# Best place for opening a lunch restaurant in London

DOR LAVY

08/11/2020

# Introduction – Business Problem

- This project is addressed to clients who wants to open a restaurant for lunch time in London
- If you want to open a restaurant in London it's not enough just to know how to cook. One of the first questions that pops into your mind is "Where would I open it?"
- This question is depending on various variables, such as:
    1. what food are you cooking?
    2. is it an evening restaurant or maybe you aim it for lunch time?
    3. will it be an expensive restaurant/fast food/ ethnic food?
- In order to succeed you have to successfully address these questions before looking for a place. Our client is fast food restaurant owner that aims for lunch time/early afternoon hours clients

# Data Understanding

- We will use web scraping from Wikipedia

in order to get all the neighborhoods in London.

| Location | London borough | Post town | Postcode district | Dial code | OS grid ref |
|---|---|---|---|---|---|
| Abbey Wood | Bexley, Greenwich [7] | LONDON | SE2 | 020 | TQ465785 |
| Acton | Ealing, Hammersmith and Fulham[8] | LONDON | W3, W4 | 020 | TQ205805 |
| Addington | Croydon[8] | CROYDON | CR0 | 020 | TQ375645 |
| Addiscombe | Croydon[8] | CROYDON | CR0 | 020 | TQ345665 |
| Albany Park | Bexley | BEXLEY, SIDCUP | DA5, DA14 | 020 | TQ478728 |
| Aldborough Hatch | Redbridge[9] | ILFORD | IG2 | 020 | TQ455895 |
| Aldgate | City[10] | LONDON | EC3 | 020 | TQ334813 |
| Aldwych | Westminster[10] | LONDON | WC2 | 020 | TQ307810 |
| Alperton | Brent[11] | WEMBLEY | HA0 | 020 | TQ185835 |
| Anerley | Bromley[11] | LONDON | SE20 | 020 | TQ345695 |
| Angel | Islington[8] | LONDON | EC1, N1 | 020 | TQ345665 |
| Aperfield | Bromley[11] | WESTERHAM | TN16 | 01959 | TQ425585 |
| Archway | Islington[12] | LONDON | N19 | 020 | TQ285875 |
| Ardleigh Green | Havering[12] | HORNCHURCH | RM11 | 01708 | TQ535895 |
| Arkley | Barnet[12] | BARNET, LONDON | EN5, NW7 | 020 | TQ225955 |
| Arnos Grove | Enfield[12] | LONDON | N11, N14 | 020 | TQ295925 |
| Balham | Wandsworth[13] | LONDON | SW12 | 020 | TQ285735 |
| Bankside | Southwark[14] | LONDON | SE1 | 020 | TQ325795 |
| Barbican | City[14] | LONDON | EC1, EC2 | 020 | TQ322818 |
| Barking | Barking and Dagenham[14] | BARKING | IG11 | 020 | TQ440840 |

Will add the Latitude and Longitude for each neighborhood

CSV dataset from [www.doogal.co.uk](http://www.doogal.co.uk)

| | D | C | B | A |
|---|---|---|---|---|
| | Longitude | Latitude | In Use? | Postcode |
| 1 | | | | |
| 2 | 0.015415 | 51.40155 | Yes | BR1 1AA |
| 3 | 0.015208 | 51.40633 | Yes | BR1 1AB |
| 4 | 0.016715 | 51.40006 | No | BR1 1AD |
| 5 | 0.014195 | 51.40454 | Yes | BR1 1AE |
| 6 | 0.014948 | 51.40139 | Yes | BR1 1AF |
| 7 | 0.014948 | 51.40139 | Yes | BR1 1AG |
| 8 | 0.01739 | 51.40044 | Yes | BR1 1AH |
| 9 | 0.018833 | 51.40049 | Yes | BR1 1AJ |
| 10 | 0.01313 | 51.40655 | Yes | BR1 1AL |
| 11 | 0.017578 | 51.40823 | No | BR1 1AX |
| 12 | 0.015436 | 51.39909 | No | BR1 1BA |
| 13 | 0.015397 | 51.39819 | No | BR1 1BB |
| 14 | 0.010236 | 51.40903 | No | BR1 1BP |
| 15 | 0.015874 | 51.40806 | Yes | BR1 1BQ |
| 16 | 0.010045 | 51.40728 | No | BR1 1BS |
| 17 | 0.012563 | 51.39914 | No | BR1 1BT |
| 18 | 0.010123 | 51.40907 | No | BR1 1BU |
| 19 | 0.016165 | 51.399 | Yes | BR1 1BW |

