

HDB Resale Price Prediction Model

Presented By Team J-JB

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1. Introduction
2. Our Visuals (Tableau)
3. Our Core Concept (Python)
4. Our Demo (Python - Streamlit)
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Introduction

Our company was created with the vision to be the best in the industry.

Problem

Singapore has one of the highest property prices in the world. It is also one of the most important and expensive single purchase item that most Singaporeans will make in their lifetime.

However, The HDB resale market has become increasingly competitive, with a rise in demand and volatile pricing trends.

How can we provide insights for our agents to better advice homeowners on their biggest purchase in life?

Objective

- To identify key factors that affects HDB resale prices
- To identify time-related trends in HDB resale prices
- To predict resale price based on key factors

Goal

Develop an easy-to-use tool for agents to predict HDB resale prices accurately

Meet the Diggers of the Rabbit Hole



Juat Teng
Visualiser



Jun Yi
UI Developer



Benjamin
Model Developer

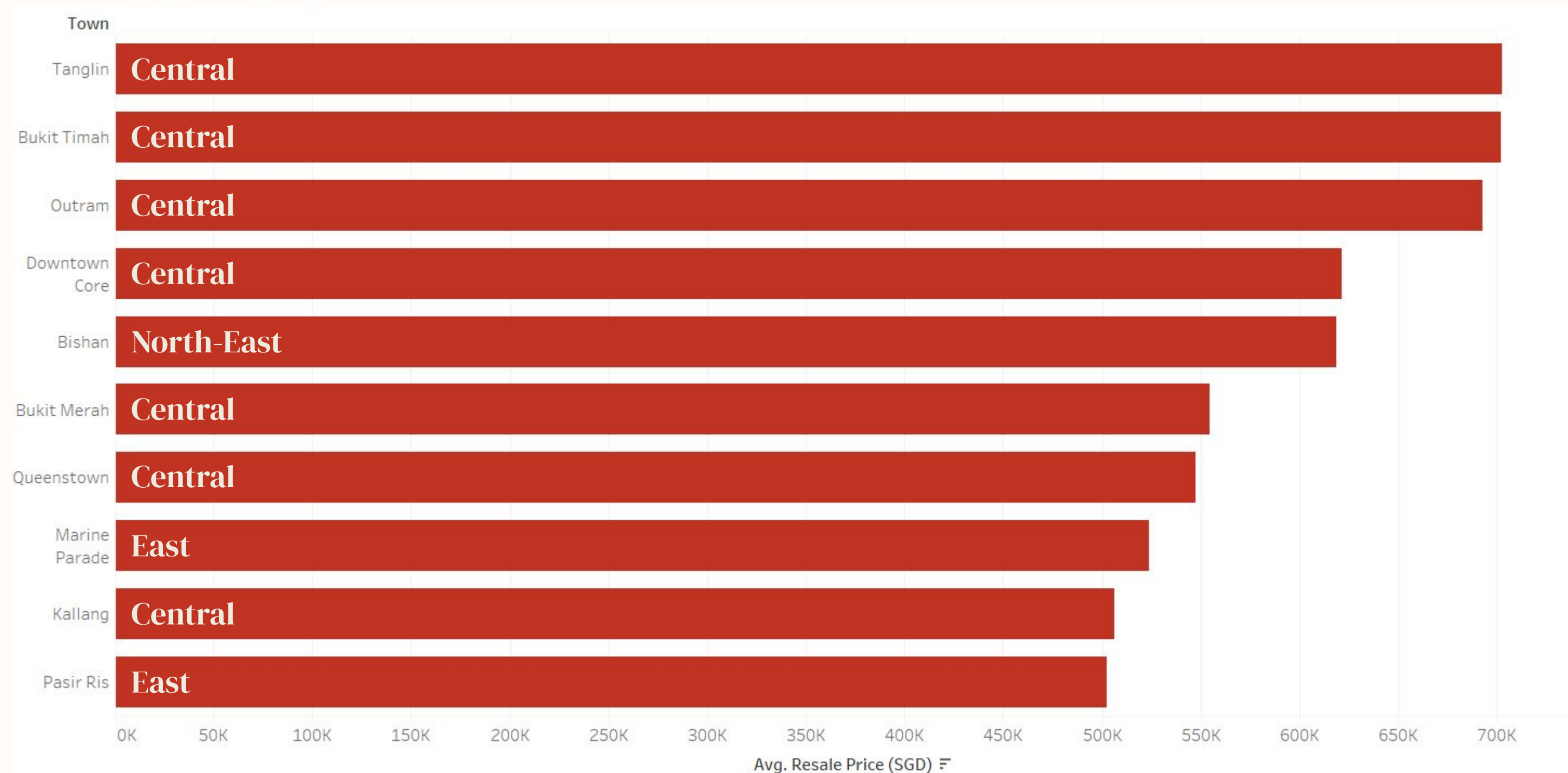
Data Cleaning

Data Cleaning Process

Issue Identified	Solution
Missing values under “postal” column	Fill in actual postal codes based on value under “address” column e.g. 680215 for 215, CHOA CHU KANG CTRL
Missing values under “Mall_Nearest_Distance” column	Drop rows as it is not possible to reliably estimate the true values
Column names can be ambiguous	Renamed the columns for greater clarity

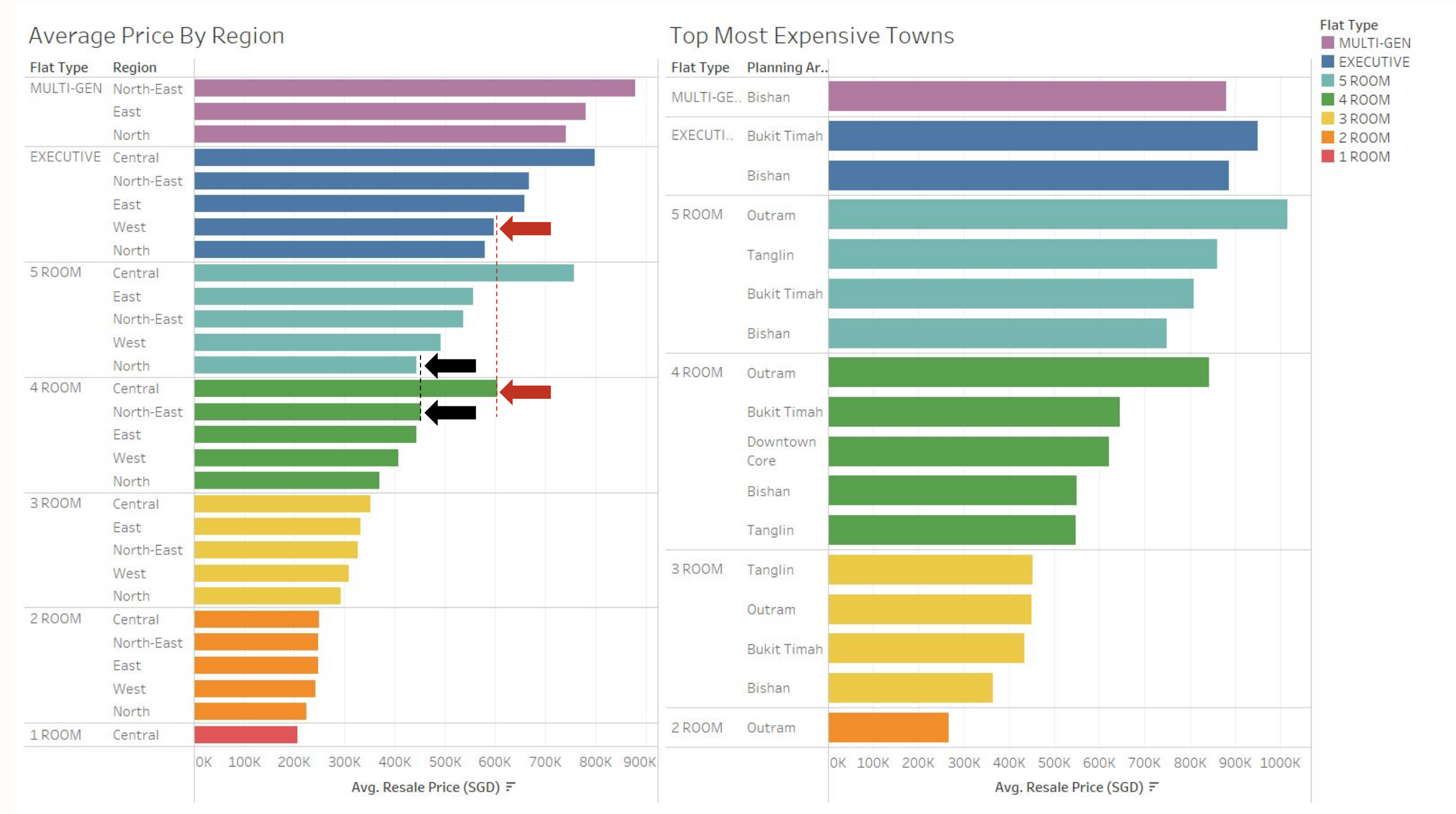
Key Findings

Top 10 Most Expensive Towns



Average of Resale Price for each Town. The view is filtered on Town, which keeps 10 of 32 members.

