
Software Requirements Specification

for

RentLah!

Version 1.0 approved

Prepared by

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Revision History

Name	Date	Reason For Changes	Version
Kapoor Ananya	10 April	Initial Draft	0.0
Beh Jia Jiunn	15 April	Revised Final Draft	1.0

1. Introduction

1.1 Purpose

This document specifies the software requirements of the web application RentLah! version 1.0. This document will cover the main functionalities of the application, the various user interfaces, as well as the constraints.

The application aims to simplify the property rental process by providing a user-friendly platform for both customers and agents. By offering a comprehensive suite of features, the application aims to enhance the overall rental experience for users. Whether it's searching for the perfect rental property or managing listings as an agent, the application strives to provide a seamless and efficient solution for all stakeholders involved in the rental process.

1.2 Document Conventions

The document makes use of the following terms:

Term	Definition
User	User refers to anyone who registers and interact with the system.
Username	Unique identifier chosen by the user for authentication.
Login	The process whereby a User enters their Account's username and password in the application to access its features, given that they have an existing Account.
Register	The process whereby a User without an existing Account creates one by entering their desired Username, Email Address, Address, Phone Number and Password.
Customer	Customer refers to users that registered as customers and intend to rent a property from a property agent.
Agent	Agent refers to a user that has a valid licence from the Council of Estate Agencies (CEA) and they intend to rent out properties to customers.

Account	An account is tied to each user in the system, there are two types of accounts, customer account and agent account. An account is a combination of user details including username, password, email address, phone number, agent company name, company licence number, registration number (only for agents).
Home Page	Refers to the page that users see right after they log into their account. Users will be able to access all other pages from here.
Watchlist Page	A list of properties that users specifically added so that they can refer these properties easily.
View all Properties Page	A list of properties that are available to rent.
Property Details Page	A page that displays detailed information of the properties the users choose to view. Users will be able to contact the agents of specific properties from this page.
Profile page	A page that displays information of the users including but not limited to username, email, and phone number.
Map	It is a visual representation of the location of properties, displayed using the OneMap API.
Hashing algorithm	Hashing is a one-way encryption of the password stored in the database.
Password mask	Password masking is the act of hiding passwords as bullets when the user enters the password.

1.3 Intended Audience and Reading Suggestions

This document is intended for developers, project managers, and users, to fully understand how the RentLah! application works. All stakeholders are encouraged to read the documentation in a sequential order to fully understand the architecture of the RentLah! application.

1.4 Product Scope

RentLah aims to streamline the process of renting housing properties in Singapore for both customers and agents by focusing on key features and functionalities such as user-friendly property search, comprehensive property listings and interactive maps. The application's scope aligns with the growing demand for rental housing solutions and addresses the specific needs of Singaporeans seeking rental properties across the country.

1.5 References

Demand For Housing. (2021, August 25). Singapore Business Review.

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<https://www.propertylimbrothers.com/year-in-review-2022-rise-of-million-dollar-resale-hdb-flats/>

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https://beta.data.gov.sg/collections/166/datasets/d_c9f57187485a850908655db0e8cfe651/view

Urban Redevelopment Authority APIs. (n.d.). Retrieved from

<https://www.developer.tech.gov.sg/products/categories/data-and-apis/ura-apis/overview.html>

2. Overall Description

2.1 Product Perspective

The web application serves as a comprehensive platform for property rental management, catering to both customers and agents. It provides a seamless interface for users to register, login, browse listings, manage their profiles, and interact with property details. The application integrates various features like registration, login, profile management, listing creation, and browsing, ensuring a holistic experience for both customers and agents. It operates within the context of a stable server infrastructure, ensuring reliable performance and data management. Additionally, the application prioritizes security and data integrity to safeguard user information.

2.2 Product Functions

1. Registration: Allows users to create new accounts, specifying whether they are customers or agents and providing necessary details.
2. Login: Enables users to sign in to their accounts securely, accessing features based on their roles.
3. Browse Listings: Provides a platform for users to explore property listings, view details, and add properties to their watchlist.
4. Manage Listings: Allows agents to manage their property listings, including adding new listings, editing existing ones, and removing outdated ones.
5. Profile Management: Permits users to edit their profiles, change passwords, and view both masked and unmasked profile details.
6. Forget Password: Facilitates the recovery of forgotten passwords by guiding users through the password reset process.
7. View Property Details: Allows users to access detailed information about specific properties, including images, descriptions, and contact options.
8. Search/ Filter Listings: Allows users to search for listings using filter criterias or keyword.

2.3 User Classes and Characteristics

The application caters to the diverse needs of these user classes, providing a user-friendly interface and robust functionality to enhance the rental property management experience.

User Class	Characteristics
Customers	Typically individuals seeking rental properties, interested in browsing available listings, and contacting agents for further inquiries. They register for new accounts, browse listings, add properties to watchlists, view detailed property information, and manage their profiles.
Agents	Individuals or organizations responsible for listing properties for rent, managing listings, and interacting with potential customers. They register for new accounts, manage property listings, edit profile details, view masked and unmasked profile information, and interact with customers regarding property inquiries.
Administrators	Backend administrators responsible for overseeing system functionality, user management, and ensuring data integrity. They manage user accounts, monitor system performance, handle support requests, and ensure adherence to security protocols.

2.4 Operating Environment

2.4.1 Frontend Development

Utilized the following for building of the user-interface:

- JavaScript
- React.js
- Bootstrap

2.4.2 Backend Development

Utilized the following for server-side logic and data storage:

- Node.js
- Express.js
- MongoDB
- Firebase

2.4.3 External API

Utilized the following for added functionality:

- MailGen API - Nodemailer
- OneMap API - an official government API
- WhatsApp API

2.4.4 Operating Platform

Development conducted through VS code 1.87.2 (universal) and managed through GitHub for version control.

2.5 Design and Implementation Constraints

An implementation hurdle we encountered was in leveraging MongoDB for our application development. Due to our utilization of a free MongoDB account to construct our database, we encountered a restriction on the available storage space.

2.6 User Documentation

User Manual (under User Interfaces in Section 3.1) to list detailed steps and preconditions with illustrated examples to assist the user in using the application, including screenshots of the user interface of the application.

2.7 Assumptions and Dependencies

2.7.1 The main underlying assumption is that users using the application have an active internet connection and enabled location services.

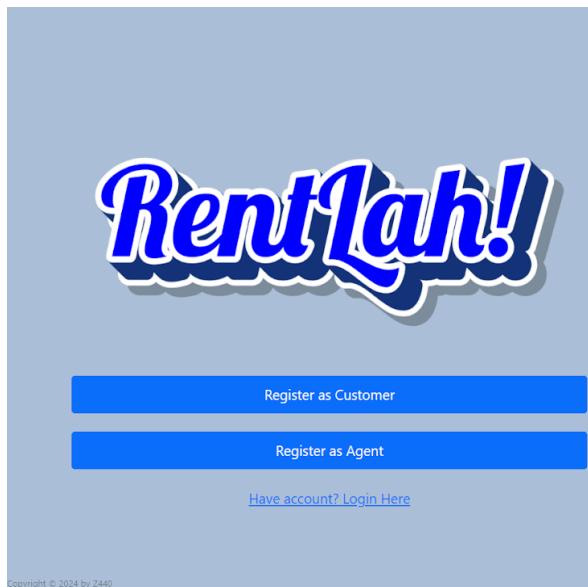
2.7.2 The application relies on external API such as MailGen API, WhatsApp API, OneMap API thus we require the service to be working for the application to be used accurately.

3. External Interface Requirements

3.1 User Interface

Register

- User can choose to register as a customer or agent to access our website.



Customer Register Page

Customer Registration

Username

Email Address

Phone Number

Password

Password Confirmation

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Agent Register Page

- An agent is required to key in his/her full name and also his/her agent registration number.

Agent Registration

Username

Email Address

Agent Name

Agent Registration Number

Phone Number

Password
 

Password Confirmation
 

[Register](#)

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Login

- User can choose to login as customer or agent.

RentLah!

[Login as Customer](#)

[Login as Agent](#)

[Register Here](#)

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Customer Login Page

- Input fields for customer to key in their username and password.
- Password is masked by default and can be unmasked by clicking the monkey emoji button.
- Error message will be shown if customer key in invalid credentials.



Customer Login Page

Username

Password
 

[Forgot Password](#)

Login as Customer

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Agent Login Page

- Input fields for agent to key in their username and password.
- Password is masked by default and can be unmasked by clicking the monkey emoji button.
- Error message will be shown if agent key in invalid credentials.



Agent Login Page

Username

Password
 

[Forgot Password](#)

Login as Agent

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Navigation Bar

- User can access home page, profile page and view all properties page.
- User can browse properties using the search bar.
- User can sign out from the system by clicking “Sign Out”.

For Customer:

- Customer can navigate to the Watchlist page by clicking “My Watchlist”



For Agent:

- Agent can navigate to the his/her listings page by clicking “My Listings”



Home Page

- The Home Page displays the latest properties that have been added to our website. Customer can add properties that they are interested in into their watchlist.

A screenshot of the Rentlah home page. At the top, it says 'Welcome, CUSTOMER'. Below that is a section titled 'Properties' with five cards. Each card shows a thumbnail image, address, monthly rent, and other details.

Thumbnail	Address	Monthly Rent	Details
	Address: 63 NANYA...	Monthly Rent: S\$1500	2 2 Add to Watchlist
	Address: 8 LORONG ...	Monthly Rent: S\$1000	2 3 Add to Watchlist
	Address: 9 JALAN A...	Monthly Rent: S\$1688	2 2 Add to Watchlist
	Address: 367 YISHU...	Monthly Rent: S\$999	2 4 Add to Watchlist
	Address: 322B ANCH...	Monthly Rent: S\$700	2 2 Add to Watchlist

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Property Detail

- This page shows the detail of the property selected.
 - Listing name, description, address, monthly rent, number of bedrooms and bathrooms and agent details are shown.
- A map pinpointing the property's location is generated using OneMap API, a government official API.
- Agents can be contacted using WhatsApp API.
- Customers can add listing to their watchlist from here.

The screenshot shows the Rentlah website's property detail page. At the top, there's a navigation bar with 'Rentlah' and links for 'Home', 'Profile', 'My Watchlist', 'View All Properties', a search bar, and 'Sign Out'. The main content area features a large image of a bright, modern living room with white furniture and a fireplace. To the right of the image, the property's name 'The Luxurie' is displayed, followed by its description: 'Available now, this original condition 2-bedroom unit in The Luxurie offers new furniture and is conveniently located just a 3-minute walk from MRT and Compass One'. Below this is the address '13 COMPASSVALE ROAD THE LUXURIE SINGAPORE 544750'. The monthly rent is listed as SGD 3500. The property has 3 bedrooms and 2 bathrooms. Further down, the agent information is provided: SAKALESH AR, Agent Registration Number AG0001, and Agent Contact Number (65) 98006215. There are buttons for 'Contact Using WhatsApp' and 'Add to Watchlist'. At the bottom left, a map shows the location of the property on Compassvale Road.

Watchlist (Customer Only)

- Customer can access his/her watchlist in this page, they can also delete property from their watchlist. He/She will be redirected to the Listing Detail Page by clicking the Learn More button.

The screenshot shows the Rentlah website's watchlist page. The top navigation bar is identical to the property detail page. The main content area is titled 'Watchlist' and lists five properties with small thumbnail images:

- Yishun Ring Road: Address 367 YISHUN RING ROAD..., \$999. Actions: Learn More, Delete from Watchlist.
- Anchorvale Drive: Address 322B ANCHORVALE DRI..., \$700. Actions: Learn More, Delete from Watchlist.
- Simei Lane: Address 168D SIMEI LANE PARC L..., \$678. Actions: Learn More, Delete from Watchlist.
- The Reserve Residences: Address 9 JALAN ANAK BUKIT T..., \$1688. Actions: Learn More, Delete from Watchlist.
- Centra Residence: (no address listed). Actions: Learn More.

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My Listings (Agent Only)

- Agent can view listings managed by him/her.
- Agent can create listing by clicking the “Create Listing” button.
- Agent can manage his/her listings by clicking the “Manage Listing” button.

The screenshot shows the 'My Listings' section of the Rentlah website. It displays five property listings:

- NTU Tamarind Hall: Address: 38 NANYANG CRESCENT..., \$581. Buttons: Learn More, Manage Listing.
- Tanjong Hall NTU: Address: 64 NANYANG CRESCENT..., \$585. Buttons: Learn More, Manage Listing.
- Watertown: Address: 71 PUNGGOL CENTRAL ..., \$2000. Buttons: Learn More, Manage Listing.
- The Centris: Address: 65 JURONG WEST CENT..., \$1888. Buttons: Learn More, Manage Listing.
- Jurong West Blk 959: Address: 959 JURONG WEST STRE..., \$0. Buttons: Learn More.

At the top right, there is a 'Create Listing' button. The bottom left corner has a small copyright notice: 'Copyright © 2024 by Z440'.

Create Listing (Agent Only)

- Agent can create listing by clicking the “Create Listing” button in this page.
- Agent can upload up to 10 images by selecting the files and click the “Upload” button.
- Agent can key in property name, zip code, description, number of bedrooms, number of bathrooms and monthly rental rate.

The screenshot shows the 'Create Listing' page. It includes the following fields:

- File upload: A 'Choose file' button and an 'Upload' button.
- Property Name: An input field labeled 'Name'.
- Zip code: An input field labeled 'Zip code'.
- Description: A large text area labeled 'Property Description'.
- Bathrooms: An input field.
- Bedrooms: An input field.
- Monthly Rent: An input field with a '\$0' placeholder.

At the bottom center is a large blue 'Create Listing' button.

Manage Listing (Agent Only)

- The current details of the listing is shown.
- Agent can edit name, zip code, description, number of bathrooms, number of bedrooms and monthly rental rate by filling in the input fields and clicking the “Submit Edit” button.

The screenshot shows the Rentlah application interface for managing a property listing. At the top, there is a dark header bar with the Rentlah logo, navigation links (Home, Profile, My Listings, View All Properties), a search bar, and a sign-out link. The main content area has a light blue background. The title "Property Name: NTU Tamarind Hall" is displayed. Below it, there are several input fields: "Name" (with placeholder "Name"), "Zip code: 636866" (with placeholder "Zip code"), "Description:" (with placeholder "Property Description"), "Bathrooms: 2" (with a small input field), "Bedrooms: 2" (with a small input field), and "Monthly Rent: 581" (with a small input field and a "SGD" label). At the bottom, there are two buttons: a blue "Submit Edit" button and a grey "Delete Listing" button. A copyright notice "Copyright © 2024 by Z440" is visible at the bottom left.

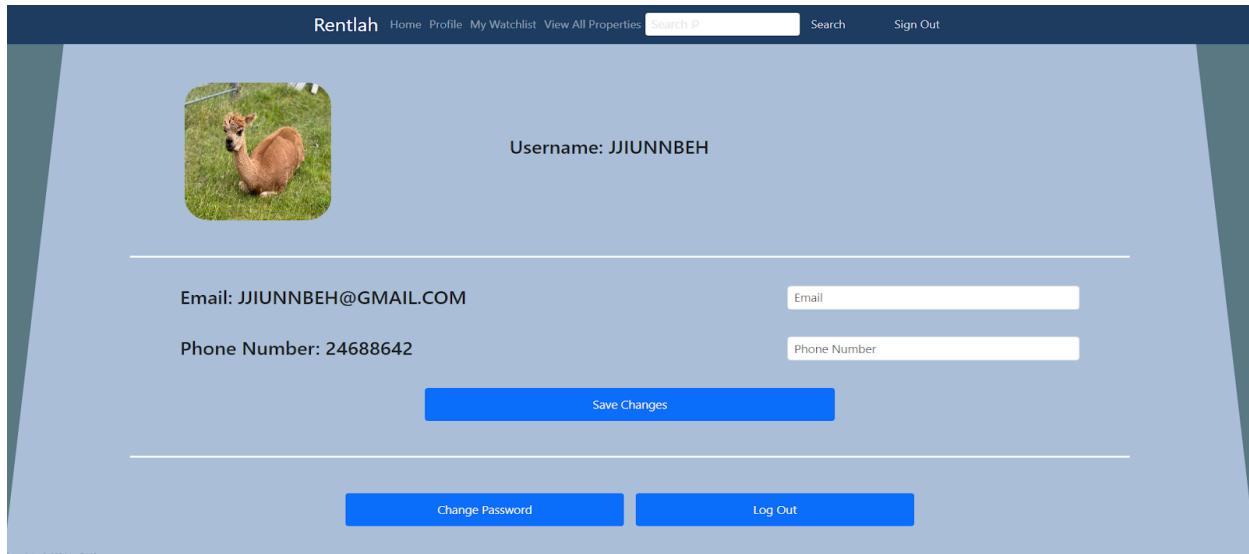
Delete Listing (Agent Only)

- By clicking the “Delete Listing” in the Manage Listing Page, a pop up will be shown.
- Listing will be deleted by confirming the delete action.

