

**NANYANG
TECHNOLOGICAL
UNIVERSITY**
SINGAPORE

**SC2006 Software Engineering
Lab 1 Deliverables**

Dream Neighbourhood

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1. Documentation of functional and non-functional requirements

A. Functional Requirements

1. Dream Neighbourhood shall allow the Users to perform property search functions.
 - 1.1. Dream Neighbourhood shall first search for property listings with Basic Filters via a search bar.
 - 1.1.1. Dream Neighbourhood shall allow the Users to specify a budget within a User-defined price range.
 - 1.1.2. Dream Neighbourhood shall validate the budget input and display an error if the minimum value is greater than the maximum, negative, or non-numeric.
 - 1.1.3. Dream Neighbourhood shall allow the Users to specify the property type from a dropdown list (HDB, Condominium, Private Property).
 - 1.1.4. Dream Neighbourhood shall allow Users to clear or reset Basic Filters at any time.
 - 1.1.5. Dream Neighbourhood shall apply the selected Basic Filters to property listings and include only those that satisfy all criteria.
 - 1.1.6. Dream Neighbourhood shall display a “No listings found” message if no properties match the current filters, with an option to relax or reset filters.
 - 1.2. Dream Neighbourhood shall then search for property listings with User-defined Key Locations.
 - 1.2.1. Dream Neighbourhood shall allow Users to have the ability to add multiple specific locations (e.g. workplace, school) by postal code or name.
 - 1.2.2. Dream Neighbourhood shall validate Key Location inputs and reject invalid postal codes or unresolvable names.
 - 1.2.3. Dream Neighbourhood shall limit the number of Key Locations a User may add (default maximum: 5) to ensure performance.
 - 1.2.4. Dream Neighbourhood shall allow Users to remove Key Locations from their selection.
 - 1.2.5. Dream Neighbourhood shall allow Users to specify a maximum acceptable distance from each Key Location for filtering.
 - 1.2.6. Dream Neighbourhood shall compute the distance from each property listing to each specified location.
 - 1.2.7. Dream Neighbourhood shall handle cases where distances cannot be computed (e.g., missing map data) by excluding affected properties from distance filtering.
 - 1.2.8. Dream Neighbourhood shall apply Key Location filters to property listings and include only those that satisfy the distance criteria.
 - 1.3. Dream Neighbourhood shall lastly search for property listings with User-specified Amenities.
 - 1.3.1. Dream Neighbourhood shall allow the Users to specify the desired Amenities through queries including keywords (e.g., “park”, “hawker centre”).
 - 1.3.2. Dream Neighbourhood shall validate Amenity input and reject empty or unresolvable queries.
 - 1.3.3. Dream Neighbourhood shall limit the number of Amenities a User may add (default maximum: 10) to ensure performance.

- 1.3.4. Dream Neighbourhood shall allow Users to remove selected Amenities from their filter selection.
 - 1.3.5. Dream Neighbourhood shall allow Users to specify a maximum acceptable distance (default: 4 km) from each selected Amenity.
 - 1.3.6. Dream Neighbourhood shall apply Amenity filters to property listings and display only those that satisfy the distance criteria.
- 1.4. Dream Neighbourhood shall provide visual feedback to Users indicating which filters are currently active.
 - 1.4.1. Dream Neighbourhood shall allow Users to modify any active filter and automatically update search results.
 - 1.4.2. Dream Neighbourhood shall allow Users to clear all active filters in a single action.
 - 1.4.3. Dream Neighbourhood shall allow Users to sort property listings by price, distance, or average rating.
 - 1.4.4. Dream Neighbourhood shall display property listings in pages of 20 items, with the option to load more.
 - 1.4.5. Dream Neighbourhood shall handle cases where fewer than 20 listings exist by displaying the available items without error.
 - 1.4.6. Dream Neighbourhood shall handle requests to load more when no additional listings exist by displaying “No more results.”
2. Dream Neighbourhood will be able to assign a numerical rating to property listings based on user-selected filters.
 - 2.1. Users can select different types of amenities, and Dream Neighbourhood will assign a rating to property listings determined by the average distance from the closest amenity of each selected type.
 - 2.1.1. Users can change the priority of the selected amenity types, and the distance to higher priority amenity types will have a greater weight in the calculation for the rating
 - 2.1.2. Property listings with a closer weighted average distance to the selected amenity types will score a higher rating.
 - 2.2. Through the numerical ratings assigned to property listings, Dream Neighbourhood can display lifestyle heatmaps on the interactive map for a fixed list of lifestyles.
 - 2.2.1. The heatmap will highlight areas with property listings that score highly using a pre-set selection of amenity types and priorities.
 - 2.2.2. For instance, “Active” lifestyle will prioritise sports complexes, parks, and cycling paths. Areas with a larger density of property listings that score highly using this pre-set amenity filter will be highlighted.
 - 2.2.2.1. The minimum rating that would classify a property listing under a certain lifestyle can be set by the user.
3. Dream Neighbourhood shall allow the Users to view and query detailed information about the property listings in a card-based format.
 - 3.1. Dream Neighbourhood shall display a list of filtered property listings.
 - 3.2. For each property listing, Dream Neighbourhood shall allow the Users to view the Property name, location, postal code, and price.
 - 3.3. Dream Neighbourhood shall handle missing or incomplete property data by displaying available fields and marking unavailable fields as “Not provided.”
 - 3.4. Dream Neighbourhood shall allow Users to save property listings as favourites while browsing.

