

Looking for accommodation in London

Capstone Project for IBM Data Science Professional Certificate

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Business problem

Which is the most recommended location for living if you want to study at Middlesex University in London?

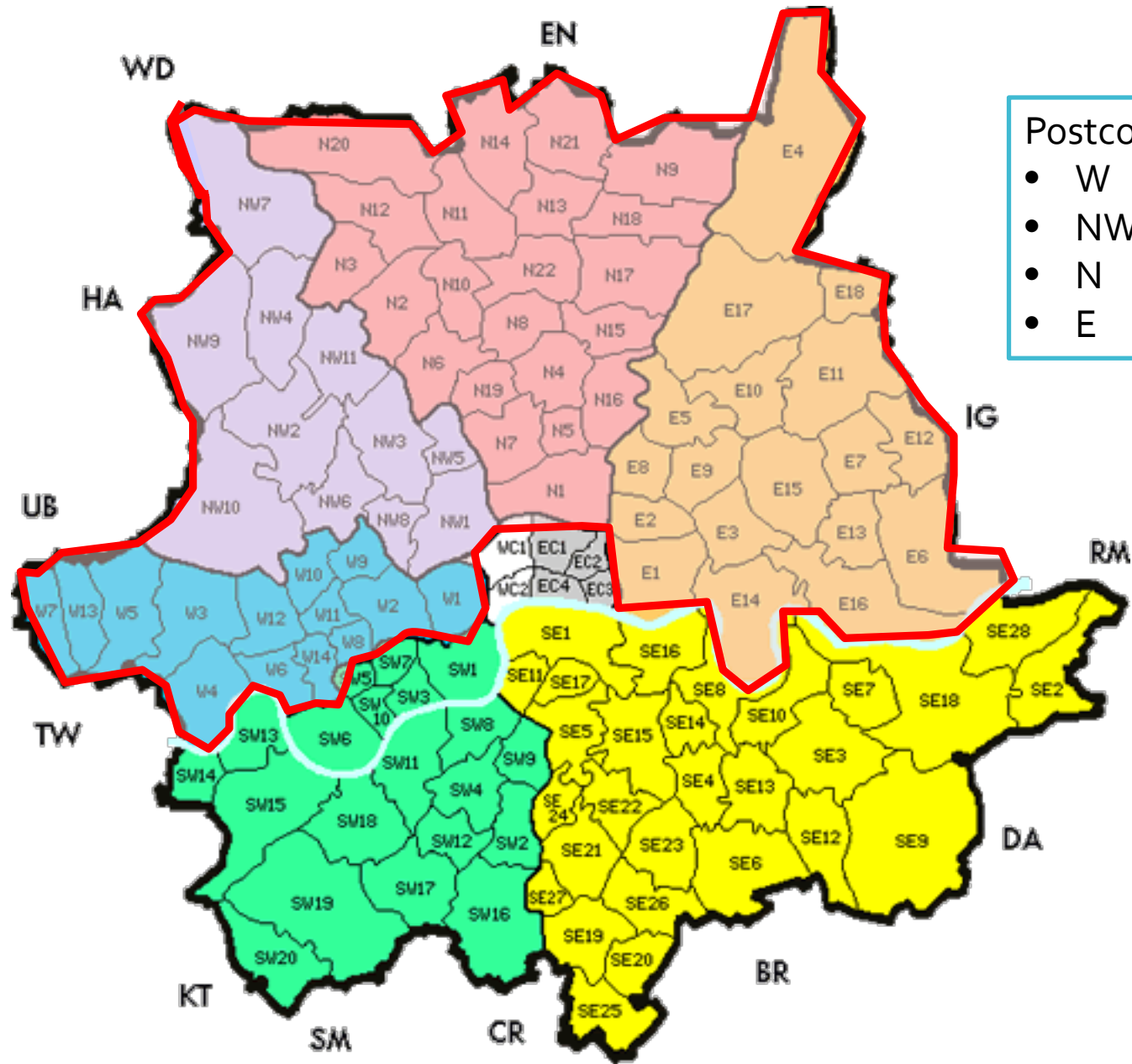
Key considerations:

- The accommodation needs to be close to the university, but not too far from the city centre.
- Supermarkets and cafes in the neighbourhood will also be taken into consideration.
- Being a student the rent is a key factor to bear in mind. A one bedroom house or flat is preferred.

