
Use Cases

for

HouseSense

Version 1.0 approved

Prepared by Group 4

Group 4

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Revision History

Name	Date	Reason For Changes	Version
Yee Yong Khang	8 th Feb	Initial edit	1.0
Yee Yong Khang	21 st Feb	Lab 2 updates + new project	1.1
Spencer Ng	24 th Feb	Lab 2 updates + extra use cases U14-U24	1.2

Summary of All Use Cases

- U1 – Register Account
- U2 – Login
- U3 – List Property
- U4 – View Available Listings
- U5 – Submit Commission Bid
- U6 – View List of Agent Biddings
- U7 – Select Agent and Finalize Deal
- U8 – View Properties
- U9 – Search for Properties
- U10 – Filter Properties
- U11 – View Agent Review
- U12 – Update Agent Profile
- U13 – Manage Account
- U14 – View Account
- U15 – Update User Account Database
- U16 – Sets Maximum Commission Rate
- U17 – Edit Listing
- U18 – Update Property Database
- U19 – Display Agent Information
- U20 – Retrieve Agent Information
- U21 – Filter List
- U22 – Sends Acceptance Notification
- U23 – Sends Bid Notification
- U24 – Retrieve Property Information

Use Cases

Use Case ID:	U1		
Use Case Name:	Register Account		
Created By:	Yee Yong Khang	Last Updated By:	Yee Yong Khang
Date Created:	21 Feb 2025	Date Last Updated:	21 Feb 2025

Actor:	User
Description:	This use case allows a user to register for an account by providing necessary information and selecting their role (Seller, Property Agent, Buyer)
Preconditions:	
Postconditions:	User account is successfully created and stored in the system
Priority:	High
Frequency of Use:	High
Flow of Events:	<ol style="list-style-type: none"> 1. User navigates to the registration page and presses “Sign Up” 2. System prompts user to select their role (Seller, Property Agent, Buyer) 3. System displays input fields for name, email, phone number, and password. 4. User fills in other required details and press “Submit” 5. System sends an email or SMS verification code 6. User enters the verification code and presses “Verify” 7. System creates the account and redirects user to the login page
Alternative Flows:	<p>3.1 User enters invalid email/phone number format</p> <p>3.1.1 System displays an error message</p> <p>3.1.2 System continues back to 3.</p> <p>6.1 User enters incorrect verification code</p> <p>6.1.1 System allows the user to retry</p> <p>6.1.2 System goes back to 6.</p>
Exceptions:	If email/phone number is already registered, the system prompts the user to log in instead
Includes:	- Manage Account
Special Requirements:	- User password must be encrypted when stored
Assumptions:	None
Notes and Issues:	

Use Case ID:	U2		
Use Case Name:	Login		
Created By:	Yee Yong Khang	Last Updated By:	Yee Yong Khang
Date Created:	21 Feb 2025	Date Last Updated:	21 Feb 2025

Actor:	User
Description:	Allows a user to log into their account using valid credentials
Preconditions:	
Postconditions:	- User gains access to their account and gets directed to the main page
Priority:	High
Frequency of Use:	High
Flow of Events:	<ol style="list-style-type: none"> 1. User navigates to the login page and presses "Login" 2. System displays input fields for email/phone number and password 3. User enter login credentials and presses "Submit" 4. System authenticates the credentials 5. System redirects user to the user's main page
Alternative Flows:	4.1 System deem the credentials to be invalid 4.1.1 System prompts user to enter their credentials again
Exceptions:	
Includes:	- Manage account
Special Requirements:	
Assumptions:	
Notes and Issues:	

Use Case ID:	U3		
Use Case Name:	List Property		
Created By:	Yee Yong Khang	Last Updated By:	Yee Yong Khang
Date Created:	21 Feb 2025	Date Last Updated:	21 Feb 2025