- 3.5. Dream Neighbourhood shall prevent Users from adding the same property to favourites more than once.
 - 3.6. When a property listing is selected from the card-based list, Dream Neighbourhood shall display a split-view interface.
 - 3.6.1. The left side of the split view shall display the selected property's detailed information (name, price, location, postal code, images, and key attributes).
 - 3.6.2. The right side of the split view shall display an interactive map showing the selected property's location.
 - 3.6.3. Dream Neighbourhood shall allow Users to zoom in and out, as well as pan the map, while viewing the selected property.
 - 3.6.4. Dream Neighbourhood shall highlight the selected property marker on the map.
 - 3.6.5. Dream Neighbourhood shall allow Users to click other property markers on the map to update the details shown in the left panel.
 - 3.6.6. Dream Neighbourhood shall dynamically update the map based on active filters, Key Locations, and selected Amenities.
 - 3.6.7. Dream Neighbourhood shall handle map loading failures by displaying an error message and a fallback list view.
 - 3.6.8. Dream Neighbourhood shall cluster or stack overlapping property markers to prevent map clutter.
 - 3.6.9. Dream Neighbourhood shall prevent excessive zoom in or zoom out beyond supported limits.
4. Dream Neighbourhood shall allow Users to manage their favourite property listings.
 - 4.1. Users shall be able to view a list of all saved favourite property listings on a dedicated Favourites page.
 - 4.2. Users shall be able to navigate to a saved property from the Favourites page to view its details.
 - 4.3. Users shall be able to remove a listing from their favourites.
 - 4.4. Dream Neighbourhood shall retain saved favourites across User sessions.
 - 4.5. Dream Neighbourhood shall limit the number of saved favourites per user (default maximum: 100).
5. Dream Neighbourhood shall allow Users to create an account
 - 5.1. Dream Neighbourhood shall allow Users to input their Username, password, and email.
 - 5.1.1. Dream Neighbourhood shall validate Username and email formats and reject invalid inputs.
 - 5.1.2. If an account with the same username or email exists, Dream Neighbourhood will prevent the user from creating a new account.
 - 5.2. Dream Neighbourhood shall enforce password strength rules (minimum length, uppercase).
 - 5.3. Dream Neighbourhood shall require email verification for new accounts.
 - 5.4. Dream Neighbourhood shall handle expired or invalid email verification links by allowing the User to request a new link.
 - 5.5. Dream Neighbourhood shall not allow Users to log in until their email has been verified.
6. Dream Neighbourhood shall allow Users to log in using the account they have created
 - 6.1. Dream Neighbourhood shall allow Users to enter their email and password to log in.
 - 6.2. Dream Neighbourhood shall mask the password entered by the Users by replacing text with dots, unless the Users choose to unmask it.

- 6.3. If email and password do not match, Dream Neighbourhood shall display “Email and password do not match” to the User.
- 6.4. If email and password match, Dream Neighbourhood shall log the User in and direct the User to the homepage.
- 7. Dream Neighbourhood shall allow Users to reset their password via email.
 - 7.1. Dream Neighbourhood shall display “Email not registered” if a password reset is requested for an unknown email.
 - 7.2. Dream Neighbourhood shall enforce the same password strength rules for new passwords.
- 8. If no user activity is detected after a set length of time, Dream Neighbourhood will prompt the user if they wish to extend their session.
 - 8.1. Selecting ‘No’ or not responding to the prompt will dismiss the prompt and log the user out of their account.
 - 8.2. Selecting ‘Yes’ will dismiss the prompt and return to normal operation.
 - 8.3. Users can choose how long this set length of time is for user inactivity.

B. Non-Functional Requirements

- 1. In order to meet users' performance requirements, Dream Neighbourhood must satisfy the following criteria:
 - 1.1. When a button that takes the user to another menu is pressed, the new screen must be fully displayed within 3 seconds.
 - 1.2. Locations and pins on the map appear within no more than 3 seconds after the map is displayed.
 - 1.3. Retrieval, followed by displaying real-time data takes a maximum of 2 seconds.
 - 1.4. Dream Neighbourhood must be able to support at least 50000 user accounts.
 - 1.4.1. Dream Neighbourhood must also be able to support at least 500 concurrent users.
- 2. To meet users' ease of use requirements, Dream Neighbourhood must satisfy the following criteria:
 - 2.1. Text and buttons use contrasting colours to ensure visibility to the user
 - 2.2. Visual feedback is given when buttons are held or pressed by the user.
 - 2.2.1. The colour of the button darkens while it is held.
 - 2.2.2. The size of the button is reduced to 95% of its original size while it is held.
 - 2.3. While Dream Neighbourhood is processing a user's input, a circular loading indicator is displayed to tell the user that the app recognises their input.
 - 2.4. Icons are used to label the following items on the map:
 - 2.4.1. Different icons represent the different property types.

