail.com

Phone number:

0868046261

Password:

Change password

Figure: Screen Design of Employee profile

Table: Screen Definition

| # | Field Name | Type | Mandatory | Max Length | Description |
|---|-----------------|----------|-----------|------------|--------------------------------------|
| 1 | Picture | Image | None | None | Display avatar of Employee |
| 2 | Address | Text | Yes | None | Display address of Employee |
| 3 | Name | Text | None | None | Display Name of Employee |
| 4 | Date of Birth | Date | None | None | Display Date of birth of Employee |
| 5 | Email | Text | None | None | Display email of Employee |
| 6 | Phone | Text | None | None | Display phone number of Employee |
| 7 | Password | Password | None | None | Display Password of Employee |
| 8 | Change password | Button | None | None | Click to change password of Employee |

1.1.7.2 Employee Profile

| | | | | | |
|----------------|------------------------------------------------------------------------------------------------|---------------------------------------------------------|-----|------------------|------------|
| Use Case ID | UC7 | Use Case Name | | Employee Profile | |
| Author | VietHQ | Version | 1.0 | Date | 17/02/2024 |
| Actor | | | | | |
| Description | The function allows employees who have an account in the Library System to view their profile. | | | | |
| Precondition | PRE-01: PRE-02: | | | | |
| Trigger | TRG-01: | | | | |
| Post-Condition | POS-01: | | | | |
| Main flow | | | | | |
| Step | Actor | Action | | | |
| 1 | Employee | Click the button and then display the employee profile. | | | |

| | | |
|---|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | System | Display information about employee profile: <ul style="list-style-type: none"> + Photo + Name + DoB + Address + Phone + Password + Email + Change password button |
| 3 | User | The user can view their information about their profile and he/she can change their password. |

Alternative flows

| AT1 | | |
|----------|--------|----------------------------------------------------------------------------------------------|
| Sub step | Actor | Action |
| 1 | System | Display "Error" page with message "Internal System Error, please contact with administrator" |

1.1.8 Change Password

1.1.8.1 Change password screen

Change Pass Word

Old pass word

New password

Confirm new pass word

Save change






Figure: Change Password

Table Definition

| # | Field Name | Type | Mandatory | Max Length | Description |
|---|----------------------|--------|-----------|------------|-------------------------------------------|
| 1 | Old password | Text | Yes | 20 | Display "*" instead of clear character |
| 2 | New password | Text | Yes | 20 | Display "*" instead of clear character |
| 3 | Confirm new password | Text | Yes | 20 | Display "*" instead of clear character |
| 4 | Change password | Button | None | None | Click to save change password of employee |

1.1.8.2 Employee Profile

| | | | | | |
|----------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-----|-----------------|------------|
| Use Case ID | UC8 | Use Case Name | | Change password | |
| Author | ThanhNt | Version | 1.0 | Date | 17/02/2024 |
| Actor | | | | | |
| Description | The function allows employees who have an account in the Library System to change their password. | | | | |
| Precondition | PRE-01: PRE-02: | | | | |
| Trigger | TRG-01: | | | | |
| Post-Condition | POS-01: | | | | |
| Main flow | | | | | |
| Step | Actor | Action | | | |
| 1 | Employee | Click the button and then display the screen change password. | | | |
| 2 | System | Validate the entered password and then display Login screen | | | |
| 3 | User | The user can change their password. | | | |

Alternative flows

| AT1 | At step 2 in the main flows, if there is an internal error in the system, | |
|----------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| Sub step | Actor | Action |
| 1 | System | Display "Error" page with message "Internal System Error, please contact with administrator" |

| AT2 | At step 3 in the main flows, if user failed to validate password | |
|----------|------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Sub step | Actor | Action |
| 1 | System | Display with message "Old password is not correct." or "New password and confirm new password is not the same" |

1.9 Edit Employee Profile

1.9.1 Edit employee Profile

Figure : Edit Employee Profile

Table Definition

| # | Field Name | Type | Mandatory | Max Length | Description |
|---|----------------|--------|-----------|------------|-------------------------------------|
| 1 | Upload picture | Image | Yes | None | Display avatar of Employee |
| 2 | Address | Text | Yes | 50 | Display address of Employee |
| 3 | Name | Text | Yes | 30 | Display Name of Employee |
| 4 | Date of Birth | Date | Yes | None | Display Date of birth of Employee |
| 5 | Email | Text | Yes | 30 | Display email of Employee |
| 6 | Phone | Text | Yes | 10 | Display phone number of Employee |
| 7 | Save Change | Button | None | None | Save change information of employee |

1.9.2 Employee Profile

| | | | | | | |
|----------------|-------|-------------------------------------------------------------------------------------------------|---------------|-----|-------------------------|------------|
| Use Case ID | | UC9 | Use Case Name | | Update Employee Profile | |
| Author | | VietHQ | Version | 1.0 | Date | 17/02/2024 |
| Actor | | | | | | |
| Description | | The function allows Managers who have an account in the Library System to change their Profile. | | | | |
| Precondition | | PRE-01: PRE-02: | | | | |
| Trigger | | TRG-01: | | | | |
| Post-Condition | | POS-01: | | | | |
| Main flow | | | | | | |
| Step | Actor | Action | | | | |

| | | |
|---|----------|--------------------------------------------------------------|
| 1 | Employee | Click the button and then display the screen Update Profile. |
| 2 | System | Validate the input on each field. |
| 3 | User | The user can update their profile. |


Alternative flows

| AT1 | At step 1 in the main flows, if there is an internal error in the system, | |
|----------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| Sub step | Actor | Action |
| 1 | System | Display "Error" page with message "Internal System Error, please contact with administrator" |

| AT2 | At step 2 in the main flows, if user failed to validate password | |
|----------|------------------------------------------------------------------|-----------------------------------------------------|
| Sub step | Actor | Action |
| 1 | System | Display with message "the character less than <30". |

1.16 Edit customer

1.16.1 Screen Design


Edit Customer

Name:

Date Of Birth:

Address:

Email:

Phone Number:

Table 1-16: Screen Definition

| # | Field Name | Type | Mandatory | Max Length | Description |
|---|----------------------|-------------|-----------|------------|-----------------------------------------------|
| 1 | Back | ImageButton | | | Click can return to the Customer Screen. |
| 2 | name_customer | Text | Yes | 255 | Click to change the customer's name. |
| 3 | dob_customer | Date | No | | Click to change the customer's date of birth. |
| 4 | address_customer | Text | No | 255 | Click to change customer's address. |
| 5 | email_customer | Text | No | 255 | Click to change customer's email. |
| 6 | phonenumber_customer | Text | No | 255 | Click to change the customer's phone number. |

1.16.2 Use case Specification

Figure 3-2: History Use-Case Diagram

| | | | | | | |
|----------------|-------|-----------------------------------------------------------------------------------------------------------------------|---------------|-----|---------------|------------|
| Use Case ID | | UC16 | Use Case Name | | Edit Customer | |
| Author | | DucTV | Version | 1.0 | Date | 17/02/2024 |
| Actor | | User, System | | | | |
| Description | | This functionality allows a Manager or employee with an account in the System Library to change a customer's Profile. | | | | |
| Precondition | | PRE-01: PRE-02: | | | | |
| Trigger | | TRG-01: | | | | |
| Post-Condition | | POS-01: | | | | |
| Main flow | | | | | | |
| Step | Actor | Action | | | | |

| | | |
|---|--------|--------------------------------------------------------------------------------------------------------------------------------|
| 1 | User | Click the button and then display the screen Edit Customer. |
| 2 | System | Display Edit Customer screen with the following fields: - Name - Date Of Birth - Address - Email - Phone Number |
| 3 | User | Enter the information fields that need to be edited. |
| 4 | System | Validate the entered information and save it to the database. |

