

KEEP CALM AND GO TO LONDON

CAPSTONE PROJECT - THE BATTLE OF NEIGHBOURHOODS



Agenda

- Introduction
- Data
- Methodology and results
- Conclusion



INTRODUCTION / PROBLEM STATEMENT:

London is one of the world's top tourist destinations famous for art, fashion, best food from all around the world and theatres. London is one of the leading metropolises every traveler should visit. This city has amazing things to offer from the centuries old architectures to the tallest building in the European Union.

Either you are planning to visit for a day or want to stay for long, the hardest part is choosing what to see, what to do and where to stay. Plenty of travel website which organise generic tours but not customised or detailed enough to cater the needs of many. Although there are many blogs about London but are not precise and one easily gets lost in abundance of information.

By using location data and top venues search API coupled with data science techniques, one can find enough useful information to organise trip to London. This would also help the people living in London to visit new and trending places. If someone wants to see which London boroughs have specific type of restaurants or where are most college and university then this data could be used to find such locations.



DATA

A description of the data and how it will be used

- Data about London is available from UK Govt (<https://data.london.gov.uk/data-for-london/>) and many other website. I had chosen to use data provided by Dogal (<https://www.doogal.co.uk/UKPostcodesCSV.ashx?area=London>) available under public domain license.
- I used four square categories (<https://developer.foursquare.com/docs/resources/categories>) along with Venu explore API (<https://api.foursquare.com/v2/venues/explore>) to search top trending venues in each category in London boroughs.



METHODOLOGY

- To visualise and process data a Jupyter Notebook will be used. Following steps will be followed once data is loaded into dataframe.
- Read Postcode data and create dataframe from CSV and then select required columns.

	Postcode	Latitude	Longitude	District	Ward	London zone	Nearest station	Distance to station	Postcode area	Postcode district
0	BR1 1AA	51.401546	0.015415	Bromley	Bromley Town	5	Bromley South	0.218257	BR	BR1
1	BR1 1AB	51.406333	0.015208	Bromley	Bromley Town	4	Bromley North	0.253666	BR	BR1
2	BR1 1AD	51.400057	0.016715	Bromley	Bromley Town	5	Bromley South	0.044559	BR	BR1
3	BR1 1AE	51.404543	0.014195	Bromley	Bromley Town	4	Bromley North	0.462939	BR	BR1
4	BR1 1AF	51.401392	0.014948	Bromley	Bromley Town	5	Bromley South	0.227664	BR	BR1



METHODOLOGY

- Find geographical coordinate of the London
- Set up connection to FourSquare, write functions to pull all the data into dataframe from json results.
- List how many venues were returned for each London boroughs

	Venue	Venue Category	Venue Latitude	Venue Longitude	Postcode	District	London zone	Nearest station
0	Kings College London	General College & University	51.407757	-0.033425	BR3 4PR	Bromley	4	Clock House
1	Marks & Spencer	Clothing Store	51.377423	-0.102015	CR9 1SH	Croydon	5	West Croydon
2	Imparando	College Classroom	51.514875	-0.067404	E1 1LP	Tower Hamlets	1	Aldgate East
3	Francis Bancroft Building	College Academic Building	51.524670	-0.040718	E1 4AH	Tower Hamlets	2	Stepney Green
4	People's Palace	College Academic Building	51.523127	-0.041107	E1 4NS	Tower Hamlets	2	Stepney Green



METHODOLOGY

- Analyze each boroughs and then group rows and by taking the mean of the frequency of occurrence of each category
- List top boroughs along with the top 5 most common venues
- List top boroughs along with the top 5 most common venues
- List top 10 London boroughs with popular venues

-----Camden-----		
	venue	freq
0	History Museum	0.15
1	College Academic Building	0.10
2	Museum	0.09
3	Park	0.05
4	Clothing Store	0.05

-----City of London-----		
	venue	freq
0	Scenic Lookout	0.1
1	Pub	0.1
2	History Museum	0.1
3	Falafel Restaurant	0.1
4	Cocktail Bar	0.1



