

The Battle of Neighborhoods

Find the best place to build a modern company in London



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Business Model and Background

London is known by its building rents. The following case study will cover this matter: the best spot for a modern company. Most of the companies rent buildings, it ends up being cheaper, faster and not a permanent decision which gives them flexibility. Although, this case is different and that's why it makes sense to involve a data scientist. Our manager wants to create from its beginning in London ... one that fulfill all their needs. The general location as you saw is already chosen. But there's still a huge job to be done in order to complete the process. Being this a permanent building for the factory, it will be time consuming and expensive, so let's take that into consideration when choosing the best spot. Because after that, there's no way back. They're counting on us.

Criteria	Features
Security	Safe
Environment	calm, with shops and places to eat, healthy
Population	not defined

Data Section

- London Recorded Crime: use to check the potential boroughs in London and its features

	LookUp_BoroughName	MonthlyAverageCrimes
22	London Heathrow and London City Airports	291.541667
26	Richmond upon Thames	1075.791667
19	Kingston upon Thames	1077.416667
28	Sutton	1107.291667
23	Merton	1184.666667
13	Harrow	1370.000000
2	Bexley	1420.791667
14	Havering	1589.541667
0	Barking and Dagenham	1616.500000
11	Hammersmith and Fulham	1924.500000
18	Kensington and Chelsea	1979.875000
25	Redbridge	1992.666667
30	Waltham Forest	2011.041667
4	Bromley	2033.750000
31	Wandsworth	2177.916667
16	Hounslow	2191.875000
15	Hillingdon	2194.458333
9	Greenwich	2305.416667
21	Lewisham	2321.125000
8	Enfield	2489.291667
17	Islington	2480.833333
1	Barnet	2522.250000
7	Ealing	2533.701667

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After cleaning the data and making it more effective, it's possible to understand that London Heathrow and London City Airports, Richmond upon Thames and Kingston upon Thames is our top 3 of more secure zones.

- London Boroughs list: To understand the security or lack of security of each zone.

	LookUp_BoroughName	Population	Latitude	Longitude
0	Barking and Dagenham	194352	51,5607	0.1557
1	Barnet	389088	51,6252	-0.1517
2	Bexley	236687	51,449	0.1505
3	Brent	317264	51,5588	-0.2817
4	Bromley	317899	51,4039	0.0198
5	Camden	229719	51,5290	-0.1255
6	Croydon	372752	51,3714	-0.0977
7	Ealing	342494	51,5130	-0.3089
8	Enfield	320524	51,6538	-0.0799
9	Greenwich	284008	51,4892	0.0648
10	Hackney	257379	51,5450	-0.0553
11	Hammersmith and Fulham	178685	51,4927	-0.2339
12	Haringey	283386	51,6000	-0.1119
13	Harrow	243372	51,5898	-0.3346
14	Havering	242080	51,5812	0.1837
15	Hillingdon	286806	51,5441	-0.4760
16	Hounslow	262407	51,4746	-0.3680
17	Islington	215667	51,5416	-0.1022
18	Kensington and Chelsea	155594	51,5020	-0.1947
19	Kingston upon Thames	166793	51,4085	-0.3064
20	Lambeth	314242	51,4807	-0.1163
21	Lewisham	286180	51,4452	-0.0209
22	Merton	203223	51,4014	-0.1958
23	Newham	318227	51,5077	0.0469
24	Redbridge	288272	51,5590	0.0741
25	Richmond upon Thames	191365	51,4479	-0.3280
26	Southwark	298464	51,5035	-0.0804

From the London Boroughs List, it was possible to identify the main zones with less population – the target of our manager. The 3 less populated are Kensington and Chelsea, Kingston upon Thames and Hammersmith and Fulham.

- Foursquare API: to report the most popular spots in London

	LookUp_BoroughName	LookUp_Borough Latitude	LookUp_Borough Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Barking and Dagenham	51,5607	0.1557	Central park	51.559580	0.181981	Park
1	Barking and Dagenham	51,5607	0.1557	Crowlands Heath Golf Course	51.562467	0.155818	Golf Course
2	Barking and Dagenham	51,5607	0.1557	Robert Clack Leisure Center	51.560808	0.152704	Martial Arts Dojo
3	Barking and Dagenham	51,5607	0.1557	Morrisons	51.559774	0.148752	Supermarket
4	Barking and Dagenham	51,5607	0.1557	Becontree Heath Bus Station	51.561065	0.150998	Bus Station

The result of the data cleansed is the previous. Here we already can check the venues latitude, venues latitude and venues category.