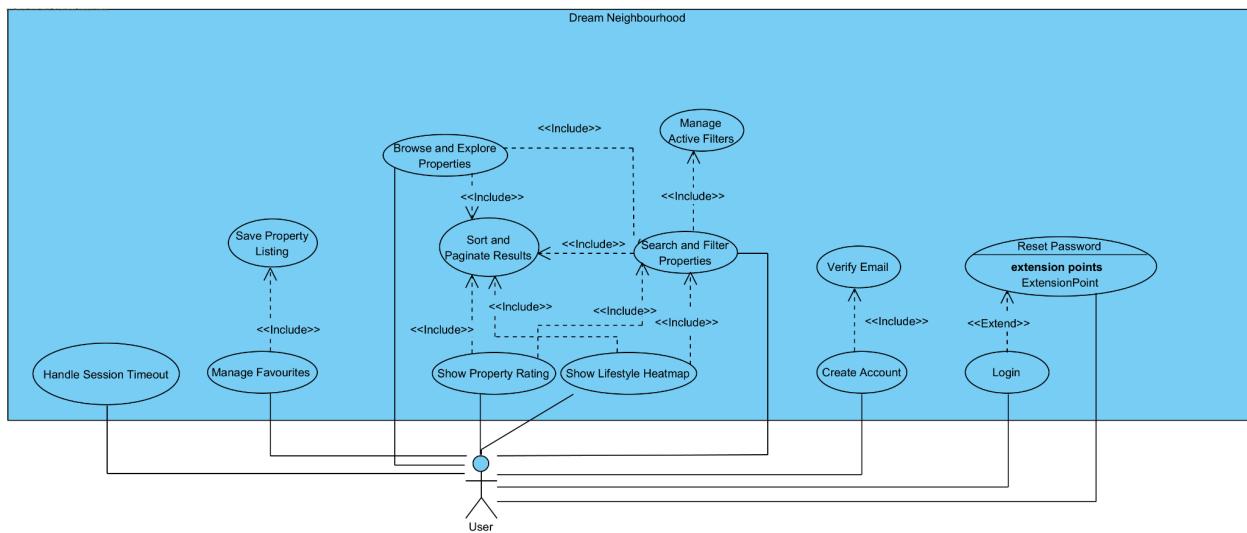
- 2.4.2. Different icons represent the different amenity types, such as train stations, bus stations, parks, libraries, schools, etc.
 - 2.5. In addition to displaying the value, displaying the distance between a property and an amenity on the map uses different colours depending on its magnitude.
 - 2.5.1. A distance of greater than 5km exclusive is represented by a red line.
 - 2.5.2. A distance between 2km and 5km inclusive is represented by a yellow line.
 - 2.5.3. A distance less than 2km exclusive is represented by a green line.
 - 2.6. Dream Neighbourhood shall adapt its layout to fit devices with screen widths ranging from 320px to 1920px without horizontal scrolling.
 - 2.7. All text, buttons, and icons shall scale appropriately on mobile devices so that content is clipped or obscured.
 - 2.8. Images, maps, and other visual content shall scale proportionally to the screen size to ensure proper display on mobile devices.
- 3. In compliance with PDPA standards, Dream Neighbourhood must support the following:
 - 3.1. 2-Factor Authentication (2FA) for user logins
 - 3.2. User must be able to delete account information
 - 4. Dream Neighbourhood must support the ability to save information from within the site to an external file format.
 - 4.1. While viewing pages for property listings, the user must be able to print the page as a pdf, docx, jpeg, png or other equivalent document.
 - 4.2. While viewing the interactive map, the user must be able to print the current map view as a pdf, docx, jpeg, png, or other equivalent document.

2. Data Dictionary

Term	Definition
Property Listing	An entry representing a house or apartment available for sale or rent, with details such as price, property type, and number of rooms.
Budget	The price range for buying or renting a property specified by the User within which property listings must fall.
Property Type	The category of private or public (state-owned) housing selected by the User, e.g. HDB, Condominium, or Landed Property.
Postal Code	A six-digit code administered by Singapore Post used to identify the location of a property or a User-defined key location.
Key Locations	Important and specific places defined by a Postal Code by the User (e.g. workplace, school, mall) used to measure proximity when searching for properties.
Amenities	User-specified general facilities or services of interest (e.g. park, hawker centre, shopping mall) which User will search by the general terms.
Amenity Distance	The maximum distance acceptable from a property to each amenity.
Favourite Listings	Property listings that the User chooses to save for later reference.
Search Filters	The set of conditions defined by the User (e.g. budget, property type, key locations, amenities) to refine property searches.
Search Results	The list of property listings returned after applying the User's search filters.
User	An individual using the Dream Neighbourhood app to search, filter, and save property listings.
Map	An interactive map that displays the geographical location of the Search Results and distance of the listings to the Key Locations and Amenities.