Actor:	Seller
Description:	This use case allows a seller to create and post a property listing
Preconditions:	Seller is logged into the system
Postconditions:	The property is successfully listed in the system
Priority:	High
Frequency of Use:	High-medium
Flow of Events:	<ol style="list-style-type: none"> 1. Seller navigates to “List Property” and presses “Add New Listing” 2. System displays input fields for Property type, location, price, size, and images 3. Seller enters property details and presses “Next” 4. System prompts seller to set a maximum commission rate 5. Seller enters the commission rate and presses “Submit” 6. System validates the details and saves the property listing 7. System updates the property database and make it visible to agents
Alternative Flows:	<p>3.1 Seller Enters incomplete details</p> <p>3.1.1 Seller presses “Next” without filling in all required property details</p> <p>3.1.2 System displays an error message indicating the missing fields</p> <p>3.1.3 Seller fills in missing details and presses “Next” again</p> <p>3.1.4 System allows the process and continue</p> <p>5.1 Seller presses “Cancel”</p> <p>5.1.1 System prompts the user for confirmation</p> <p>5.1.2 Seller press “Yes” and system discards all entered data and return seller to the dashboard</p>
Exceptions:	None
Includes:	<ul style="list-style-type: none"> - Set Maximum Commission Rate - Update Property Database
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

Use Case ID:	U4		
Use Case Name:	View Available Listings		
Created By:	Yee Yong Khang	Last Updated By:	Yee Yong Khang
Date Created:	21 Feb 2025	Date Last Updated:	21 Feb 2025

Actor:	Property Agent
Description:	Allows property agents to browse property listings available for commission bidding
Preconditions:	- Property listings exists in the system
Postconditions:	- Agent can view and bid on listings
Priority:	High
Frequency of Use:	High-medium
Flow of Events:	<ol style="list-style-type: none"> 1. Agent navigates to “Available Listings” and presses “View Listings” 2. System retrieves and displays all active property listings 3. Agent applies filter if necessary
Alternative Flows:	<p>2.1 No Listings Available</p> <p>2.1.1 System retrieves no active listings</p> <p>2.1.2 System display message “No active property listings available at the moment”</p> <p>2.1.3 System sends agent back to dashboard</p> <p>3.1 No matches found with filter</p> <p>3.1.1 System display message “No listings match the filter, try adjusting filter or expanding search criteria”</p>
Exceptions:	None
Includes:	Retrieve Property Information
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

Use Case ID:	U5		
Use Case Name:	Submit Commission Bid		
Created By:	Yee Yong Khang	Last Updated By:	Yee Yong Khang
Date Created:	21 Feb 2025	Date Last Updated:	21 Feb 2025

Actor:	Property Agent
Description:	This use case allows an agent to submit a commission bid for a listed property
Preconditions:	- The property must be listed and open for bidding
Postconditions:	- The commission bid is successfully recorded in the system
Priority:	High
Frequency of Use:	High-medium
Flow of Events:	<ol style="list-style-type: none"> 1. Agent selects a property listing and presses "Place Bid" 2. System displays input field for commission percentage 3. Agent enters bid amount and presses "Submit" 4. System validates bid (must be lower than seller's max) 5. System records the bid and notifies the seller
Alternative Flows:	4.1 Agent tries to submit a bid higher than maximum 4.1.1 Agent enters a commission rate higher than the seller's maximum 4.1.2 System displays error message "Your commission bid must be lower than the seller's maximum rate of X%" 4.1.3 Agent modifies the bid and resubmits successfully
Exceptions:	None
Includes:	Sends Bid Notification
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

Use Case ID:	U6		
Use Case Name:	View List of Agent Biddings		
Created By:	Yee Yong Khang	Last Updated By:	Yee Yong Khang
Date Created:	21 Feb 2025	Date Last Updated:	21 Feb 2025

Actor:	Seller
Description:	Allows the seller to view all agents who have placed commission bids.
Preconditions:	- At least one agent has submitted a bid
Postconditions:	- Seller can review and compare agents
Priority:	High
Frequency of Use:	High-Medium
Flow of Events:	<ol style="list-style-type: none"> 1. Seller navigates to “Agent biddings” and presses “View List” 2. System displays a list of agents with their details 3. Seller filters the list if necessary
Alternative Flows:	None
Exceptions:	None
Includes:	<ul style="list-style-type: none"> - Filter list - View Agent Reviews
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

Use Case ID:	U7		
Use Case Name:	Select Agent and Finalize Deal		
Created By:	Yee Yong Khang	Last Updated By:	Yee Yong Khang
Date Created:	21 Feb 2025	Date Last Updated:	21 Feb 2025

