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**Functional Requirements**

1. **Login Page**
   1. The system shall allow users to input via text input for these fields:
      1. Username
      2. Password
   2. The system shall allow users to auto-save his account credentials via a ‘Remember me’ checkbox.
   3. The system shall offer a ‘Register’ and ‘Login’ button for new and existing users.
   4. The system shall direct users to the home page when users tap on the login button with the correct credentials.
      1. The system shall not proceed if backend database does not have matching credentials.
2. **Registration Page**
   1. The system shall direct users to a registration page when users tap on the ‘Register’ button.
   2. The system shall present users with text inputs to enter his new account information.
      1. The text inputs shall include username, password and email fields.
   3. The system shall direct users to the login page when users tap on the submit button.
      1. The system shall not proceed if the username text inputs have matching data with the database.
      2. The system shall not proceed if the text inputs have empty fields.
      3. The system shall not proceed if the email text inputs have matching data with the database.
3. **Home Page**
   1. The system shall allow users to choose between 3 public housing options:
      1. Build-To-Order Flats (BTO)
      2. Resale Flat
      3. Sale-Of-Balance Flats (SBF)
   2. The system shall display a greeting message to users.
   3. The system shall allow users to seek help with the help button.
4. **BTO Page**
   1. The system shall allow users to filter between these options:
      1. Launch Period\*
         1. Upcoming Launches
            1. The system shall direct users to the results page when users tap on the upcoming launches button.
         2. Past Launches
            1. The system shall allow users to filter between these options:

BTO Flat Types

Selling Price Range

* 1. The system shall direct users to the main page when users tap on the back button.
  2. The system shall direct users to the region page when users tap on the next button.
  3. The system shall not proceed If no selection was made for asterisked fields.

1. **SBF Page**
   1. The system shall allow users to filter between these options:
      1. Flat Types\*
      2. Selling Price Range
      3. Flat Supply Range
      4. Ethnic Group
         1. Ethnic Quota Range
   2. The system shall direct users to the main page when users tap on the back button.
   3. The system shall direct users to the region page when users tap on the next button.
   4. The system shall not proceed If no selection was made for asterisked fields.
2. **Resale Page**
   1. The system shall allow users to filter between these options:
      1. Flat Type\*
      2. Selling Price Range
      3. Remaining Lease Range
      4. Storey Range
      5. Floor Area range (sqm)
   2. The system shall direct users to the main page when users tap on the back button.
   3. The system shall direct users to the region page when users tap on the next button.
   4. The system shall not proceed If no selection was made for asterisked fields.
3. **Region Page**
   1. The system shall display a Singapore Map separated into regions. The regions consists of:
      1. Woodlands
      2. [Ang Mo Kio](https://www.hdb.gov.sg/cs/infoweb/about-us/history/hdb-towns-your-home/ang-mo-kio&rendermode=preview)
      3. [Hougang](https://www.hdb.gov.sg/cs/infoweb/about-us/history/hdb-towns-your-home/hougang&rendermode=preview)
      4. [Punggol](https://www.hdb.gov.sg/cs/infoweb/about-us/history/hdb-towns-your-home/punggol&rendermode=preview)
      5. [Sengkang](https://www.hdb.gov.sg/cs/infoweb/about-us/history/hdb-towns-your-home/sengkang&rendermode=preview)
      6. [Serangoon](https://www.hdb.gov.sg/cs/infoweb/about-us/history/hdb-towns-your-home/serangoon&rendermode=preview)
      7. [Bedok](https://www.hdb.gov.sg/cs/infoweb/about-us/history/hdb-towns-your-home/bedok&rendermode=preview)
      8. [Pasir Ris](https://www.hdb.gov.sg/cs/infoweb/about-us/history/hdb-towns-your-home/pasir-ris&rendermode=preview)
      9. [Tampines](https://www.hdb.gov.sg/cs/infoweb/about-us/history/hdb-towns-your-home/tampines&rendermode=preview)e
      10. [Bukit Batok](https://www.hdb.gov.sg/cs/infoweb/about-us/history/hdb-towns-your-home/bukit-batok&rendermode=preview)
      11. [Bukit Panjang](https://www.hdb.gov.sg/cs/infoweb/about-us/history/hdb-towns-your-home/bukit-panjang&rendermode=preview)
      12. [Choa Chu Kang](https://www.hdb.gov.sg/cs/infoweb/about-us/history/hdb-towns-your-home/choa-chu-kang&rendermode=preview)
      13. [Clementi](https://www.hdb.gov.sg/cs/infoweb/about-us/history/hdb-towns-your-home/clementi&rendermode=preview)
      14. [Jurong East](https://www.hdb.gov.sg/cs/infoweb/about-us/history/hdb-towns-your-home/jurong-east&rendermode=preview)
      15. [Jurong West](https://www.hdb.gov.sg/cs/infoweb/about-us/history/hdb-towns-your-home/jurong-west&rendermode=preview)
      16. [Bishan](https://www.hdb.gov.sg/cs/infoweb/about-us/history/hdb-towns-your-home/bishan&rendermode=preview)
      17. [Bukit Merah](https://www.hdb.gov.sg/cs/infoweb/about-us/history/hdb-towns-your-home/bukit-merah&rendermode=preview)
      18. [Bukit Timah](https://www.hdb.gov.sg/cs/infoweb/about-us/history/hdb-towns-your-home/bukit-timah&rendermode=preview)
      19. [Central](https://www.hdb.gov.sg/cs/infoweb/about-us/history/hdb-towns-your-home/central&rendermode=preview)
      20. [Geylang](https://www.hdb.gov.sg/cs/infoweb/about-us/history/hdb-towns-your-home/geylang&rendermode=preview)
      21. [Kallang/ Whampoa](https://www.hdb.gov.sg/cs/infoweb/about-us/history/hdb-towns-your-home/kallang-whampoa&rendermode=preview)
      22. [Marine Parade](https://www.hdb.gov.sg/cs/infoweb/about-us/history/hdb-towns-your-home/marine-parade&rendermode=preview)
      23. [Queenstown](https://www.hdb.gov.sg/cs/infoweb/about-us/history/hdb-towns-your-home/queenstown&rendermode=preview)
      24. [Toa Payoh](https://www.hdb.gov.sg/cs/infoweb/about-us/history/hdb-towns-your-home/toa-payoh&rendermode=preview)
   2. The system shall direct the users to the results page when users tap on any region.
4. **Map Page**
   1. The available flats shall be denoted with a marker on the region selected.
   2. The system shall direct users to the results page when marker is clicked.
   3. The system shall offer
   4. The system shall allow changes to be made to the filters excluding:
      * + 1. Region
          2. Public Housing Options
   5. The system shall allow users to return to either the main menu or region page.
5. **Results Page**
   1. The system shall display the building information in accordance to the filters when specific marker in the map page is clicked. The information revealed will include:
      1. Flat Address
      2. Flat Type
      3. Selling Price (if applicable)
      4. Flat Supply Available (if applicable)
      5. Ethnic Group (if applicable)