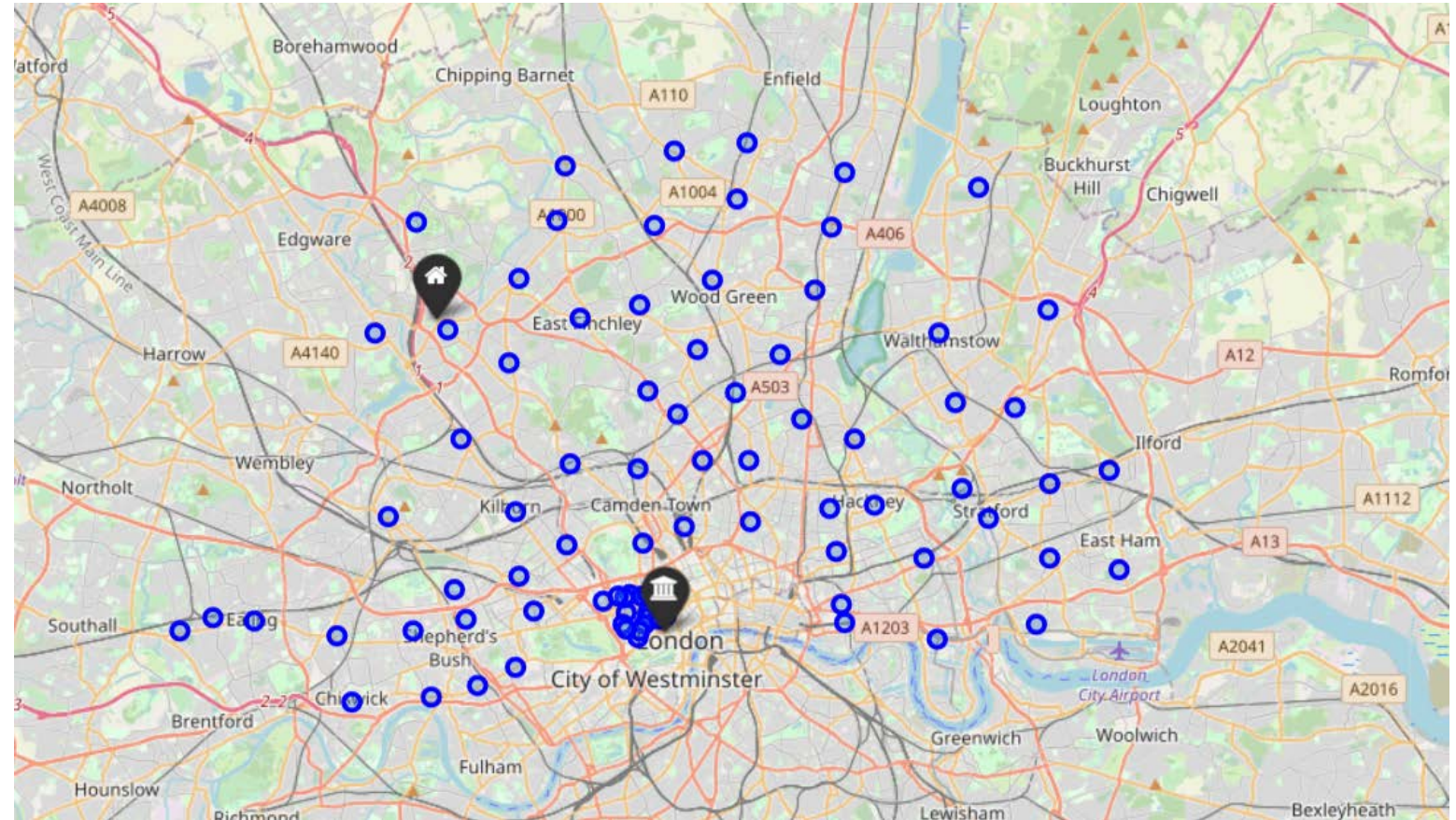
Data

- Postcodes information
- Geographical coordinates
- Average rent
- Distance to Middlesex University
- Distance to London City Centre
- Number of supermarkets
- Number of cafés