Alternative flows

| | | |
|----------|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| AT1 | At step 2 in the main flows, if there is an internal error in the system. | |
| Sub step | Actor | Action |
| 2.1 | System | Display "Error" page with message "Internal System Error, please contact administrator". |

| | | |
|----------|---------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| AT2 | At step 4 in the main flows, if the System cannot authenticate the information. | |
| Sub step | Actor | Action |
| 4.1 | System | Displays the "Edit customer" page with the message "The information you entered is incorrect". |

1.17 View Customer

1.17.1 Screen Design

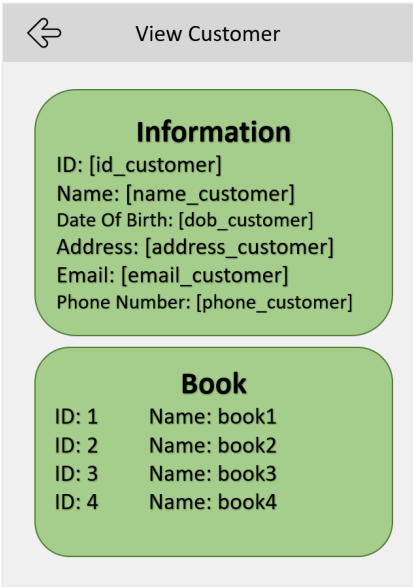


Table 1-17: Screen Definition

| # | Field Name | Type | Mandatory | Max Length | Description |
|---|------------|-------------|-----------|------------|--------------------------------------|
| 1 | Back | ImageButton | | | Click can return to Customer Screen. |

1.17.2 Use case Specification

Figure 3-2: History Use-Case Diagram

| | | | | | |
|--------------|---------------------------------------|---------------|-----|---------------|------------|
| Use Case ID | UC17 | Use Case Name | | View Customer | |
| Author | DucTV | Version | 1.0 | Date | 17/02/2024 |
| Actor | User, System | | | | |
| Description | Display detailed customer information | | | | |
| Precondition | PRE-01: PRE-02: | | | | |

| | | |
|----------------|--------|----------------------------------------------------------------------------------------|
| Trigger | | TRG-01: |
| Post-Condition | | POS-01: |
| Main flow | | |
| Step | Actor | Action |
| 1 | User | Click the button and then display the screen View Customer. |
| 2 | System | Display the customer's personal information and the number of books they are borrowing |

1.18 Book

1.18.1 Screen Design

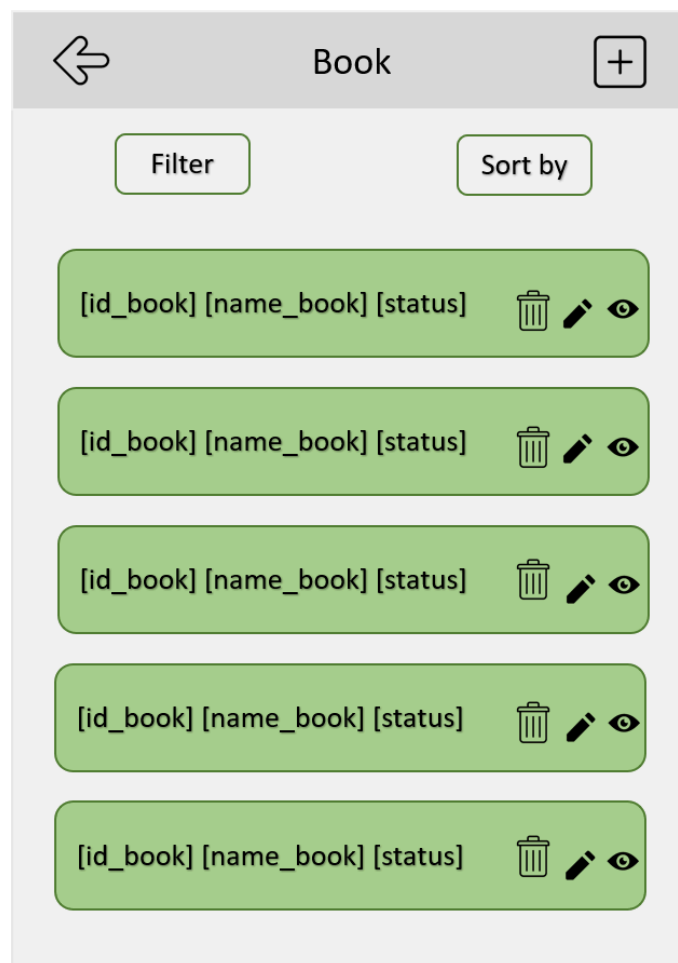


Table 1-18: Screen Definition

| # | Field Name | Type | Mandatory | Max Length | Description |
|---|--------------|-------------|-----------|------------|---------------------------------------------|
| 1 | Back | ImageButton | | | Click can return to Dashboard Screen. |
| 2 | create_book | Button | | | Click to create new book |
| 3 | edit_book | Button | | | Click to edit book |
| 4 | delete_book | Button | | | Click to delete book |
| 5 | book_details | Button | | | Show book details |
| 6 | seekbar | SeekBar | | | Used to slide to see more old content |
| 7 | filter | Text | No | 255 | Filter basic information of books |
| 8 | sort_by | Button | | | Click to sort by id ascending or descending |

1.18.2 Use case Specification

Figure 3-2: History Use-Case Diagram

| | | | | | |
|----------------|----------------------------------------|---------------|-----|------|------------|
| Use Case ID | UC18 | Use Case Name | | Book | |
| Author | DucTV | Version | 1.0 | Date | 17/02/2024 |
| Actor | User, System | | | | |
| Description | Display list of book and book function | | | | |
| Precondition | PRE-01: PRE-02: | | | | |
| Trigger | TRG-01: | | | | |
| Post-Condition | POS-01: | | | | |
| Main flow | | | | | |

| Step | Actor | Action |
|------|--------|----------------------------------------------------|
| 1 | User | Click the button and then display the screen Book. |
| 2 | System | Display list of book and book function. |
| 3 | User | The user will select the necessary tasks. |

1.19 Create Book

1.19.1 Screen Design



Create Book

Name:

Supplier:

Author:

Category:

Status:

Description :

ADD

Table 1-19: Screen Definition

| # | Field Name | Type | Mandatory | Max Length | Description |
|---|------------------|-------------|-----------|------------|----------------------------------------|
| 1 | Back | ImageButton | | | Click can return to the Book Screen. |
| 2 | name_book | Text | Yes | 255 | Click to enter the book's name. |
| 3 | supplier_book | Text | No | 255 | Click to enter the book's supplier. |
| 4 | author_book | Text | No | 255 | Click to enter the book's author. |
| 5 | category_book | Text | No | 50 | Click to enter the book's category. |
| 6 | status_book | Text | No | 50 | Click to enter the book's status. |
| 7 | description_book | Text | No | 255 | Click to enter the book's description. |

1.19.2 Use case Specification

Figure 3-2: History Use-Case Diagram

| | | | | | |
|----------------|--------------------|---------------|-----|-------------|------------|
| Use Case ID | UC19 | Use Case Name | | Create Book | |
| Author | DucTV | Version | 1.0 | Date | 17/02/2024 |
| Actor | User, System | | | | |
| Description | Create new book | | | | |
| Precondition | PRE-01: PRE-02: | | | | |
| Trigger | TRG-01: | | | | |
| Post-Condition | POS-01: | | | | |
| Main flow | | | | | |

| Step | Actor | Action |
|------|--------|--------------------------------------------------------------------------------------------------------------------------------------|
| 1 | User | Click the button and then display the screen Create Book. |
| 2 | System | Display Create Book screen with the following fields: - Name - Supplier - Author - Category - Status - Description |
| 3 | User | Enter the information fields that need to be added. |
| 4 | System | Validate the entered information and save it to the database. |