3. Use Case Model (Use Case Diagram and Descriptions)

A. Use Case Diagram



B. Use Case Descriptions

I. Search and Filter Properties

Use Case ID	01		
Use Case Name	Search and Filter Properties		
Created By	Jarrel Ng	Last Updated By	Isaac Teo
Date Created	1 September 2025	Last Date Updated	1 September 2025

Actor	User
Description	Allows Users to search for properties with filters
Preconditions	User is logged in Property listings database and map/geolocation service is available

Postconditions	System displays filtered and sorted property listings
Priority	High
Frequency of Use	High
Flow of Events	<ol style="list-style-type: none"> 1. User navigates to the search interface 2. User enters a budget range (minimum and maximum) 3. System validates the range ($\text{min} \leq \text{max}$, no negative values) 4. User selects property type(s) 5. User enters one or more key locations (postal code or place name) 6. System validates location input and calculates distance 7. User specifies the maximum acceptable distance for the key location 8. User applies Amenity filters (e.g., parks) 9. User specifies maximum acceptable distance for each amenity (default 4km) 10. User clicks the search button 11. System displays results in pages of 20 items 12. User can sort results by price, distance, or average rating 13. User can clear filters at any time
Alternative Flows	<ol style="list-style-type: none"> 1. User clears filters, system will reset and shows all listings 2. User modifies filters (e.g., budget, amenities), system dynamically updates the result 3. User removes specific key locations or amenities, system re-applies remaining filters
Exceptions	<ol style="list-style-type: none"> 1. Network or database failure, the system will display an error message. 2. No listings are found, and the system displays, "No properties found." 3. Invalid budget input (e.g., $\text{min} > \text{max}$), the system displays, "minimum amount cannot be more than the maximum" 4. Distance calculation fails due to missing map data; the system will exclude affected listings from results
Includes	Manage Active Filters Sort and Paginate Results

Special Requirements	Filters must update results dynamically while filters are modified System must support up to 5 key locations and 10 amenities per search Response time for applying filters should not exceed 3 seconds
Assumptions	The property database is available Property listings contain valid postal codes and coordinates
Notes and Issues	UX challenge when filters conflict and eliminate all listings Handling duplicate or ambiguous amenity keywords (e.g., “school” vs “Primary school”) Performance may degrade when many filters are applied simultaneously

A. Manage Active Filters

Use Case ID	01A		
Use Case Name	Manage Active Filters		
Created By	Jarrel Ng	Last Updated By	
Date Created	8 September 2025	Last Date Updated	

Actor	User
Description	User modifies, clears, or resets filters.
Preconditions	At least one filter applied.
Postconditions	Results have been updated to reflect the new filter state.
Priority	High
Frequency of Use	High
Flow of Events	<ol style="list-style-type: none"> 1. User views active filters below the search bar 2. User modifies or removes filters by clicking the minus icon on the filter and applying new filters 3. System updates results dynamically

Alternative Flows	1. User clicks “Clear All” in the filter section, and the default results are shown
Exceptions	1. When the filter eliminates all listings, the system suggests resetting
Includes	
Special Requirements	Real-time feedback on active filters
Assumptions	Filters are combinable
Notes and Issues	UX when multiple filters overlap

B. Sort and Paginate Results

Use Case ID	01B		
Use Case Name	Sort and Paginate Results		
Created By	Jarrel Ng	Last Updated By	
Date Created	8 September 2025	Last Date Updated	

Actor	User
Description	User sorts search results and navigates between pages.
Preconditions	Filtered results available.
Postconditions	Listings shown according to chosen sort order.
Priority	Medium
Frequency of Use	High
Flow of Events	<ol style="list-style-type: none"> 1. User selects sort criteria (price, distance) 2. System reorders listings 3. System displays listings in pages of 20 4. User scrolls or clicks “Load More” 5. System loads next page
Alternative Flows	1. When the results are fewer than 20 listings, the system will show all without pagination

Exceptions	1. When there are no more results, the system will display “No more listings.”
Includes	Nil
Special Requirements	Pagination must not exceed 2s load time.
Assumptions	The listing dataset is large.
Notes and Issues	Infinite scroll vs. paged navigation UX.

II. Browse and Explore Property Listings

Use Case ID	02		
Use Case Name	Browse and Explore Property Listings		
Created By	Jarrel Ng	Last Updated By	Jarrel Ng
Date Created	1 September 2025	Last Date Updated	8 September 2025

Actor	User
Description	The user browses a list of property listings, selects one to view details in a split-view layout, and views a map showing only that property's location. When the user selects a different listing, the map updates to display the newly selected property.
Preconditions	Property search results are available Property database and map service are operational
Postconditions	The user views property details and the location of the selected property on the map The user may switch between different properties, and the map updates accordingly
Priority	High
Frequency of Use	High
Flow of Events	1. System displays a list of filter property listings (20

