London Property Recommendation

Capstone Project – The Battle of Neighborhoods

Objective

Investigate the most recent market prices of Property in the city of London and recommend various locations where the prospective client can buy a property based upon his/ her budget using Machine Learning.

Business Problem

- Very hard to find a suitable place and neighborhood to accommodate them and their families.
- With the inevitable Brexit, the problem has further compounded.
- Considering several factors like proximity to schools, medical care, restaurants to accommodate his/ her familial needs.

Resolution

- With government provided authentic data on London properties coupled with data science techniques, one can make derive the useful information about current pricing in different localities of London while considering other factors of his choice. This would help the potential client to make an informed decision about buying a suitable property.

- The automated solution using Machine Learning techniques parses the necessary data from the price paid dataset which includes the transactions received at HM Land Registry. After cleansing, data is further condensed by selecting it only for the city of London which is area of choice in this project. The average price of property on each of these streets is determined by taking a mean on recent transactions of sale of property on respective streets.

- Further, location coordinates (latitude, longitude) of these street names are fetched by making API calls to Google Maps.

- Based upon the budget of the client, the current average prices are compared and all recommendations for the locations are made by plotting them on map of London. The recommended locations are further fed into Foursquare API calls to determine various venues in proximity to them. All reported venues are then tabulated and presented to the user.

- Important facilities like Hospitals, Grocery stores, Elementary schools, High Schools are searched in vicinity of each location and then reported in a tabular form to the user.

Application

Input :

- Open Data published by Government of UK under the section HM Land Registry: Price Paid Data
- Google Maps Geocoding API
- Foursquare location data

Output :

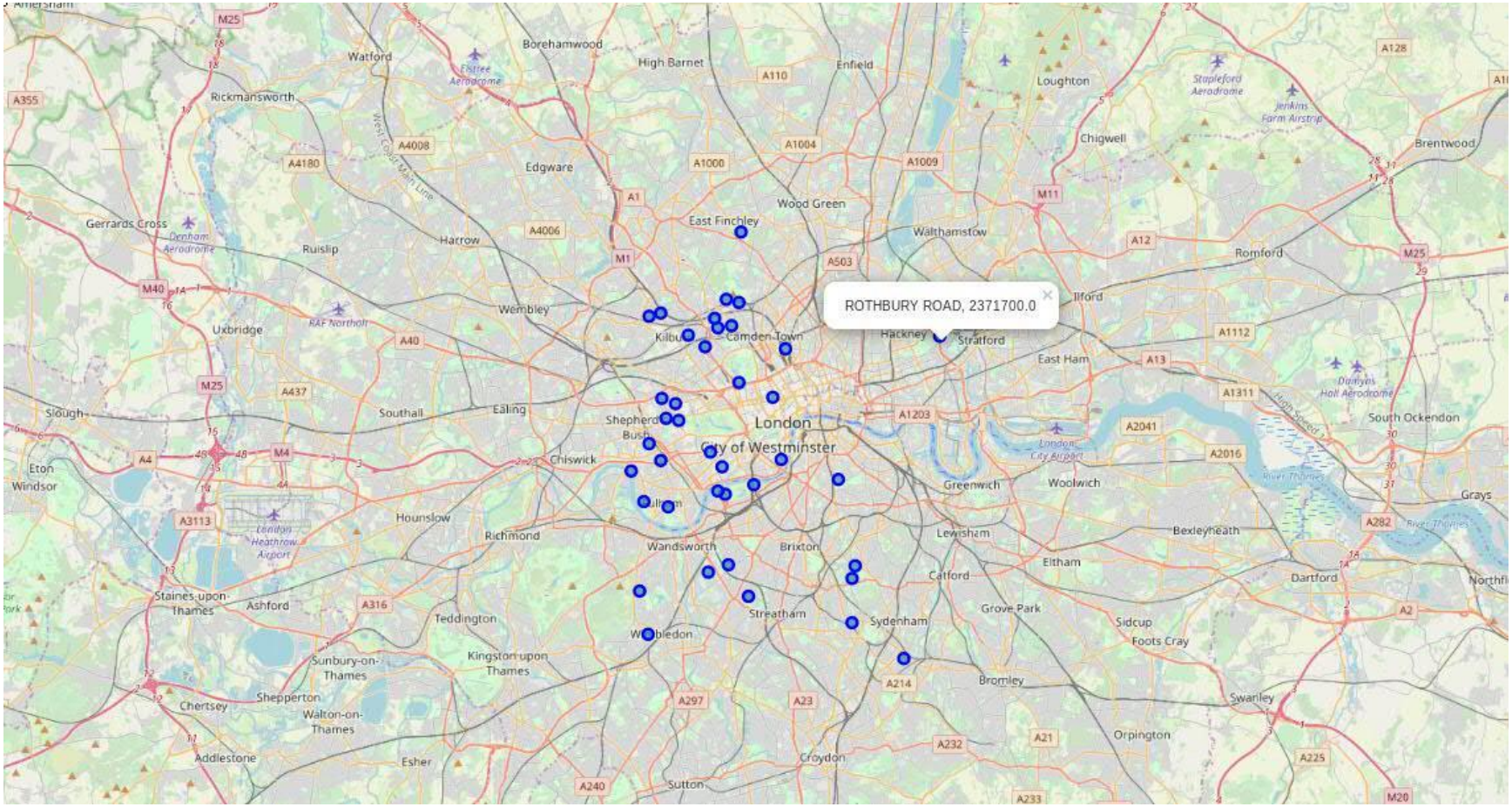
- List of recommended locations
- Recommended locations in London plotted on map.
- Venues/ facilities list close to the property

Statistic

Street	Latitude	Longitude	Avg_Price
DULWICH WOOD AVENUE	51.425586	-0.082416	2.297000e+06
SOUTH HILL PARK	51.557134	-0.164343	2.466667e+06
TEIGNMOUTH ROAD	51.550139	-0.214496	2.295000e+06
BURNSALL STREET	51.489042	-0.166883	2.286500e+06
FORDWYCH ROAD	51.551511	-0.206736	2.290000e+06
PORTEN ROAD	51.498603	-0.214120	2.200000e+06
ALBERT BRIDGE ROAD	51.477861	-0.164743	2.383333e+06
EDITH VILLAS	51.491665	-0.206556	2.402500e+06
WESTBOURNE GROVE	51.514797	-0.197071	2.300000e+06
LADBROKE ROAD	51.508776	-0.203410	2.261250e+06

With a budget of
GBP 2.2 - 2.5 Million,
the app
recommends 39 streets

Mapping average market Price



Scope of Improvement

- **Enable additional condition checking for different PROPERTY types.**
- **Utilization of historical data which dates back to 1995.**
- **Interactive UI**

Thank you.