CAPSTONE PROJECT

OPENING A CLIMBING GYM IN LONDON

PROBLEM DESCRIPTION

- Based on Foursquare data of existing climbing gyms in London, we want to know where to open a new gym
- The borough of choice will lack a climbing gym and will have its five closest boroughs also lacking a gym

DATA

- Geolocation data of the boroughs in London
  - From Wikipedia

    https://en.wikipedia.org/wiki/List_of_London_boroughs

  - From Github:

    https://github.com/naomiggg/the-best-borough-in-london/

	Borough	Area (sqmi)	Population	Latitude	Longitude
0	Barking and Dagenham	13.93	194352	51.5607	0.1557
1	Barnet	33.49	369088	51.6252	0.1517
2	Bexley	23.38	236687	51.4549	0.1505
3	Brent	16.70	317264	51.5588	0.2817
4	Bromley	57.97	317899	51.4039	0.0198

	Borough	Population density (people/km2)	Latitude	Longitude
0	Barking and Dagenham	5792.891651	51.545277	0.133528
1	Barnet	4491.630649	51.560700	-0.210017
2	Bexley	4034.402238	51.457389	0.138861
3	Brent	7678.080133	51.454900	-0.267821
4	Bromley	2183.928180	51.371999	0.051524

- Geolocation data of the climbing gyms in London from Foursquare

|	Borough	Borough Latitude	Borough Longitude	Gym	Gym Latitude	Gym Longitude
0	Barnet	51.560700	-0.210017	Westway Climbing Wall	51.515455	-0.220350
1	Camden	51.546394	-0.157424	Swiss Cottage Climbing Centre	51.542497	-0.173436
2	Camden	51.546394	-0.157424	Better Swiss Cottage Leisure Centre	51.542550	-0.172956
3	Ealing	51.513000	-0.331026	The Arch Acton	51.506720	-0.265233
4	Greenwich	51.489200	0.056244	The Reach	51.494364	0.042757

METHODOLOGY

- The data was organised into dataframes and plotted on a Folium map
    - In blue, the boroughs; in red, the gyms
    - Left: Wikipedia data, right: Github data
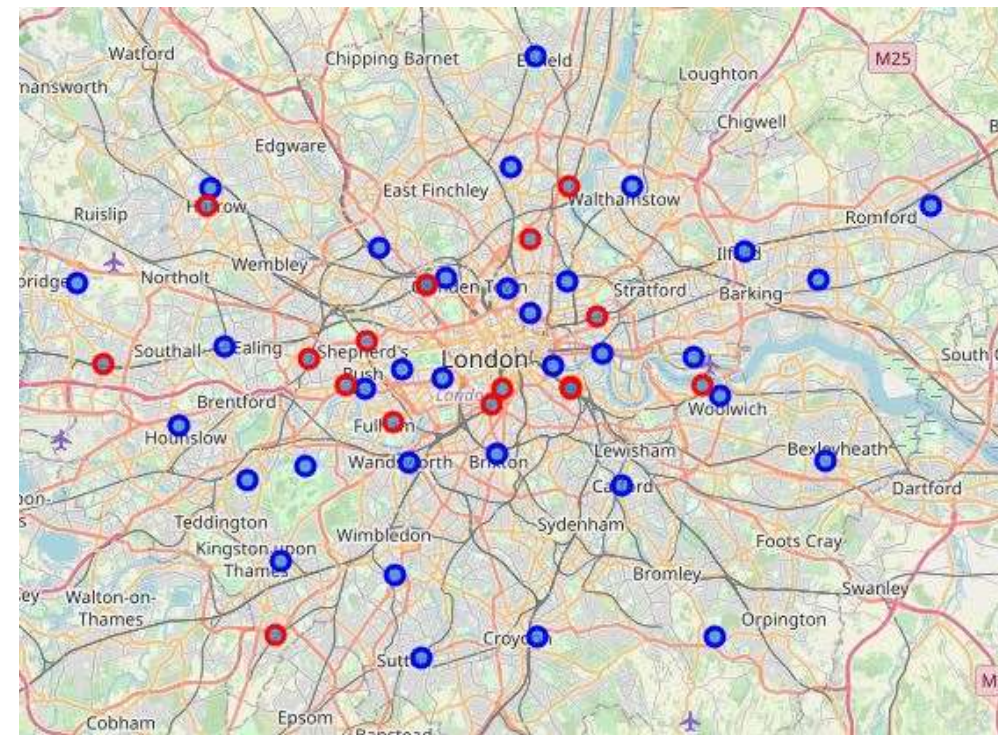
RESULTS

- After filtering out the boroughs whose neighbours already have a climbing gym, we are left with the borough of Croydon

	Borough	Population density (people/km2)	Latitude	Longitude	Neighbours
7	Croydon	4466.560887	51.3714	-0.087157	Sutton Merton Lewisham Bromley Lambeth
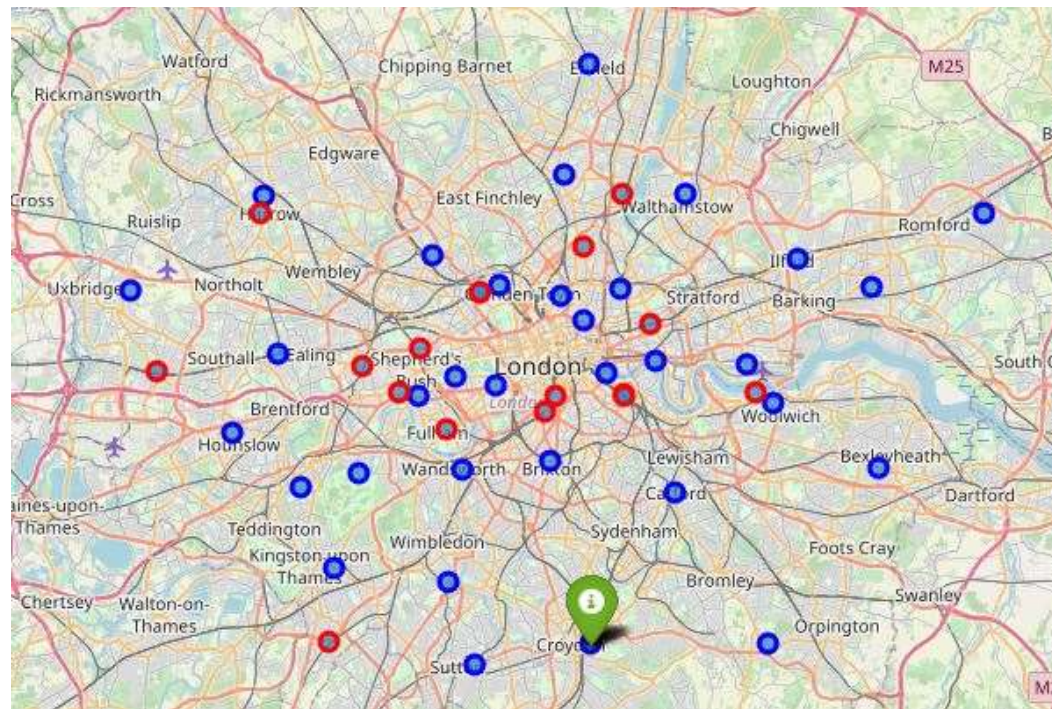
CONCLUSION

- The data was scraped, imported into Python and analised with the help of Folium maps

- Different datasets had to be used, highlighting the importance of working with reliable data

- The results suggest that Croydon might be a reasonable choice for opening a new climbing gym