Which Borough in London is for Me?

CAPSTONE PROJECT – THE BATTLE OF THE NEIGBORHOODS

Introduction

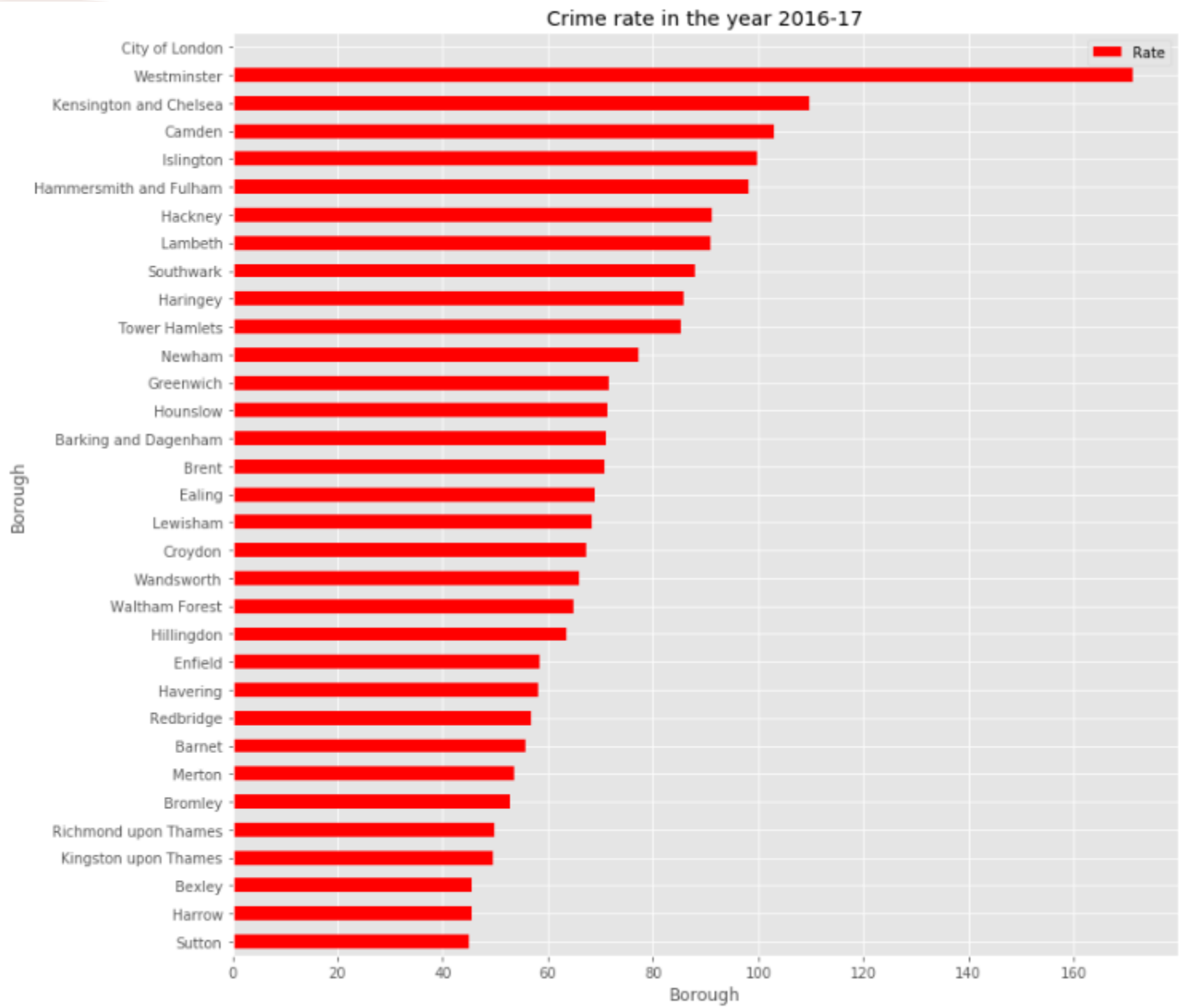
- London, UK is a globally recognised city that experiences an influx of international and domestic residents.
- Because the city is large and attractive, there is also attraction of criminals.
- It is difficult to move to London without knowing a neighbourhood and borough that suits your needs and that is safe.
- The project sets out to find the ideal neighbourhood for an individual.