Alternative flows

| AT1 | At step 2 in the main flows, if there is an internal error in the system. | |
|----------|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Sub step | Actor | Action |
| 2.1 | System | Display "Error" page with message "Internal System Error, please contact administrator". |

| AT2 | At step 4 in the main flows, if the System cannot authenticate the information. | |
|----------|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| Sub step | Actor | Action |
| 4.1 | System | Displays the "Create book" page with the message "The information you entered is incorrect". |

1.20 Edit Book

1.20.1 Screen Design


Edit Book

Name:

Supplier:

Author:

Category:

Status:

Description:

CHANGE

Table 1-20: Screen Definition

| # | Field Name | Type | Mandatory | Max Length | Description |
|---|---------------|-------------|-----------|------------|--------------------------------------|
| 1 | Back | ImageButton | | | Click can return to the Book Screen. |
| 2 | name_book | Text | Yes | 255 | Click to enter the book's name. |
| 3 | supplier_book | Text | No | 255 | Click to enter the book's supplier. |
| 4 | author_book | Text | No | 255 | Click to enter the book's author. |
| 5 | category_book | Text | No | 50 | Click to enter the book's category. |

| | | | | | |
|---|------------------|------|----|-----|----------------------------------------|
| 6 | status_book | Text | No | 50 | Click to enter the book's status. |
| 7 | description_book | Text | No | 255 | Click to enter the book's description. |

1.20.2 Use case Specification

Figure 3-2: History Use-Case Diagram

| | | | | | |
|----------------|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|-----|-----------|------------|
| Use Case ID | UC20 | Use Case Name | | Edit Book | |
| Author | DucTV | Version | 1.0 | Date | 17/02/2024 |
| Actor | User, System | | | | |
| Description | This functionality allows a Manager or employee with an account in the System Library to change a book detail. | | | | |
| Precondition | PRE-01: PRE-02: | | | | |
| Trigger | TRG-01: | | | | |
| Post-Condition | POS-01: | | | | |
| Main flow | | | | | |
| Step | Actor | Action | | | |
| 1 | User | Click the button and then display the Edit Book. | | | |
| 2 | System | Display Edit Customer screen with the following fields: - Name - Supplier - Author - Category - Status - Description | | | |
| 3 | User | Enter the information fields that need to be edited. | | | |
| 4 | System | Validate the entered information and save it to the database. | | | |

Alternative flows

| AT1 | At step 2 in the main flows, if there is an internal error in the system. | |
|----------|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Sub step | Actor | Action |
| 2.1 | System | Display "Error" page with message "Internal System Error, please contact administrator". |

| AT2 | At step 4 in the main flows, if the System cannot authenticate the information. | |
|----------|---------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| Sub step | Actor | Action |
| 4.1 | System | Displays the "Edit book" page with the message "The information you entered is incorrect". |

1.21 View book

1.21.1 Screen Design

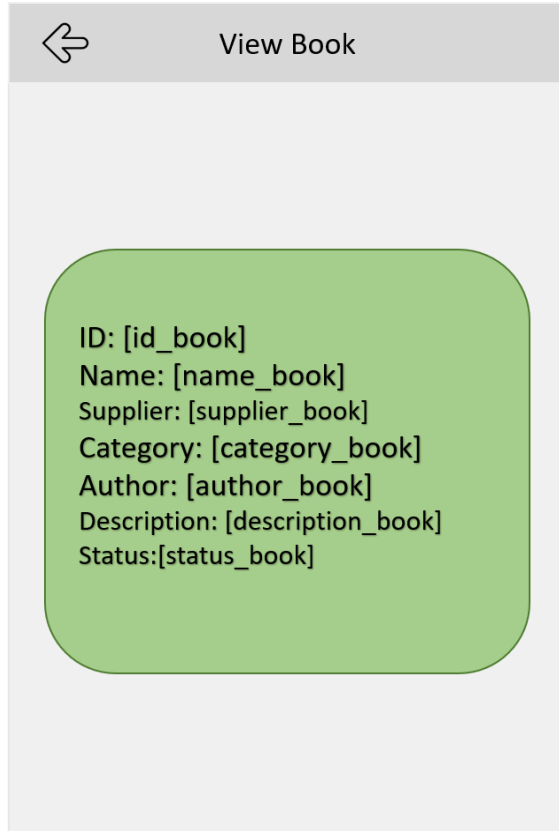


Table 1-21: Screen Definition

| # | Field Name | Type | Mandatory | Max Length | Description |
|---|------------|-------------|-----------|------------|--------------------------------------|
| 1 | Back | ImageButton | | | Click can return to the Book Screen. |

1.21.2 Use case Specification

Figure 3-2: History Use-Case Diagram

| | | | | | |
|----------------|-----------------------------------|----------------------------------------------------------------------------------------|-----|-----------|------------|
| Use Case ID | UC21 | Use Case Name | | View Book | |
| Author | DucTV | Version | 1.0 | Date | 17/02/2024 |
| Actor | User, System | | | | |
| Description | Display detailed book information | | | | |
| Precondition | PRE-01: PRE-02: | | | | |
| Trigger | TRG-01: | | | | |
| Post-Condition | POS-01: | | | | |
| Main flow | | | | | |
| Step | Actor | Action | | | |
| 1 | User | Click the button and then display the screen View Customer. | | | |
| 2 | System | Display the customer's personal information and the number of books they are borrowing | | | |

1.22 Staff

1.22.1 Screen Design

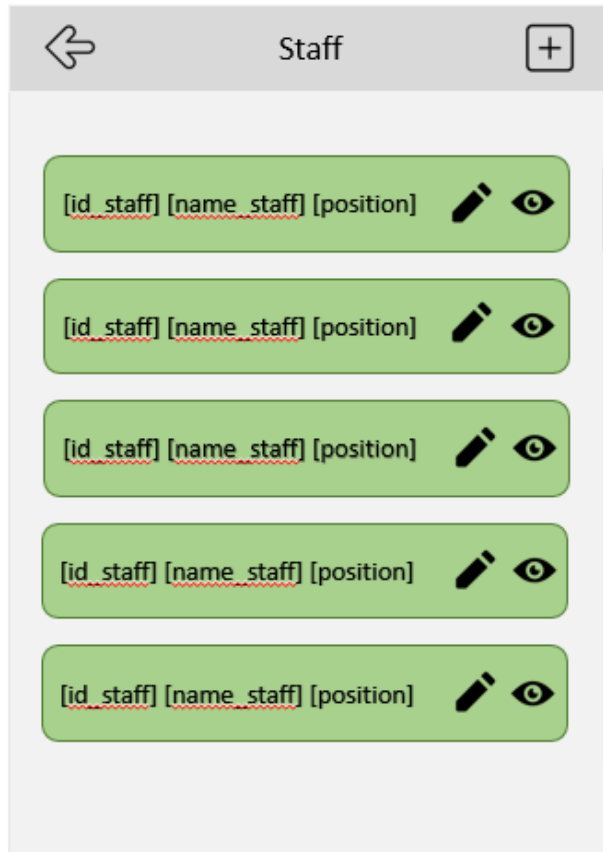


Figure 3-1: Screen Design of Staff

Table 1-1: Screen Definition

| # | Field Name | Type | Mandatory | Max Length | Description |
|---|-------------------|-------------|-----------|------------|-------------------------------------------------|
| 1 | Back | ImageButton | | | Click can return to dashboard. |
| 2 | Feature | Text | | | |
| 3 | Create Staff | ImageButton | | | Click to change screen to add staff |
| 4 | Staff information | Text | | | Staff information |
| 5 | Edit Staff | ImageButton | | | Click to change screen to edit profile of staff |

| | | | | | |
|---|------------|-------------|--|--|-------------------------------------------------|
| 6 | View Staff | ImageButton | | | Click to change screen to view profile of staff |
| 7 | SeekBar | SeekBar | | | Used to slide to see more old content |

