Requirements Elicitation

Mission statement: Our web app aims to help prospective home buyers to be well-informed about the information on estimated pricing and evaluations of their desired house, as well as current properties on the market, based on their specific needs and wants.

Target Users: Buyers in the housing market looking for accurate housing price estimates

Functional Requirements:

1. The User shall query the System.

    1.1.   Users must query the System by username and password.

        1.1.1.   When the User has a valid account, the web application shall proceed and display the web application interface.

        1.1.2.   If the User does not have an account, then the web application must display an option to create an account.

    1.2.   Users shall be able to select the desired property attributes.

        1.2.1.   The User shall select the desired property location from the drop down menu.

        1.2.2.   The User shall select the desired number of rooms from the drop down menu.

        1.2.3.   The User shall select their desired amenities nearby, including transport options, shopping malls, schools and hospitals and their proximity range from the desired amenities.

        1.2.4.   The User shall select the area of the property from the drop down menu.

        1.2.5.   The User shall select floor range from the drop down menu.

        1.2.6.   The User shall select the property type from the drop down menu.

    1.3.   The web application shall output all the relevant property recommendations.

        1.3.1.   The web system is required to suggest properties that align with a minimum of 60% of the user's desired property criteria.

1.3.1.1. The System will assess the recommended properties by comparing it to the specified criteria for attributes.

1.3.2. The User data displayed must consist of the desired property's estimated buying price.

1.3.2.1. The System will provide a price estimate based on transaction data from the past two years accessible via the API.

1.3.2.1.1. If past transaction data is not present in the API, then the web application shall calculate and indicate the average price estimated based on the available transaction data.

1.3.3. The User data display must consist of information of the suggested properties according to the User's desired property criteria.

1.3.3.1. The User data displayed must consist of the buying price.

1.3.3.1.1. The System shall retrieve the price according to the current transaction data in the API.

1.3.3.2. The User data displayed must consist of the property location.

2. The User shall finalize the best property option.

2.1. The user must be able to choose from the suggested properties displayed on the web page to access detailed information about the selected property.

2.1.1. The User data displayed must consist of the desired property on the left and the selected current property listing on the right.

2.1.2. The System will indicate if the selected property is optimal selection based on User's desired property.

2.1.3. The User data displayed must consist of attributes, such as the location, amenities, number of rooms and area of property, under desired property and current property.

2.1.3.1. If the attributes exist in both, the attributes will be highlighted in green.

2.1.3.2. If the attributes do not exist in either one, the attributes will be highlighted in red.

2.2. When the save button is pressed, the web application shall save the property to the favorites file.

      2.2.1.   The favorites file will consist of all the saved current properties.

      2.2.2.   Where differences and similarities between current properties are concerned, the system shall present a clear comparison, aiding users in making informed decisions.

    2.3.   When the User visits the favorites files, the user can select his best suited property.

3.   The web application shall generate a clear and comprehensive sequence of steps to guide users on how to proceed with the purchase of a selected property.

    3.1.   The web application should display the contact details of the property agent.

Non-functional Requirements:

Performance	The system must meet the defined standard of delivering the prediction price and potential HDBs in the market in 3 seconds. The system ensures optimal and responsive user experience.
Scalability	The system must be able to host more than 150k user accounts while providing consistent and acceptable performance. The system must ensure seamless user experience and be able to handle increased demand without compromising efficiency. Inactive accounts spotted by the system should be permanently terminated so that new accounts can be made.
Portability	The web application must be able to be screened on both the user's computer and mobile phone via Google Chrome. The web application should run on both Windows and Mac.
Compatibility	The web application should be compatible with location services.
Reliability	The system should be highly reliable and able to minimize critical failures 99% of the time.
Maintainability	The system should fix all bugs and update the security software every 3 months.
Availability	The app must perform consistently across different devices and operating systems with a reliability rate of 98%.

Security	The system must demonstrate thorough defense against a range of cyberthreats such as malware, phishing, SQL injection attacks and prevent unauthorized access. The system must also comply with system standards and aim for a high level of integrity, confidentiality and availability.
Usability	The system will include a tutorial for new account users before using the application. The interface must have a clear interface design in vibrant colors and adjustable font sizes which would enhance the overall user experience and accessibility for all users.