The screenshot shows the Rentlah application interface for managing a property listing. A modal dialog box is open in the center, asking "Are you sure you want to delete NTU Tamarind Hall?". It includes a message "This delete is permanent and cannot be undone." and two buttons: "No" and "Delete". The background of the page is dimmed. The main content area has a dark grey background. The title "Property Name: NTU Tamarind Hall" is displayed. Below it, there are several input fields: "Name" (with placeholder "Name"), "Zip code: 636866" (with placeholder "Zip code"), "Description:" (with placeholder "Property Description"), "Bathrooms: 2" (with a small input field), "Bedrooms: 2" (with a small input field), and "Monthly Rent: 581" (with a small input field and a "SGD" label). At the bottom, there are two buttons: a blue "Submit Edit" button and a grey "Delete Listing" button. A copyright notice "Copyright © 2024 by Z440" is visible at the bottom left.

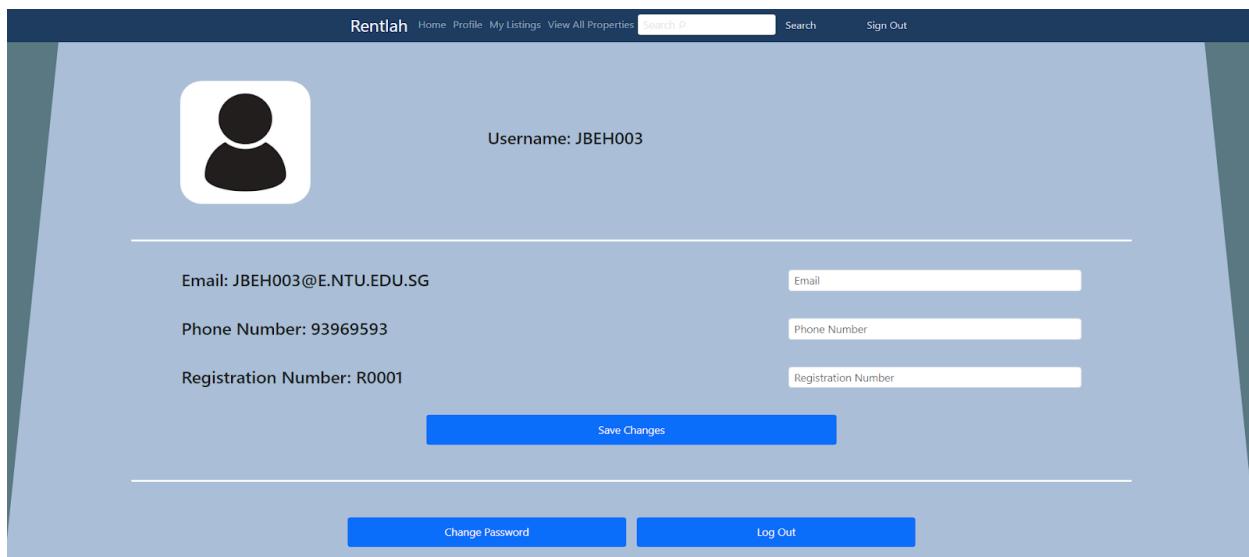
Profile Page (Customer)

- Customers can edit their email address and phone number here.
- Customers can also upload their profile picture by clicking the image icon and then select a image file to be uploaded to our database from their computer.
- Customer can access the change password page by clicking the Change Password button.
- Customer can log out from the system by clicking the Log Out button.



Profile Page (Agent)

- Agents can edit their email address, phone number and registration number here.
- Agents can also upload their profile picture by clicking the image icon and then select a image file to be uploaded to our database from their computer.
- Agents can access the change password page by clicking the Change Password button.
- Agents can log out from the system by clicking the Log Out button.



View All Properties

- User can view all the properties available in our website here. Customer can choose to add property into their watchlist here as well.

The screenshot shows the 'View All Properties' page on the Rentlah website. At the top, there is a navigation bar with links for Home, Profile, My Watchlist, View All Properties, a search bar, a 'Search' button, and a 'Sign Out' button. Below the navigation bar, there is a search bar with a magnifying glass icon and a 'Filter' button. The main content area displays four property listings:

- Heaven Garden**
Address: 36 NANYANG CRESCENT...
Price: S\$1000
Learn More | Add to Watchlist
- The Lakeside Residences**
Address: 42 LAKESIDE DRIVE THE ...
Price: S\$2000
Learn More | Add to Watchlist
- Hall 4 Super Room**
Address: 11 NANYANG CIRCLE NA...
Price: S\$600
Learn More | Add to Watchlist
- NTU Tamarind Hall**

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Search/Filter Page

- Users can explore listings by applying filtering criterias or entering keywords.
- The filtering criterias are number of bedrooms, number of bathrooms and price range.

The screenshot shows the 'Search/Filter Page' on the Rentlah website. The layout is similar to the previous page, with a navigation bar at the top and a search bar with a magnifying glass icon and a 'Filter' button. A filtering sidebar is visible on the left side of the main content area, containing fields for 'Bedroom' (with values 0 and 1) and 'Bathroom' (with values 0 and 1), along with a 'Price' range slider from 0 to 1000. The main content area displays the same four property listings as the previous page:

- Heaven Garden**
Address: 36 NANYANG CRESCENT...
Price: S\$1000
Learn More | Add to Watchlist
- The Lakeside Residences**
Address: 42 LAKESIDE DRIVE THE ...
Price: S\$2000
Learn More | Add to Watchlist
- Hall 4 Super Room**
Address: 11 NANYANG CIRCLE NA...
Price: S\$600
Learn More | Add to Watchlist
- NTU Tamarind Hall**
Address: 38 NANYANG CRESCENT...
Learn More

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Change Password

- Users can change their password by clicking the “Change Password” button in their Profile Page.
- Users need to enter their current password correctly in order to change their password.



A screenshot of a web-based "Change Password" form. The page has a light blue header and a white main content area. At the top center is the title "Change Password". Below it are two input fields: "Old Password" and "New Password", each accompanied by a small lock icon. A large blue rectangular button labeled "Confirm" is positioned below the password fields. At the bottom left of the page, there is a small, faint copyright notice: "Copyright © 2004 by Z440".

Forget Password Page

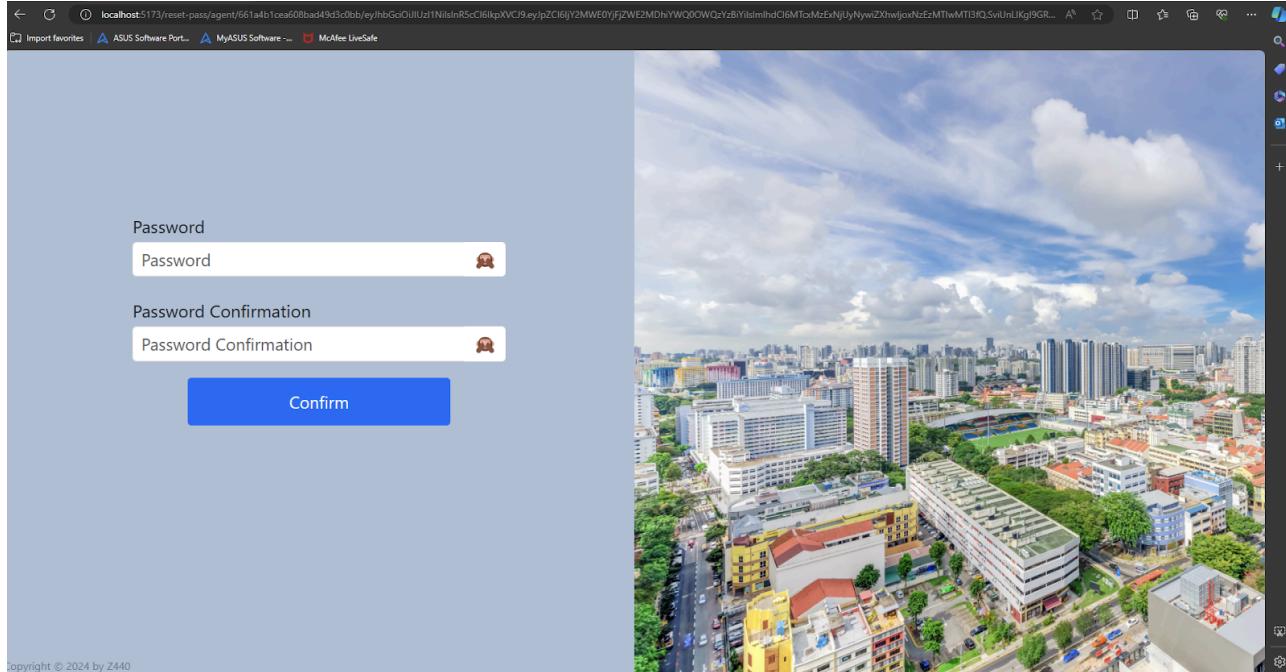
- User need to enter his/her email address to reset his/her password.
- A message “Email sent successfully” will be shown if the system verify the email address.
- User will receive an email with a reset link to reset his/her password.



A screenshot of a web-based "Enter your email" form. The page has a light blue header and a white main content area. At the top center is the title "Enter your email". Below it is a single input field labeled "Email" containing the text "jbeh003@e.ntu.edu.sg". Underneath the input field, a message "Email sent successfully" is displayed in a smaller font. Below the message are two buttons: a blue "Confirm" button and a grey "Go to Login Page" button. At the bottom left of the page, there is a small, faint copyright notice: "Copyright © 2004 by Z440".

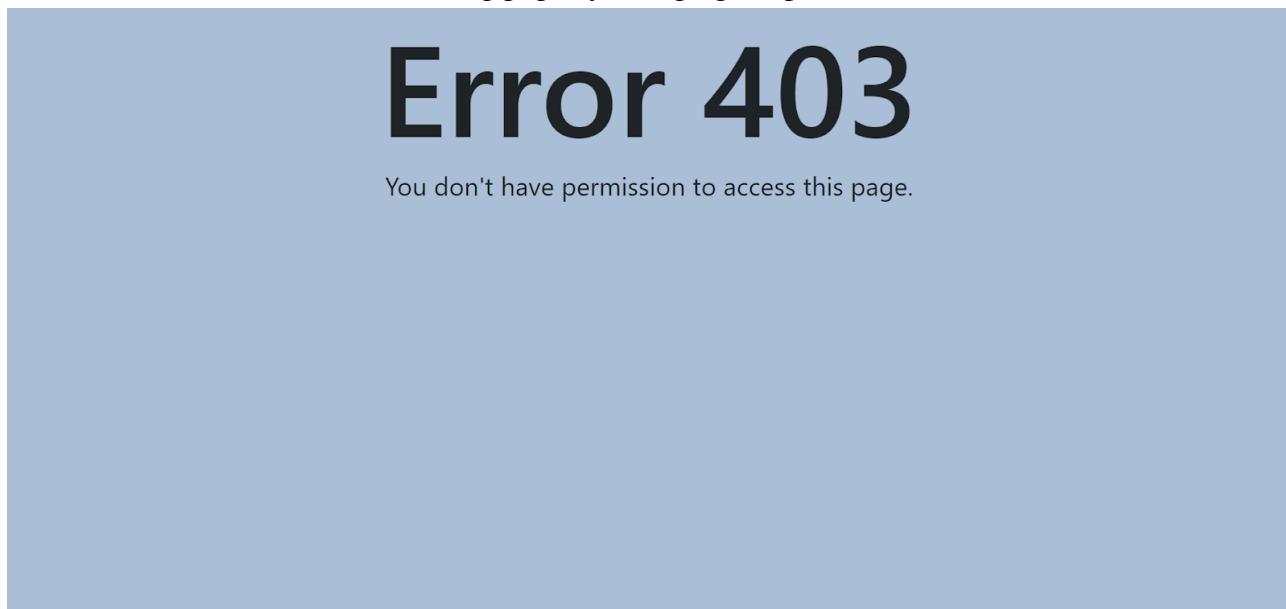
Reset Password Page

- A unique link will be received by user to reset his/her password.
- User can enter his/her new password.



Error (Access denied) Page

- This will show up if a user tries to access a page he/she is not allowed to. (i.e., customer tries to access the create listing page by changing the path name)



3.2 Hardware Interfaces

The application does not require any hardware to run on.

3.3 Software Interfaces

Firebase: Backend as a Service (BaaS)

Firebase is a Backend-as-a-Service (BaaS). It provides developers with a variety of tools and services to help them develop quality applications, grow their user base, and gain profit. It is built on Google's infrastructure. Firebase is categorized as a NoSQL database program, which stores data in JSON-like documents.

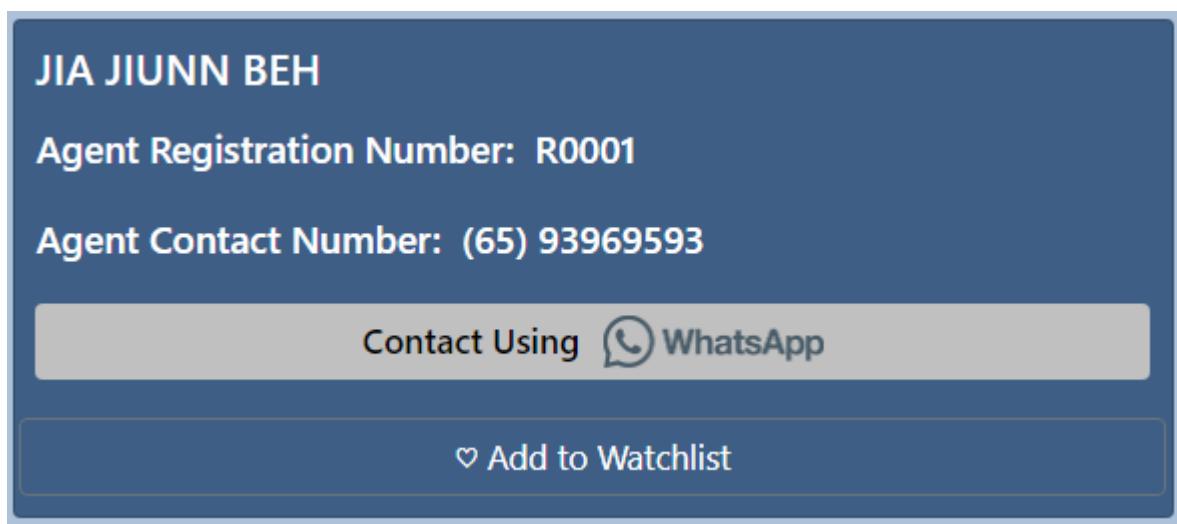
MongoDB:

MongoDB is a NoSQL database program renowned for its flexibility and scalability. It stores data in a document-oriented format similar to JSON, making it ideal for applications with dynamic schemas and evolving data structures. MongoDB ensures the scalability of this web application.

3.4 Communications Interfaces

3.4.1 WhatsApp Feature

For each listing put up on the application, the contact details of the agent are provided alongside allowing customers to contact agents easily through WhatsApp. The WhatsApp API has been utilized to achieve this.



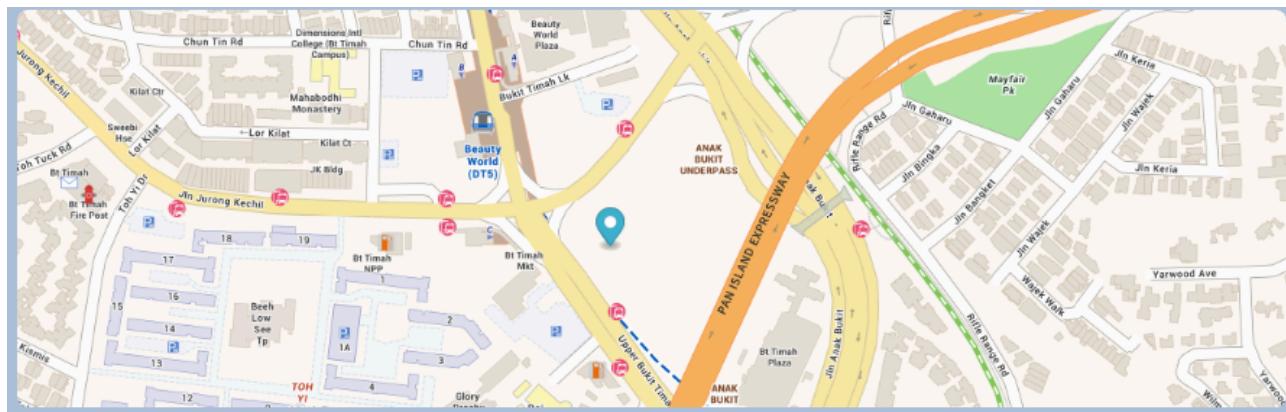
3.4.2 Email Feature for Forget Password - Reset Link

Users will be sent a unique URL on the entered Email-ID in order to reset their password.

The screenshot shows an email from RentLah by Z440 to JJIUNNBEH. The subject is "RentLah by Z440". The body of the email starts with "Hi JBEH003," followed by "Here is your reset password link". Below this is a link: http://localhost:5173/reset-pass/agent/661a4b1cea608bad49d3c0bb/eyJhbGciOiJUzI1NiIsInR5cC16IkpxVCJ9.eyJpZC16jY2MWE0YFjZWE2MDhiYWQ0OWQzYzBiYlsImhdCI6MTcxMzAwNjk0MiwZXhwIjoxNzEzMDEwNTQyQD6m8zQUeeEAC-JD_OimYegPzt_XIL_a74fVH7FYwx08. The message concludes with "Do not share your password with anyone." and "Yours truly,
RentLah by Z440".