Actor:	Seller
Description:	This use case allows a seller to select an agent from the list of commission bids and finalize the agent selection
Preconditions:	<ul style="list-style-type: none"> - At least one agent has placed a commission bid on the property - Seller is logged in
Postconditions:	<ul style="list-style-type: none"> - The selected agent is assigned to the property listing - Both seller and agent receives contact details
Priority:	High
Frequency of Use:	Medium
Flow of Events:	<ol style="list-style-type: none"> 1. Seller navigates to “Agent Bids” and presses “View Bids” 2. System display a list of agents showing their details and submitted comission bid 3. Seller shortlists agents by pressing “Shortlist” next to their name 4. Seller presses “Finalize Selection” on the chosen agent 5. System sends notification to the selected agent 6. System exchanges contact details between seller and agent 7. System updates property listing as “Assigned to Agent” and removes it from active bidding
Alternative Flows:	
Exceptions:	None
Includes:	Sends Acceptance Notification
Special Requirements:	System must log all transaction for future reference
Assumptions:	None
Notes and Issues:	None

Use Case ID:	U8		
Use Case Name:	View Properties		
Created By:	Yee Yong Khang	Last Updated By:	Yee Yong Khang
Date Created:	21 Feb 2025	Date Last Updated:	21 Feb 2025

Actor:	Buyer
Description:	Allows buyers to browse available property listings
Preconditions:	- At least one property is listed in the system
Postconditions:	- Buyer sees available properties matching their criteria
Priority:	Medium
Frequency of Use:	Medium
Flow of Events:	<ol style="list-style-type: none"> 1. Buyer navigates to “Properties” and presses “View Listings” 2. System retrieves all available properties from the database 3. Buyer scrolls through listing or applies filters 4. Buyer selects a property by pressing “View Details” 5. System displays property details
Alternative Flows:	2.1 System retrieves no property listings 2.1.1 System displays “No properties available. Try adjusting your search criteria”
Exceptions:	none
Includes:	<ul style="list-style-type: none"> - Search Properties - Filter Properties
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

Use Case ID:	U9		
Use Case Name:	Search for Properties		
Created By:	Yee Yong Khang	Last Updated By:	Yee Yong Khang
Date Created:	21 Feb 2025	Date Last Updated:	21 Feb 2025

Actor:	Buyer
Description:	This use case allows buyers to search for proerties using keywords
Preconditions:	- The system contains property listings
Postconditions:	- The system displays search results matching the user's query
Priority:	Medium
Frequency of Use:	Low
Flow of Events:	<ol style="list-style-type: none"> 1. Buyer enter a keyword into the search bar 2. Buyer Presses Search 3. System retrievers matching listings and displays them
Alternative Flows:	3.1 No properties matches 3.1.1 System displays a "No results found" message
Exceptions:	None
Includes:	None
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

Use Case ID:	U10		
Use Case Name:	Filter Properties		
Created By:	Yee Yong Khang	Last Updated By:	Yee Yong Khang
Date Created:	21 Feb 2025	Date Last Updated:	21 Feb 2025

Actor:	Buyer
Description:	This use case allows buyers to refine search results by applying filters
Preconditions:	- At least one property exists in the system
Postconditions:	- System updates the listing results based on selected filters
Priority:	Medium
Frequency of Use:	Low
Flow of Events:	<ol style="list-style-type: none"> 1. Buyer presses “Filter” on the property listing page 2. System displays filter options 3. Buyer selects desired filters and presses “Apply Filters” 4. System updates the property list to show only relevant results
Alternative Flows:	<p>4.1 Buyer presses "Apply Filters", but no properties match. 4.1.1 System displays "No properties match your selected filters. Try adjusting the price range or location."</p> <p>4.2 Buyer clears filter 4.2.1 Buyer presses “Clear Filters” button 4.2.2 System resets the list to display all available properties</p>
Exceptions:	None
Includes:	None
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

Use Case ID:	U11		
Use Case Name:	View Agent Review		
Created By:	Yee Yong Khang	Last Updated By:	Yee Yong Khang
Date Created:	21 Feb 2025	Date Last Updated:	21 Feb 2025

Actor:	Seller
Description:	This use case allows seller to review agent ratings and past client feedback before selecting an agent
Preconditions:	- The agent has past reviews in the system
Postconditions:	- System shows the agent's reviews and seller gains insights into the agent's credibility and performance
Priority:	Medium
Frequency of Use:	Medium-Low
Flow of Events:	<ol style="list-style-type: none"> 1. Seller navigates to an agent's profile and presses "View Reviews" 2. System retrieves and displays all past client reviews
Alternative Flows:	2.1 Agent has no reviews 2.1.1 System displays "No reviews available"
Exceptions:	None
Includes:	Display Agent Information
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