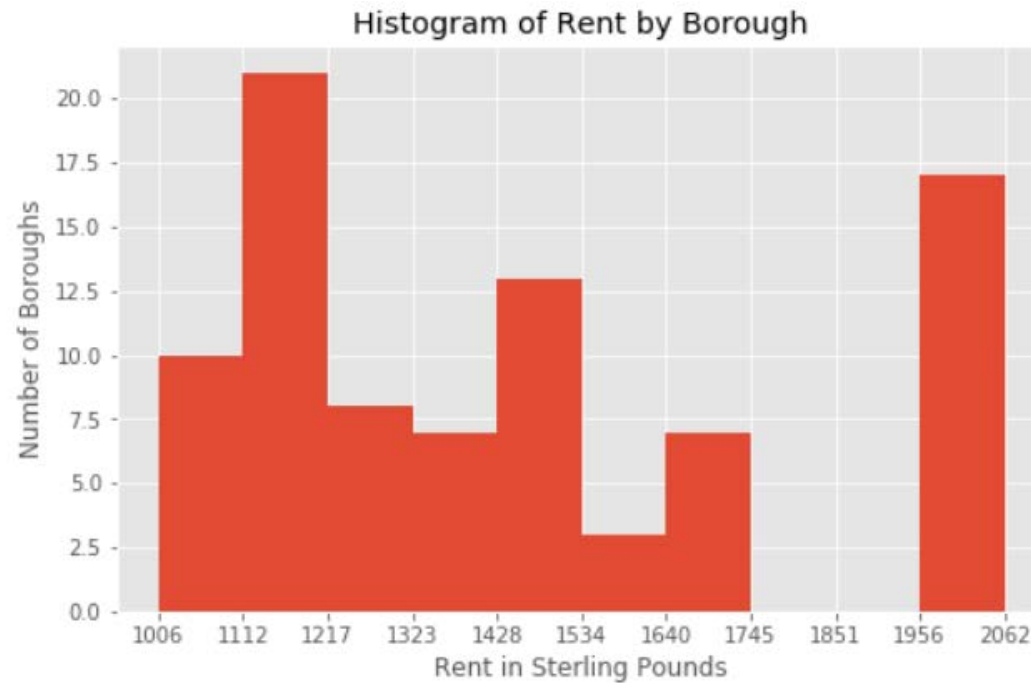
Areas considered



Selected areas

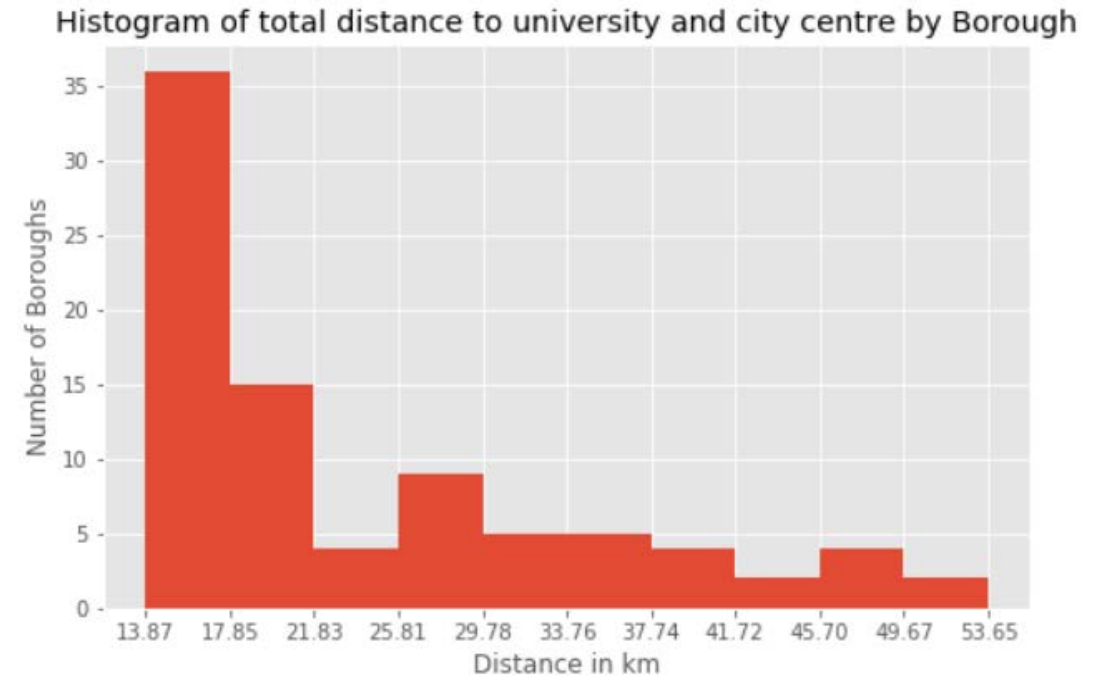


Exploratory Data Analysis