3.4.3 Map Feature

An interactive map pinpointing the property's exact location is generated using OneMap API, a government official API.



OneMap © contributors | Singapore Land Authority

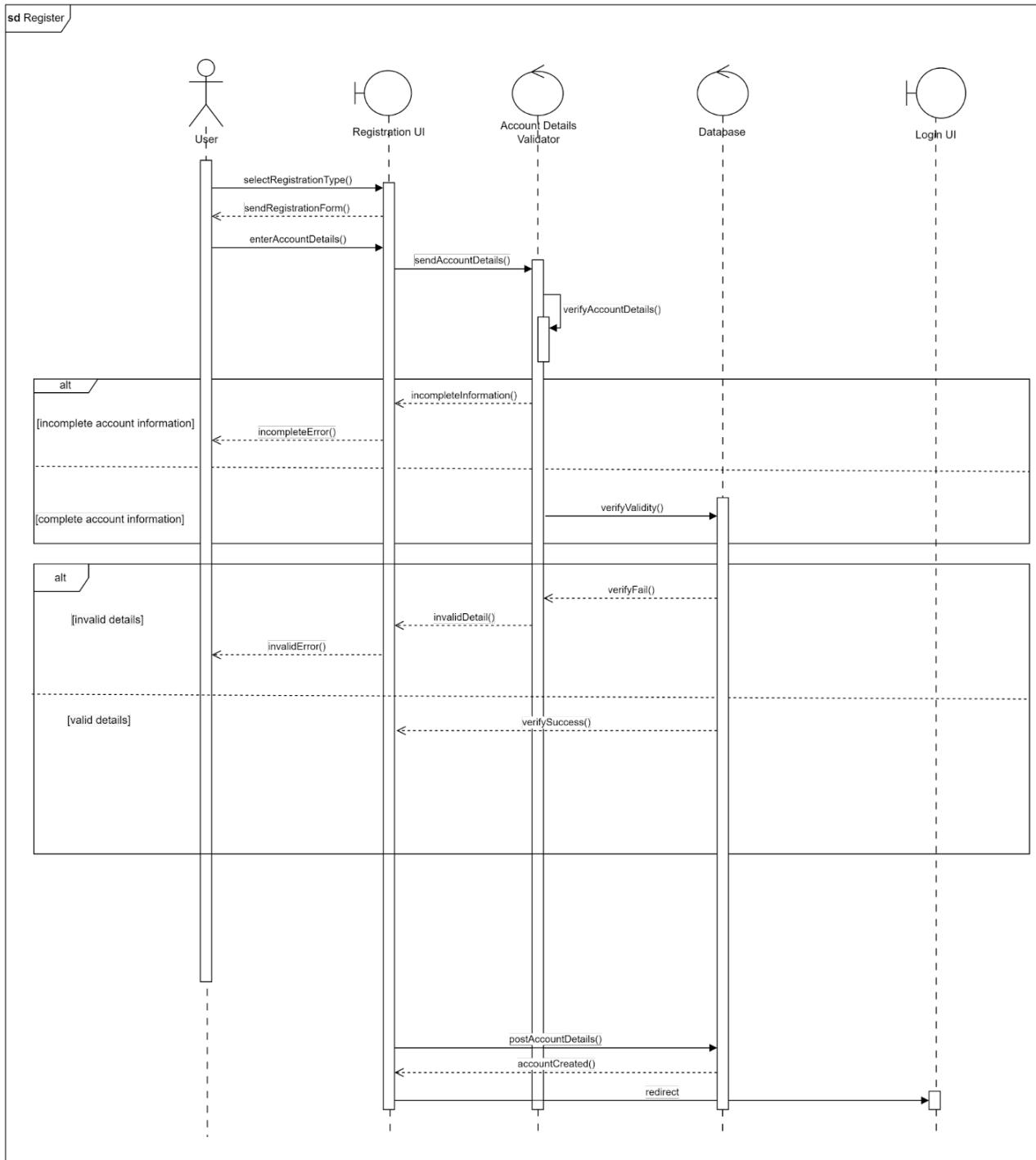
4. System Features

4.1 Registration

Use Case ID:	REG1		
Use Case Name:	Registration		
Created By:	Sakalesh Ashoka Rugi	Last Updated By:	Beh Jia Jiunn
Date Created:	10/02/2024	Date Last Updated:	30/03/2024

Actor:	User
Description:	Creates a new account for the user.
Preconditions:	<ol style="list-style-type: none">1. The web application opens up.2. The user clicks on the “Sign up” button on the login page.
Postconditions:	<ol style="list-style-type: none">1. The user’s details are verified to be valid by the system.2. The user's information is captured by the system.3. The user exits the application.
Priority:	High
Frequency of Use:	Low as this is only required for new users to register for an account (once)
Flow of Events:	<ol style="list-style-type: none">1. The system prompts the user to choose his/her desired type of account: Customer or Agent.2. User selects the type of account he/she desires.3. The system displays text fields to request the user for relevant details:<ol style="list-style-type: none">a. For users registering as customers, the system requests the following details:<ol style="list-style-type: none">i. Usernameii. Phone numberiii. Email addressiv. Passwordv. Password confirmationb. For users registering as agents, the system requests the following details:<ol style="list-style-type: none">i. Usernameii. Phone numberiii. Email addressiv. Agent namev. Agent Registration Number4. User enters the account details required.5. The system verifies that all the text fields have been filled up.6. The system verifies the validity of username and email.7. The system returns back to the login page.

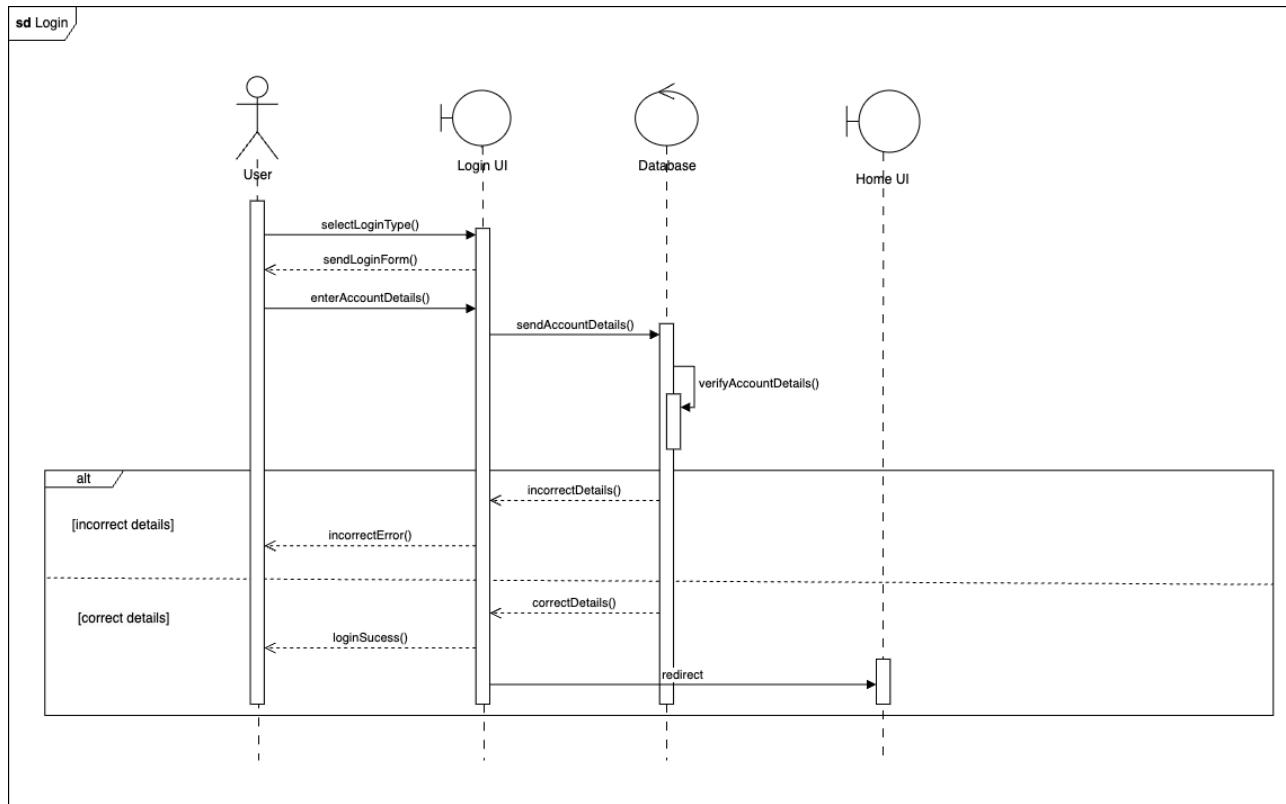
Alternative Flows:	<p>REG1.AF.1 At step 5, if the system detects that one or more text fields are empty.</p> <ol style="list-style-type: none"> 1. The system prompts the user to fill in the missing information. 2. User fills in the missing information. 3. The system goes back to Step-5. <p>REG1.AF.2 At step 6, if the system fails to verify the validity of username and email.</p> <ol style="list-style-type: none"> 1. The system displays an error message indicating the reason for failure. 2. The system goes back to Step-3.
Exceptions:	At any step before successful creation of an account, if the system detects a network error, it displays a message “Network error: Please try again later.”. The system then halts further actions until the network connectivity is restored or the user reattempts.
Includes:	NIL
Special Requirements:	NIL
Assumptions:	A1. User is connected to the internet. A2. The server is stable
Notes and Issues:	NIL



4.2 Login

Use Case ID:	LOG1		
Use Case Name:	Login		
Created By:	Sakalesh Ashoka Rugi	Last Updated By:	Beh Jia Jiunn
Date Created:	10/02/2024	Date Last Updated:	30/03/2024

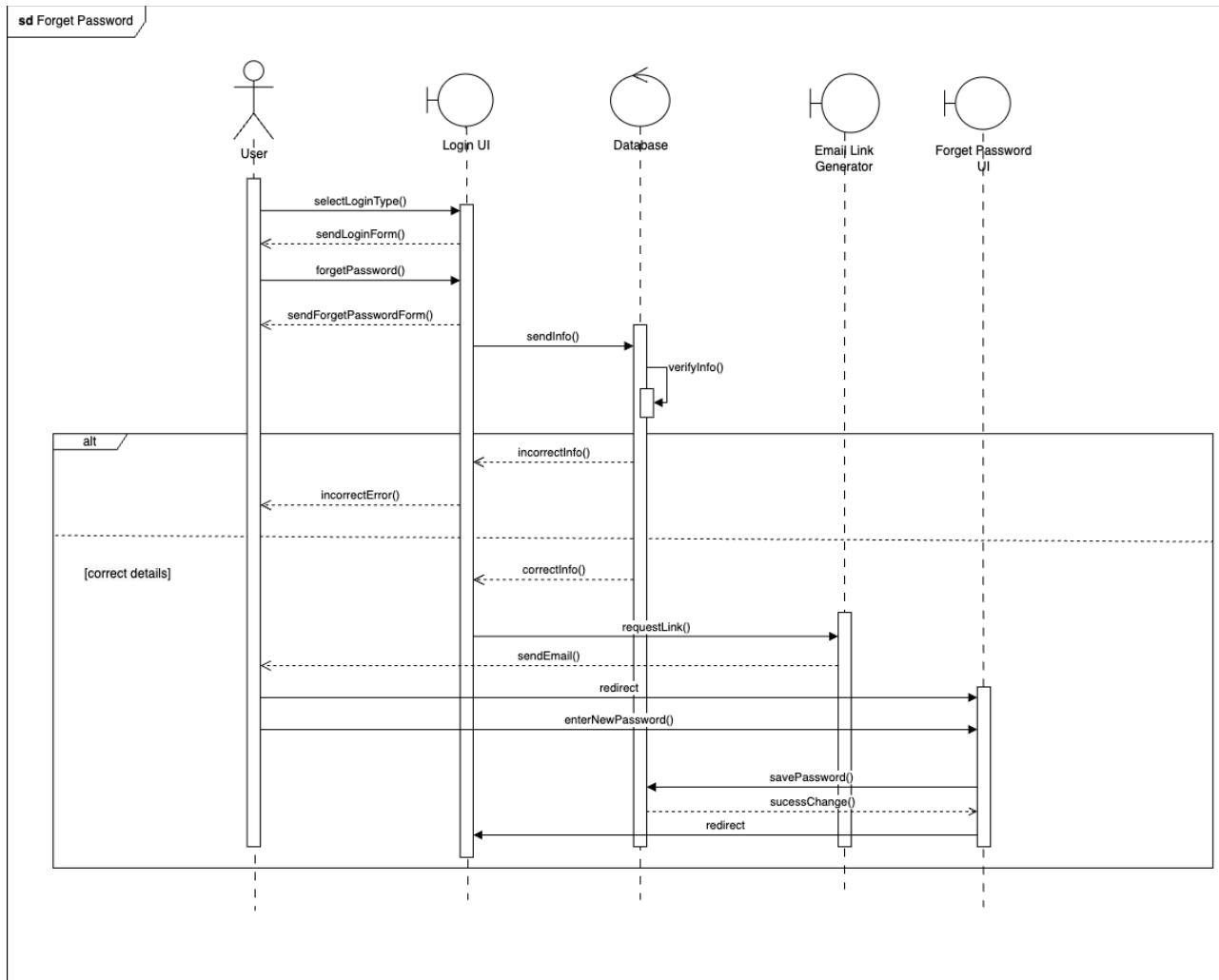
Actor:	User
Description:	User signs in to account to access features of the application.
Preconditions:	<ol style="list-style-type: none"> 1. The web application starts up. 2. The user has an existing account registered in the system.
Postconditions:	<ol style="list-style-type: none"> 1. The user clicks “Login as Customer” or “Login as Agent.” 2. The user has entered a valid username and password related to their account. 3. The user's information is successfully validated by the system.
Priority:	High
Frequency of Use:	Low as the user only needs to login at the start of each session
Flow of Events:	<ol style="list-style-type: none"> 1. The system displays a text field for the user's username. 2. The system displays a text field for the user's password. 3. The system displays a “Forget Password” button. 4. The user enters his/her username and password. 5. The system verifies the entered details. 6. The system logs the user in. 7. The system displays the homepage.
Alternative Flows:	<p>LOG1.AF.1 At step 4, If the user provides incorrect username and/or password.</p> <ol style="list-style-type: none"> 1. The system displays an error message indicating invalid login. 2. The system returns to Step 1.
Exceptions:	NIL
Includes:	NIL
Special Requirements:	NIL
Assumptions:	<p>A1. User is connected to the internet.</p> <p>A2. The server is stable.</p>
Notes and Issues:	LOG1.AF.1 If the user exceeds 5 attempts at entering the correct password, the user account will be locked for 5 minutes.