	<p>items per page)</p> <ol style="list-style-type: none"> 2. System displays property cards with name, price, location, postal code, and thumbnail. 3. User scrolls or paginates through the list 4. User selects a card 5. System shows split view: left = property info, right = interactive map. 6. User can zoom, pan, but only the selected property remains highlighted.
Alternative Flows	<ol style="list-style-type: none"> 1. Map fails to load, the system will display a static image or an error message 2. User clicks on the same property again, the map will remain unchanged, and the details will stay visible 3. User closes details view, the system will hide the map and return to list only view 4. When the user loads additional results, the user can select a new property to update the map
Exceptions	<ol style="list-style-type: none"> 1. Database failure, the system will display an error message. 2. When the map service fails, only the property details are shown 3. When property lacks location data, the system will display details with "location unavailable."
Includes	Search and Filter Properties Sort and Paginate Results
Special Requirements	Map integration: the property card must show essential details The map should load only for the selected property Switching between properties should update the map within 2 seconds The map must always highlight exactly one property (the current selection)
Assumptions	Every property has valid geolocation data
Notes and Issues	None

A. Show Property Rating

Use Case ID	02A
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Use Case Name	Show Property Rating		
Created By	Isaac Teo	Last Updated By	
Date Created	9 September 2025	Last Date Updated	

Actor	User
Description	The user selects a few amenity types from the amenity filtering function and adjusts the priority of what they value most, and the system calculates a score for each property listing based on their weighted average distance to all the selected amenities.
Preconditions	Property search results are available Property database and map service are operational User has applied amenity search filter
Postconditions	Property listing cards will show the rating score
Priority	High
Frequency of Use	High
Flow of Events	<ol style="list-style-type: none"> After selecting amenity types to filter, user selects the option to show property rating The user can assign weights to the selected amenity types through a slider that they can increase or decrease. The system will calculate the rating score for property listings based on the weighted average of their distance from the closest amenity types selected. The closer the weighted average the higher the property listing score. While property ratings are shown, adjusting the selected amenity type filter or the weights will automatically adjust the rating scores shown to reflect the change. When viewing a selected property listing in page format, the rating score is shown.
Alternative Flows	Nil
Exceptions	<ol style="list-style-type: none"> The system fails to update rating scores after new changes are applied.

Includes	Search and Filter Properties Sort and Paginate Results
Special Requirements	Map integration: the map must display the rating score above the property listing The map should load only for the area visible on the screen. When the user moves or expands the map, the map must be able to update in real time to show the scores for the newly visible property listings.
Assumptions	Every property and amenity has valid geolocation data
Notes and Issues	None

B. Show Lifestyle Heatmaps

Use Case ID	02B		
Use Case Name	Show Lifestyle Heatmaps		
Created By	Isaac Teo	Last Updated By	
Date Created	9 September 2025	Last Date Updated	

Actor	User
Description	In a separate menu, the user selects from a list of preset lifestyles, and the system will display a heatmap of property listings over the interactive map showing which areas have a relatively higher density of property listings with a high rating score according to a preset selection of amenity types and weightage.
Preconditions	Property search results are available Property database and map service are operational Property rating feature is operational
Postconditions	The user views areas on the map that highlight where they can find property listings that best support their preferred lifestyle, through their weighted proximity to certain types of amenities that support that lifestyle.
Priority	High

Frequency of Use	High
Flow of Events	<ol style="list-style-type: none"> 1. In a separate menu from the search and filter interface, there is an option to display lifestyle heatmaps. 2. From the list of preset lifestyles, the user is able to choose the lifestyle that they think fits themselves best. The system will allow the user to select more than one lifestyle to be represented on the map. 3. The user is able to adjust the minimum rating score that a property should have to be classified as a property that supports the chosen lifestyle. 4. On the map, the areas with properties that support the chosen lifestyle are bounded by partitioned zones, and the density of such properties in this area is represented by the colour. A darker circle implies a greater density. If multiple lifestyles are chosen, each lifestyle is represented by different coloured circles.
Alternative Flows	Nil
Exceptions	<ol style="list-style-type: none"> 1. The user zooming in or expanding the map does not change the size of the partitions correspondingly
Includes	Search and Filter Properties Sort and Paginate Results Show Property Rating
Special Requirements	Map integration: the interactive map must display the heatmaps over the original map.
Assumptions	Every property has valid geolocation data Property rating feature functions without exception
Notes and Issues	The size of the partitions drawn and the places where a partition can be drawn needs to be well defined to avoid excessive visual clutter.