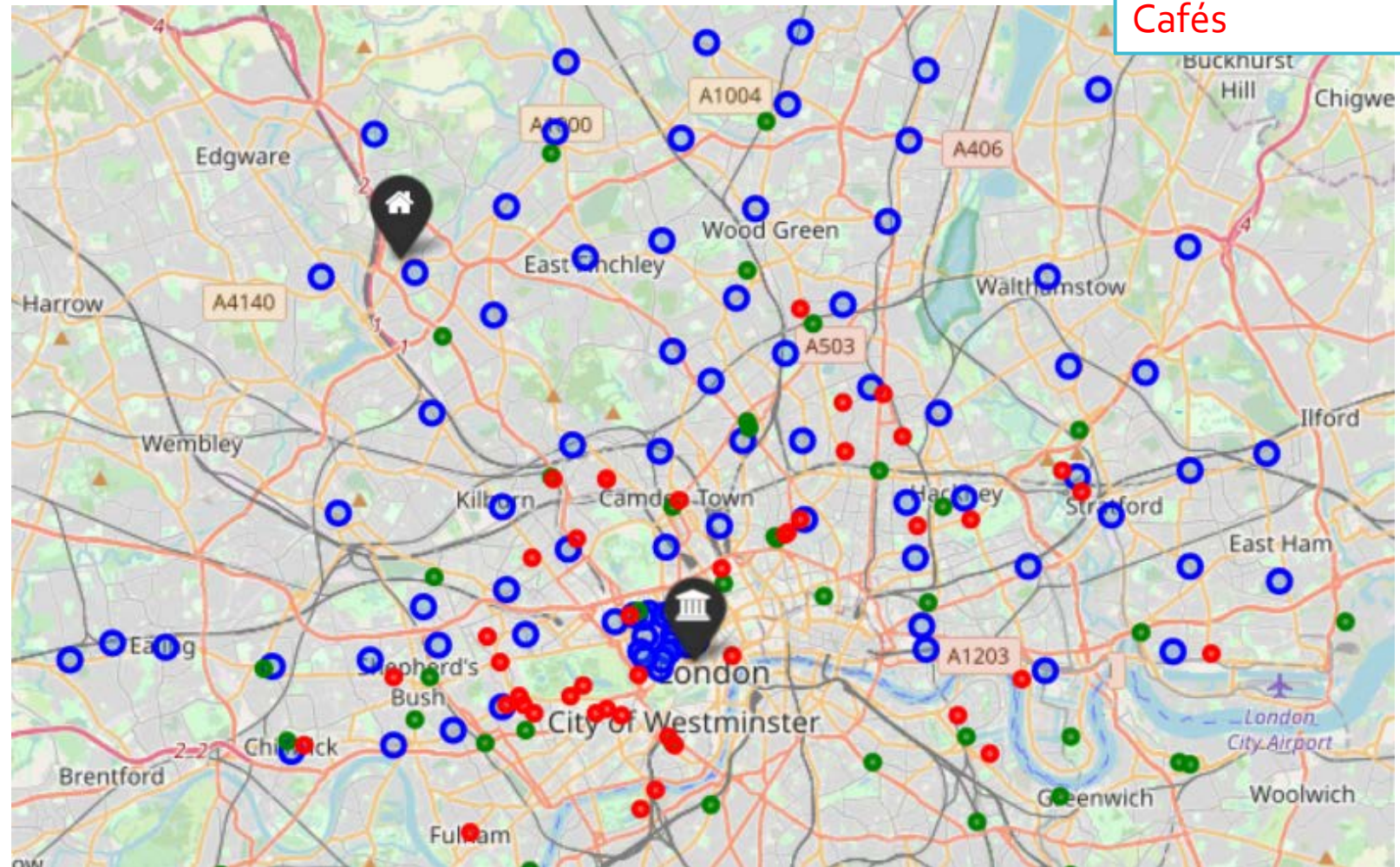
- Two main categories:
- Affordable rents from 1000 to 1500 GBP
 - Very expensive rents around 2000 GBP

