

# APPLIED DATA SCIENCE FINAL PROJECT

BATTLE OF NEIGHBORHOODS IN LONDON

# INTRODUCTION AND BUSINESS PROBLEM

- Benefits of living in London
- Job opportunities
- Entertainment
- Tourism
- House pricing
- Nearby locations of interest
- Medical care for requirements

# DATA

- Government of UK open data
  - HM Land Registry / Price Paid Data
  - Helps obtaining location coordinates
- Type
  - CSV
  - JSON
- Description
  - Price on property sales
  - Location: England
  - Includes: received transactions at HM Land Registry
- Platform
  - IBM Cloud for Data - Jupyter Notebooks
- Google Maps Geocoding API
- Google Cloud Platform
- Source:
  - <http://landregistry.data.gov.uk/>
  - <https://foursquare.com/>

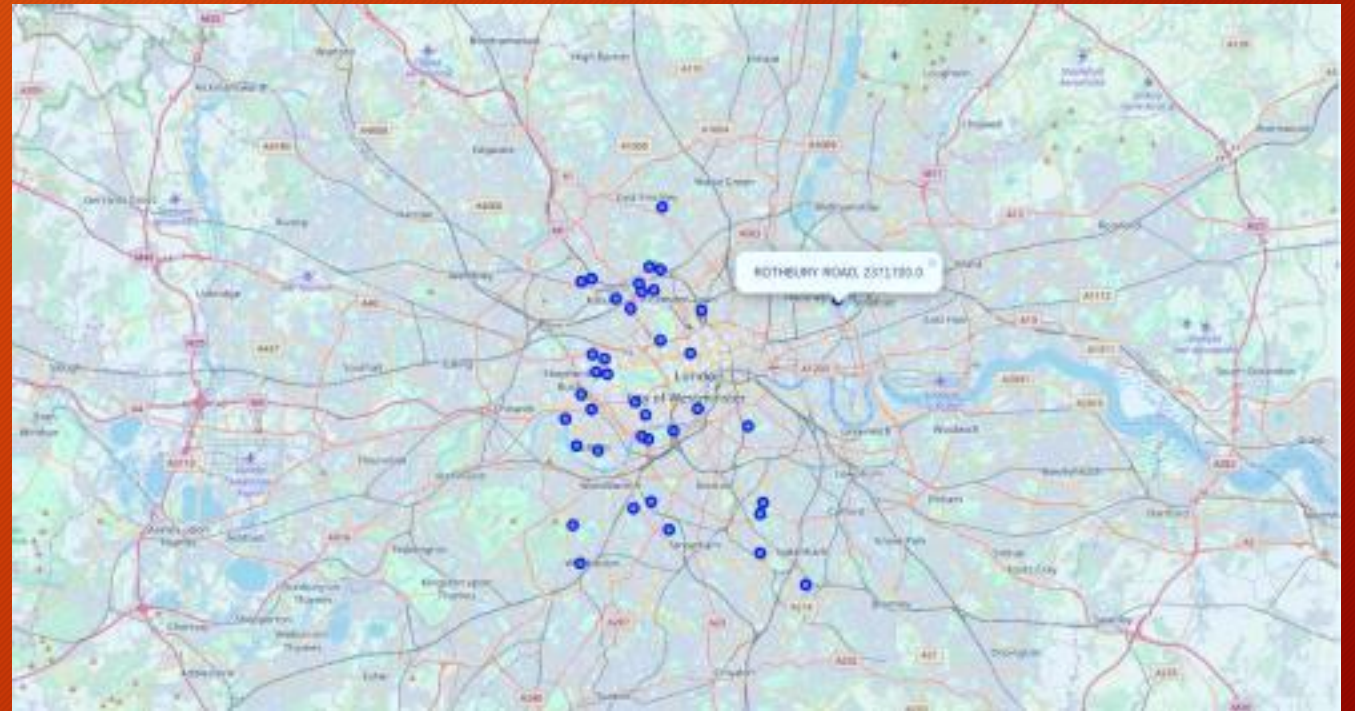


# METHODOLOGY

- Extract data from the price paid dataset
- Cleanse and delete old data with more than 5 years from now
- Centre the data for only London city
- Any name below a label which is unique were filtered
- Get location information with Google Maps Geocoding API
- Calculate the mean on recent transactions of property sale on various streets
- Given an established budget, the prices are compared and recommendations are given for the location selected
- Given the location, it determines nearby places of interest

# RESULTS

- Exploratory data analysis for London city with a budget of:
  - 2.8 to 3.2 million dollars
- Machine learning 41 streets





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

	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
22	DULWICH WOOD AVENUE	Tesco	Grocery Store	4831	51.385912	-0.110613

	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	Cafe
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 Butala	51.555340	-0.166230	Italian Restaurant

# DISCUSSION

- With the information given based on 41 streets, variables such as prices, venues and medical care locations, the client can choose the best place for its own interest.
- There are many cases in which you could opt for different combinations such as kids near schools, people who suffers from a disease near a hospital or even students near university campus.



# CONCLUSION

- The final choice is given depending on each family composition or each individual requirement.
- Of course it would also be important to take care in a further investigation the security of each location and its behavior with the economical changes that happens constantly.
- This applies for any location desired and just data from location and prices would be changed.