III. Manage Favourites

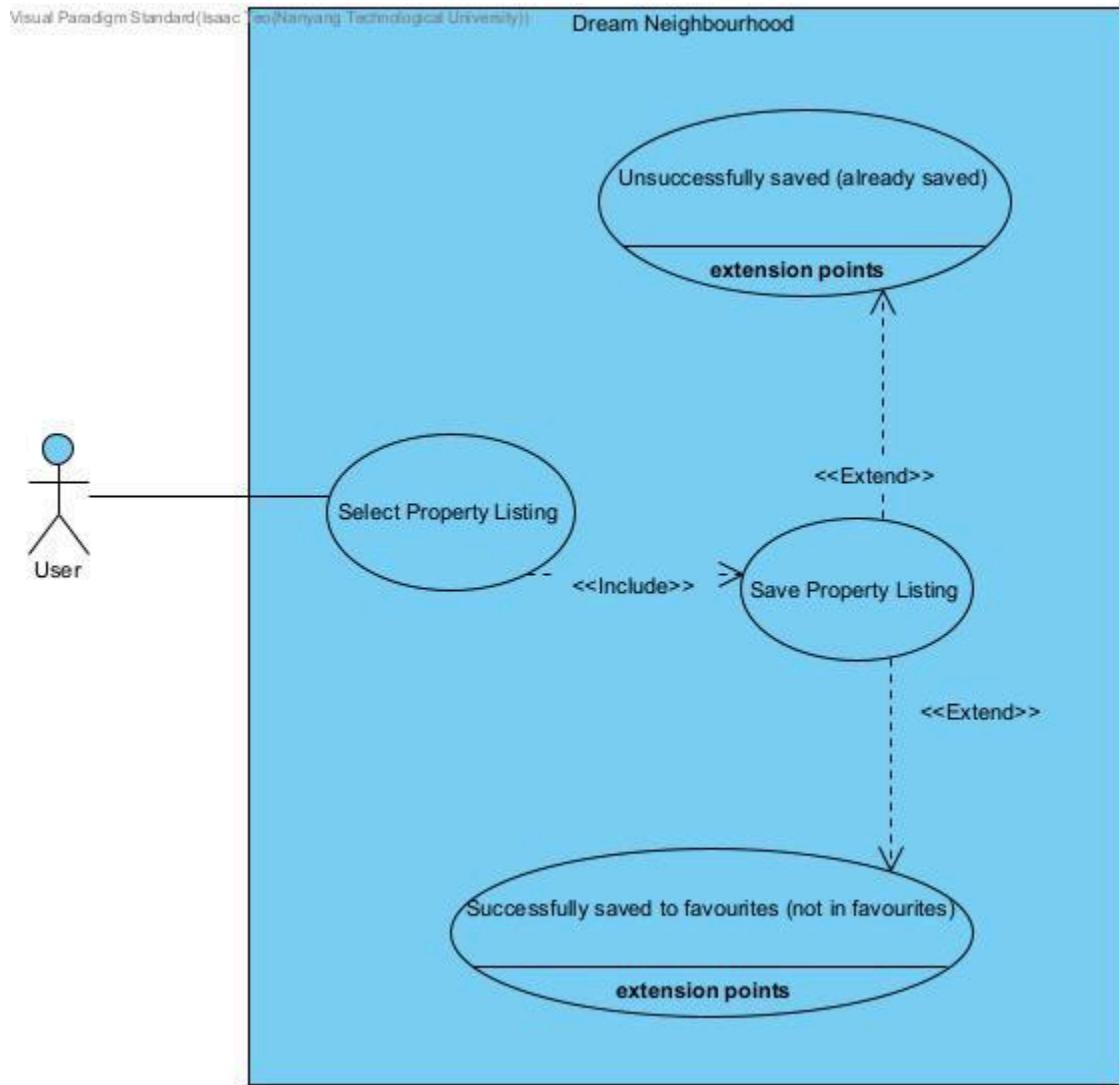
Use Case ID	03		
Use Case Name	Manage Favourites		
Created By	Jarrel Ng	Last Updated By	Isaac Teo

Date Created	1 September 2025	Last Date Updated	7 September 2025
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Actor	User
Description	Save and manage favourite properties
Preconditions	User has viewed property listings
Postconditions	Favourites saved across sessions
Priority	Medium
Frequency of Use	Medium
Flow of Events	<ol style="list-style-type: none"> 1. User saves the property to favourites by clicking the star icon, and the system adds it to the favourites list 2. User clicks on the icon to enter the favourites page, and the system redirects them to the favourites menu 3. Clicking on a property in the list brings up the options to remove or view the property listing. 4. If so desired, the user may click on “remove” to delete the property listing from their favourites list. The system will then remove the property from the menu 5. The deleted property will no longer be treated as a favourited property, and its icon indicator on the interactive map returns to its original icon.
Alternative Flows	<ol style="list-style-type: none"> 1. If the user instead chooses to view the selected property listing, then the system redirects them to the information page for that selected property listing. 2. Choosing to return to the previous page will redirect the user to the favourites page.
Exceptions	<ol style="list-style-type: none"> 1. Database failure, system will display error message.
Includes	Save Property listing
Special Requirements	None
Assumptions	None

Notes and Issues	None
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A. Save Property Listing



Use Case ID	03A		
Use Case Name	Save Property Listing		
Created By	Isaac Teo	Last Updated By	Isaac Teo
Date Created	30 August 2025	Last Date Updated	7 September 2025