4.3 Forget Password

Use Case ID:	PWD1		
Use Case Name:	Forget Password		
Created By:	Beh Jia Jiunn	Last Updated By:	Beh Jia Jiunn
Date Created:	10/02/2024	Date Last Updated:	20/2/2024

Actor:	User
Description:	User forgets the password of their account.
Preconditions:	1. The user has clicked the “Forget password” button.
Postconditions:	1. The user has entered their new password and clicked the “Confirm” button. 2. The system successfully verifies the new password and updates the database. 3. The user exits the application.
Priority:	Low
Frequency of Use:	Low as users will not be changing their password frequently.
Flow of Events:	1. The user clicks on the “Forget Password” button on their profile page. 2. The system displays a text field for the user’s registered email. 3. The system verifies the user’s email. 4. The system sent a link to the user’s email. 5. The user clicks on that link. 6. The user gets directed to the “Change Password” page. 7. The system displays text field for the user’s new password. 8. The user enters a new password. 9. The system displays a “Confirm” button. 10. The user clicks on the “Confirm” button. 11. The system verifies the new password. 12. The system displays a message indicating the successful change.
Alternative Flows:	PW1.AF.1 The system fails to verify the email entered by the user. 1. The system displays an error message. 2. The system goes back to step 2.
Exceptions:	NIL
Includes:	NIL
Special Requirements:	NIL
Assumptions:	A1. User is connected to the internet. A2. The server is stable.
Notes and Issues:	NIL



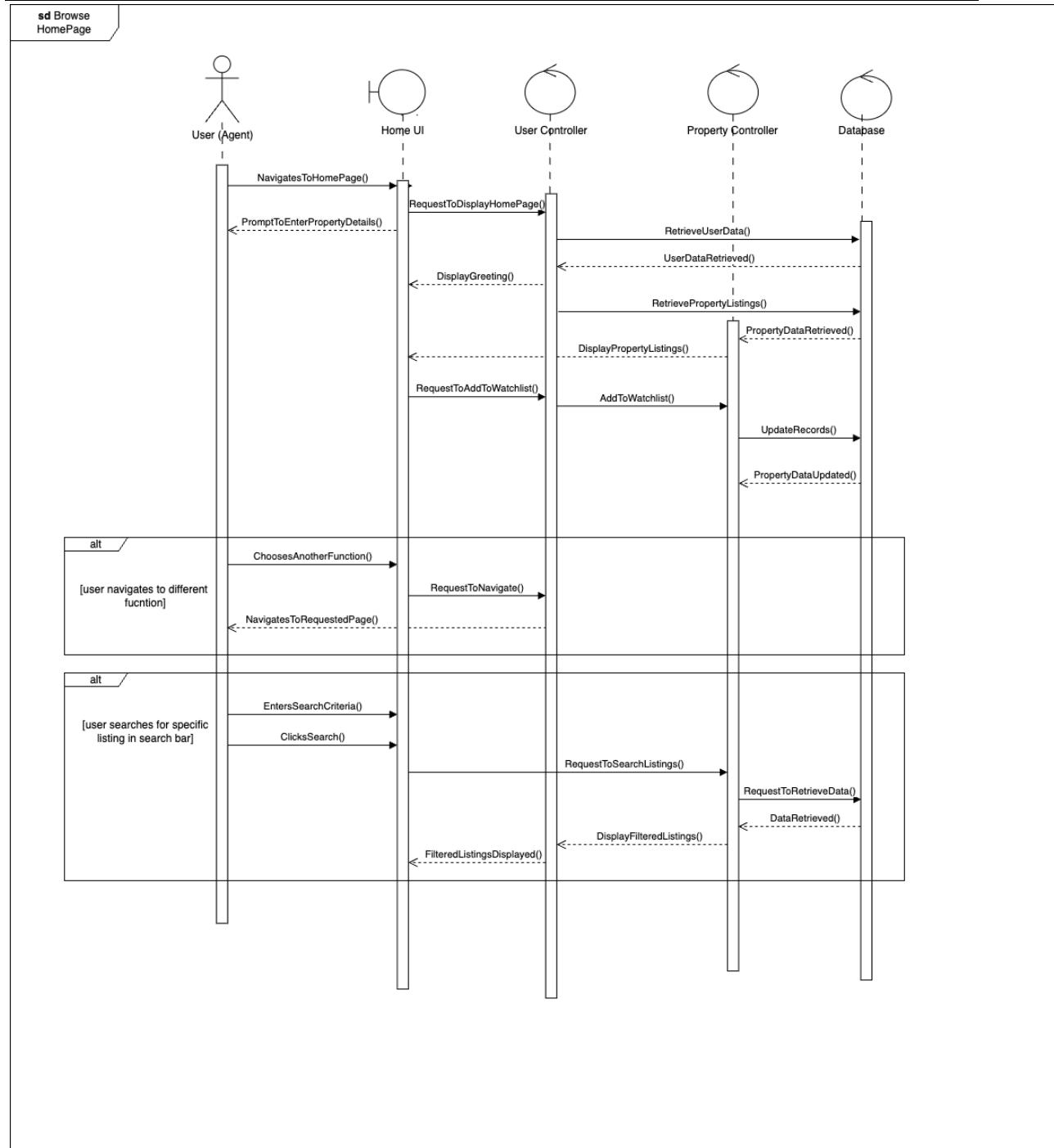
4.4 Browse Home Page

Use Case ID:	HOM1		
Use Case Name:	Browse home page		
Created By:	Sakalesh Ashoka Rugi	Last Updated By:	Sakalesh Ashoka Rugi
Date Created:	10/02/2024	Date Last Updated:	23/02/2024

Actor:	User
Description:	User browses the recommended listing under the home page.
Preconditions:	<ol style="list-style-type: none"> 1. The user has successfully logged into the system. 2. The user has been successfully directed to the homepage.
Postconditions:	<ol style="list-style-type: none"> 1. The user has found a listing they want to learn more about. 2. The user clicks on “Learn more...” to view the details of the listing. 3. The user exits the application.
Priority:	Low
Frequency of Use:	High as the homepage is default page of the application
Flow of Events:	<ol style="list-style-type: none"> 1. The user navigates to the homepage. 2. The system displays “Hello, *username*.” 3. The system displays all property listings within a 5-kilometer radius. 4. For each property listing: <ol style="list-style-type: none"> a. System displays monthly rent. b. System displays the location of the property. c. System displays the option to “Learn More...”. d. System displays the option to “Add to watchlist”. 5. The system displays a text field for the search bar. 6. The system displays an option “View Properties” 7. The user can add a property they are interested to their watchlist.
Alternative Flows:	<p>HOM1.AF.1 The user decides to search for a specific listing via the search bar</p> <ol style="list-style-type: none"> 1. The user enters search criteria in the search bar. 2. The user clicks the “Search” button. 3. The system displays listings filtered by the user’s search criterias. <p>HOM1.AF.2 The user decides to navigate to a different function</p> <ol style="list-style-type: none"> 1. The user clicks one of the functions in the navigation bar. 2. The user is brought to the corresponding page.
Exceptions:	NIL
Includes:	NIL
Special Requirements:	NIL

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Assumptions:	A1. User is connected to the internet A2. The user is logged in to the system. A3. The server is stable
Notes and Issues:	NIL

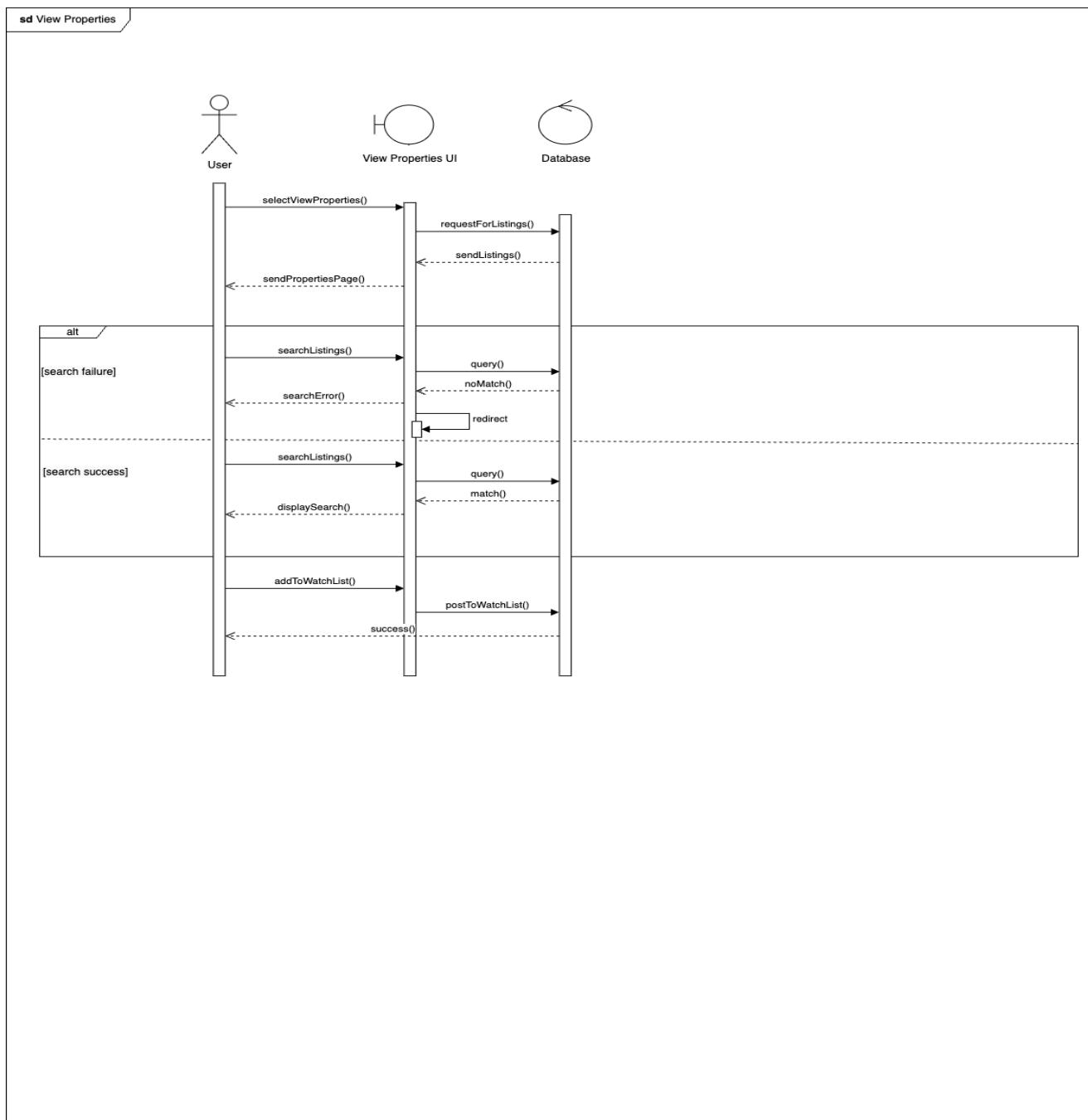


4.5 View Properties

Use Case ID:	VP1		
Use Case Name:	View Properties		
Created By:	Kapoor Ananya	Last Updated By:	Kapoor Ananya
Date Created:	10/02/2024	Date Last Updated:	30/03/24

Actor:	User
Description:	User views available property listings.
Preconditions:	<ol style="list-style-type: none"> 1. The user has successfully logged into the system. 2. The user has been successfully directed to the “View Properties” page.
Postconditions:	<ol style="list-style-type: none"> 1. The user has found a listing they want to learn more about. 2. The user clicks on “Learn more...” to view the details of the listing. 3. The user exits the application.
Priority:	High
Frequency of Use:	Medium as users sometimes may want to search for a listing with specific requirements.
Flow of Events:	<ol style="list-style-type: none"> 1. The user navigates to the listings page. 2. The system displays all the listings in the database in a default order. 3. System displays a text field for the search bar. 4. The user can add a property they are interested in to their watchlist.
Alternative Flows:	<p>VP1.AF.1 The user decides to search for a specific listing via the search bar.</p> <ol style="list-style-type: none"> 1. The user enters search criteria in the search bar. 2. The user clicks the “search” button. 3. If the system finds a match in the database, the system displays listings that satisfy the search. 4. If the system fails to find a match, the system sends an error message and redirects the user back to the “View Properties” page. <p>VP1.AF.2 The user decides to navigate to a different function.</p> <ol style="list-style-type: none"> 1. The user clicks one of the functions in the navigation bar. 2. The user is brought to the corresponding page
Exceptions:	NIL
Includes:	NIL
Special Requirements:	NIL
Assumptions:	<p>A1. User is connected to the internet.</p> <p>A2. The user is logged in to the system.</p> <p>A3. The server is stable</p>
Notes and Issues:	NIL

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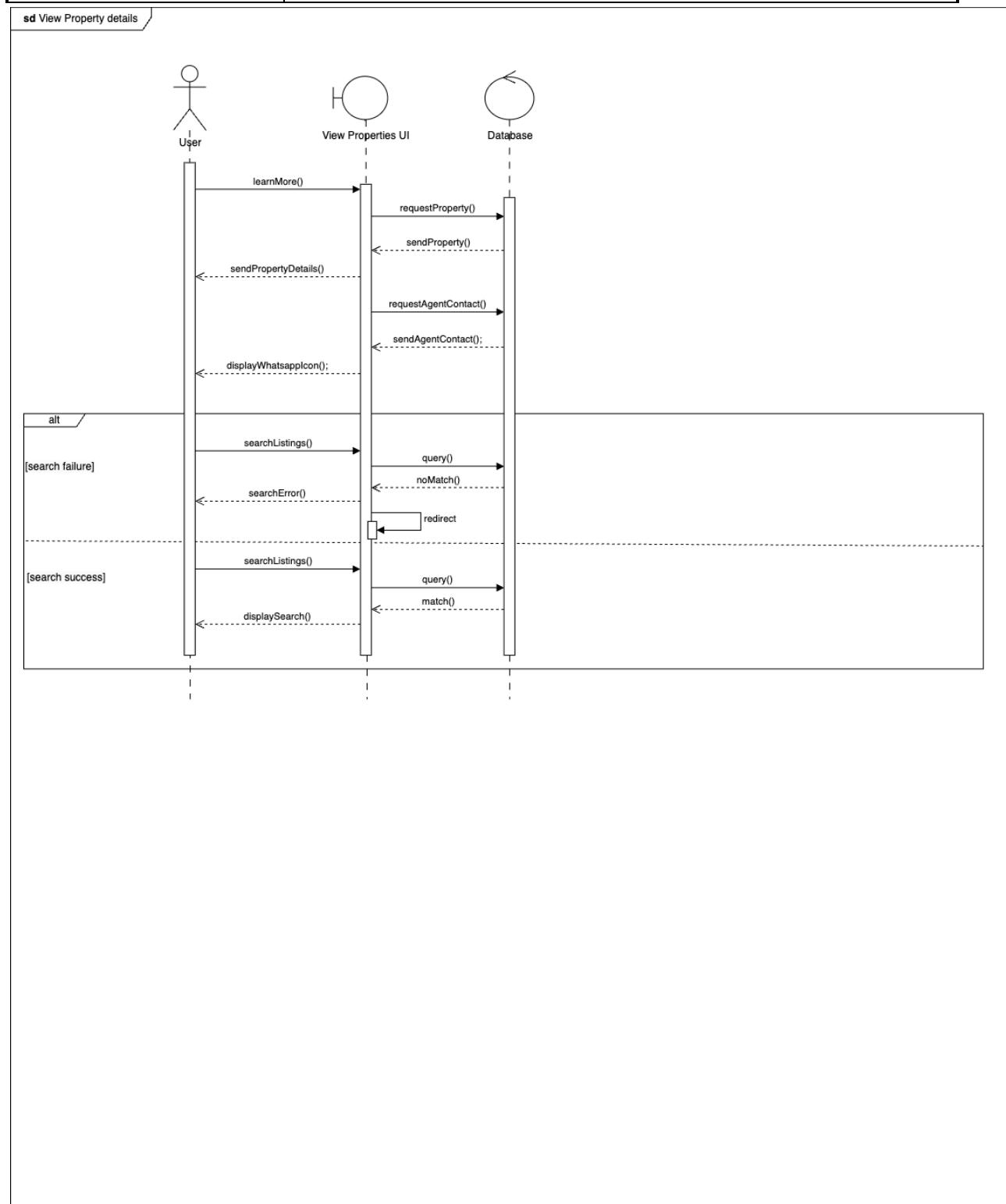


4.6 View Property Details

Use Case ID:	VPD1		
Use Case Name:	View Property details		
Created By:	Kapoor Ananya	Last Updated By:	Kapoor Ananya
Date Created:	10/02/2024	Date Last Updated:	24/02/24

Actor:	User
Description:	User views detailed information of a specific property listed.
Preconditions:	<ul style="list-style-type: none"> 1. The user has successfully logged into the system. 2. The user has been successfully directed to the specific listing details page.
Postconditions:	<ul style="list-style-type: none"> 1. The user contacts the agent that listed the property. 2. The user exits the application.
Priority:	High
Frequency of Use:	High as users will want to access the details of the property they are interested in
Flow of Events:	<ul style="list-style-type: none"> 1. The user clicks on the “Learn More” button of a specific listing. 2. The system displays the detailed information of the selected property: <ul style="list-style-type: none"> a. System displays pictures of the property. b. System displays the property name. c. System displays the property location. d. System displays the monthly rent of property. e. System displays the number of bedrooms and bathrooms of the property. f. System displays the address of the property of an interactive map. 3. The system displays the “Contact” button for the user to be able to contact the agent associated with the property.
Alternative Flows:	<p>VPD1.AF.1 The user decides to search for a specific listing via the search bar.</p> <ul style="list-style-type: none"> 1. The user enters search criteria in the search bar. 2. The user clicks the “search” button. 3. The system displays listings filtered by the user’s search criterias. <p>VPD1.AF.2 The user decides to navigate to a different function</p> <ul style="list-style-type: none"> 1. The user clicks one of the functions in the navigation bar. 2. The user is brought to the corresponding page.
Exceptions:	NIL
Includes:	NIL
Special Requirements:	NIL

Assumptions:	A1. User is connected to the internet. A2. The user is logged in to the system. A3. The server is stable.
Notes and Issues:	NIL