HDB Resale Prices By Region/Town



Which flat will you choose?

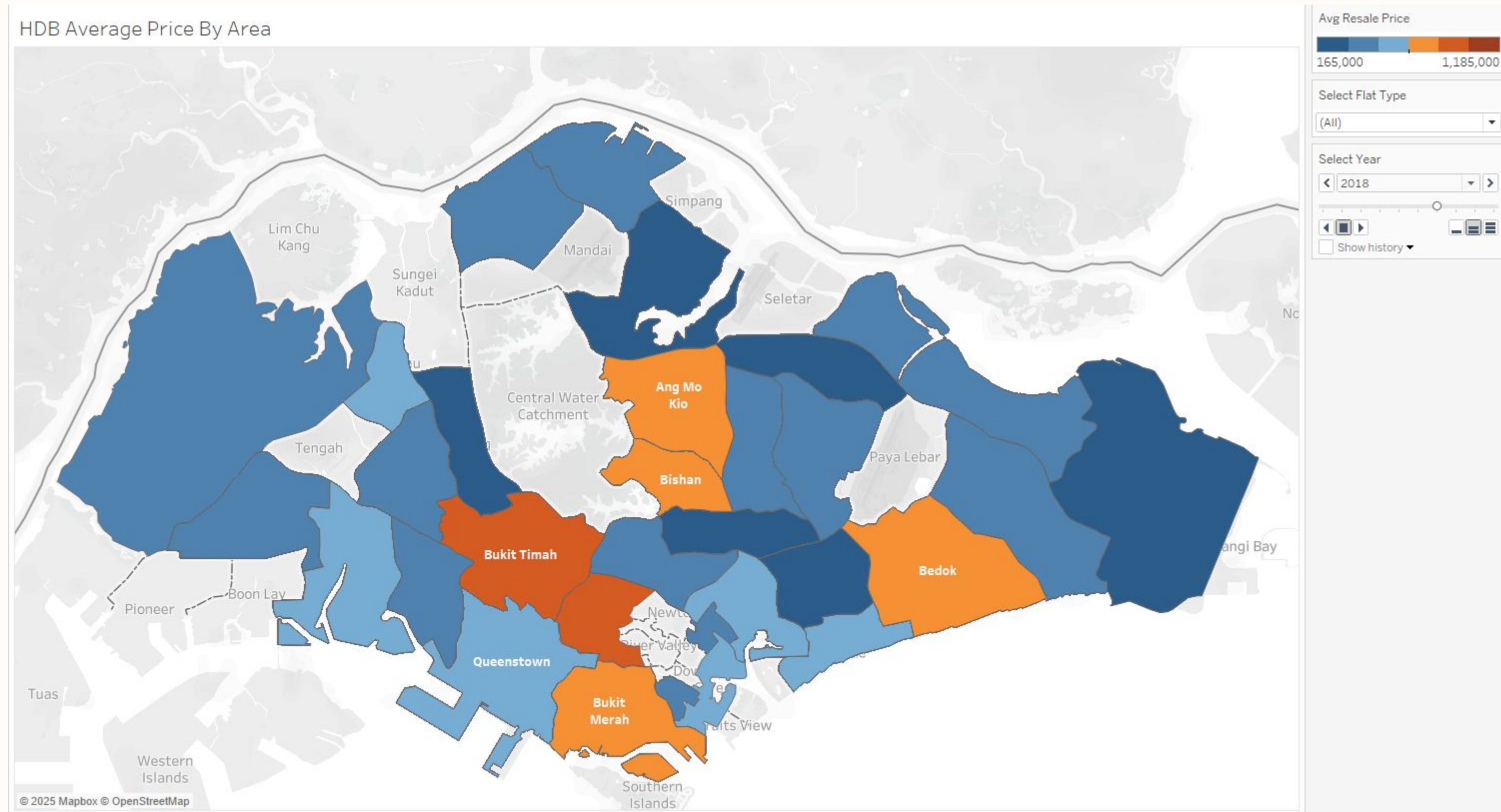


5-room in the North
or
4-room in the North-East?