1.22.2 Use case Specification

Figure 3-2: History Use-Case Diagram

| | | | | | |
|----------------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-------|------------|
| Use Case ID | UC22 | Use Case Name | | Staff | |
| Author | BaoTQ | Version | 1.0 | Date | 17/02/2024 |
| Actor | LMS | | | | |
| Description | A screen display all staff. | | | | |
| Precondition | PRE-01: PRE-02: | | | | |
| Trigger | TRG-01: | | | | |
| Post-Condition | POS-01: | | | | |
| Main flow | | | | | |
| Step | Actor | Action | | | |
| 1 | User | Select the Staff feature on the dashboard | | | |
| 2 | LMS | Display Staff screen with the following fields: - Back - Create feature - Name feature - Information staff - Edit feature - View feature - Seekbar | | | |
| 3 | User | User use seekbar to slide to see more old content | | | |
| 4 | User | User click icon to add new staff | | | |
| 5 | User | User click icon to edit or delete staff | | | |
| 6 | User | User click icon to view profile staff | | | |

1.23 Create staff

1.23.1 Screen Design

Figure 3-1: Screen Design of Create staff

Table 1-1: Screen Definition

| # | Field Name | Type | Mandatory | Max Length | Description |
|---|------------|-------------|-----------|------------|------------------------------------|
| 1 | Back | ImageButton | | | Click can return to Staff screen.. |
| 2 | Feature | Text | | | |
| 3 | ID Staff | Text | Yes | 4 | Only number |
| 4 | Position | Text | Yes | | |
| 5 | Name | Text | Yes | | Only word |

| | | | | | |
|---|---------|--------|-----|--|-------------|
| 6 | Address | Text | Yes | | |
| 7 | Email | Text | Yes | | Must have @ |
| 8 | Phone | Text | Yes | | Only number |
| 9 | Add | Button | | | |

1.23.2 Use case Specification

Figure 3-2: Create staff Use-Case Diagram

| | | | | | |
|----------------|---------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----|--------------|------------|
| Use Case ID | UC23 | Use Case Name | | Create staff | |
| Author | BaoTQ | Version | 1.0 | Date | 17/02/2024 |
| Actor | LMS User | | | | |
| Description | Write information of Staff and add him to System. | | | | |
| Precondition | PRE-01: PRE-02: | | | | |
| Trigger | TRG-01: | | | | |
| Post-Condition | POS-01: | | | | |
| Main flow | | | | | |
| Step | Actor | Action | | | |
| 1 | User | Select the Create Staff feature on the Staff Screen | | | |
| 2 | LMS | Display Create Staff screen with the following fields: - Back - Name feature - Text - Button | | | |
| 3 | User | User write all information of Staff to add | | | |
| 4 | User | User click button to add new staff | | | |

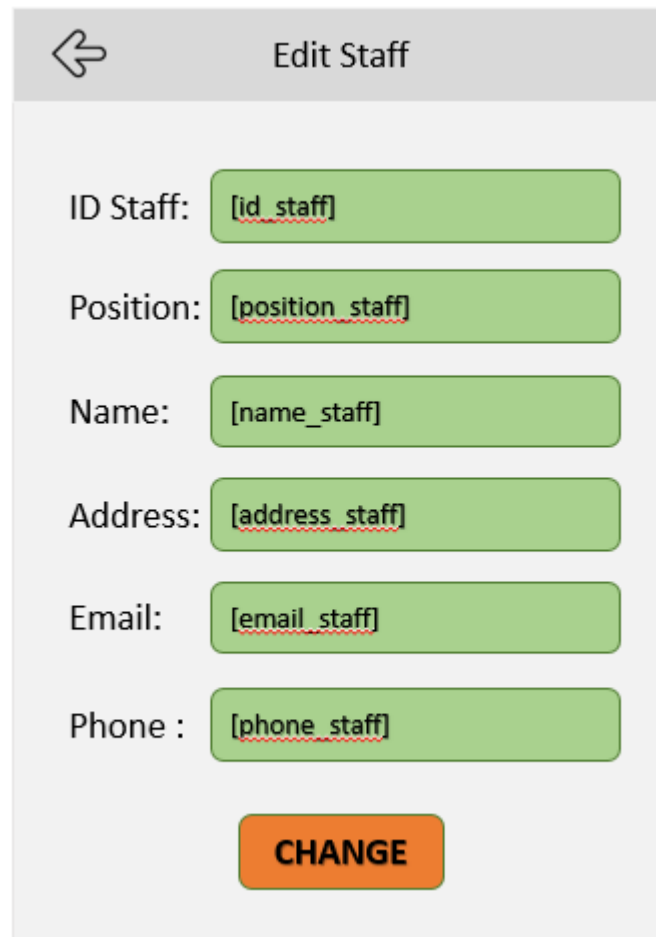
Alternative flows

| | |
|-----|--|
| AT1 | |
|-----|--|

| Sub step | Actor | Action |
|----------|-------|----------------------------------------------------------------|
| 4.1 | LMS | Display "Confirm" page with message "Comfirm to add new staff" |

1.24 Edit staff

1.24.1 Screen Design



The screen design for 'Edit Staff' features a grey header bar with a back arrow icon on the left and the title 'Edit Staff' in the center. Below the header, the form contains six input fields, each with a label to its left and a green rounded rectangular input box to its right. The labels and their corresponding placeholder text in the input boxes are: 'ID Staff:' with '[id_staff]', 'Position:' with '[position_staff]', 'Name:' with '[name_staff]', 'Address:' with '[address_staff]', 'Email:' with '[email_staff]', and 'Phone :' with '[phone_staff]'. At the bottom of the form is an orange rounded rectangular button with the text 'CHANGE' in black capital letters.

Figure 3-1: Screen Design of Edit staff

Table 1-1: Screen Definition

| # | Field Name | Type | Mandatory | Max Length | Description |
|---|------------|-------------|-----------|------------|------------------------------------|
| 1 | Back | ImageButton | | | Click can return to Staff screen.. |
| 2 | Feature | Text | | | |
| 3 | ID Staff | Text | Yes | 4 | Only number |
| 4 | Position | Text | Yes | | |
| 5 | Name | Text | Yes | | Only word |
| 6 | Address | Text | Yes | | |
| 7 | Email | Text | Yes | | Must have @ |
| 8 | Phone | Text | Yes | | Only number |
| 9 | Change | Button | | | |

1.24.2 Use case Specification

Figure 3-2: Edit staff Use-Case Diagram

| | | | | | |
|----------------|----------------------------|------------------------------------------------------------------|-----|------------|------------|
| Use Case ID | UC24 | Use Case Name | | Edit staff | |
| Author | BaoTQ | Version | 1.0 | Date | 17/02/2024 |
| Actor | LMS User | | | | |
| Description | Edit information of Staff. | | | | |
| Precondition | PRE-01: PRE-02: | | | | |
| Trigger | TRG-01: | | | | |
| Post-Condition | POS-01: | | | | |
| Main flow | | | | | |
| Step | Actor | Action | | | |
| 1 | User | Select the Edit Staff feature on the Staff Screen | | | |
| 2 | LMS | Display Create Staff screen with the following fields: - Back | | | |

| | | |
|---|------|----------------------------------------------------------------------------------------------------|
| | | <ul style="list-style-type: none"> - Name feature - Text - Button |
| 3 | User | User can edit any information of Staff |
| 4 | User | User click button to edit success |

Alternative flows

| AT1 | | |
|----------|-------|---------------------------------------------------------------------|
| Sub step | Actor | Action |
| 4.1 | LMS | Display "Confirm" page with message "Comfirm to edit staff success" |