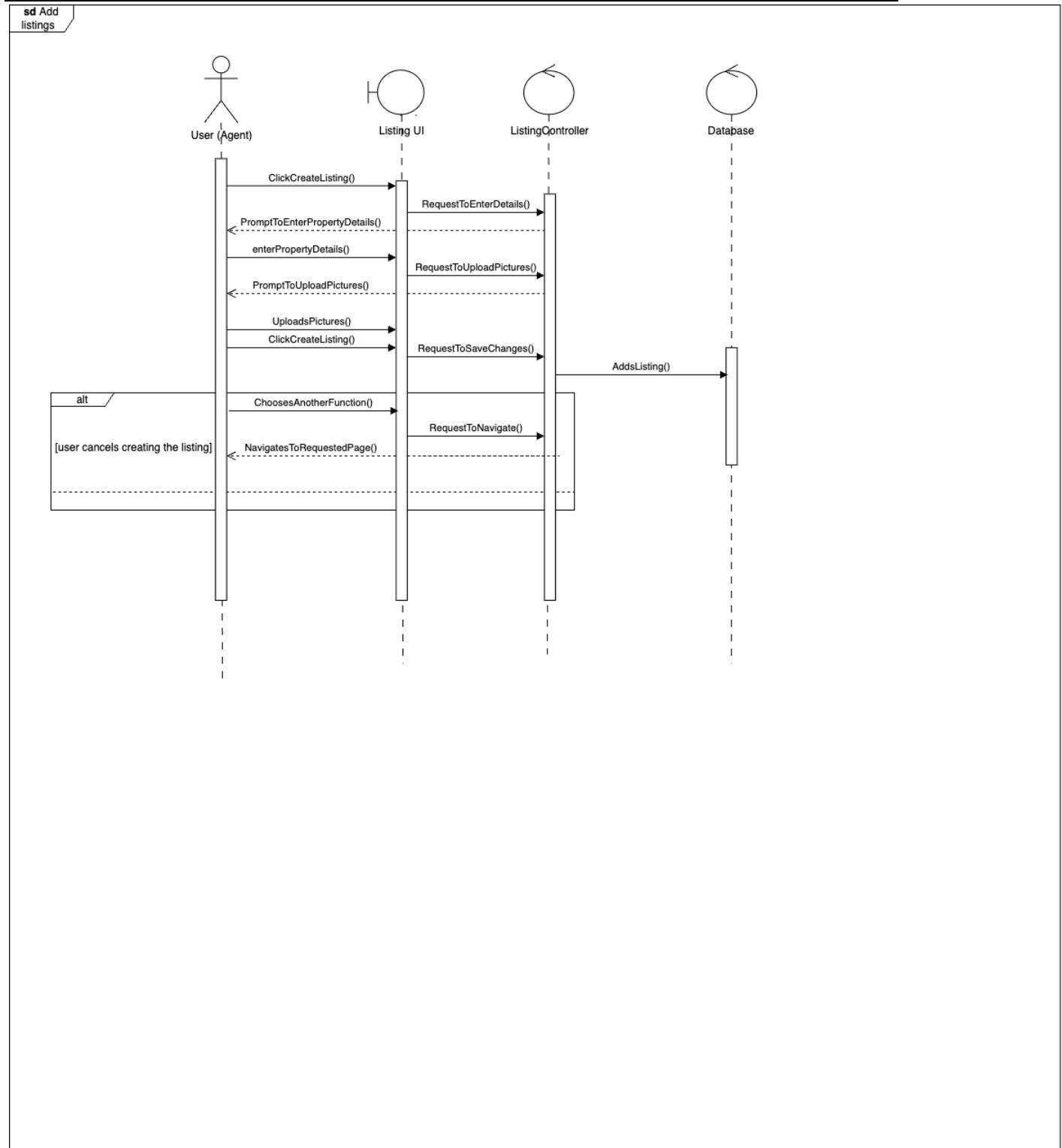


4.7 Add Listings Details

Use Case ID:	ALD1		
Use Case Name:	Add listings details		
Created By:	Denis Yu Dian	Last Updated By:	Kapoor Ananya
Date Created:	10/02/2024	Date Last Updated:	24/02/24

Actor:	User
Description:	User adds details about the property that they want to list.
Preconditions:	<ul style="list-style-type: none"> 1. The user has successfully logged into the system. 2. The user is signed in as an agent. 3. The user has clicked the create listing button under the Manage Listing page.
Postconditions:	<ul style="list-style-type: none"> 1. The user clicks on the “Create Listing” button and successfully creates a new listing. 2. The user exits the application.
Priority:	High
Frequency of Use:	High as most agents will create a listing
Flow of Events:	<ul style="list-style-type: none"> 1. The user clicks on the “Create Listing” button. 2. The system prompts the user to enter the following information in the displayed text fields: <ul style="list-style-type: none"> a. Address of the property. b. Monthly rental prices. c. Number of bathroom(s). d. Number of bedroom(s). e. Description about the property. 3. The user enters the required details. 4. The system prompts the user to upload pictures of the property. 5. The user uploads the property pictures. 6. The user clicks the “Create Listing” button to save changes and add a new listing.
Alternative Flows:	<p>ALD1.AF.1 The user decides to cancel creating the listing by choosing another function.</p> <ul style="list-style-type: none"> 1. The user clicks one of the functions in the navigation bar. 2. The user is brought to the corresponding page.
Exceptions:	NIL
Includes:	NIL
Special Requirements:	NIL
Assumptions:	A1. User is connected to the internet.

	A2. The user is logged in to the system. A3. The server is stable.
Notes and Issues:	NIL

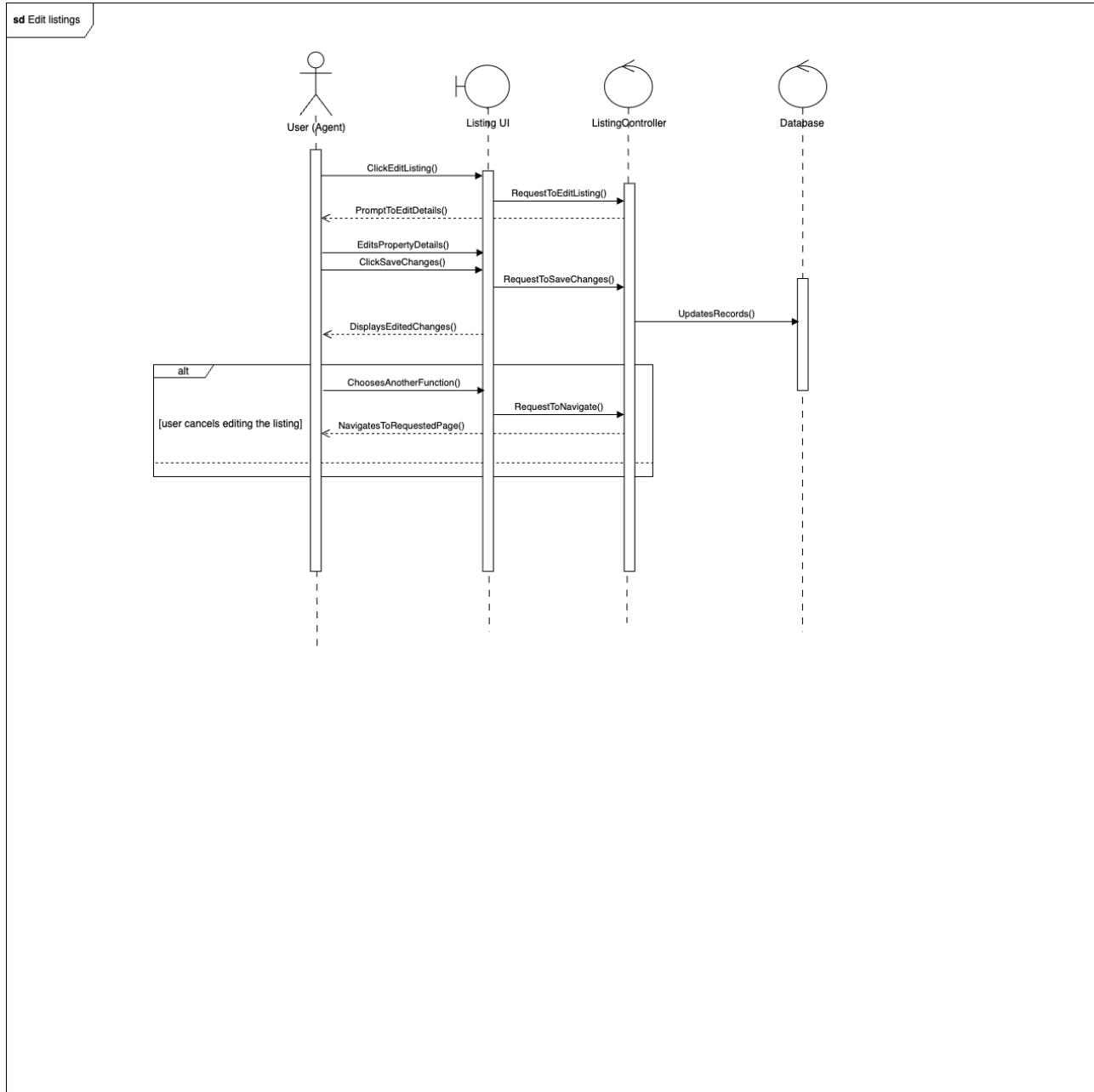


4.8 Edit Listings Details

Use Case ID:	ELD1		
Use Case Name:	Edit listings details		
Created By:	Denis Yu Dian	Last Updated By:	Denis Yu Dian
Date Created:	10/02/2024	Date Last Updated:	23/02/2024

Actor:	User
Description:	The user edits detailed information of a specific property listed.
Preconditions:	<ol style="list-style-type: none"> 1. The user has successfully logged into the system. 2. The user has logged into the system as an agent. 3. The user has clicked the “Edit” button next to the specific listing on the Manage Listing page. 4. The user has at least one property listed.
Postconditions:	<ol style="list-style-type: none"> 1. The user has finished editing the listing and changes are updated in the system. 2. The user exits the application.
Priority:	Low
Frequency of Use:	Moderate as only accessible to users logging in as agents, and they may not always be required to edit their listings.
Flow of Events:	<ol style="list-style-type: none"> 1. The user clicks on the “Edit” button of a specific listing. 2. System prompts the user to make required changes for the selected property: <ol style="list-style-type: none"> a. The user can edit the following: <ol style="list-style-type: none"> i. Address of the property. ii. Monthly rental prices. iii. Number of bathroom(s) iv. Number of bedroom(s) v. Description about the property. b. The user can also choose to remove the listing as part of editing. <ol style="list-style-type: none"> i. The system displays a “Remove listing” button. ii. The users can click on the “Remove listing” button to delete the chosen listing. 3. The user makes the edits and clicks the “Save Changes” button. 4. The system updates the records based on user-made changes.
Alternative Flows:	<p>ELD1.AF.1 The user decides to cancel editing the listing by choosing another function.</p> <ol style="list-style-type: none"> 1. The user clicks one of the functions in the navigation bar. 2. The user is brought to the corresponding page.

Exceptions:	NIL
Includes:	NIL
Special Requirements:	NIL
Assumptions:	A1. User is connected to the internet. A2. The user is logged in to the system. A3. The server is stable
Notes and Issues:	NIL

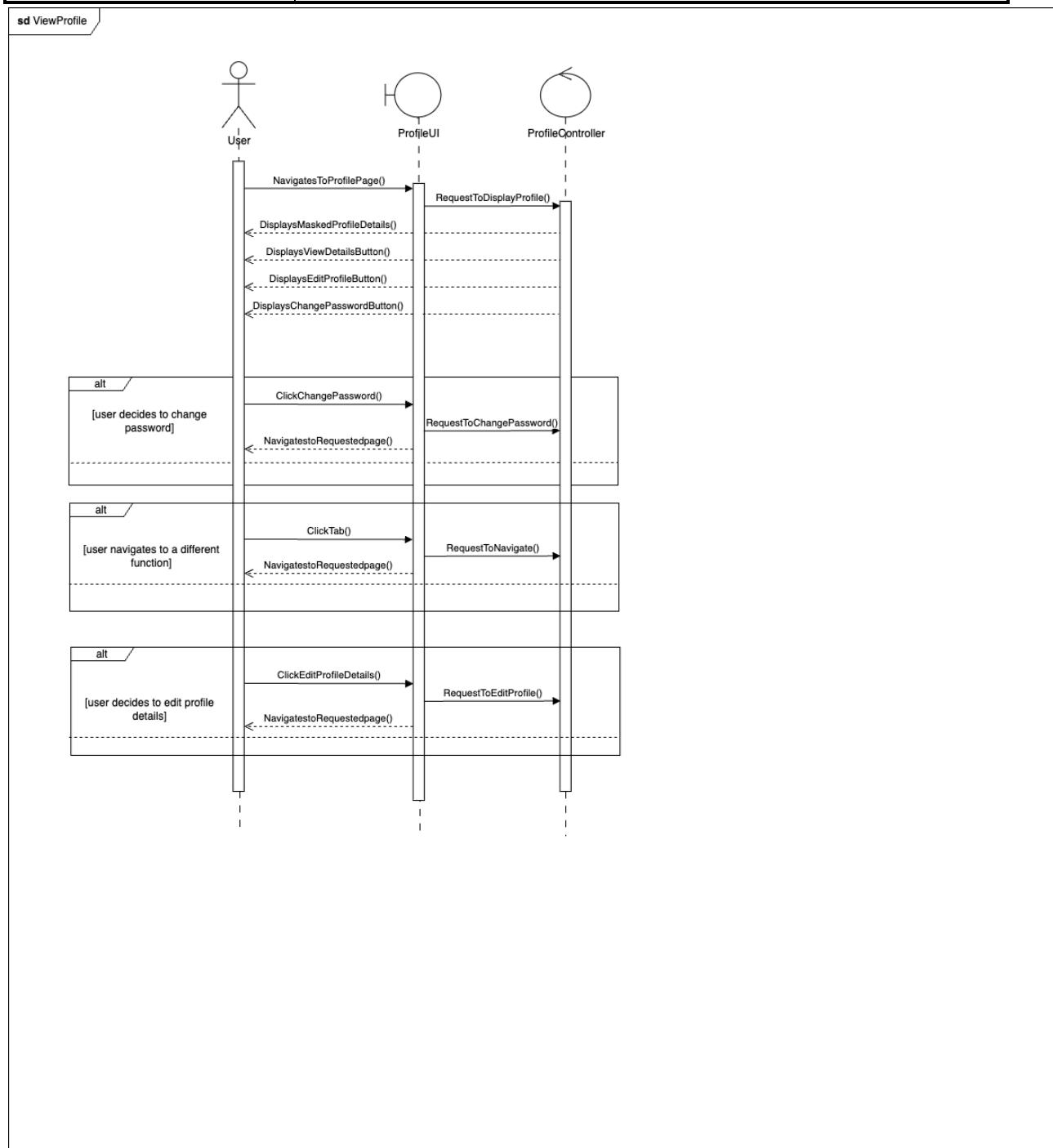


4.9 View Profile

Use Case ID:	VP1		
Use Case Name:	View Profile		
Created By:	Nguyen Trong Phan	Last Updated By:	Nguyen Trong Phan
Date Created:	10/02/2024	Date Last Updated:	23/02/2024

Actor:	User
Description:	Allows user to view masked information on their profile.
Preconditions:	<ul style="list-style-type: none"> 1. The user has successfully logged into the system. 2. The user navigates to the profile page.
Postconditions:	<ul style="list-style-type: none"> 1. The user finished viewing their profile 2. The user exits the application
Priority:	High
Frequency of Use:	High as users will want to view the profile frequently
Flow of Events:	<ul style="list-style-type: none"> 1. System displays the user profile. 2. For users logged in as customer: <ul style="list-style-type: none"> a. System displays username. b. System displays profile picture. c. System displays masked email addresses. d. System displays masked address. e. System displays masked phone number. f. System displays an option “View Profile Details”. g. System displays an option “Edit Profile Details”. h. System displays options to “Change Password.” 3. For users logged in as agents: <ul style="list-style-type: none"> a. System displays username. b. System displays masked phone number. c. System displays masked email address. d. System displays masked Registration ID. e. System displays an option “View Profile Details”. f. System displays an option “Edit Profile Details”. g. System displays an option to “Change password”.
Alternative Flows:	<p>VP1.AF.1 The user decides to change password.</p> <ul style="list-style-type: none"> 1. User clicks on the “change password” button. 2. User is brought to the corresponding page. <p>VP1.AF.2 The user decides to navigate to a different function.</p> <ul style="list-style-type: none"> 1. User clicks one of the functions in the navigation bar. 2. User is brought to the corresponding page. <p>VP1.AF.3 The user decides to edit his profile.</p> <ul style="list-style-type: none"> 1. User clicks on the “Edit Profile Details” button. 2. User is brought to the corresponding page.
Exceptions:	NIL