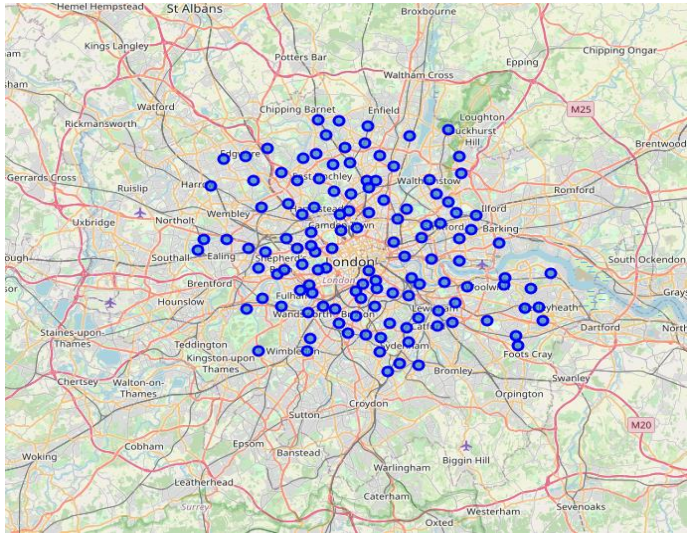
# Methodology (1/3)

- Will merge the 2 datasets to create one dataframe

| | Location | Post_town | London_borough | Postcode | Latitude | Longitude |
|---|---|---|---|---|---|---|
| 0 | Abbey Wood | LONDON | Bexley, Greenwich | SE2 | 51.481603 | 0.122712 |
| 1 | Acton | LONDON | Ealing, Hammersmith and Fulham | W3 | 51.519838 | -0.268414 |
| 2 | Acton | LONDON | Ealing, Hammersmith and Fulham | W4 | 51.501346 | -0.254217 |
| 3 | Anerley | LONDON | Bromley | SE20 | 51.409107 | -0.059069 |
| 4 | Angel | LONDON | Islington | N1 | 51.539442 | -0.117873 |

- London Neighborhoods Visualization – Folium

Each marker represents a postcode

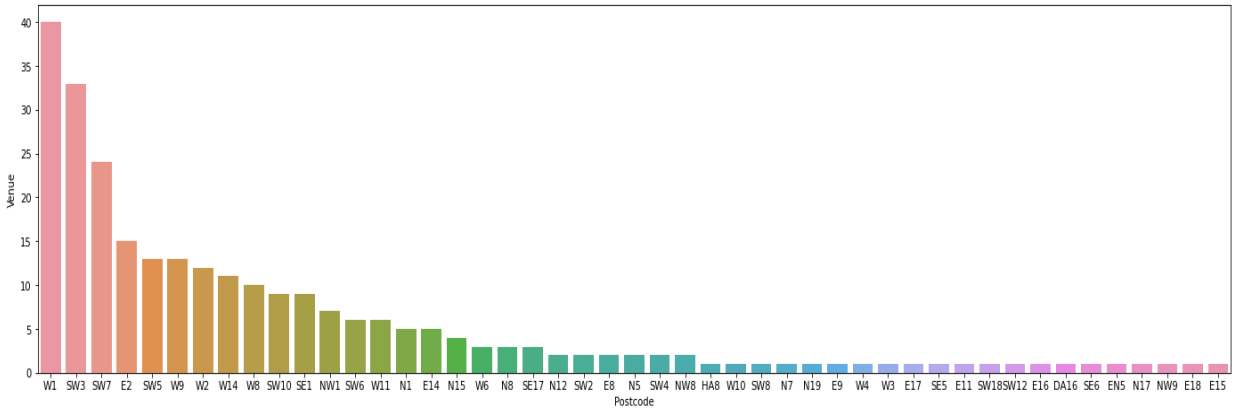


# Methodology (2/3)

London Restaurants Query – Foursquare API

Will get the restaurant in each neighborhood using foursquare API with the following conditions:

- Limit: 70 (runtime and API limitations)
- Radius: 1000 (in meters)