1.25 View staff

1.25.1 Screen Design

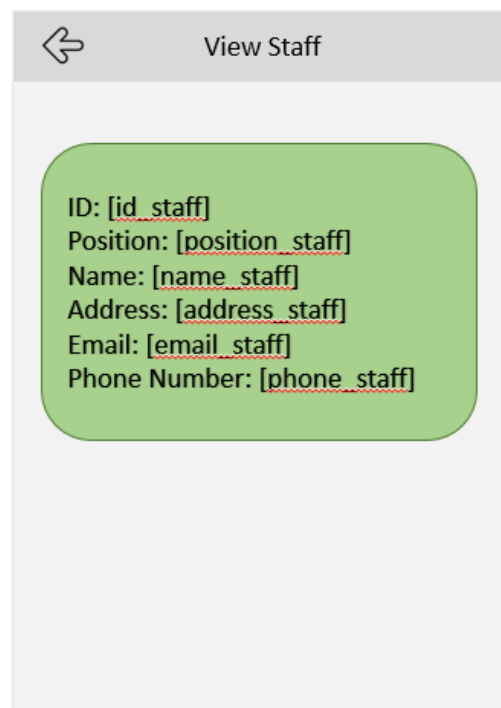


Figure 3-1: Screen Design of View staff

Table 1-1: Screen Definition

| # | Field Name | Type | Mandatory | Max Length | Description |
|---|-------------------|-------------|-----------|------------|------------------------------------|
| 1 | Back | ImageButton | | | Click can return to Staff screen.. |
| 2 | Feature | Text | | | |
| 3 | Information Staff | Text | | | |

1.25.2 Use case Specification

Figure 3-2: View staff Use-Case Diagram

| | | | | | |
|----------------|---------------------------|--------------------------------------------------------------------------------------------|-----|------------|------------|
| Use Case ID | UC25 | Use Case Name | | View staff | |
| Author | BaoTQ | Version | 1.0 | Date | 17/02/2024 |
| Actor | LMS | | | | |
| Description | Show information of Staff | | | | |
| Precondition | PRE-01: PRE-02: | | | | |
| Trigger | TRG-01: | | | | |
| Post-Condition | POS-01: | | | | |
| Main flow | | | | | |
| Step | Actor | Action | | | |
| 1 | User | Select the View Staff feature on the Staff Screen | | | |
| 2 | LMS | Display View Staff screen with the following fields: - Back - Name feature - Text | | | |

1.26 Statistics Principal

1.26.1 Statistic Screen

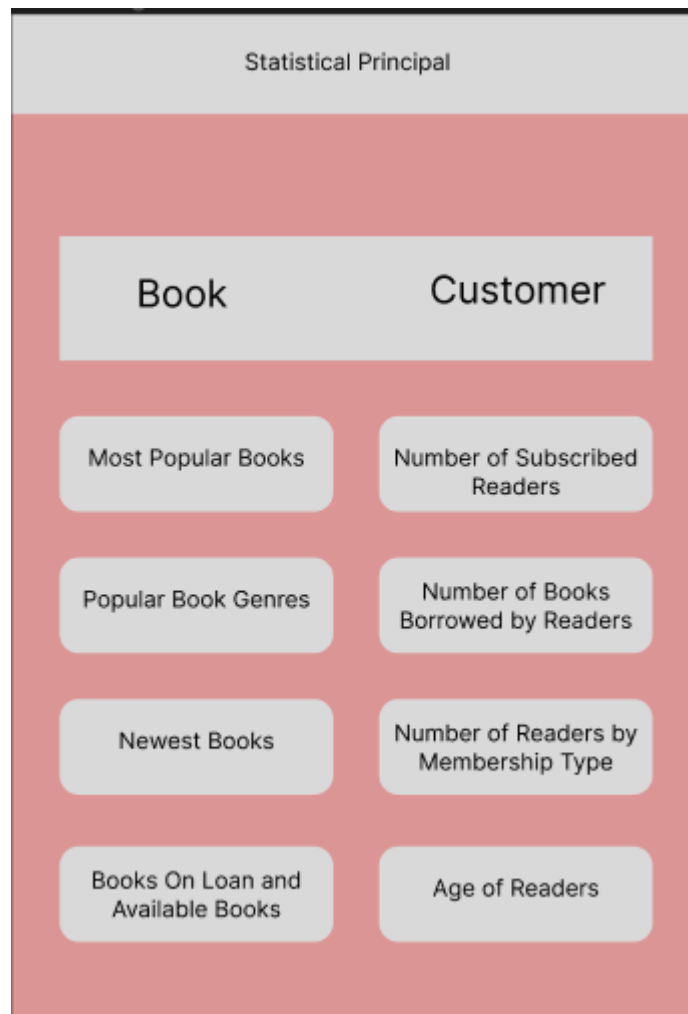


Figure: Statistic Screen

Table Definition

| # | Field Name | Type | Mandatory | Max Length | Description |
|---|---------------------|--------|-----------|------------|----------------------------------------------------------|
| 1 | Popular Book Genres | Button | None | None | Shows the most borrowed books in a specific time period. |
| 2 | Most Popular Books | Button | None | None | List the most borrowed book genres, helping you |

| | | | | | |
|---|--------------------------------------|--------|------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | | | understand readers' reading preferences. |
| 3 | Newest Books | Button | None | None | Displays a list of new books added to the library. |
| 4 | Books On Loan and Available Books | Button | None | None | Books being borrowed and books available: Displays the ratio of books being borrowed compared to the total number of books available in the library, helping you evaluate the library's book usage status. |
| 5 | Number of Subscribed Readers | Button | None | None | Displays the total number of registered readers in the library. |
| 6 | Number of Books Borrowed by Readers | Button | None | None | Lists the number of books each reader has borrowed, helping you understand the level of service usage by each reader. |
| 7 | Number of Readers by Membership Type | Button | None | None | Number of readers by membership type: If the library has a membership system, you can count the number of readers by each member type (for example: regular members, VIP members). |
| 8 | Age of Readers | Button | None | None | Age of readers: If you have this information, you can calculate the average age of readers to understand the age distribution of readers using the library. |

| | | | | | |
|-------------|------------------------------------------------------------------------------|---------------|-----|----------------------|------------|
| Use Case ID | UC26 | Use Case Name | | Statistics Principal | |
| Author | ThanhNT | Version | 1.0 | Date | 17/02/2024 |
| Actor | | | | | |
| Description | Screen allowing manager who has an account in the system to view statistics. | | | | |

| | | |
|----------------|---------|--------------------------------------------------------------------------------------|
| Precondition | | PRE-01: PRE-02: |
| Trigger | | TRG-01: |
| Post-Condition | | POS-01: |
| Main flow | | |
| Step | Actor | Action |
| 1 | Manager | Click on button Statistic in the screen |
| 2 | System | Display screen Statistics Principal. |
| 3 | Manager | Click one of the Button in the Screen will display information based on that button. |

Alternative flows

| | | |
|----------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| AT1 | At step 1 in the main flows, if there is an internal error in the system, | |
| Sub step | Actor | Action |
| 1 | System | Display "Error" page with message "Internal System Error, please contact with administrator" |

| | | |
|----------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| AT2 | At step 2 in the main flows, if there is an internal error in the system, | |
| Sub step | Actor | Action |
| 1 | System | Display "Error" page with message "Internal System Error, please contact with administrator" |

| | | |
|----------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| AT3 | At step 3 in the main flows, if there is an internal error in the system, | |
| Sub step | Actor | Action |
| 1 | System | Display "Error" page with message "Internal System Error, please contact with administrator" |

