The Battle of Neighborhoods

The UK House Price Index : Price cost Analysis

Coursera_Capstone

Content Flow:

- Problem Background and Objective
- Dataset Sources
- Data Cleaning
- Methodology : Data Analysis
- Results
- Data Visualization
- Discussion of Result on Prime Cases
- Conclusion

Problem Background & Objective

- UK current Real Estate Situation
- Remarkable Accommodation
- Major choice Factors
- Stack holder Identifications
- Curiosity to learn the future prediction
- Best Place among all according to requirement
- Profit margin Consideration
- How DATA-SCIENCE help them **?**

Data Sources:

- Three types of data required:

- 1) Past Data of trending: 'http://landregistry.data.gov.uk/'

- Reliability: Govt. of UK , since 1995 to August 2018

- 2) Geological Google Map Data: 'Google Cloud Platform/ Google Maps'

- 3) Four squre location data: JSON formatted file. 'https://foursquare.com/'

Data Cleaning:

▶ Identify the Nan Values.

▶ Remove all such Rows with out data due to big dataset compare to missing values)

▶ Give column name as per common understanding with out the use of the ' 'jargon' naming

▶ Drop the unnecessary data column after identifying the required columns.

▶ Check random dataset for the desire pre processing result.

Methodology: (Steps)

- 1) First in the script import all the require libraries such as pandas, numpy, matplotlib and folium. We need to import the JSON file of the particular region and requests statement for query analysis.

- 2. First, pass the necessary data from the price paid dataset which includes the transactions received at HM Land Registry in the period from the first to the last day of August 2018. Load that data with the local directory saving path method, which save in jupetor notebook local folder.

- 3. Then we need to give understandable label to the columns and it is gone by the list method of python, in perfect order of the dataset. But we only require two columns for the initial analysis.

- 4. The data is cleansed and any data of sales agreements which predates 2016 is dropped from the dataset.

- 5. The data is further condensed by selecting it only for the city of London which is area of choice in this project. And our main focus is for the certain limit of price range.

Methodology:(Cont....)

- 6. Unique "Street names" in the city of London where recent transactions for sale of property were done are filtered from the dataset.

- 7. Location coordinates (latitude, longitude) of these street names are fetched by making API calls to Google Maps. A separate one-time Python script was developed to fetch this data and store it in a CSV file. By merging two datasets we can easily filtered out the data for the require street name.

- 8. 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.

- 9. 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 locations popups are labelled with the respective street names and their average property price.

- 10. 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.

- 11. 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.

Results: Analysis via Visualization
What this data say ?

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
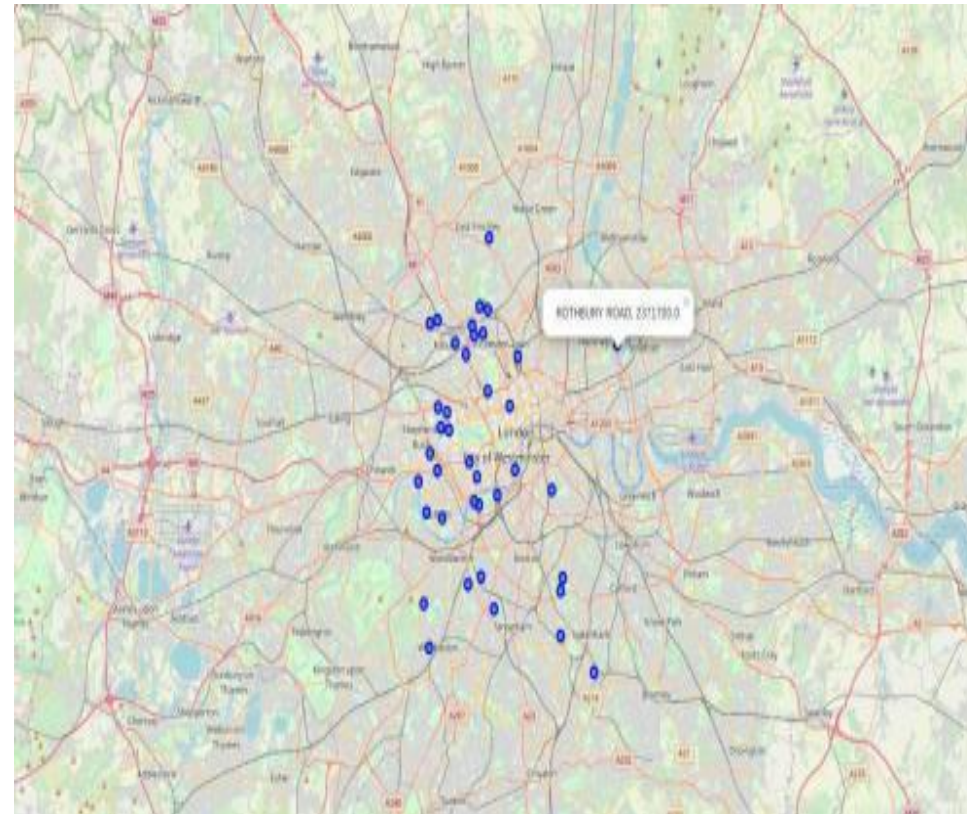
Data Analysis:

	Street	Street Latitude	Street Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	DULWICH WOOD AVENUE	51.425586	-0.082416	Beer Rebellion	51.424580	-0.083425	Bar
1	DULWICH WOOD AVENUE	51.425586	-0.082416	The Indian Dining Club	51.427795	-0.086488	Indian Restaurant
2	DULWICH WOOD AVENUE	51.425586	-0.082416	The Paxton	51.427880	-0.086168	Pub
3	DULWICH WOOD AVENUE	51.425586	-0.082416	Gipsy Hill Railway Station (GIP)	51.424530	-0.083959	Train Station
4	DULWICH WOOD AVENUE	51.425586	-0.082416	Brown & Green @ The Station	51.424425	-0.083836	Breakfast Spot
5	DULWICH WOOD AVENUE	51.425586	-0.082416	Manuel's Restaurant and Bar	51.427591	-0.086131	Italian Restaurant
6	SOUTH HILL PARK	51.557134	-0.164343	Daunt Books Hampstead	51.555513	-0.166277	Bookstore
7	SOUTH HILL PARK	51.557134	-0.164343	Hampstead Heath Ponds	51.559300	-0.165973	Lake
8	SOUTH HILL PARK	51.557134	-0.164343	Hampstead Heath	51.559622	-0.164921	Park
9	SOUTH HILL PARK	51.557134	-0.164343	Paradise	51.555476	-0.166312	Indian Restaurant
10	SOUTH HILL PARK	51.557134	-0.164343	Keats House	51.555745	-0.167975	Museum
11	SOUTH HILL PARK	51.557134	-0.164343	karma bread	51.554494	-0.165586	Bakery
12	SOUTH HILL PARK	51.557134	-0.164343	The Garden Gate	51.554733	-0.165697	Pub
13	SOUTH HILL PARK	51.557134	-0.164343	The Little Thai	51.554115	-0.164737	Thai Restaurant
14	SOUTH HILL PARK	51.557134	-0.164343	Parliament Hill	51.559661	-0.159639	Scenic Lookout
15	SOUTH HILL PARK	51.557134	-0.164343	Silverberry Deli & Kitchen	51.554174	-0.164975	Café
16	SOUTH HILL PARK	51.557134	-0.164343	The Freemasons Arms	51.556968	-0.168806	Pub
17	SOUTH HILL PARK	51.557134	-0.164343	Zara	51.554423	-0.165561	Greek Restaurant
18	SOUTH HILL PARK	51.557134	-0.164343	The Stag	51.553420	-0.161576	Gastropub
19	SOUTH HILL PARK	51.557134	-0.164343	M&S Simply Food	51.553956	-0.165119	Grocery Store
20	SOUTH HILL PARK	51.557134	-0.164343	Mimmo la Bufala	51.555340	-0.166230	Italian Restaurant

	Street Name	Facility Name	Facility Category	Distance	Facility Latitude	Facility Longitude
0	DULWICH WOOD AVENUE	Tesco	Grocery Store	1311	51.436213	-0.090561
1	DULWICH WOOD AVENUE	Tesco	Supermarket	3911	51.397043	-0.049559
2	DULWICH WOOD AVENUE	M&S Simply Food	Grocery Store	4513	51.389183	-0.111039
3	DULWICH WOOD AVENUE	Tesco	Grocery Store	3677	51.445271	-0.124966
4	DULWICH WOOD AVENUE	Tesco	Grocery Store	5315	51.438880	-0.155979
5	DULWICH WOOD AVENUE	Sainsbury's Local	Grocery Store	3749	51.446901	-0.124255
6	DULWICH WOOD AVENUE	telferscot primary school	Elementary School	4250	51.442807	-0.137087
7	DULWICH WOOD AVENUE	M&S Streatham Hill Foodhall	Grocery Store	3419	51.439372	-0.126443
8	DULWICH WOOD AVENUE	The Co-operative Food	Grocery Store	2306	51.440017	-0.106273
9	DULWICH WOOD AVENUE	Tesco	Supermarket	3216	51.398649	-0.099187
10	DULWICH WOOD AVENUE	Golden Jubilee Wing	Hospital	4836	51.468522	-0.093121
11	DULWICH WOOD AVENUE	Tesco Express	Grocery Store	3634	51.401783	-0.118253
12	DULWICH WOOD AVENUE	The Co-operative Food	Grocery Store	5529	51.471577	-0.112531
13	DULWICH WOOD AVENUE	Tesco Express	Grocery Store	4642	51.465227	-0.103222
14	DULWICH WOOD AVENUE	M&S Foodhall	Grocery Store	3386	51.426259	-0.131190
15	DULWICH WOOD AVENUE	The Co-operative Food	Supermarket	4366	51.432608	-0.020514
16	DULWICH WOOD AVENUE	Aldi	Supermarket	5169	51.448675	-0.017781
17	DULWICH WOOD AVENUE	The Co-operative Food	Supermarket	4934	51.381969	-0.069717
18	DULWICH WOOD AVENUE	Sainsbury's Local	Grocery Store	3155	51.440406	-0.121180
19	DULWICH WOOD AVENUE	Tesco	Grocery Store	6212	51.470177	-0.028570
20	DULWICH WOOD AVENUE	Balgowan Primary School	Elementary School	3811	51.404480	-0.039182
21	DULWICH WOOD AVENUE	Tesco	Grocery Store	5228	51.468581	-0.112767

Discussion:

- What they choose from the table data **?**

▶ **Q.1:** with Elder Family member…

▶ **Q.2:** Having children….

▶ **Q.3:** College student…

Conclusion:

► Deciding Factors :

►Price

►Requirements

Thank you, for your participation…

▶Questions ?