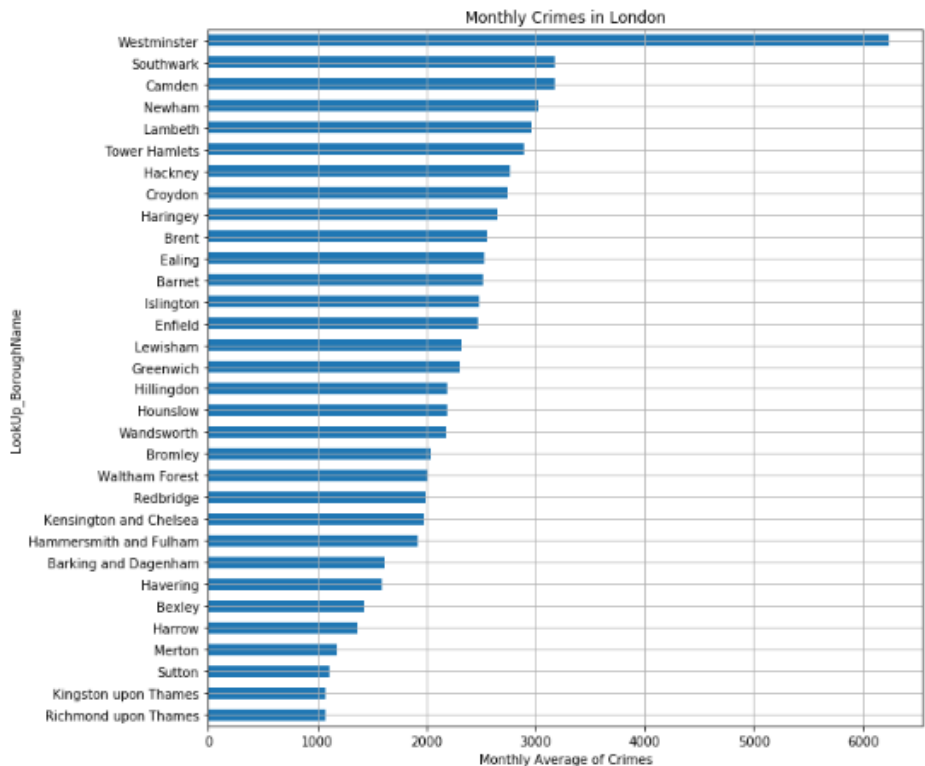
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Let me remind you that until this moment, the only procedure was to take the most out of our data and make it proper to be used. From now on, on the next chapters, with critic spirit, we'll be developing a way to get to the target.

Methodology

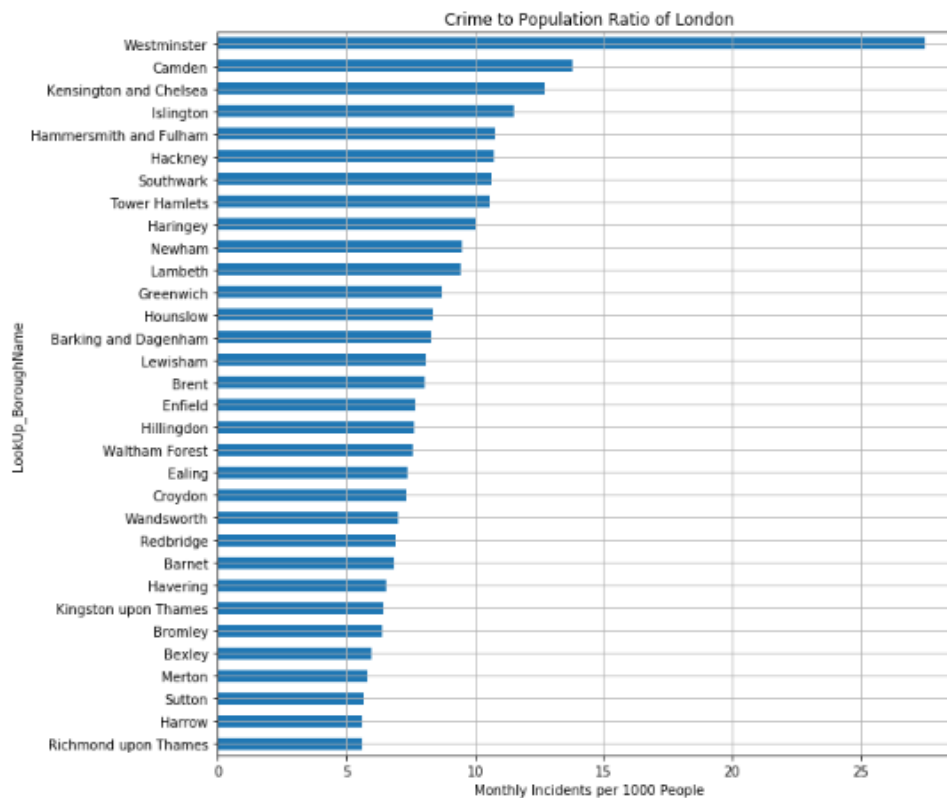
Exploratory Data Analysis (EDA)