**9.1.5.1** Ethnic Quota Available

* + 1. Remaining Lease (if applicable)
    2. Storey (if applicable)
    3. Floor Area (if applicable)

1. **Bookmarks**
   1. The system shall show the flats that was bookmarked previously pertaining to the user account.
   2. The results are prioritized by recency based on the flats browsed.
   3. The system shall direct the user to the corresponding result page upon tapping  
       on one of the search results.
   4. The system shall allow users to return to either the main menu or region page.

**Non-Functional Requirements**

1. **Usability**
   1. The system shall be available in English to match the medium of communication in Singapore.
   2. The system shall provide drop down lists for the different filters.
      1. The system shall remove inapplicable filters when necessary.
   3. The system shall have a help button to aid users.
   4. The system shall allow users to undo any actions.
   5. The system shall display text messages as a form of feedback to users.
   6. The system shall have prominent buttons.
   7. The system shall allow users to leave non-asterisk filter functions empty.
2. **Performance** 
   1. The system shall have a response time of less than 1 second.
   2. The system shall be able to support 100 000 concurrent users.
   3. The system shall never crash due to system overload.
3. **Supportability**
   1. The developers shall troubleshoot problems faced by the users.
4. **Interface**
   1. The system shall be able to retrieve resale flat information from Data.gov.sg API
   2. The system shall be able to retrieve the following information from HDB.gov.sg:
      1. BTO Flat Information
      2. SOB Flat Information
   3. Users must have Android version 9.0 and above to be compatible with the system.
   4. The system shall be able to retrieve data from googlefirebase
   5. The system shall be able to write data to googlefirebase.
5. **Extendibility Requirements**
   1. The system shall store data collected from HDB.gov.sg in a separate database for easy data access
   2. The system shall be open to conversion from an Android Application to IOS application through MechDome in future.
6. **Overall Maintenance** 
   1. The system shall be updated on a monthly basis for currency purposes