Use Case ID:	U12		
Use Case Name:	Update Agent Profile		
Created By:	Yee Yong Khang	Last Updated By:	Yee Yong Khang
Date Created:	21 Feb 2025	Date Last Updated:	21 Feb 2025

Actor:	Property Agent
Description:	This use case allows property agent to update their profile deatails
Preconditions:	- Agent is logged in
Postconditions:	- System updates agent's profile in the database
Priority:	Medium
Frequency of Use:	Low
Flow of Events:	<ol style="list-style-type: none"> 1. Agent navigates to "Profile" and presses "Edit Profile" 2. System displays editable fields for the Agent 3. Agent modifies details and presses "Saves" 4. System updates the agent's profile in the database
Alternative Flows:	
Exceptions:	None
Includes:	Retrieves Agent Information
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

Use Case ID:	U13		
Use Case Name:	Manage Account		
Created By:	Yee Yong Khang	Last Updated By:	Yee Yong Khang
Date Created:	21 Feb 2025	Date Last Updated:	21 Feb 2025

Actor:	Seller, Buyer
Description:	This use case allows user to update personal account settings
Preconditions:	- User is logged in
Postconditions:	- System updates account information
Priority:	Medium
Frequency of Use:	Low
Flow of Events:	<ol style="list-style-type: none"> 1. User navigates to “Account Settings” and presses “Edit Profile” 2. System displays account details 3. User make changes and presses “Save Changes 4. System updates the user profile in the database
Alternative Flows:	None
Exceptions:	None
Includes:	Retrieves Agent Information
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

Use Case ID:	U14
Use Case Name:	View Account

Created By:	Spencer Ng	Last Updated By:	Spencer Ng
Date Created:	24 Feb 2025	Date Last Updated:	24 Feb 2025

Actor:	Seller, Buyer, Agent
Description:	This use case allows user to click the Manage Account button
Preconditions:	- User is logged in
Postconditions:	- System updates account information
Priority:	High
Frequency of Use:	Medium
Flow of Events:	1. User clicks on Manage Account button 2. Manage Account Use Case is activated
Alternative Flows:	None
Exceptions:	None
Includes:	Manage Account
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

Use Case ID:	U15		
Use Case Name:	Update user account database		
Created By:	Spencer Ng	Last Updated By:	Spencer Ng

Date Created:	24 Feb 2025	Date Last Updated:	24 Feb 2025
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Actor:	System
Description:	Allows system to update user account database
Preconditions:	None
Postconditions:	- System updates user account information
Priority:	High
Frequency of Use:	High
Flow of Events:	<ol style="list-style-type: none"> 1. User creates a new account/deletes an account 2. System is notified and updates database via Manage Account
Alternative Flows:	None
Exceptions:	None
Includes:	None
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

Use Case ID:	U16		
Use Case Name:	Set maximum commission rate		
Created By:	Spencer Ng	Last Updated By:	Spencer Ng
Date Created:	24 Feb 2025	Date Last Updated:	24 Feb 2025

Actor:	Seller
Description:	Allows seller to set maximum commission rate

Preconditions:	Seller invokes List Property use case
Postconditions:	- System updates property maximum commission rate
Priority:	High
Frequency of Use:	Medium
Flow of Events:	<ol style="list-style-type: none"> 1. System receives max commission rate value from List Property use case 2. System re-assigns new value to maxComissionRate
Alternative Flows:	None
Exceptions:	None
Includes:	None
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

Use Case ID:	U17		
Use Case Name:	Edit Listing		
Created By:	Spencer Ng	Last Updated By:	Spencer Ng
Date Created:	24 Feb 2025	Date Last Updated:	24 Feb 2025

Actor:	Seller, System
Description:	Allows actor to edit listing
Preconditions:	Either from List Property or Update Property Database use case
Postconditions:	- System updates property listing information

Priority:	High
Frequency of Use:	High
Flow of Events:	<ol style="list-style-type: none"> 1. System receives listing info from pre-condition use cases 2. System updates the info received in the database
Alternative Flows:	None
Exceptions:	None
Includes:	None
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

Use Case ID:	U18		
Use Case Name:	Update Property Database		
Created By:	Spencer Ng	Last Updated By:	Spencer Ng
Date Created:	24 Feb 2025	Date Last Updated:	24 Feb 2025

Actor:	System
Description:	Allows System to update property database
Preconditions:	Used to extend List Property and Edit Listing use case
Postconditions:	Ensures that property information is updated
Priority:	High
Frequency of Use:	High

