Predicting HDB Resale Prices in Singapore

**Motivation**

I’ve been learning data science on DataCamp and really enjoy working with Python, machine learning, and data visualization. I also have some experience using Tableau for creating dashboards. I think this project is a great way to practice what I’ve learned and combine both skills into one project.

I chose **HDB flat price prediction** because:

1. It’s a real-world problem that affects many people in Singapore.
2. It lets me use Python for data cleaning, building models, and making predictions.
3. I can use Tableau to create a dashboard that makes the results easy to understand for everyone.

This project is also important for my future. I want to work in Singapore, and I think this project will help me:

1. Show employers that I can use data science to solve real problems.
2. Build a portfolio that stands out for jobs.

**Project Overview**

* **Project goal:** To build a prediction model HDB resales price and implement on Tableau Dashboard
* **Data source:**
  + Dataset - <https://data.gov.sg/collections/189/view>
  + For map api - <https://www.onemap.gov.sg/apidocs/>
* **Outcome:**
  + Helps buyers and sellers understand fair prices for HDB flats.
  + Shows how location and other factors affect prices.
* **Tools**
  + **Python** (Pandas, Scikit-learn) for data cleaning and modeling.
  + **Tableau** for visualizing trends and creating an interactive dashboard.
  + **Flask** to create a web application (optional futureenhancements)

**Timeline**

Expected Timeline (1 month)

|  |  |
| --- | --- |
| **Week** | **Tasks** |
| Week 1 | - Collect and clean HDB resale data from government website.  - Fetch geospatial data using the OneMap API. |
| Week 2 | - Perform exploratory data analysis to identify trends and patterns. - Train and optimize machine learning models |
| Week 3 | - Build Tableau dashboard to visualize HDB price trends and predictions. - Test the model and refine the dashboard for usability. |
| Week 4 | - *Optional:* Begin exploring Flask for future web app development. |

**Expected Outcomes:**

**Core Deliverables:**

1. A machine learning model to predict HDB resale prices based on features like town, flat type, and floor area.
2. An interactive Tableau dashboard showing:
   * Price trends over time.
   * Heatmaps of HDB prices across Singapore.
   * Key factors influencing prices (e.g., proximity to MRT stations)