1.27 Statistics Book

1.27.1 Statistics Book Screen

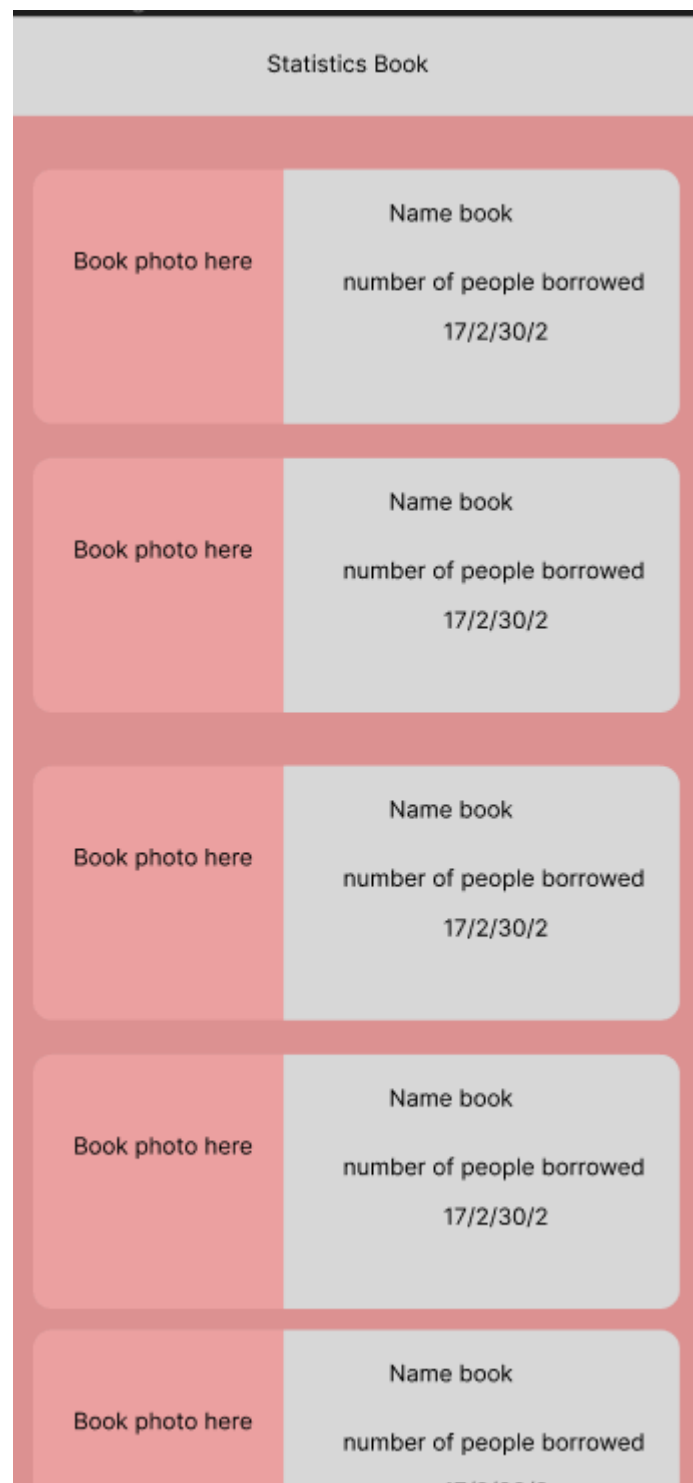


Figure: Statistics Book

Table Definition

| # | Field Name | Type | Mandatory | Max Length | Description |
|---|---------------------------|-------|-----------|------------|----------------------------------------------------------|
| 1 | Book photo | Image | None | None | Display book photo |
| 2 | Book name | Text | None | None | Display book name |
| 3 | Number of people borrowed | Text | None | None | Display number of people borrowed |
| 4 | Time to time | Text | None | None | Shows the most borrowed books in a specific time period. |

| | | | | | |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----|-----------------|------------|
| Use Case ID | UC27 | Use Case Name | | Statistics Book | |
| Author | ThanhNT | Version | 1.0 | Date | 17/02/2024 |
| Actor | | | | | |
| Description | Screen allowing manager who has an account in the system to view statistics books. Depending manager click on button in the screen it will display information corresponding | | | | |
| Precondition | PRE-01: PRE-02: | | | | |
| Trigger | TRG-01: | | | | |
| Post-Condition | POS-01: | | | | |
| Main flow | | | | | |
| Step | Actor | Action | | | |
| 1 | Manager | Click on button Statistic book in the screen | | | |
| 2 | System | Display screen Statistics. | | | |
| 3 | Manager | Click one of the Button in the Screen will display information based on that button. | | | |

| | | |
|----------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| AT1 | At step 1 in the main flows, if there is an internal error in the system, | |
| Sub step | Actor | Action |
| 1 | System | Display "Error" page with message "Internal System Error, please contact with administrator" |

| | | |
|----------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| AT2 | At step 2 in the main flows, if there is an internal error in the system, | |
| Sub step | Actor | Action |
| 1 | System | Display "Error" page with message "Internal System Error, please contact with administrator" |

| | | |
|----------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| AT3 | At step 3 in the main flows, if there is an internal error in the system, | |
| Sub step | Actor | Action |
| 1 | System | Display "Error" page with message "Internal System Error, please contact with administrator" |

1.28 Statistics Customer

1.28.1 Screen Statistics Customer

Statistics Customer

Customer photo here

Name
number of borrowed book

Customer photo here

Name
number of borrowed book

Customer photo here

Name
number of borrowed book

Customer photo here

Name
number of borrowed book

Figure: Statistic Customer

| # | Field Name | Type | Mandatory | Max Length | Description |
|---|------------|-------|-----------|------------|--------------------|
| 1 | Book photo | Image | None | None | Display book photo |
| 2 | Book name | Text | None | None | Display book name |

| | | | | | |
|---|---------------------------|------|------|------|----------------------------------------------------------|
| 3 | Number of people borrowed | Text | None | None | Display number of people borrowed |
| 4 | Time to time | Text | None | None | Shows the most borrowed books in a specific time period. |

| | | | | | |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----|---------------------|------------|
| Use Case ID | UC28 | Use Case Name | | Statistics Customer | |
| Author | ThanhNT | Version | 1.0 | Date | 17/02/2024 |
| Actor | | | | | |
| Description | Screen allowing manager who has an account in the system to view statistics Customer. Depending manager click on button in the screen it will display information corresponding | | | | |
| Precondition | PRE-01: PRE-02: | | | | |
| Trigger | TRG-01: | | | | |
| Post-Condition | POS-01: | | | | |
| Main flow | | | | | |
| Step | Actor | Action | | | |
| 1 | Manager | Click on button Statistic Customer in the screen | | | |
| 2 | System | Display screen Statistics. | | | |
| 3 | Manager | Click one of the Button in the Screen will display information based on that button. | | | |

| | | |
|----------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| AT1 | At step 1 in the main flows, if there is an internal error in the system, | |
| Sub step | Actor | Action |
| 1 | System | Display "Error" page with message "Internal System Error, please contact with administrator" |

| AT2 | At step 2 in the main flows, if there is an internal error in the system, | |
|----------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| Sub step | Actor | Action |
| 1 | System | Display "Error" page with message "Internal System Error, please contact with administrator" |

| AT3 | At step 3 in the main flows, if there is an internal error in the system, | |
|----------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| Sub step | Actor | Action |
| 1 | System | Display "Error" page with message "Internal System Error, please contact with administrator" |