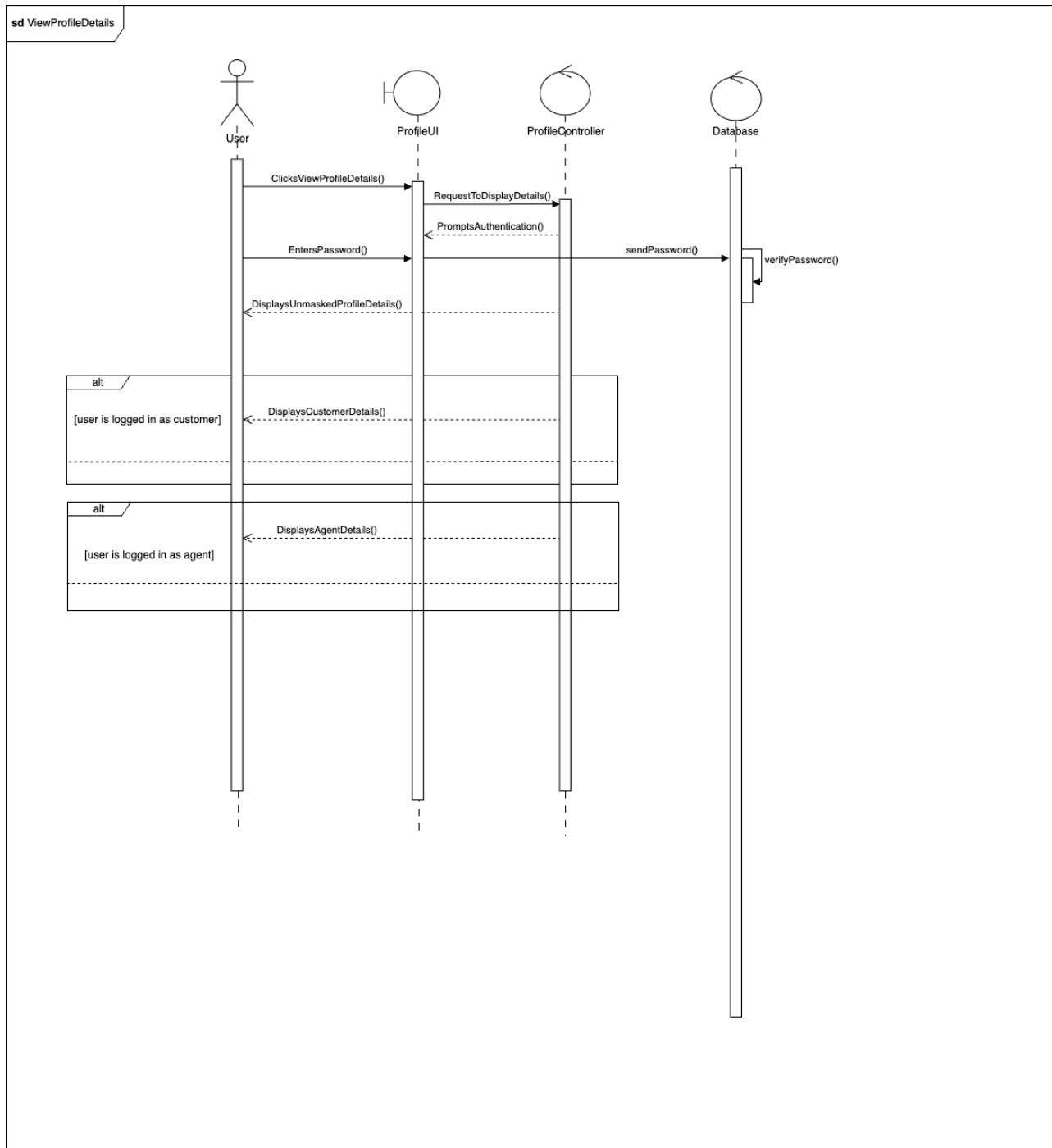
Includes:	NIL
Special Requirements:	NIL
Assumptions:	A1. User is connected to the internet. A2. The user is logged in to the system. A3. The server is stable
Notes and Issues:	NIL



4.10 View Profile Details

Use Case ID:	VPD1		
Use Case Name:	View Profile Details		
Created By:	Nguyen Trong Phan	Last Updated By:	Nguyen Trong Phan
Date Created:	10/02/2024	Date Last Updated:	23/02/2024

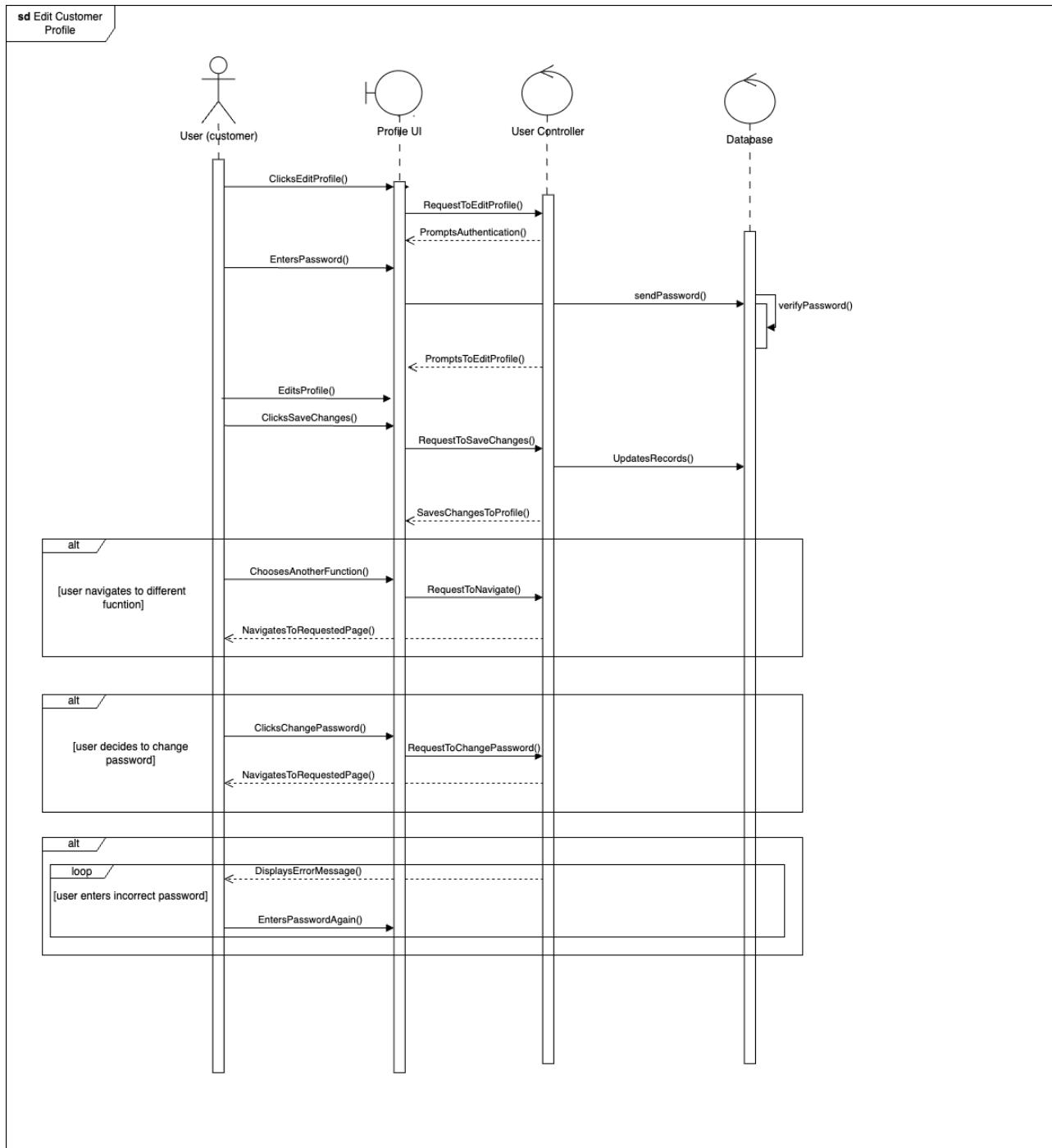
Actor:	User
Description:	Allows user to view detailed information of their profile.
Preconditions:	<ul style="list-style-type: none"> 1. The user has successfully logged into the system. 2. The user navigates to the profile page. 3. The user clicks on the “View Profile Details” button.
Postconditions:	<ul style="list-style-type: none"> 1. The system displays unmasked profile information. 2. The user exits the application.
Priority:	High
Frequency of Use:	Moderate as users will not view their unmasked profile details frequently
Flow of Events:	<ul style="list-style-type: none"> 1. System prompts the user to enter their account password to view their details. 2. System displays the unmasked user profile details. 3. For users logged in as customer: <ul style="list-style-type: none"> a. System displays username. b. System displays profile picture. c. System displays email addresses. d. System displays password and a field for password confirmation. e. System displays phone number. 4. For users logged in as agents: <ul style="list-style-type: none"> a. System displays username. b. System displays phone number. c. System displays email address. d. System displays Registration ID. e. System displays password. f. System displays agent full name.
Alternative Flows:	<p>VPD1.AF.1 The user enters incorrect password.</p> <ul style="list-style-type: none"> 1. The system goes back to Step-1.
Exceptions:	NIL
Includes:	NIL
Special Requirements:	NIL
Assumptions:	<ul style="list-style-type: none"> A1. User is connected to the internet. A2. The user is logged in to the system. A3. The server is stable
Notes and Issues:	NIL



4.11 Edit Customer Profile

Use Case ID:	ECP1		
Use Case Name:	Edit Customer Profile		
Created By:	Nguyen Trong Phan	Last Updated By:	Nguyen Trong Phan
Date Created:	10/02/2024	Date Last Updated:	23/02/2024

Actor:	User
Description:	Allows user edit information about their profile
Preconditions:	<ul style="list-style-type: none"> 1. User has successfully logged into the system 2. User has logged into the system as a customer 3. User navigates to the profile page.
Postconditions:	<ul style="list-style-type: none"> 1. The user has finished editing their profile and changes are updated in the system. 2. The user exits the application.
Priority:	Low
Frequency of Use:	Low as users do not frequently edit their profile
Flow of Events:	<ul style="list-style-type: none"> 1. The system prompts the user to enter their password for authentication. 2. System prompts the user to edit details of their profile: <ul style="list-style-type: none"> a. Phone number b. Email Address c. Address 3. The user makes the edits and clicks the “Save Changes” button. 4. The system updates the database based on the user changes made.
Alternative Flows:	<p>ECP1.AF.1 The user decides to navigate to a different page.</p> <ul style="list-style-type: none"> 1. The user clicks one of the functions in the navigation bar. 2. The user is brought to the corresponding page. <p>ECP1.AF.2 The user decides to change password.</p> <ul style="list-style-type: none"> 1. The user clicks on the “change password” button. 2. The user is brought to the corresponding page. <p>ECP1.AF.3 The user enters incorrect password.</p> <ul style="list-style-type: none"> 1. The system displays an error message. 2. The system goes back to Step-2.
Exceptions:	NIL
Includes:	NIL
Special Requirements:	NIL
Assumptions:	<ul style="list-style-type: none"> A1. User is connected to the internet. A2. The user is logged in to the system. A3. The server is stable
Notes and Issues:	NIL

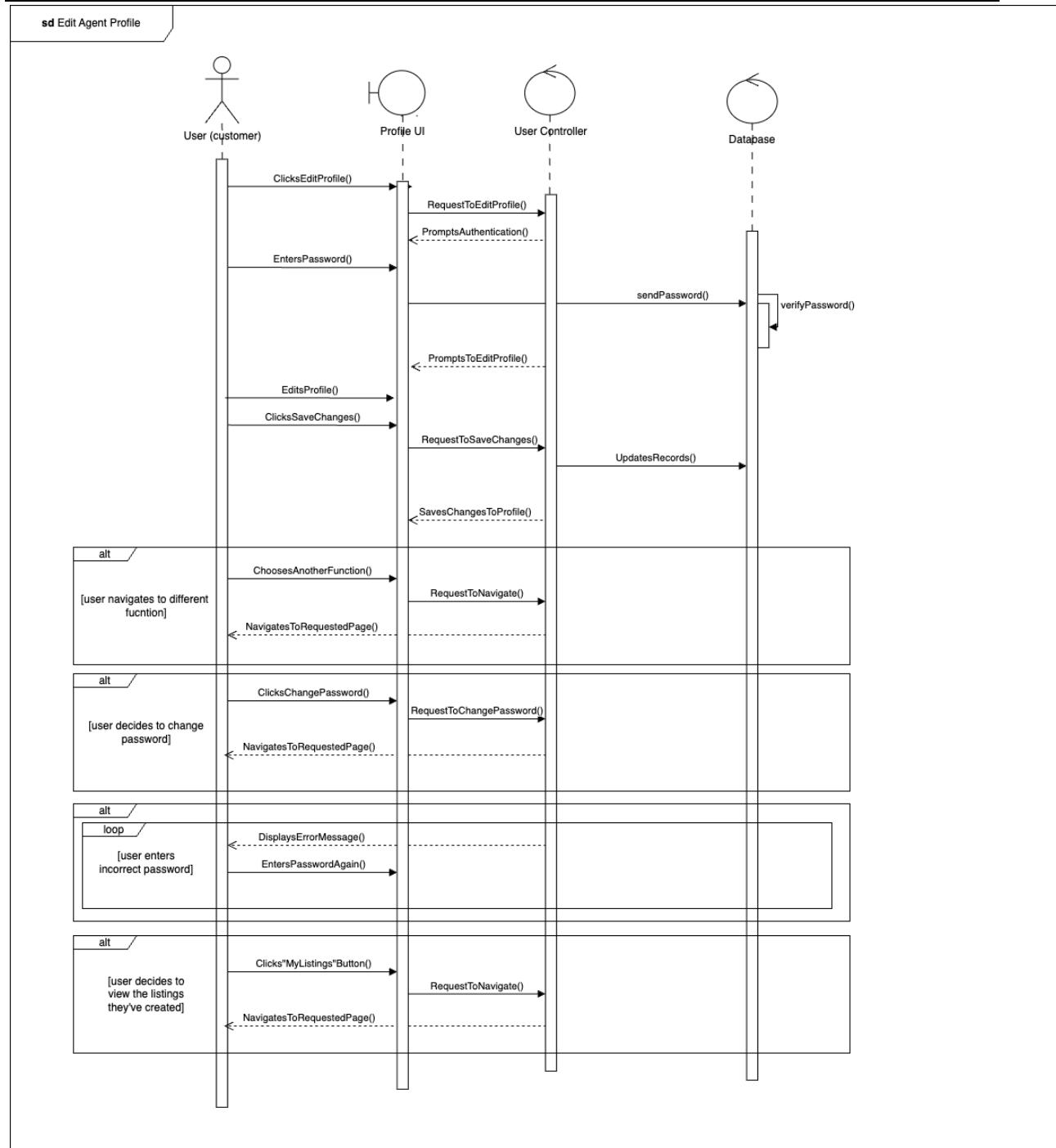


4.12 Edit Agent Profile

Use Case ID:	EAP1		
Use Case Name:	Edit Agent Profile		
Created By:	Beh Jia Jiunn	Last Updated By:	Beh Jia Jiunn
Date Created:	10/02/2024	Date Last Updated:	23/02/2024

Actor:	User
Description:	Allows users to edit information about their profile.
Preconditions:	<ul style="list-style-type: none"> 1. The user has successfully logged into the system. 2. The user has logged into the system as an agent. 3. The user navigates to the profile page.
Postconditions:	<ul style="list-style-type: none"> 1. The user has finished editing their profile and changes are updated in the system. 2. The user exits the application.
Priority:	Low
Frequency of Use:	Low as users do not edit their profile frequently
Flow of Events:	<ul style="list-style-type: none"> 1. The user clicks on the “Edit Profile” button of a specific listing. 2. The system prompts the user to enter their password for authentication. 3. The system prompts the user to edit details of their profile: <ul style="list-style-type: none"> a. Phone number b. Email Address c. Address d. Registration ID 4. The user makes the edits and clicks the “Save Changes” button. 5. System updates the database based on the user changes made.
Alternative Flows:	<p>EAP1.AF.1 The user decides to navigate to a different page.</p> <ul style="list-style-type: none"> 1. The user clicks one of the functions in the navigation bar. 2. The user is brought to the corresponding page. <p>EAP1.AF.2 The user decides to change password.</p> <ul style="list-style-type: none"> 1. The user clicks on the “change password” button. 2. The user is brought to the corresponding page. <p>EAP1.AF.3 The user decides to view listings they’ve created.</p> <ul style="list-style-type: none"> 1. The user clicks on the My Listings button. 2. The user is brought to the corresponding page. <p>EAP1.AF.4 The user enters incorrect password.</p> <ul style="list-style-type: none"> 1. The system displays an error message. 2. The system goes back to Step-2.