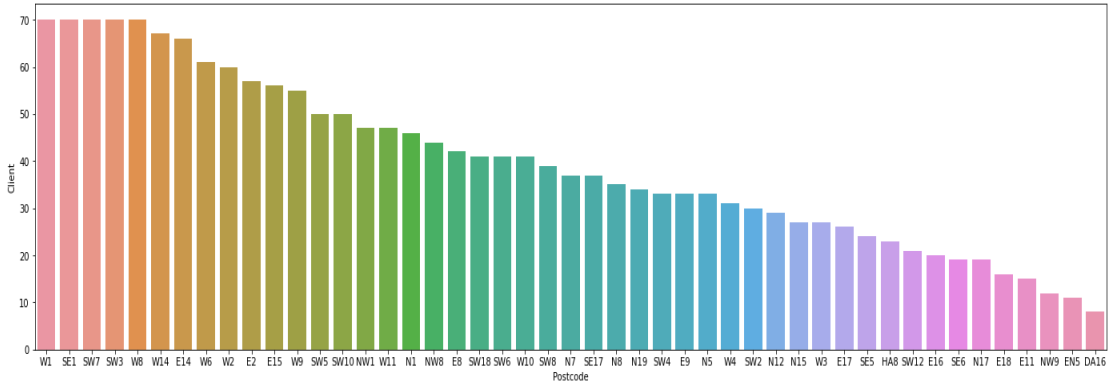



| | Postcode | London_borough_Latitude | London_borough_Longitude | Venue | Venue Latitude | Venue Longitude | Venue Category |
|---|---|---|---|---|---|---|---|
| 0 | W3 | 51.519838 | -0.268414 | Bamboo Lounge | 51.528255 | -0.271092 | Hookah Bar |
| 1 | W4 | 51.501346 | -0.254217 | High Road House | 51.492901 | -0.254711 | Lounge |
| 2 | N1 | 51.539442 | -0.117873 | The Lexington | 51.531669 | -0.111359 | Rock Club |
| 3 | N1 | 51.539442 | -0.117873 | Simmons Bar | 51.531897 | -0.120764 | Cocktail Bar |
| 4 | N1 | 51.539442 | -0.117873 | The Parcel Yard | 51.532374 | -0.123933 | Pub |

# Methodology (3/3)

London Potential Clients Query – Foursquare API

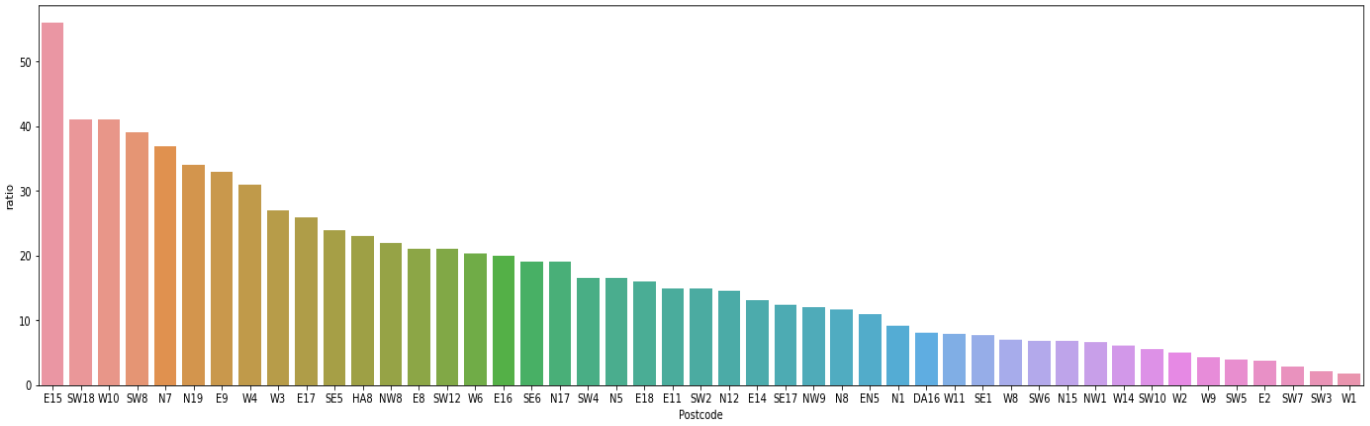
- We need to check how many workplaces/colleges/schools we have for each postcode.
- Will do the same process we did for the restaurants but this time to locate potential clients.




| | Postcode | London_borough_Latitude | London_borough_Longitude | Client | Client_Latitude | Client_Longitude | Client_Category |
|---|---|---|---|---|---|---|---|
| 0 | SE2 | 51.481603 | 0.122712 | J & D Pallet Services Ltd | 51.477697 | 0.123973 | Office |
| 1 | SE2 | 51.481603 | 0.122712 | The Belvedere Clinic | 51.483525 | 0.121878 | Doctor's Office |
| 2 | SE2 | 51.481603 | 0.122712 | Passing You Driving School | 51.479510 | 0.127379 | Driving School |
| 3 | SE2 | 51.481603 | 0.122712 | Home Security Surveys UK | 51.476251 | 0.117953 | Police Station |
| 4 | W3 | 51.519838 | -0.268414 | Dixons Carphone HQ | 51.521592 | -0.260953 | Office |

# Results

- Will use the 2 dataframes (Restaurants & Clients) to create one dataframe the calculates the ratio between clients to restaurants for every postcode (neighborhood).

# Discussion

- We found that the best neighborhood will be E15, Walhalm.
- If the customer will look for alternatives he can check the top 5 other neighborhoods we visualize on the London map.
- As discussed in the introduction, restaurant owner might reject neighborhood for other reasons such as crime rates, real estate price etc.
- We are not only recommending but giving the full picture for the client to choose based on our research.

# Conclusion

- During this project we were able to use datasets from Wikipedia & doogal.co.uk with the Foursquare API in order to address our business problem – where should we open a restaurant for lunch time in London.
- During the process we defined which datasets we need, cleaned it , visualize it, analyze and making conclusions. At the end, we were able to recommend a specific restaurant for our client.

# Reference


1. Wikipedia (London neighborhoods list): https://en.wikipedia.org/wiki/List_of_areas_of_London
2. Doogal.co.uk (London neighborhoods coordinates): https://www.doogal.co.uk/london_postcodes.php
3. Foursquare API – Retrieving the Restaurants and potential clients around the neighborhoods.