The Problem

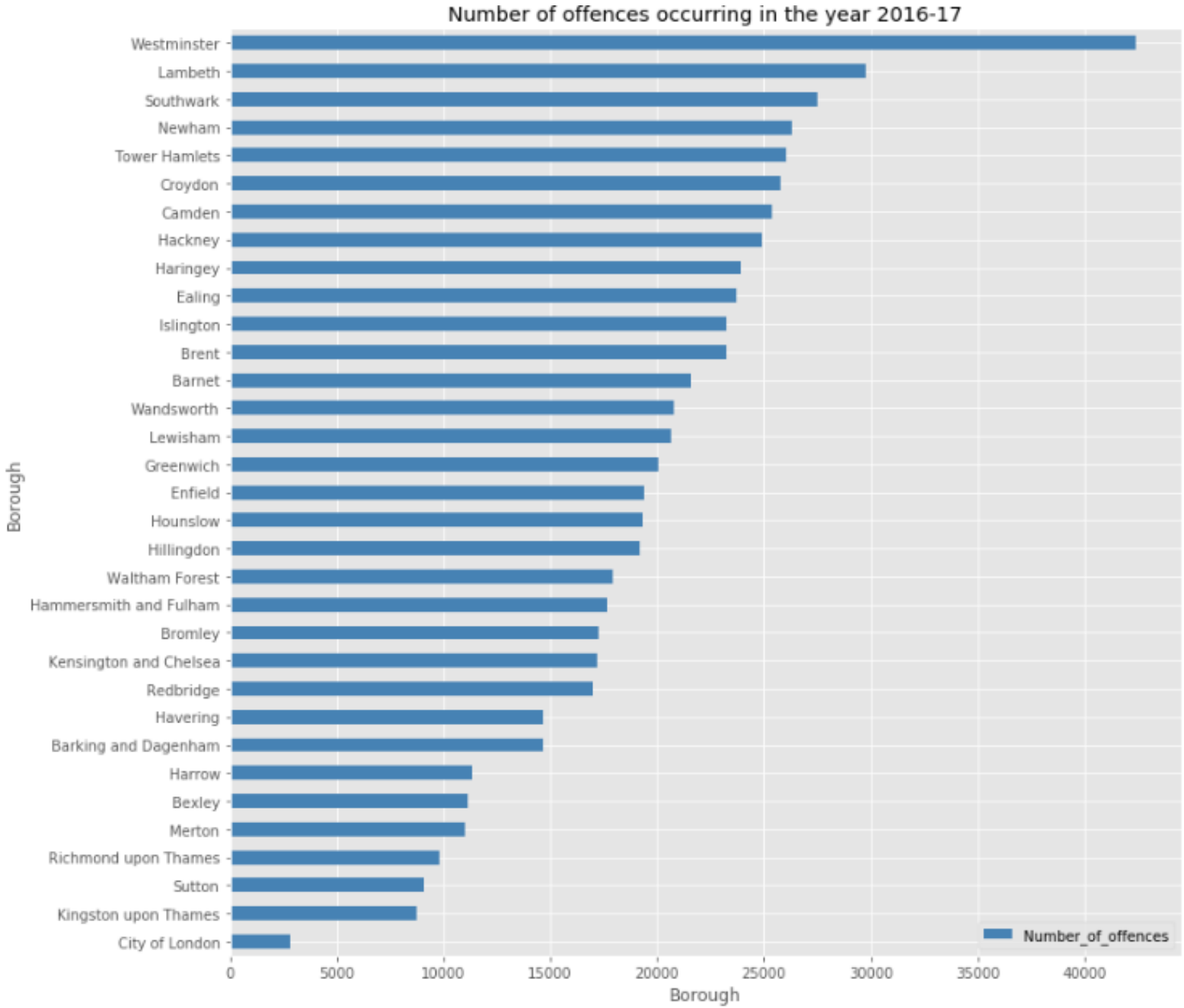
- When people move to a new location, it is in their interest to identify the area they would be most comfortable in.
- This depends on what type of person but for the project's sake, we will assume they are crime avoiding.
- The project will attempt to identify the safest borough in London based on the rates and the number of incidents
- There will then be exploration of the neighborhoods to find common venues and the neighborhoods will also be clustered using k-mean methods.