Actor	User
Description	The user selects a property listing and saves it under favourite properties
Preconditions	None
Postconditions	A new property listing is added to the list of favourite properties, and it gets a pin highlighted on the map
Priority	High
Frequency of Use	High
Flow of Events	<ol style="list-style-type: none"> 1. The user clicks on the property icon on the map, bringing up an informative pop-up about the listing. 2. The user selects the option to save it 3. The listing is added to the favourites list, and the listing gains a “favoured” pin
Alternative Flows	<ol style="list-style-type: none"> 1. The selected listing is already in the favourites list, and the option to save it is greyed out. 2. Clicking on the greyed out button triggers a small pop-up informing the user that this property listing has already been saved.
Exceptions	<ol style="list-style-type: none"> 1. The user attempts to save an already saved property listing, despite the button to do so being greyed out.
Includes	None
Special Requirements	None
Assumptions	The User has an existing Dream Neighbourhood Account.
Notes and Issues	None

IV. Account Creation

Use Case ID	04		
Use Case Name	Create Account		
Created By	Jarrel Ng	Last Updated By	

Date Created	1 September 2025	Last Date Updated	
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Actor	User
Description	Allows the User to register a new account in Dream Neighbourhood
Preconditions	User has accessed the registration page
Postconditions	User account is created and verified, and is able to log in
Priority	High
Frequency of Use	Medium
Flow of Events	<ol style="list-style-type: none"> 1. The User clicks “Sign Up.” 2. User inputs username, email, and password 3. System shall enforce password strength rules 4. System triggers Verify Email after clicking submit 5. User clicks verification link from their email address that he/she have entered during registration 6. System confirms account creation
Alternative Flows	<ol style="list-style-type: none"> 1. Email is already registered. The system will prompt the user to log in or use another email 2. The password is invalid, and the system will prompt for correction
Exceptions	<ol style="list-style-type: none"> 1. Email fails to deliver to User's email address, allow to resend the verification email
Includes	Verify Email
Special Requirements	Password strength enforcement and email verification are required
Assumptions	The User has a valid email address
Notes and Issues	Ensure email uniqueness and handle network failures during verification

A. Verify Email

Use Case ID	04A		
Use Case Name	Verify Email		
Created By	Jarrel Ng	Last Updated By	
Date Created	1 September 2025	Last Date Updated	

Actor	User
Description	Ensures User's email is valid before activating the account
Preconditions	User has submitted the registration form
Postconditions	User account is verified
Priority	High
Frequency of Use	Medium
Flow of Events	<ol style="list-style-type: none"> 1. The system sends a verification email with a link 2. User clicks the link 3. System validates the token and confirms verification
Alternative Flows	<ol style="list-style-type: none"> 1. Token has expired, System shall allow resend 2. Email is undelivered. System shall allow resend
Exceptions	<ol style="list-style-type: none"> 1. System fails to generate a token and shall log the error and notify the admin
Includes	None
Special Requirements	Email service must be reliable
Assumptions	User checks their email
Notes and Issues	None

V. Authentication

Use Case ID	05
Use Case Name	Login

Created By	Jarrel Ng	Last Updated By	Isaac Teo
Date Created	29 August 2025	Last Date Updated	7 September 2025

Actor	User
Description	Allows the User to log into his/her Dream Neighbourhood account using his/her email and password.
Preconditions	None
Postconditions	User is logged into his/her Dream Neighbourhood application and is directed to the home page of the application
Priority	High
Frequency of Use	High
Flow of Events	<ol style="list-style-type: none"> 1. The User enters his/her email and password. The password is masked as dots, but the User can choose to unmask it by clicking the eye icon. 2. The User clicks the login button. 3. If the information entered is correct, the user is redirected to the home page of their Dream Neighbourhood account.
Alternative Flows	<ol style="list-style-type: none"> 1. The user enters incorrect information, in which the system prevents them from logging in. 2. The user then chooses to click the reset password option. 3. Redirects to the “Reset Password” use case
Exceptions	<ol style="list-style-type: none"> 2. If any of the required information is missing or invalid, an error message is displayed 3. If the email and password do not match when the User tries to log in in step 2, Dream Neighbourhood shall display “Email and password do not match” to the User
Includes	None
Special Requirements	The system needs to validate user input data
Assumptions	The User has an existing Dream Neighbourhood Account.

Notes and Issues	None
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A. Reset Password

Use Case ID	05A		
Use Case Name	Reset Password		
Created By	Jarrel Ng	Last Updated By	
Date Created	1 September 2025	Last Date Updated	

Actor	User
Description	Allows the User to reset a forgotten password.
Preconditions	User has a registered email
Postconditions	User can log in with a new password
Priority	High
Frequency of Use	Low
Flow of Events	<ol style="list-style-type: none"> 1. User selects “Forgot Password” 2. User enters registered email 3. System sends reset link 4. User clicks the link and sets a new password 5. System confirms reset
Alternative Flows	<ol style="list-style-type: none"> 1. Email is not found, the system will prompt the user to try again
Exceptions	<ol style="list-style-type: none"> 1. Link has expired, the system shall allow resend
Includes	None
Special Requirements	None
Assumptions	None
Notes and Issues	None

