

Overview

Name of Application: REvaluate

Type of Application: Web

Problem Formulation

Motivation

Housing affordability is a key social concern of residents of Singapore. In a survey done in December 2022 by multinational market-research company YouGov, two out of three Singaporeans expressed a need for the government to place greater emphasis on the affordability of housing.

As Singapore strives towards a Smart Nation, the government has open-sourced various data, including real estate transactions. However, the real estate transactions data are currently not translated into a digestible manner for the mass public. Potential home sellers/buyers may find it difficult to estimate their property value when they are trying to sell/buy the house.

Aim

We aim to complement the Smart Nation efforts in creating a Digital Society by translating the open-source data into insights so that:

1. Buyers can have a benchmark pricing of their desired flats and avoid overpaying
2. Sellers can have a benchmark pricing of their flats and avoid undervaluing
3. Public have a clearer idea of how different features (e.g. level, proximity to train station) affect house prices
4. Enhance transparency to the housing market to deter unscrupulous house brokers

Constraints

This project will currently only apply to the public housing flats.

Project Mission Statement

The Z57 team will develop a web application that translates data.gov open-source housing resale transaction information for potential home buyers/sellers to gain data insights and perform ad-hoc queries on resale houses pricing. This project will be considered completed when it has been tested internally by the Z57 team and approved by the Lab TA. This project serves to enhance transparency in the housing market and help potential buyers/sellers make more informed pricing decisions.

Problem Stakeholders Developers Users Outcomes and benefits

1. Functional Requirements

1. Users will be able to view the housings on a dynamic map and see pop up pins after making a search.
 - 1.1. Users will be able to view more detailed information of a housing transaction by clicking on a pin
2. The system must be able to search for housing transactions based on specific flat type and town or postal code
 - 2.1. The system must be able to prevent a search if there are missing fields in the 'Get Price' form
 - 2.2. The system must be able to prevent a search if the postal code provided in the 'Get Price' form is invalid.
3. The system must show all past housing transactions as per the user's query
 - 3.1. The system must be able to filter the houses by price range set by user
4. The system must be able to provide additional data insights as to how different each house is based on neighbourhood, nearby facilities.
5. User must be able to understand services provided by the system
 - 5.1. There must be an 'About Us' page with information on services provided by system
6. User must be able to get insights on the Singapore housing market
 - 6.1. There must be an 'Get Insights' page with charts based on past housing transaction data
 - 6.1.1. There must be a chart to show the most valued neighbourhoods
 - 6.1.2. There must be a chart to show the average resale price across the years
 - 6.1.3. There must be a chart to show the most affordable neighbourhoods
 - 6.1.4. There must be a chart to show details of an average resale house transaction according to flat type
7. User must be aware of a network error
 - 7.1. There must be a error page when there is a network error

Non-Functional Requirements

1. Users must be able to search for records and get results within 5 seconds.
2. The user interface should be readable and easy for the user to navigate.
3. The system shall be available in simple English
4. The selected pin must be highlighted in a different colour to make the user's selection known to him
5. The user interface should be consistent with a colour palette across pages

Data Directory

Housing District	<p>Official housing districts of Singapore:</p> <p>D01 - Boat Quay/ Raffles Place/ Marina</p> <p>D02 - Chinatown/ Tanjong Pagar</p> <p>D03 - Alexandra/ Commonwealth</p> <p>D04 - Harbourfront/ Telok Blangah</p> <p>D05 - Buona Vista/ West Coast/ Clementi</p> <p>D06 - City Hall/ Clarke Quay</p> <p>D07 - Beach Road/ Bugis/ Rochor</p> <p>D08 - Farrer Park/ Serangoon Road</p> <p>D09 - Orchard/ River Valley</p> <p>D10 - Tanglin/ Holland/ Bukit Timah</p> <p>D11 - Newton/ Novena</p> <p>D12 - Balestier/ Toa Payoh</p> <p>D13 - Macpherson/ Potong pasir</p> <p>D14 - Eunos/ Geylang /Paya Lebar</p> <p>D15 - East Coast/ Marine Parade</p> <p>D16 - Bedok/ Upper East Coast</p> <p>D17 - Changi Airport/ Changi Village</p> <p>D18 - Pasir Ris. Tampines</p> <p>D19 - Hougang/ Punggol/ Sengkang</p> <p>D20 - Ang Mo Kio/ Bishan/ Thomson</p> <p>D21 - Clementi Park/ Upper Bukit Timah</p> <p>D22 - Boon Lay/ Jurong/ Tuas</p> <p>D23 - Dairy Farm/ Bukit Panjang/ Choa Chu Kang</p> <p>D24 - Lim Chu Kang/ Tengah</p> <p>D25 - Admiralty/ Woodlands</p> <p>D26 - Mandai/ Upper Thomson</p> <p>D27 - Sembawang/ Yishun</p> <p>D28 - Seletar/ Yio Chu Kang</p>
Neighbourhood	Individual neighbourhoods within each housing district
Flat Type	<p>Types of flats with different sizes and rooms:</p> <ul style="list-style-type: none"> - 2-Room Flat - 3-Room Flat - 4-Room Flat - 5-Room Flat - Others
Postal Code	<p>The 6-digit postal code is made up of the sector code and the delivery point. The sector is represented by the first two numbers of the postal code. The remaining four numbers define the delivery point within the sector. e.g. 53 Ang Mo Kio Avenue 3.</p> <p>Valid sector codes:</p> <p>01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 75, 76, 77, 78, 79, 80, 81, 82</p>

Use Cases

1. Search by area
2. Search by postal code
3. View House Information
4. Interactive Housing Map
5. View House Price
6. View data insights
7. Form Validation
8. Filter by price range
9. Generate Housing Market Insights
10. Generate Estimated Pricing
11. Generate Search Data
12. Learn about REvaluate