The Data

- The London Datastore has a datset that has the crime rate for each borough from year 1999-00, to 2016-17. The most relevant data will be the data in 2016-17.
- From Wikipedia, data about the boroughs will be scraped and processed.
- This will be used along with Fouresquare API to locate venues nearby and other relevant information on the neigborhood.


Crime rate in the year 2016-17
Rate
City of London
Westminster
Kensington and Chelsea
Camden
Islington
Hammersmith and Fulham
Hackney
Lambeth
Southwark
Haringey
Tower Hamlets
Newham
Greenwich
Hounslow
Barking and Dagenham
Brent
Ealing
Lewisham
Croydon
Wandsworth
Waltham Forest
Hillingdon
Enfield
Havering
Redbridge
Barnet
Merton
Bromley
Richmond upon Thames
Kingston upon Thames
Bexley
Harrow
Sutton
Borough
0
20
40
60
80
100
120
140
160
Borough

- Shows us the safest and least safest boroughs in the London, UK.



Findings

We can see that the boroughs with **highest number of criminal offences** are:

- Westminster
- Lambeth
- Southawk
- Newham
- Tower Hamlets

We will stay away from these boroughs.

Findings (cont'd)

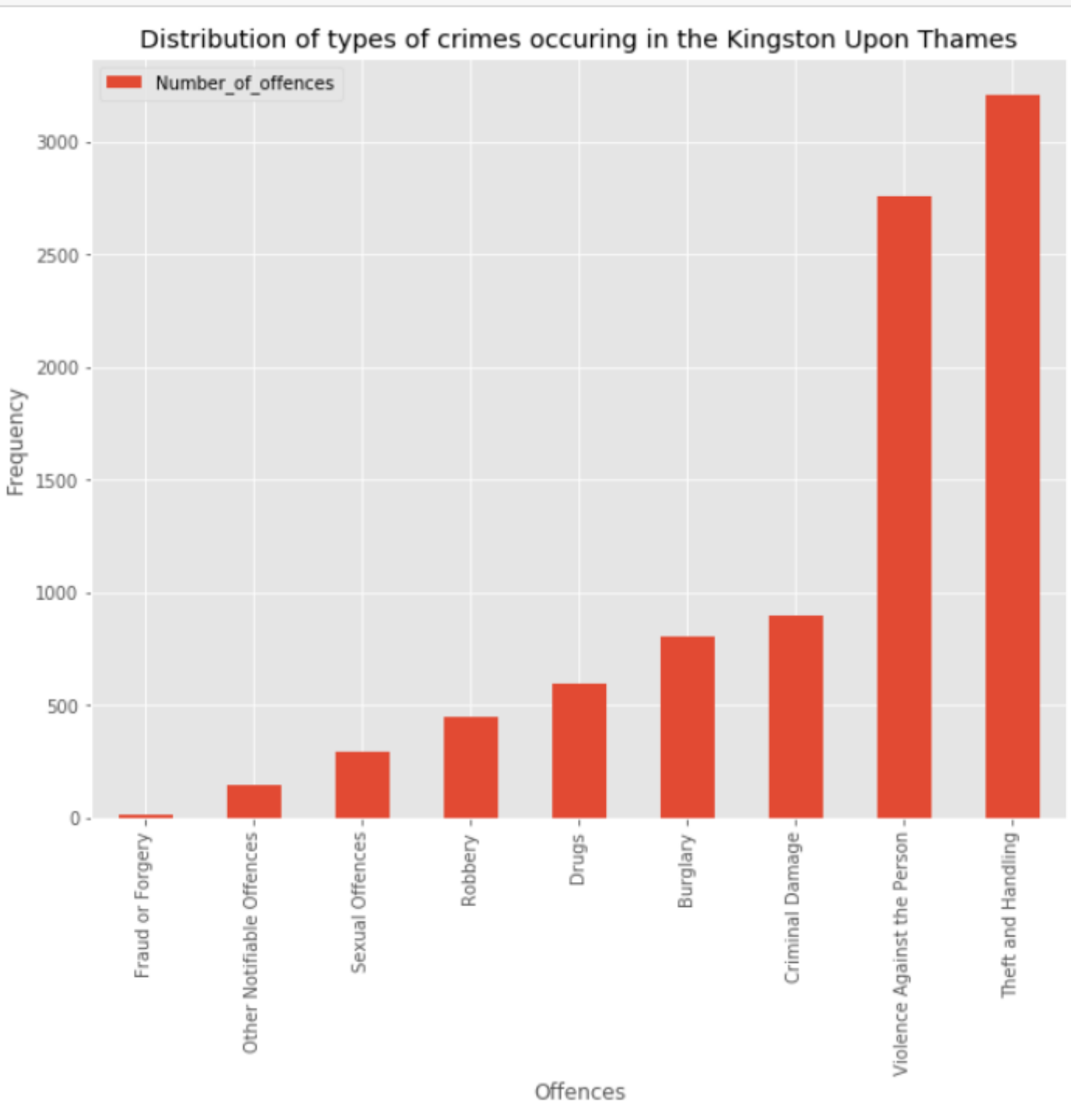
Whereas the boroughs with the **lowest number of criminal offences** are:

- City of London
- Kingston upon Thames
- Sutton
- Richmond upon Thames
- Merton

- The safest is the City of London, however London is not a borough of London. The next best borough is ***Kingston upon Thames.*** This borough will be further explored.

Findings (cont'd)

- This gives us an outlook or overview of the type of criminal offences that occur in the borough.
- 'Violence against the person' and 'Theft and Handling' are the most common offences.



Determining the Neighbourhood

- After establishing the safest borough, we need to work out the ideal neighbourhood for the individual.
- Clustering of the neighbourhoods was carried out so that similar neighbourhoods could be grouped.

Clusters

- Example:
- Cluster 5

	Neighborhood	Latitude	Longitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	Berrylands	51.393781	-0.284802	4.0	Gym / Fitness Center	Park	Bus Stop	Yoga Studio	Fish & Chips Shop	Dry Cleaner	Electronics Store	Farmers Market	Fast Food Restaurant	Food
8	Motspur Park	51.390985	-0.248898	4.0	Gym	Soccer Field	Park	Bus Stop	Department Store	Dry Cleaner	Electronics Store	Farmers Market	Fast Food Restaurant	Fish & Chips Shop

- Cluster 1

	Neighborhood	Latitude	Longitude	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
7	Malden Rushett	51.341052	-0.319076	3.0	Grocery Store	Pub	Garden Center	Restaurant	Fish & Chips Shop	Department Store	Dry Cleaner	Electronics Store	Farmers Market	Fast Food Restaurant

- The two clusters show different neighbourhoods that would be suited for different people.
- For example if you're health and fitness were a big priority for you then a neighbourhood in Cluster 5 would be better than one in cluster 1
- This is because cluster 5's neighbourhoods shows there are more gym/fitness venues in the vicinity.

Discussion

- The objective here was to aid individuals in the choice of living given the idea that the people are crime averse. It shows the safest borough in London is Kingston upon Thames.
- The project then furthers creates clusters around the neighbourhoods existing in Kingston upon Thames, this would allow for an easier understanding of the neighbourhood and therefore a better decision on where their ideal or optimal neighbourhood would be.

Conclusion

- A person is better equipped to make decisions on neighbourhoods in relevance to the common surrounding venues. This is an example of utilising machine learning to solve a real-world problem/task.
- The potential futures of this project could be taking on other factors so that the person gets an even better understanding of the neighbourhoods as well as being better equipped to make decisions.