VI. Handle Session Timeout

Use Case ID	06A		
Use Case Name	Handle Session Timeout		
Created By	Jarrel Ng	Last Updated By	
Date Created	8 September 2025	Last Date Updated	

Actor	User
Description	System manages inactivity by prompting the user.
Preconditions	User logged in.
Postconditions	Session extended or ended.
Priority	Medium
Frequency of Use	Medium
Flow of Events	<ol style="list-style-type: none">1. User is inactive for a set time2. System displays a timeout prompt, “The session has ended, do you want to extend?”3. If user clicks the yes button, the session is extended4. If user clicks the no button, the session ends
Alternative Flows	None
Exceptions	None
Includes	None
Special Requirements	Default timeout is 15 minutes

Assumptions	User's internet connection is stable
Notes and Issues	None

4. UI Mockups

1. Login & Signup Page

The image consists of two side-by-side panels. The left panel is a screenshot of a login page for 'Dream Neighbourhood.com'. It features a logo at the top, followed by a 'Welcome!' message and a 'Login to Dream Neighbourhood' heading. Below this are fields for 'Email Address/ Phone Number' and 'Password', each with a corresponding input box. There are also 'Remember me' and 'Forgot Password?' links, and a large blue 'Login' button at the bottom. The right panel is a conceptual illustration of a person holding a magnifying glass over a house icon on a screen, symbolizing property search.

Welcome !

Sign up to
Dream Neighbourhood

Email

Email Address/ Phone Number

Password
 

Confirm Password
 

Register

Already have an Account ? [Login](#)



2. Reset Password

Dream Neighbourhood.com



Reset your password

Enter the email associated with your account

Email Address

[Try another way](#) **Next**

Already have account ? [Log in](#)



3. View Property Listings

Dream Neighbourhood .com

HDB ▾ Bedok ◻ LOG IN

800+ Searches

Search Results

Property Type Location Budget

Property Address	Type	Rooms	Size	Price
Blk 613B Bedok Reservoir Rd, Singapore 472613 Bedok Town	4-Room Resale flat	4 room	100 sqm	\$800,000
Blk 504 Bedok Nth St 3, Singapore 460504 Bedok Town	3-Room Resale flat	3 room	58sqm	\$450,000
Blk 103 Bedok Reservoir Rd, Singapore 470103 Bedok Town	4-Room Resale flat	3 room	67 sqm	\$480,000

The map shows the location of Bedok Reservoir Park, PIE, SIMEI, and various shopping centers like Bedok Mall and Sheng Siong Eatery Place. Price overlays indicate values such as 850k, 900k, 750k, 1mil, 976k, 632k, 789k, 999k, 2mil, and 1.2mil.

4. Search Properties (with Filters)

Dream Neighbourhood.com

HDB ▾ Bedok ✖ Below 900k ✖ **LOG IN**

Filters ⚙️ **Clear Filters** ✖

Property Type

All	Condo	Landed	HDB
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Location

Search by Mrt

Budget

BELOW \$900K **\$900K**

Bedroom

Any	1+	2+	3+	4+	5+
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Land

AROUND 80 SQ.FT **80 Sqft**

Amenities

<input type="checkbox"/> Mrt Nearby	<input type="checkbox"/> Community Centres
<input type="checkbox"/> Swimming Complex	<input type="checkbox"/> Polyclinic
<input type="checkbox"/> Heartland Malls	<input type="checkbox"/> Hawker Centres

Search Results

800+ Searches

**Blk 613B Bedok Reservoir Rd
Singapore 472613 Bedok Town**

4 room | 100 sqm

\$800,000

**Blk 504 Bedok Nth St 3
Singapore 460504 Bedok Town**

3 room | 58sqm

\$450,000

**Blk 103 Bedok Reservoir Rd
Singapore 470103 Bedok Town**

3 room | 67 sqm

\$480,000

1 2 3 4 5 ... Next

5. Admin Page

Dream Neighbourhood.com

ADMIN

Dashboard

Users

Comments

→ **LOG OUT**

Manage Users

Name

6. Favourites and Community

Favourites

[See all](#)



Blk 613B Bedok Reservoir Rd Singapore 472613 Bedok Town

4 room | 100 sqm

4-Room Resale flat
Posted by X Builder

\$800,000



Blk 613B Bedok Reservoir Rd Singapore 472613 Bedok Town

4 room | 100 sqm

4-Room Resale flat
Posted by X Builder

\$480,000



Blk 613B Bedok Reservoir Rd Singapore 472613 Bedok Town

4 room | 100 sqm

4-Room Resale flat
Posted by X Builder

\$450,000



Blk 613B Bedok Reservoir Rd Singapore 472613 Bedok Town

4 room | 100 sqm

4-Room Resale flat
Posted by X Builder

\$50,000

Community



Add a comment..

[Post](#)



Reviews 4.0



10 reviews

Comments



John Ben

Great location and quiet neighbourhood



Jonathan

Are the parks huge?



James

[Report](#)

The place seems horrible