1.29 History

1.29.1 Screen Design

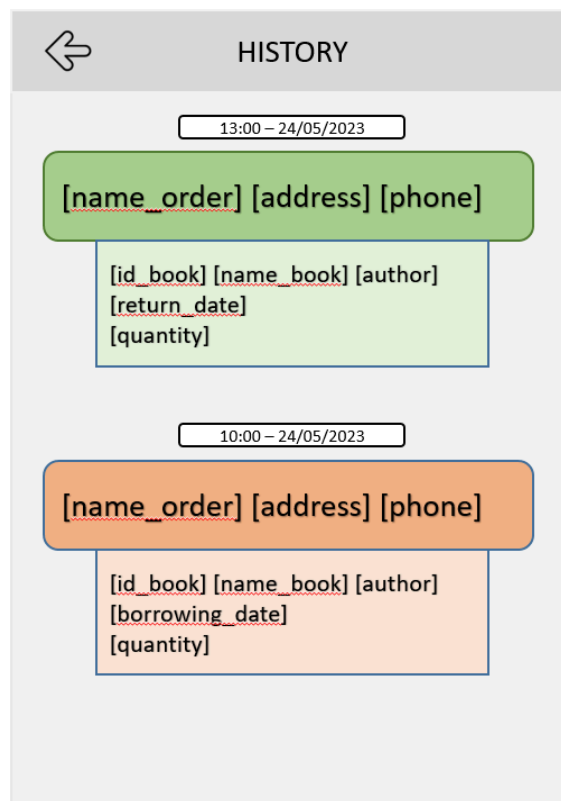


Figure 3-1: Screen Design of History

Table 1-1: Screen Definition

| # | Field Name | Type | Mandatory | Max Length | Description |
|---|-----------------------------|-------------|-----------|------------|---------------------------------------------------------|
| 1 | Back | ImageButton | | | Click can return to dashboard. |
| 2 | Feature | Text | | | |
| 3 | Date and time | Text | | | |
| 4 | Borrower information | Text | | | Borrower information included name, address, phone, ... |
| 5 | Books borrowed and returned | Text | | | Information about books borrowed and returned |
| 6 | Seekbar | Seekbar | | | Used to slide to see more old content |

1.29.2 Use case Specification

Figure 3-2: History Use-Case Diagram

| | | | | | |
|----------------|------------------------------------------------------------------------------------------|---------------------------------------------|-----|---------|------------|
| Use Case ID | UC29 | Use Case Name | | History | |
| Author | ThànhNT | Version | 1.0 | Date | 17/02/2024 |
| Actor | LMS | | | | |
| Description | A screen display the borrowing history of a borrower, showing details of borrowed books. | | | | |
| Precondition | PRE-01: PRE-02: | | | | |
| Trigger | TRG-01: | | | | |
| Post-Condition | POS-01: | | | | |
| Main flow | | | | | |
| Step | Actor | Action | | | |
| 1 | User | Select the History feature on the dashboard | | | |

| | | |
|---|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | LMS | Display History screen with the following fields: <ul style="list-style-type: none"> - Back - Name feature - Date and time - Information customer - Information book - Seekbar |
| 3 | User | Uesr use seekbar to slide to see more old content |







10. Order

ORDER

Create Order

Filter

Sort by ↓

| ID | Customer | Borrow Date | Due Date | Return Date | Status | Action |
|----|------------|-------------|-----------|-------------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Customer 1 | 1/1/2024 | 10/1/2024 | 9/1/2024 | On time |   |
| 2 | Customer 2 | 1/1/2024 | 10/1/2024 | 11/1/2024 | Late |   |
| 3 | Customer 3 | 1/1/2024 | 1/1/2025 | Empty | On Going |   |

| # | Field Name | Type | Mandatory | Max Length | Description |
|---|---------------|--------------|-----------|------------|---------------------------|
| 1 | create_order | Button | | | Click to create new order |
| 2 | edit_order | Button | | | Click to edit order |
| 3 | delete_order | Button | | | Click to delete order |
| 4 | list_order | Recyclerview | | | Show list of order |
| 5 | order_details | Button | | | Show order details |

| | | | | | |
|----------------|------------------------------------------------|----------------------------------------------------------|-----|------------|------------|
| Use Case ID | UC10 | Use Case Name | | List Order | |
| Author | TuanTD | Version | 1.0 | Date | 17/02/2024 |
| Actor | Staff A, Staff B, Manager | | | | |
| Description | Display list of order and order function | | | | |
| Precondition | PRE-01: Login PRE-02: | | | | |
| Trigger | TRG-01: User click Button “Order” in Dashboard | | | | |
| Post-Condition | POS-01: | | | | |
| Main flow | | | | | |
| Step | Actor | Action | | | |
| 1 | User | Logs into the System using valid credentials. | | | |
| 2 | System | Display with the system dashboard. | | | |
| 3 | User | Click the "Order" Button from the system's dashboard. | | | |
| 4 | System | Show list of order and order function | | | |
| 5 | User | View all order and decides to Create/ Edit/ Delete order | | | |

Alternative flows: None

11. Create Order

Create New Order

| | |
|---------------|----------------------|
| ID | <input type="text"/> |
| Customer | <input type="text"/> |
| Description | <input type="text"/> |
| Borrowed Date | <input type="text"/> |
| Due Date | <input type="text"/> |
| Status | <input type="text"/> |
| Create at | <input type="text"/> |
| Create by | <input type="text"/> |
| Update at | <input type="text"/> |
| Update by | <input type="text"/> |
| Delete at | <input type="text"/> |
| Delete by | <input type="text"/> |

Save

| # | Field Name | Type | Mandatory | Max Length | Description |
|----|-------------------|--------|-----------|------------|----------------------|
| 1 | order_id | Text | Yes | 100 | Enter order ID |
| 2 | order_customer | Text | Yes | 255 | Enter customer order |
| 3 | order_description | Text | Yes | 255 | Enter description |
| 4 | borrow_date | Date | Yes | | Enter borrow date |
| 5 | due_date | Date | Yes | | Enter due date |
| 6 | status | Text | Yes | | Enter status |
| 7 | create_at | Date | Yes | | Enter create date |
| 8 | create_by | Text | Yes | 255 | Enter staff create |
| 9 | update_at | Date | No | | Enter update date |
| 10 | update_by | Text | No | 255 | Enter staff update |
| 11 | delete_at | Date | No | | Enter delete date |
| 12 | delete_by | Text | No | 255 | Enter staff delete |
| 13 | button_save | Button | No | | Save |

| | | | | | | |
|----------------|-------|------------------------------------------|---------------|-----|--------------|------------|
| Use Case ID | | UC11 | Use Case Name | | Create Order | |
| Author | | TuanTD | Version | 1.0 | Date | 17/02/2024 |
| Actor | | Staff A, Staff B, Manager | | | | |
| Description | | Create new order | | | | |
| Precondition | | PRE-01: Login PRE-02: | | | | |
| Trigger | | TRG-01: User click Button “Create Order” | | | | |
| Post-Condition | | POS-01: | | | | |
| Main flow | | | | | | |
| Step | Actor | Action | | | | |

| | | |
|---|--------|-------------------------------------------------------|
| 1 | User | Logs into the System using valid credentials. |
| 2 | System | Display with the system dashboard. |
| 3 | User | Click the "Order" Button from the system's dashboard. |
| 4 | System | Show list of order and order function |
| 5 | User | Click the button Create order |
| 6 | System | Show the create order form |
| 7 | User | Enter all order information and click button Save |
| 8 | System | Add new order to order list and return Order screen |

Alternative flows

| | | |
|----------|--------|-----------------------------------------------------------------|
| AT1 | | |
| Sub step | Actor | Action |
| 1 | User | Decides to cancel the operation at any point during the process |
| 2 | System | Return to the list of order without saving any changes. |