Once it's easier to take proper conclusions from data when we can visualize it, some graphs were created.

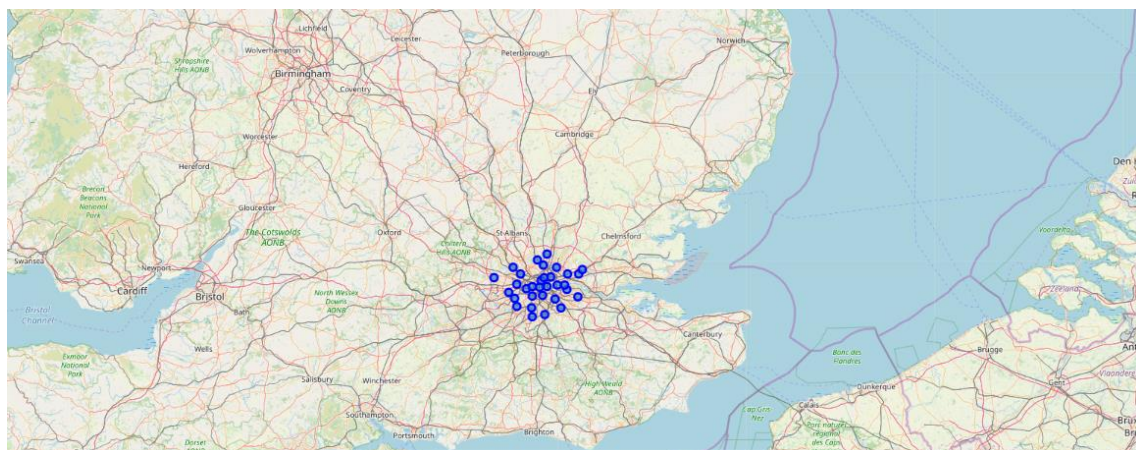


In this one we can have an idea on which boroughs have the more crimes monthly in London. In this case, it would be Westminster, Southwark and Camden.

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Another conclusion taken was about the ratio of crime to population in London. But the 2 first boroughs keep the same, which confirms our earlier conclusions. This info is represented in the following graph.



Cluster Analysis

Different clusters were created such as Healthy area cluster, Lively area cluster, Busy Area cluster, Quiet area cluster and traveler area cluster. Each one of them could bring benefits to the company.

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	LookUp_BoroughName	Safety	Atmosphere	Score
1	Barnet	0.944809	1.0	1.944809
22	Merton	0.990507	0.9	1.890507
19	Kingston upon Thames	0.961707	0.9	1.861707
6	Croydon	0.921094	0.9	1.821094
7	Ealing	0.918819	0.9	1.818819
29	Waltham Forest	0.911140	0.9	1.811140
3	Brent	0.889874	0.9	1.789874
0	Barking and Dagenham	0.876806	0.9	1.776806
20	Lambeth	0.825228	0.9	1.725228
25	Richmond upon Thames	1.000000	0.7	1.700000
13	Harrow	0.999654	0.7	1.699654
27	Sutton	0.998617	0.7	1.698617
12	Haringey	0.798238	0.9	1.698238
2	Bexley	0.982581	0.7	1.682581
28	Tower Hamlets	0.772289	0.9	1.672289
26	Southwark	0.771088	0.9	1.671088
10	Hackney	0.766225	0.9	1.666225
4	Bromley	0.964546	0.7	1.664546
14	Havering	0.956836	0.7	1.656836
24	Redbridge	0.941011	0.7	1.641011
30	Wandsworth	0.936377	0.7	1.636377
17	Islington	0.731220	0.9	1.631220
15	Hillingdon	0.907243	0.7	1.607243

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