Exceptions:	NIL
Includes:	NIL
Special Requirements:	NIL
Assumptions:	A1. User is connected to the internet A2. The user is logged in to the system. A3. The server is stable
Notes and Issues:	NIL

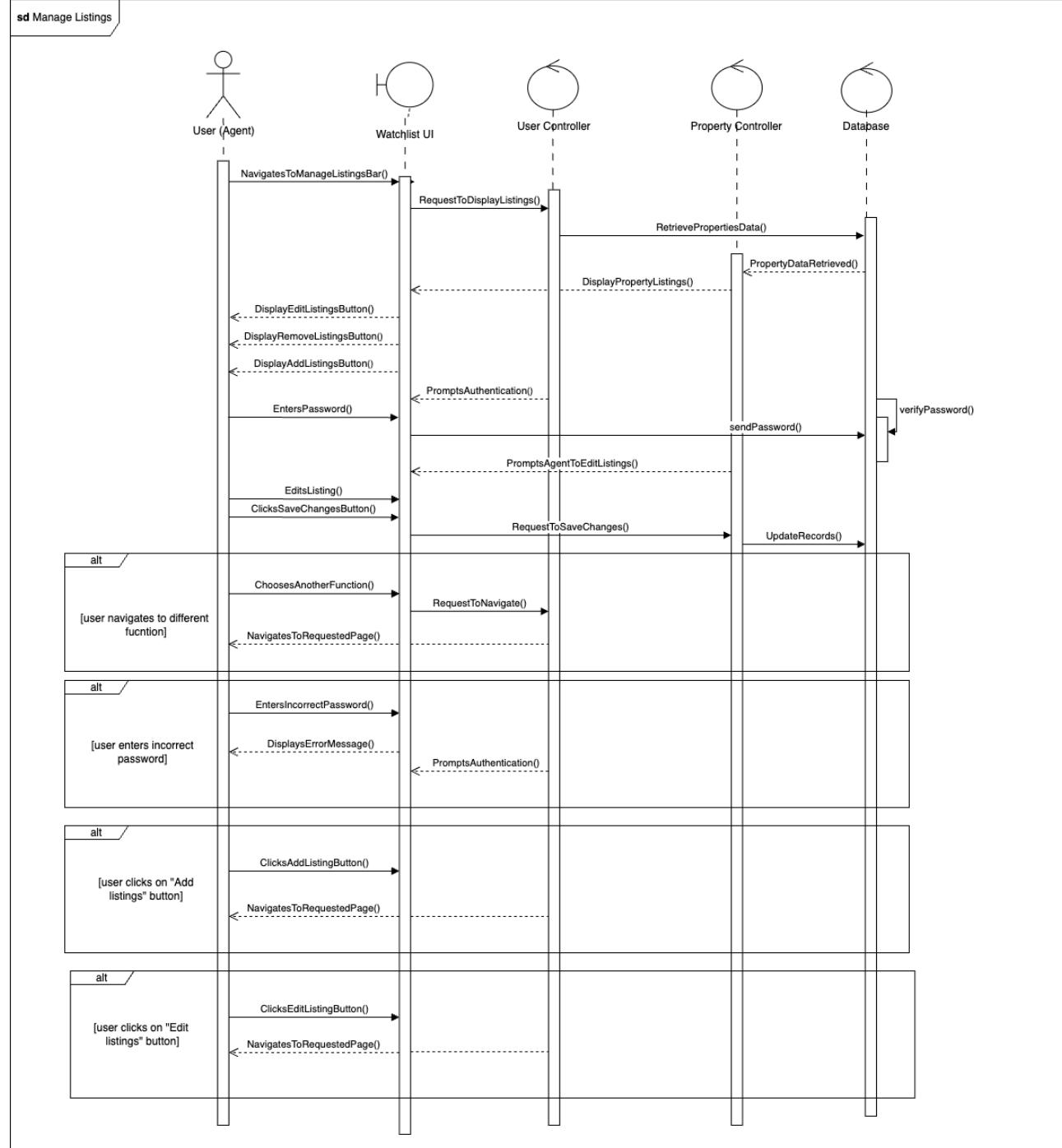


4.13 Manage Listing

Use Case ID:	ML1		
Use Case Name:	Manage Listing		
Created By:	Beh Jia Jiunn	Last Updated By:	Sakalesh Ashoka Rugi
Date Created:	10/02/2024	Date Last Updated:	23/02/2024

Actor:	User
Description:	Allows the agent to manage their own listings.
Preconditions:	<ul style="list-style-type: none"> 1. The user has successfully logged into the system. 2. The user has logged into the system as an agent. 3. The user has navigated to the manage listings bar.
Postconditions:	<ul style="list-style-type: none"> 1. The user has finished managing their listings. 2. The user exits the application.
Priority:	Moderate
Frequency of Use:	High as agents would regularly manage their listing.
Flow of Events:	<ul style="list-style-type: none"> 1. The system displays details of all listings managed by the agent - pictures, monthly rent, location, number of bedrooms and bathrooms, description. 2. The system displays an “Edit listings” button. <ul style="list-style-type: none"> a. The system displays a “Remove listing” button. 3. The system displays a “Add Listings” button. 4. The system prompts the user to enter their password for authentication prior to editing the listings. 5. The system prompts the user to do the following: <ul style="list-style-type: none"> a. The user can edit details of their listings. b. The user can remove a listing by clicking on the “Remove Listing” button. c. The user can add a new listing. 6. The user makes the edits and clicks the “Save Changes” button. 7. The system updates the database based on the user changes made.
Alternative Flows:	<p>ML1.AF.1 The user decides to navigate to a different function.</p> <ul style="list-style-type: none"> 1. The user clicks one of the functions in the navigation bar. 2. The user is brought to the corresponding page. <p>ML1.AF.2 The user enters an incorrect password.</p> <ul style="list-style-type: none"> 1. The system displays an error message. 2. The system goes back to Step-2. <p>ML1.AF.3 The user clicks on “Edit Listings.”</p> <ul style="list-style-type: none"> 1. The system directs the user to the specific listings’ details. <p>ML1.AF.4 The user clicks on “Add Listings.”</p> <ul style="list-style-type: none"> 1. The system directs the user to the Add listings page.
Exceptions:	NIL

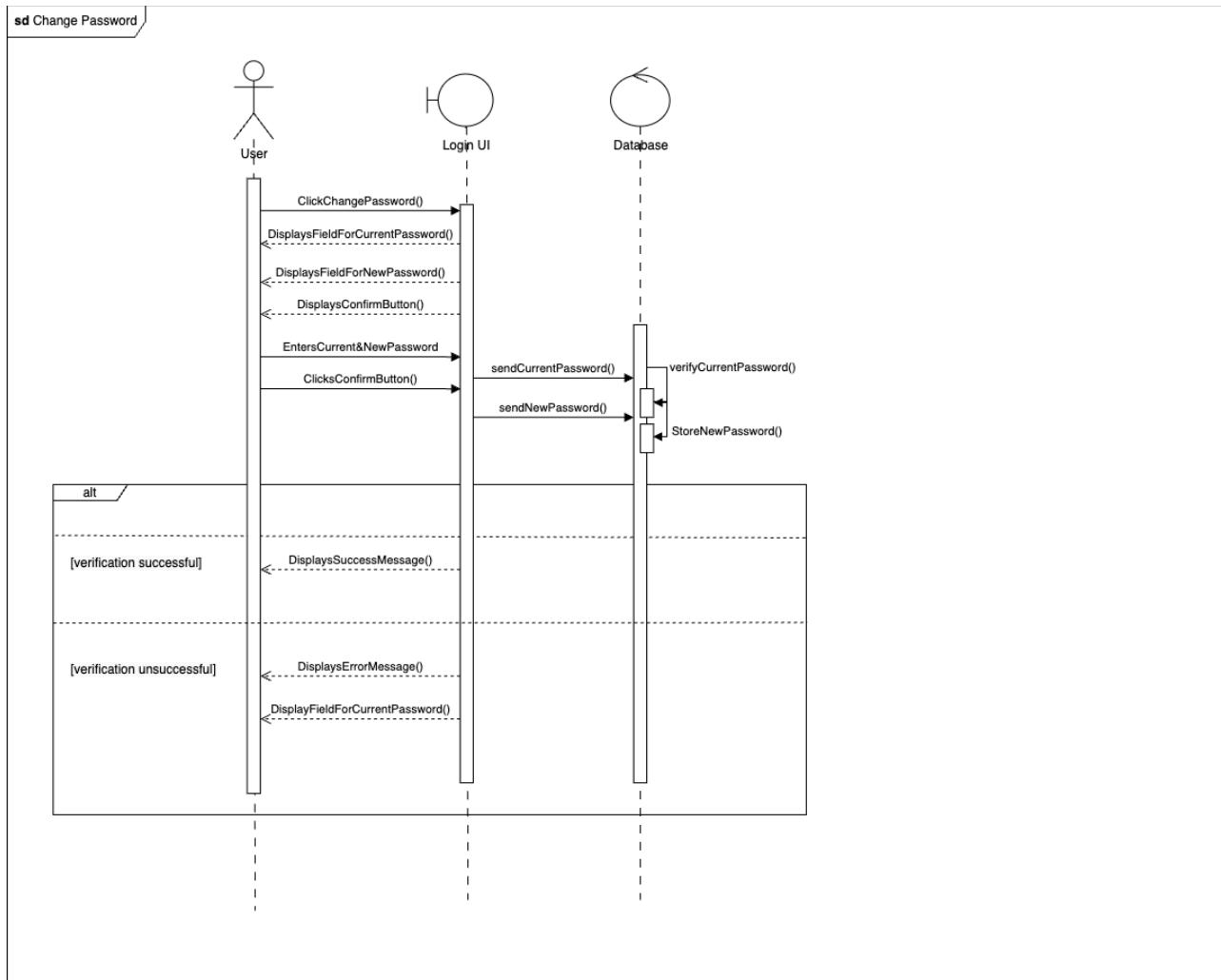
Includes:	NIL
Special Requirements:	NIL
Assumptions:	A1. User is connected to the internet A2. The user is logged in to the system. A3. The server is stable
Notes and Issues:	NIL



4.14 Change password

Use Case ID:	PWD2		
Use Case Name:	Change password		
Created By:	Beh Jia Jiunn	Last Updated By:	Beh Jia Jiunn
Date Created:	10/02/2024	Date Last Updated:	20/2/2024

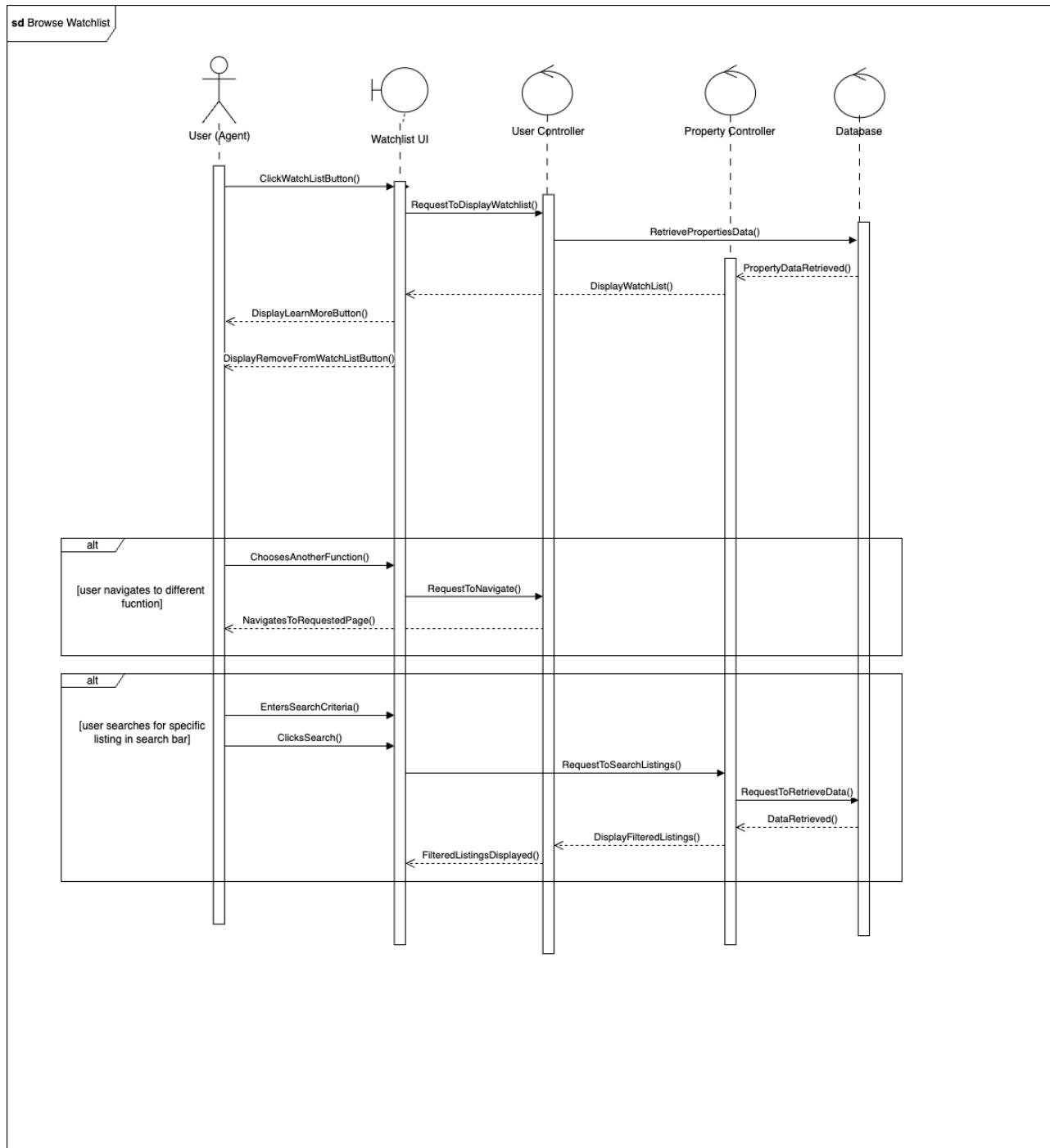
Actor:	User
Description:	User changes password of their account.
Preconditions:	<ul style="list-style-type: none"> 1. The user has successfully logged into the system. 2. The user has been directed to the profile page. 3. The user has clicked the “Change Password” button.
Postconditions:	<ul style="list-style-type: none"> 4. The user has entered their new password and clicked the “Confirm” button. 5. The system successfully verifies the new password and updates the database. 6. The user exits the application.
Priority:	Low
Frequency of Use:	Low as users will not be changing their password frequently.
Flow of Events:	<ul style="list-style-type: none"> 1. The user clicks on the “Change Password” button on their profile page. 2. The system displays a text field for the user’s current password. 3. The system displays a text field for the user’s new password. 4. The system displays a button “Confirm”. 5. The user enters his/her current password. 6. The user enters his/her new password. 7. The user clicks on the “Confirm” button. 8. The system verifies the current password. 9. The system displays a message indicating the successful change.
Alternative Flows:	<p>PWD2.AF.1 The system fails to verify the password entered by the user.</p> <ul style="list-style-type: none"> 1. The system displays an error message. 2. The system goes back to step 2.
Exceptions:	NIL
Includes:	NIL
Special Requirements:	NIL
Assumptions:	<ul style="list-style-type: none"> A1. User is connected to the internet. A2. The server is stable. A3. The user is logged in to the system.
Notes and Issues:	NIL



4.15 Browse Watchlist

Use Case ID:	BW1		
Use Case Name:	Browse Watchlist		
Created By:	Beh Jia Jiunn	Last Updated By:	Denis Yu Dian
Date Created:	10/02/2024	Date Last Updated:	23/02/2024

Actor:	User
Description:	User views information of the watchlist in the system.
Preconditions:	<ol style="list-style-type: none"> 1. User has successfully logged into the system. 2. User has been successfully directed to the watchlist.
Postconditions:	<ol style="list-style-type: none"> 1. The user has found a listing they want to learn more about. 2. The user clicks on “Learn more...” to view the details of the listing. 3. The user exits the application.
Priority:	High
Frequency of Use:	High as users will want to view the watchlist which has the properties they are interested in.
Flow of Events:	<ol style="list-style-type: none"> 1. The user clicks on the watchlist button on the navigation bar. 2. The system displays the watchlist. 3. The system displays a “Learn more” button next to each listing. 4. The system displays a “Remove from Watchlist” button next to each listing.
Alternative Flows:	<p>BW1.AF.1 The user decides to search for a specific listing via the search bar.</p> <ol style="list-style-type: none"> 1. The user enters search criteria in the search bar. 2. The user clicks the “Search” button. 3. The system displays listings filtered by the user’s search criterias. <p>BW1.AF.2 The user decides to navigate to a different function.</p> <ol style="list-style-type: none"> 1. The user clicks one of the functions in the navigation bar. 2. The user is brought to the corresponding page.
Exceptions:	NIL
Includes:	NIL
Special Requirements:	NIL
Assumptions:	<p>A1. User is connected to the internet.</p> <p>A2. The server is stable.</p> <p>A3. The user is logged in to the system.</p>
Notes and Issues:	NIL



5. Other Nonfunctional Requirements

5.1 Performance Requirements

- 5.1.1 95% of users must be able to login within 10 seconds after pressing the login button.
- 5.1.2 Forget Password email with reset link should be sent out within 1 minute.

5.2 Safety Requirements

- 5.2.1 Application must not ask for the personal information of users
- 5.2.2 Application must not store any transaction details, including but not limited to the address of recently sold houses and price of sale.
- 5.2.3 Application must not store users location or track users location for any other purpose other than the aforementioned functionalities.

5.3 Security Requirement

- 5.3.1 The system must perform password masking when the user is entering his/her password into the "Password" text field.
- 5.3.2 The system must encrypt the user's password using hashing algorithm when saving it into the database.
- 5.3.3 The system must issue a cookie using JWT token to the user when the user successfully logs in.
- 5.3.4 The system must issue a JWT token to the user for password recovery. The password recovery email must be unique.

5.4 Software Quality Attributes

5.4.1 Reliability

- 1. The app must load within 20s after launching the website.
- 2. 90% of users must be able to login within 10 seconds after pressing the login button.

5.4.2 Scalability

- 1. Applications should be able to increase the number of listings at any time.

5.4.3 Usability

1. 80% of the users must be able to find the details of the nearby properties within two minutes.
2. The system must sort the properties by distance.

5.5 Business Rules

1. All individuals shall be allowed to use the application for its stated function, which is to act as a one-stop platform for customers and agents in Singapore looking for renting properties.
2. The application and the organization behind the application do not borne any legal responsibility with regard to fraudulent activities. Users shall carry out their own due diligence and report to relevant authorities in such cases.

6. Other Requirements

6.1 Reuse Objectives

To maximize efficiency by we referred to previously documented user requirements from existing SRS reports to inform the design and development of new features, ensure consistency and reduce redundancy in the development process.