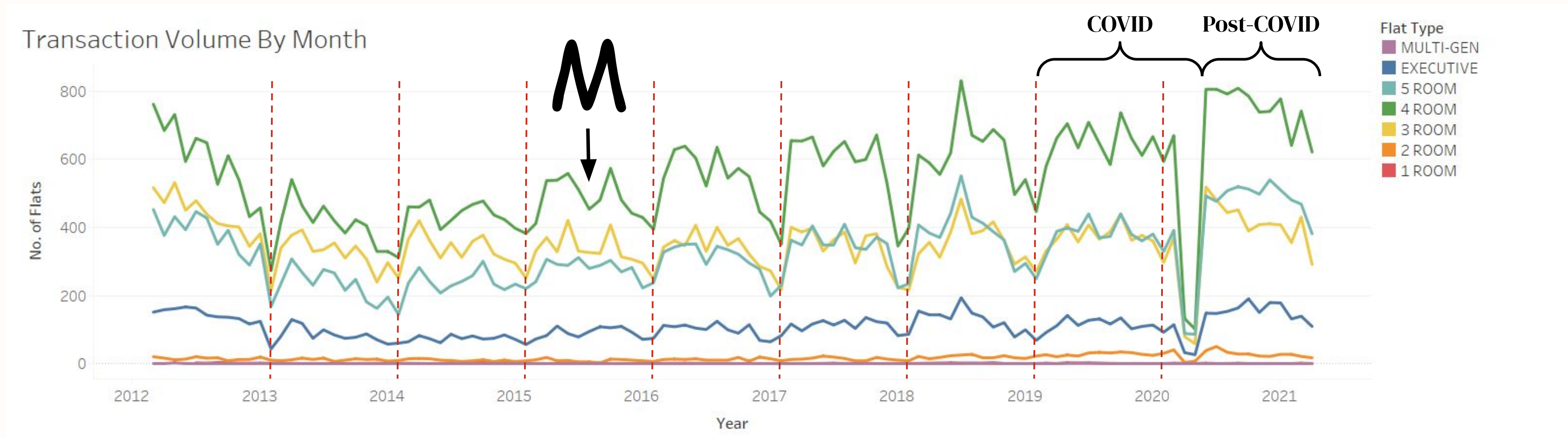


4-room in the Central
or
Executive in the West?

Interactive Map: Resale Prices Over Time



HDB Transaction Volume Trends



- February is almost always the month with the lowest transaction volume
- M-shape trend on a yearly basis

*From 2015 to 2023, HDB typically launch BTO projects in Feb, May, Aug and Nov.

Any correlation to HDB launch dates?