12. Edit Order

Edit Order

ID

#1

Customer

Customer 1

Description

Borrowed Date

Due Date

Status

Create at

Create by

Update at

Update by

Delete at

Delete by

Save

| # | Field Name | Type | Mandatory | Max Length | Description |
|---|-------------------|------|-----------|------------|-------------------|
| 1 | order_description | Text | Yes | 255 | Enter description |
| 2 | borrow_date | Date | Yes | | Enter borrow date |
| 3 | due_date | Date | Yes | | Enter due date |
| 4 | status | Text | Yes | | Enter status |

| | | | | | |
|----|-------------|--------|-----|-----|--------------------|
| 5 | create_at | Date | Yes | | Enter create date |
| 6 | create_by | Text | Yes | 255 | Enter staff create |
| 7 | update_at | Date | No | | Enter update date |
| 8 | update_by | Text | No | 255 | Enter staff update |
| 9 | delete_at | Date | No | | Enter delete date |
| 10 | delete_by | Text | No | 255 | Enter staff delete |
| 11 | button_save | Button | No | | Save |

| | | | | | |
|----------------|----------------------------------------|-------------------------------------------------------|-----|------------|------------|
| Use Case ID | UC12 | Use Case Name | | Edit Order | |
| Author | TuanTD | Version | 1.0 | Date | 17/02/2024 |
| Actor | Staff A, Staff B, Manager | | | | |
| Description | Create new order | | | | |
| Precondition | PRE-01: Login PRE-02: | | | | |
| Trigger | TRG-01: User click Button “Edit Order” | | | | |
| Post-Condition | POS-01: | | | | |
| Main flow | | | | | |
| Step | Actor | Action | | | |
| 1 | User | Logs into the System using valid credentials. | | | |
| 2 | System | Display with the system dashboard. | | | |
| 3 | User | Click the "Order" Button from the system's dashboard. | | | |
| 4 | System | Show list of order and order function | | | |
| 5 | User | Click the button Edit order | | | |
| 6 | System | Show the edit order form | | | |
| 7 | User | Edit order information and click button Save | | | |
| 8 | System | Change order information and return Order screen | | | |

Alternative flows

| AT1 | | |
|----------|--------|-----------------------------------------------------------------|
| Sub step | Actor | Action |
| 1 | User | Decides to cancel the operation at any point during the process |
| 2 | System | Return to the list of order without saving any changes. |

13. View order

Back

View Order

| | |
|---------------|------------|
| ID | #1 |
| Customer | Customer 1 |
| Description | abcd |
| Borrowed Date | 01/01/2024 |
| Due Date | 30/04/2024 |
| Status | On Going |
| Create at | 01/01/2024 |
| Create by | Staff A |
| Update at | Empty |
| Update by | Empty |
| Delete at | Empty |
| Delete by | Empty |

Book

| ID | Name | Number |
|-----|--------|--------|
| 123 | Book 1 | 1 |

| # | Field Name | Type | Mandatory | Max Length | Description |
|---|------------|--------------|-----------|------------|----------------------------|
| 1 | Back | Button | | | Click to return Order |
| 2 | list_order | Recyclerview | | | Show list of book in order |

| | | | | | |
|----------------|------------------------------------------------------|-------------------------------------------------------|-----|------------|------------|
| Use Case ID | UC13 | Use Case Name | | View Order | |
| Author | TuanTD | Version | 1.0 | Date | 17/02/2024 |
| Actor | Staff A, Staff B, Manager | | | | |
| Description | Display order details | | | | |
| Precondition | PRE-01: Login PRE-02: | | | | |
| Trigger | TRG-01: User click the ID of the Order in Order list | | | | |
| Post-Condition | POS-01: | | | | |
| Main flow | | | | | |
| Step | Actor | Action | | | |
| 1 | User | Logs into the System using valid credentials. | | | |
| 2 | System | Display with the system dashboard. | | | |
| 3 | User | Click the "Order" Button from the system's dashboard. | | | |
| 4 | System | Show list of order and order function | | | |
| 5 | User | User click the ID of the Order in Order list | | | |
| 6 | System | Show the detail of order | | | |

Alternative flows: None







14. Customer

CUSTOMER

Create Customer

Search by name

Sort by ↓

| ID | Name | Status | Phone | Address | Email | Action |
|----|------------|------------|------------|---------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Customer 1 | Active | 0123456789 | Ha Noi | abc@email |   |
| 2 | Customer 2 | Active | 0987654321 | Ha Noi | xyz@email |   |
| 3 | Customer 3 | Global Ban | 0966666666 | TP HCM | 123@email |   |

| # | Field Name | Type | Mandatory | Max Length | Description |
|---|------------------|--------------|-----------|------------|------------------------------|
| 1 | create_customer | Button | | | Click to create new customer |
| 2 | edit_customer | Button | | | Click to edit customer |
| 3 | delete_customer | Button | | | Click to delete customer |
| 4 | list_customer | Recyclerview | | | Show list of customers |
| 5 | customer_details | Button | | | Show customer information |

| | | | | | |
|----------------|---------------------------------------------------|--------------------------------------------------------|-----|----------|------------|
| Use Case ID | UC14 | Use Case Name | | Customer | |
| Author | TuanTD | Version | 1.0 | Date | 17/02/2024 |
| Actor | Staff A, Staff B, Manager | | | | |
| Description | Display list of order and order function | | | | |
| Precondition | PRE-01: Login PRE-02: | | | | |
| Trigger | TRG-01: User click Button “Customer” in Dashboard | | | | |
| Post-Condition | POS-01: | | | | |
| Main flow | | | | | |
| Step | Actor | Action | | | |
| 1 | User | Logs into the System using valid credentials. | | | |
| 2 | System | Display with the system dashboard. | | | |
| 3 | User | Click the "Customer" Button in the system's dashboard. | | | |
| 4 | System | Show list of Customer and Customer function | | | |

Alternative flows: None

15. Create Customer

Create New Customer

| | |
|---------------|----------------------|
| ID | <input type="text"/> |
| Name | <input type="text"/> |
| Date of birth | <input type="text"/> |
| Address | <input type="text"/> |
| Phone | <input type="text"/> |
| Email | <input type="text"/> |
| Create at | <input type="text"/> |
| Create by | <input type="text"/> |
| Update at | <input type="text"/> |
| Update by | <input type="text"/> |
| Delete at | <input type="text"/> |
| Delete by | <input type="text"/> |

Save

| # | Field Name | Type | Mandatory | Max Length | Description |
|----|---------------|--------|-----------|------------|------------------------|
| 1 | customer_id | Text | Yes | 100 | Enter customer ID |
| 2 | customer_name | Text | Yes | 255 | Enter customer name |
| 3 | date_of_birth | Date | No | | Enter date of birth |
| 4 | address | Text | Yes | 255 | Enter customer address |
| 5 | phone | Number | Yes | 20 | Enter customer phone |
| 6 | email | Text | Yes | 255 | Enter customer email |
| 7 | create_at | Date | Yes | | Enter create date |
| 8 | create_by | Text | Yes | 255 | Enter staff create |
| 9 | update_at | Date | No | | Enter update date |
| 10 | update_by | Text | No | 255 | Enter staff update |
| 11 | delete_at | Date | No | | Enter delete date |
| 12 | delete_by | Text | No | 255 | Enter staff delete |
| 13 | button_save | Button | No | | Save |

| | | | | | | |
|----------------|-------|---------------------------------------------|---------------|-----|-----------------|------------|
| Use Case ID | | UC15 | Use Case Name | | Create Customer | |
| Author | | TuanTD | Version | 1.0 | Date | 17/02/2024 |
| Actor | | Staff A, Manager | | | | |
| Description | | Create new customer | | | | |
| Precondition | | PRE-01: Login PRE-02: | | | | |
| Trigger | | TRG-01: User click Button “Create Customer” | | | | |
| Post-Condition | | POS-01: | | | | |
| Main flow | | | | | | |
| Step | Actor | Action | | | | |

| | | |
|---|--------|--------------------------------------------------------------|
| 1 | User | Logs into the System using valid credentials. |
| 2 | System | Display with the system dashboard. |
| 3 | User | Click the "Customer" Button from the system's dashboard. |
| 4 | System | Show list of customer and customer function |
| 5 | User | Click the button Create Customer |
| 6 | System | Show the create customer form |
| 7 | User | Enter all customer information and click button Save |
| 8 | System | Add new customer to customer list and return Customer screen |

Alternative flows

| AT1 | | |
|----------|--------|-----------------------------------------------------------------|
| Sub step | Actor | Action |
| 1 | User | Decides to cancel the operation at any point during the process |
| 2 | System | Return to the list of order without saving any changes. |