Appendix A: Glossary

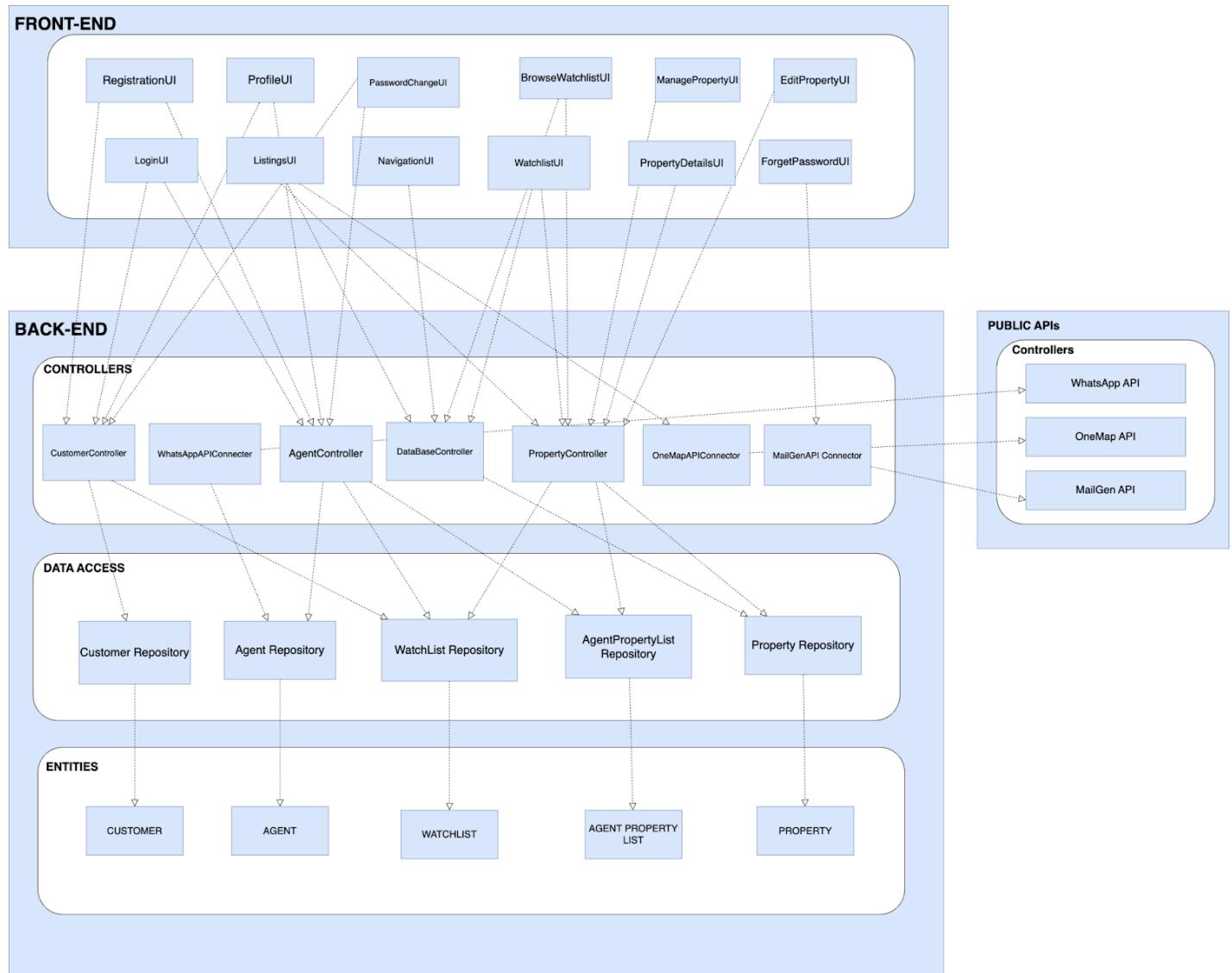
Data Dictionary

Term	Definition
User	User refers to anyone who registers and interact with the system.
Username	Unique identifier chosen by the user for authentication.
Login	The process whereby a User enters their Account's username and password in the application to access its features, given that they have an existing Account.
Register	The process whereby a User without an existing Account creates one by entering their desired Username, Email Address, Address, Phone Number and Password.
Customer	Customer refers to users that registered as customers and intend to rent a property from a property agent.
Agent	Agent refers to a user that has a valid licence from the Council of Estate Agencies (CEA) and they intend to rent out properties to customers.
Company name	Company name refers to the name of the company of the property agent, it is also known as estate agent.
Company licence number	Company licence number is a unique Identifier associated with the company.
Registration number	Registration number is a unique Identifier of a registered agent of the Council of Estate Agencies (CEA).

Account	An account is tied to each user in the system, there are two types of accounts, customer account and agent account. An account is a combination of user details including username, password, email address, phone number, agent company name, company licence number, registration number (only for agents).
Home Page	Refers to the page that users see right after they log into their account. Users will be able to access all other pages from here.
Watchlist Page	A list of properties that users specifically added so that they can refer these properties easily.
View All Properties Page	A list of properties that are available to rent.
Property Details Page	A page that displays detailed information of the properties the users choose to view. Users will be able to contact the agents of specific properties from this page.
Profile page	A page that displays information of the users including but not limited to username, email, and phone number.
Map	It is a visual representation of the location of properties, displayed using the OneMap API.
Hashing algorithm	Hashing is a one-way encryption of the password stored in the database.
Password mask	Password masking is the act of hiding passwords as bullets when the user enters the password.

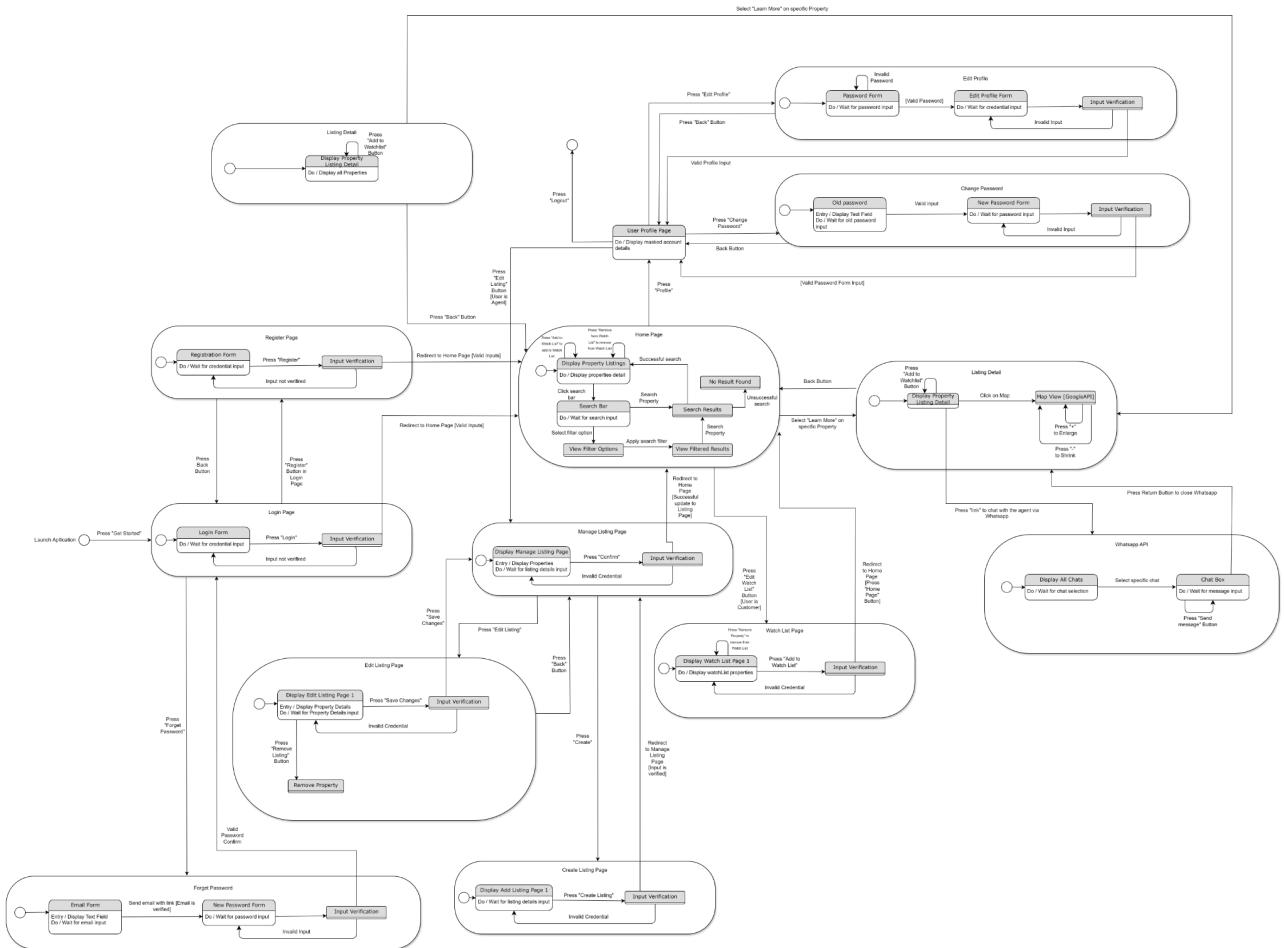
Appendix B: Analysis Models

System Architecture Diagram



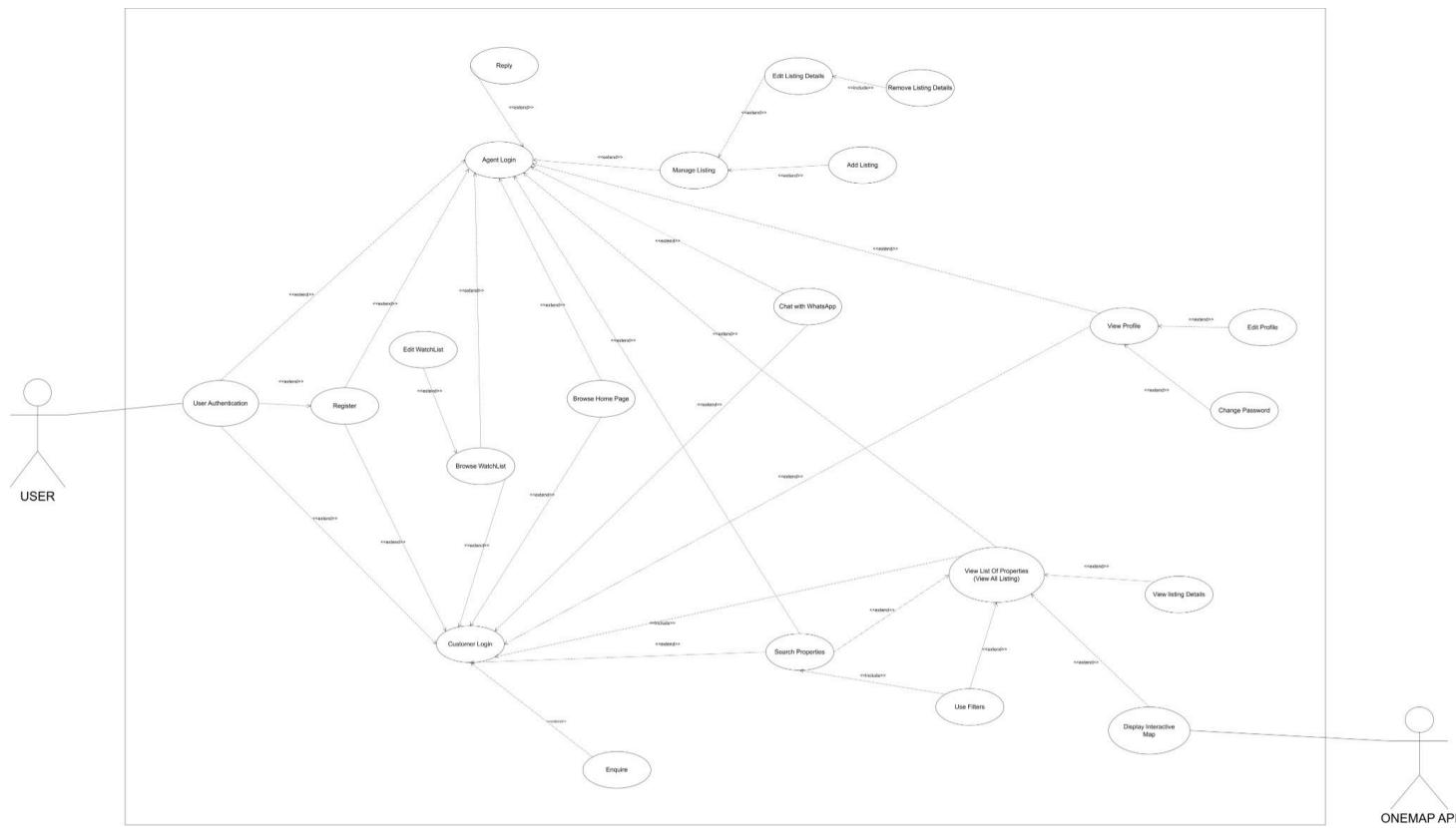
[System Architecture.png](#)

Dialog Map



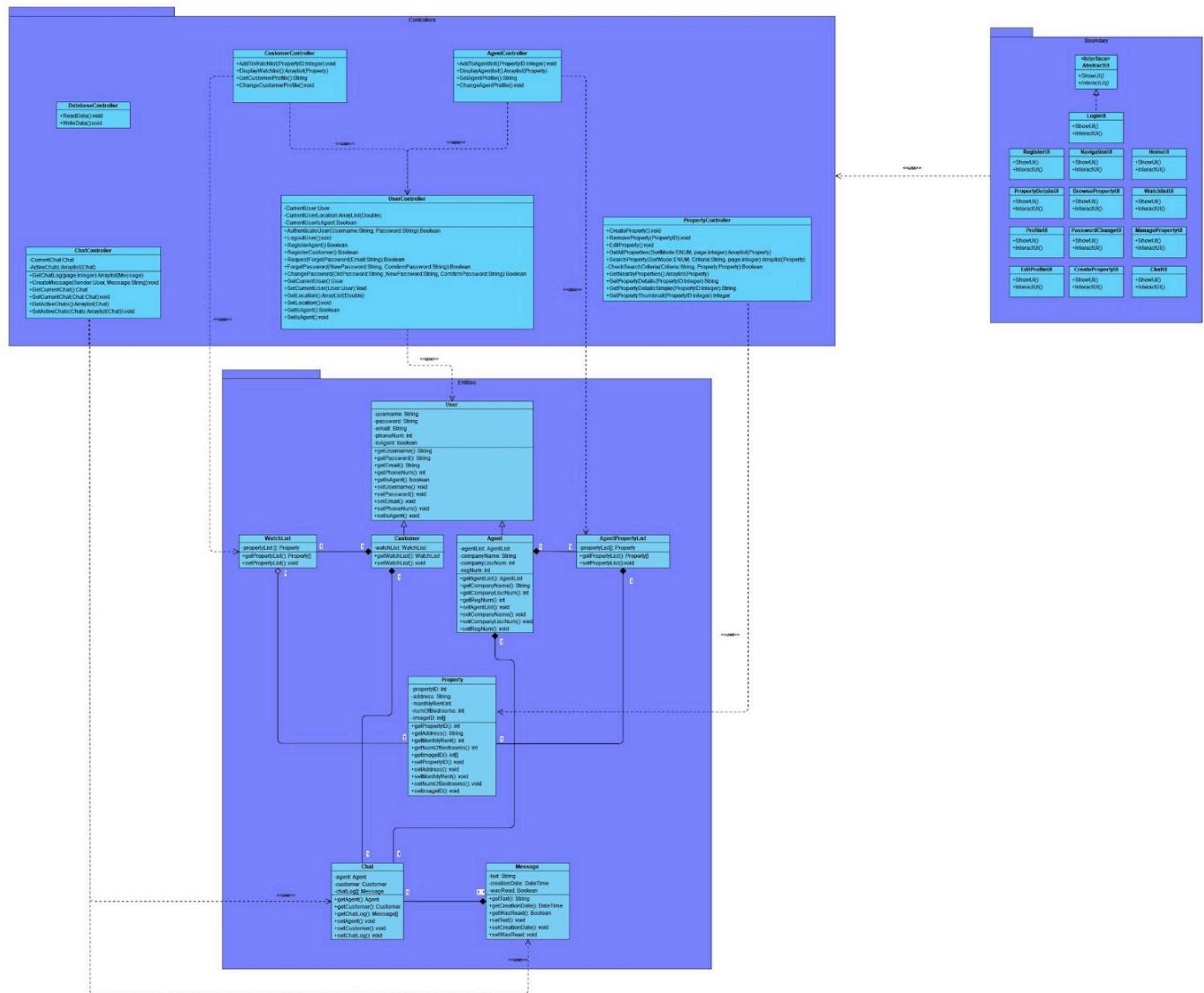
DialogMap.pdf

Use Case Diagram



[Use Case Diagram.pdf](#)

Class Diagram



[Class Diagram.jpg](#)

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Appendix C: To Be Determined List

There are no TBD items in our final submission and all TBD items have been cleared.