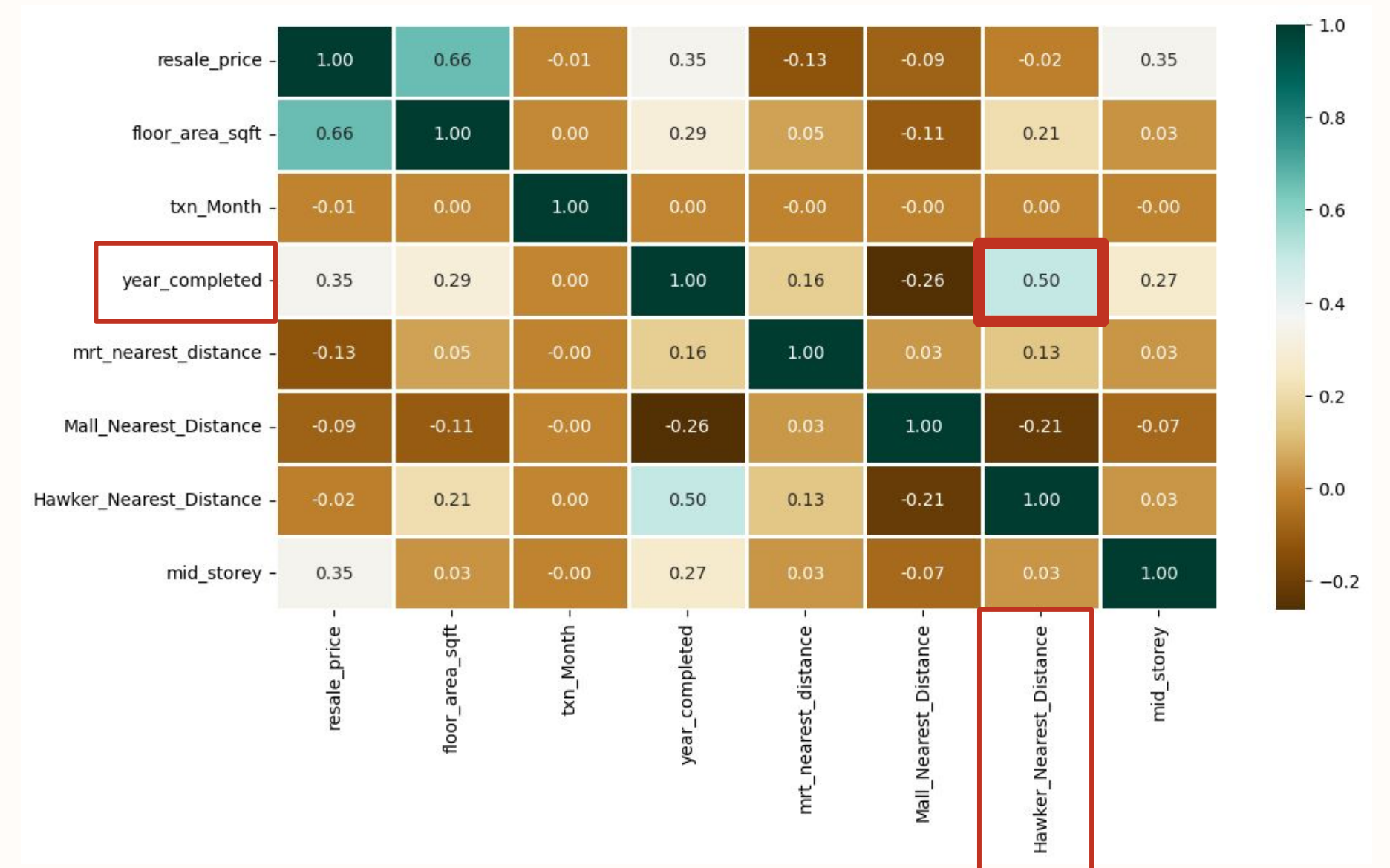
Selection of Features

While exploring the data, the following features were identified:

1. Month
2. Planning Area

Through Market Research and Experience, features which homeowners will typically look out for are added:

1. Flat Type
2. Flat Model
3. Floor Area
4. Floor Level
5. Year of Completion (age of flat)
6. Distance to amenities (mall, MRT, hawker)



Correlation Analysis is conducted to ensure the selected features are not strongly correlated to each other.

Predictive Model

Comparison of Baseline and Selected Model

Metric (Based on Testing Data from “train” file)	Linear Regression (Baseline)	Random Forest Regressor (Selected)
R-Square	0.86	0.93
RMSE	53,371	38,163

Submissions

You selected 0 of 2 submissions to be evaluated for your final leaderboard score. Since you selected less than 2 submissions, Kaggle auto-selected up to 2 submissions from among your public best-scoring unselected submissions for evaluation. The evaluated submission with the best Private Score is used for your final score.

☒ Submissions evaluated for final score

- AllSuccessfulSelectedErrors

Recent ▼

Submission and Description	Private Score ⓘ	Public Score ⓘ	Selected
<div><div><div><div>✓</div><div>🕒</div></div></div><div><div>sub_reg_jjb.csv</div><div>Complete (after deadline) · now</div></div></div>	38172.76545	37798.13101	<input type="checkbox"/>