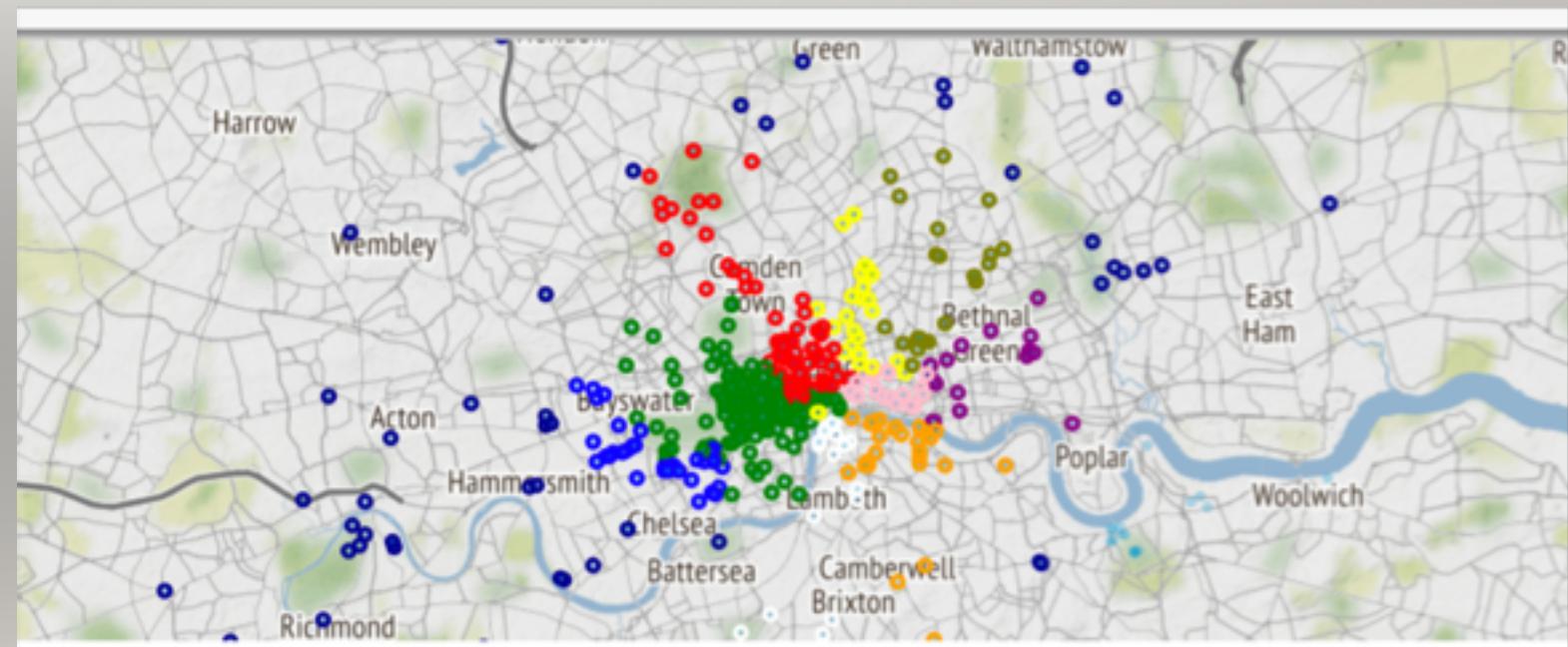
METHODOLOGY

Venue	
District	
Westminster	272
Camden	80
Kensington and Chelsea	43
Southwark	30
Islington	27
Lambeth	22
Hackney	21
City of London	21
Tower Hamlets	17
Greenwich	16



METHODOLOGY

- Put All in form a map



METHODOLOGY

- List top 10 venue from each category

	Venue	Venue Category	Venue Latitude	Venue Longitude	Postcode	District	London zone	Nearest station
0	Kings College London	General College & University	51.407757	-0.033425	BR3 4PR	Bromley	4	Clock House
1	Bishopsgate Institute	Historic Site	51.518874	-0.079114	EC2M 4QH	City of London	1	Liverpool Street
2	Wellcome Library	Library	51.526163	-0.134052	NW1 2BE	Camden	1	Euston
3	Imperial War Museum	History Museum	51.495985	-0.108642	SE1 6HZ	Southwark	1	Lambeth North
4	The London Eye	Scenic Lookout	51.503287	-0.119594	SE1 7PB	Lambeth	1	Westminster
5	Shakespeare's Globe Theatre	Theater	51.508115	-0.096946	SE1 9DT	Southwark	1	Mansion House
6	Tate Modern	Art Museum	51.507704	-0.099456	SE1 9TG	Southwark	1	Blackfriars
7	Dukes Bar	Hotel Bar	51.505632	-0.139481	SW1A 1NY	Westminster	1	Green Park
8	Churchill War Rooms (Churchill Museum & Cabine...	Historic Site	51.502079	-0.129305	SW1A 2AQ	Westminster	1	Westminster
9	Horse Guards Parade	Plaza	51.504847	-0.126590	SW1A 2AX	Westminster	1	Charing Cross



METHODOLOGY

- Finally let user find out top 10 venues from category of his choice, in this example user selected Indian restaurants.

	Venue	Venue Category	Venue Latitude	Venue Longitude	Postcode	District	London zone	Nearest station
0	Needoo Grill	Indian Restaurant	51.517070	-0.062379	E1 1HH	Tower Hamlets	2	Whitechapel
1	Zaza's	Indian Restaurant	51.518066	-0.064340	E1 1HJ	Tower Hamlets	2	Whitechapel
2	Tayyabs	North Indian Restaurant	51.517240	-0.063476	E1 1JU	Tower Hamlets	2	Whitechapel
3	Lahore Kebab House	Indian Restaurant	51.514483	-0.062912	E1 1PY	Tower Hamlets	2	Shadwell
4	Dosa World	Indian Restaurant	51.520245	-0.071358	E1 5JL	Tower Hamlets	1	Shoreditch High Street
5	Tiffinbox	Indian Restaurant	51.516345	-0.077195	E1 7DB	City of London	1	Aldgate
6	Gunpowder	Indian Restaurant	51.518436	-0.074732	E1 7NF	Tower Hamlets	1	Aldgate East
7	Cafe Spice Namaste	Indian Restaurant	51.511485	-0.070693	E1 8AZ	Tower Hamlets	1	Tower Gateway
8	Halal Restaurant	Indian Restaurant	51.513429	-0.071699	E1 8DJ	Tower Hamlets	1	Aldgate East
9	Taste Of India	Indian Restaurant	51.542572	0.050107	E12 6PH	Newham	3	East Ham
10	Chai Ki	Indian Restaurant	51.505928	-0.017872	E14 5AR	Tower Hamlets	2	Poplar



CONCLUSION

We used data from public domain , used foursquare APIs and applied different data manipulation techniques to derive meaningful results.

Proposed solution could easily be extended to develop a fully working website to help user search and organize his trip to London.