Flow of Events:	<ol style="list-style-type: none"> 1. System receives signal that either a new property has been listed or a listing has been edited 2. System takes note of the new values and updates them in the database
Alternative Flows:	None
Exceptions:	None
Includes:	None
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

Use Case ID:	U19		
Use Case Name:	Display Agent Information		
Created By:	Spencer Ng	Last Updated By:	Spencer Ng
Date Created:	24 Feb 2025	Date Last Updated:	24 Feb 2025

Actor:	System
Description:	Allows system to display agent information
Preconditions:	None
Postconditions:	System displays agent information
Priority:	High
Frequency of Use:	High
Flow of Events:	<ol style="list-style-type: none"> 1. System receives request to display agent information

	2. System goes to Retrieve Agent information use case to obtain info 3. System displays the info obtained
Alternative Flows:	None
Exceptions:	None
Includes:	None
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

Use Case ID:	U20		
Use Case Name:	Retrieve Agent Information		
Created By:	Spencer Ng	Last Updated By:	Spencer Ng
Date Created:	24 Feb 2025	Date Last Updated:	24 Feb 2025

Actor:	ACEAS API
Description:	Retrieves agent information from data.gov
Preconditions:	None
Postconditions:	System updates agent information in database
Priority:	High
Frequency of Use:	Low
Flow of Events:	1. System retrieves info from data.gov 2. System updates agent info in database

Alternative Flows:	None
Exceptions:	None
Includes:	None
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

Use Case ID:	U21		
Use Case Name:	Filter List		
Created By:	Spencer Ng	Last Updated By:	Spencer Ng
Date Created:	24 Feb 2025	Date Last Updated:	24 Feb 2025

Actor:	Seller
Description:	Allows actor to filter listing
Preconditions:	View List Of Agents biddings use case
Postconditions:	System displays new filtered list of biddings
Priority:	Low
Frequency of Use:	Medum
Flow of Events:	<ol style="list-style-type: none"> 1. Filter List use case receives signal from pre-condition use case that seller wants to filter biddings by value 2. System filters out biddings by value 3. System displays new filtered list to seller
Alternative Flows:	None

Exceptions:	None
Includes:	None
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

Use Case ID:	U22		
Use Case Name:	Sends acceptance notification		
Created By:	Spencer Ng	Last Updated By:	Spencer Ng
Date Created:	24 Feb 2025	Date Last Updated:	24 Feb 2025

Actor:	System
Description:	Sends acceptance notification to all interested agents once seller has accepted a bid
Preconditions:	Seller must accept a commission bid from an agent
Postconditions:	System sends a notification to all interested agents that the seller has accepted a bid
Priority:	Low
Frequency of Use:	Medium
Flow of Events:	<ol style="list-style-type: none"> 1. System receives signal that seller has clicked accept bid 2. System sends notification to all interested agents that the seller has accepted a bid
Alternative Flows:	None

Exceptions:	None
Includes:	None
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

Use Case ID:	U23		
Use Case Name:	Sends bid notification		
Created By:	Spencer Ng	Last Updated By:	Spencer Ng
Date Created:	24 Feb 2025	Date Last Updated:	24 Feb 2025

Actor:	System
Description:	Sends bid notification to agent whenever a new commission bid is made
Preconditions:	Agent must submit a new bid
Postconditions:	System sends notification to all other agents involved about the new bid made
Priority:	High
Frequency of Use:	High
Flow of Events:	<ol style="list-style-type: none"> 1. Agent makes a commission bid 2. Notification is sent by system to all other agents interested in the property that a new bid has been made
Alternative Flows:	None

Exceptions:	None
Includes:	None
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None

Use Case ID:	U24		
Use Case Name:	Retrieve Property Information		
Created By:	Spencer Ng	Last Updated By:	Spencer Ng
Date Created:	24 Feb 2025	Date Last Updated:	24 Feb 2025

Actor:	Property API
Description:	Retrieve past house prices from data.gov
Preconditions:	None
Postconditions:	Displays a particular house price given input
Priority:	High
Frequency of Use:	High
Flow of Events:	<ol style="list-style-type: none"> 1. Method takes in a particular property name as an argument 2. Searches up database to check if property exists in database 3. If found, display past prices 4. If not found, return NOT FOUND
Alternative Flows:	None
Exceptions:	None

Includes:	None
Special Requirements:	None
Assumptions:	None
Notes and Issues:	None