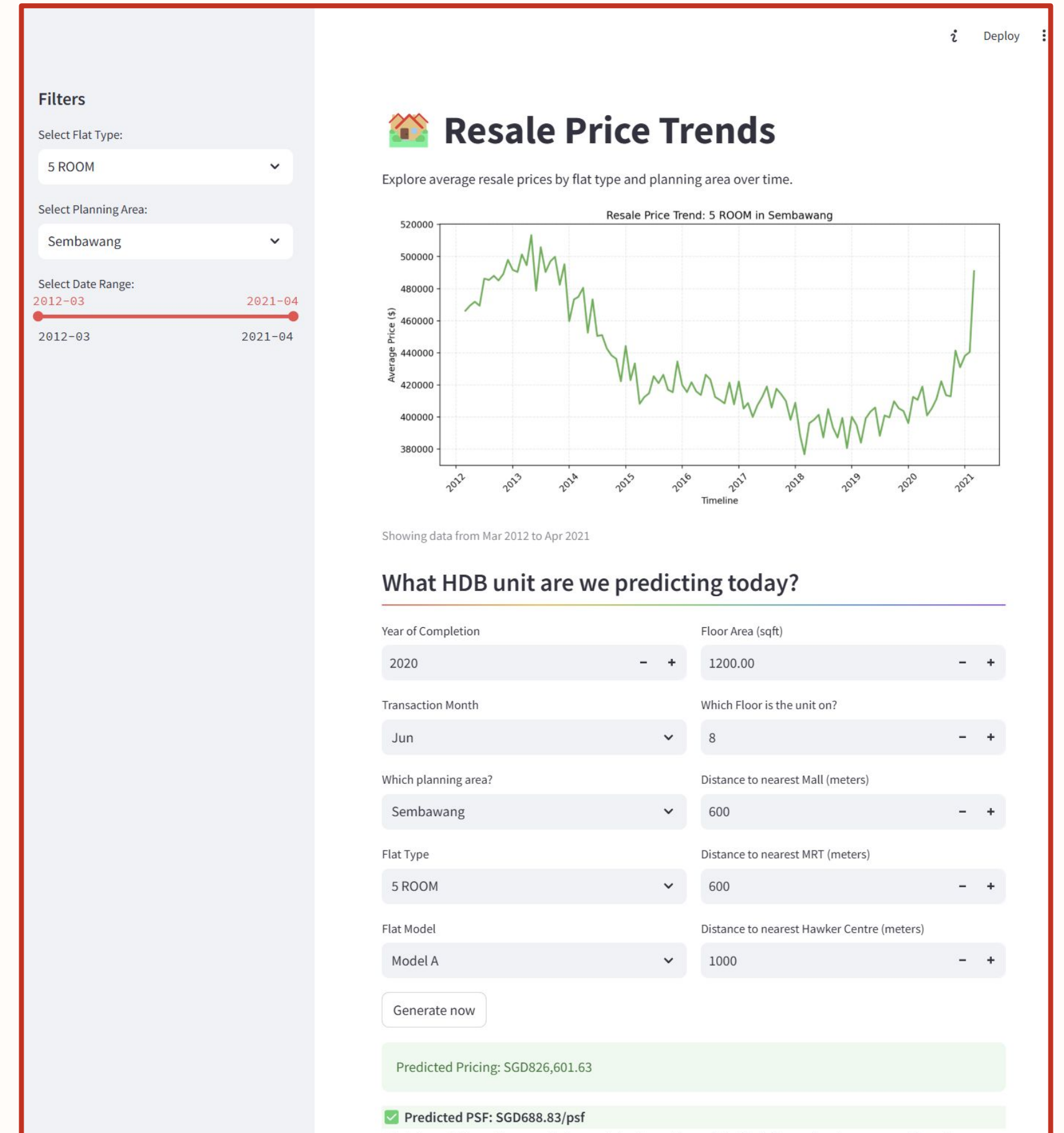
Results of Kaggle submission (Based on “test” file)

0/2

Model Demo

Features:

1. Average Price Trend
2. Flat Type filter
3. Planning Area filter
4. Generates:
 - Predicted Pricing
 - Predicted PSF



Assumptions & Limitations

- Does not take into account presence of government policies at point of prediction (e.g. cooling measures)
- Does not reflect availability of units in the market
- Volatile fluctuations from post COVID period

What's Next

- Understand key features from perspective of property agents and potential buyers to fine tune the model
- Include economic features such as GDP and interest rates
- Expand to regional property market (Jio you to sell house in JB, get it?)

Sprint Review

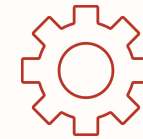
Sprint Retrospective

Lessons learnt as a team



Team Dynamics

- Understanding differences in working style
- Reached compromise despite disagreements
- Matching tasks to each team player's strongest domains



Collaboration Tools

- Trello: Effective for tracking progress
- Other collab tools: Google Drive, Slack
- GitHub: Not a good choice of version tracking in this sprint



Communications

- Regular updates and check-ins on progress to prevent bottlenecks
- Flag out issues early and brainstorm as a team for solutions

Ask Us Anything