The majority of the considered neighbourhoods require a maximum displacement distance of 20 km.



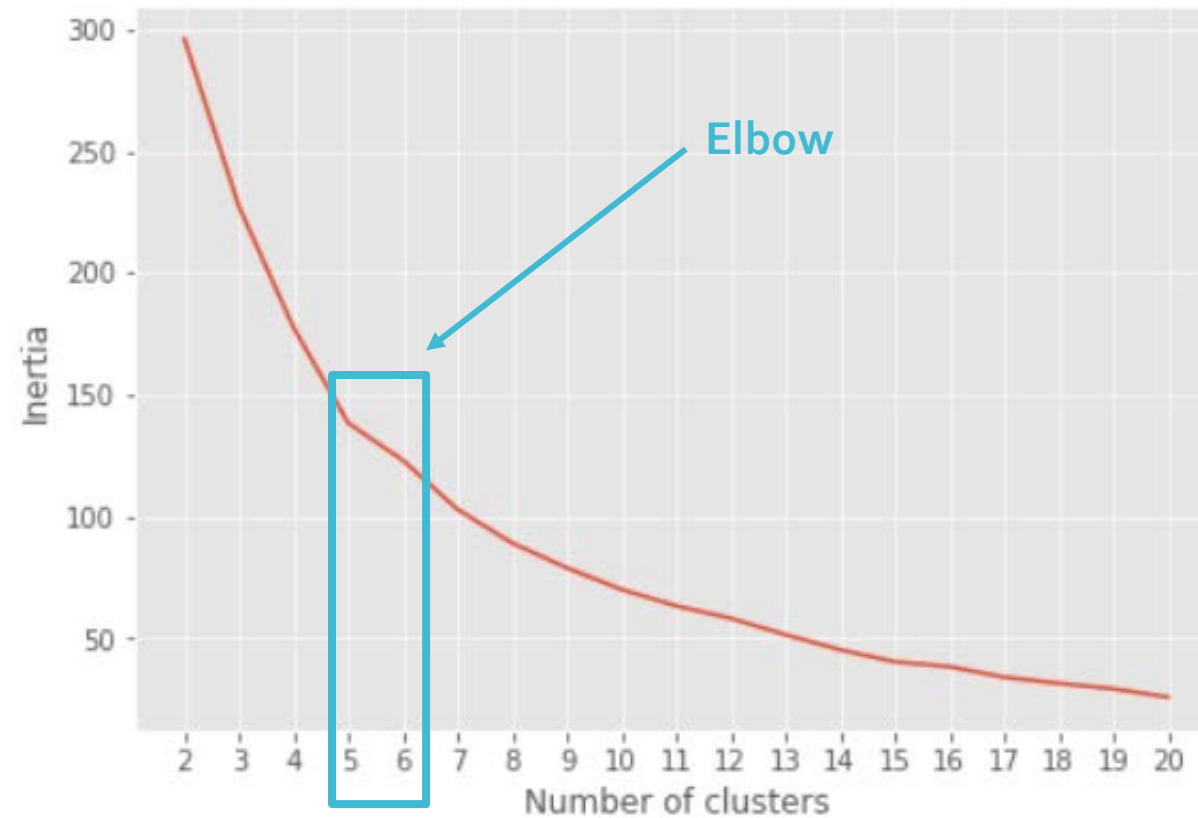
Cafés and Supermarkets

Neighbourhoods
Supermarkets
Cafés

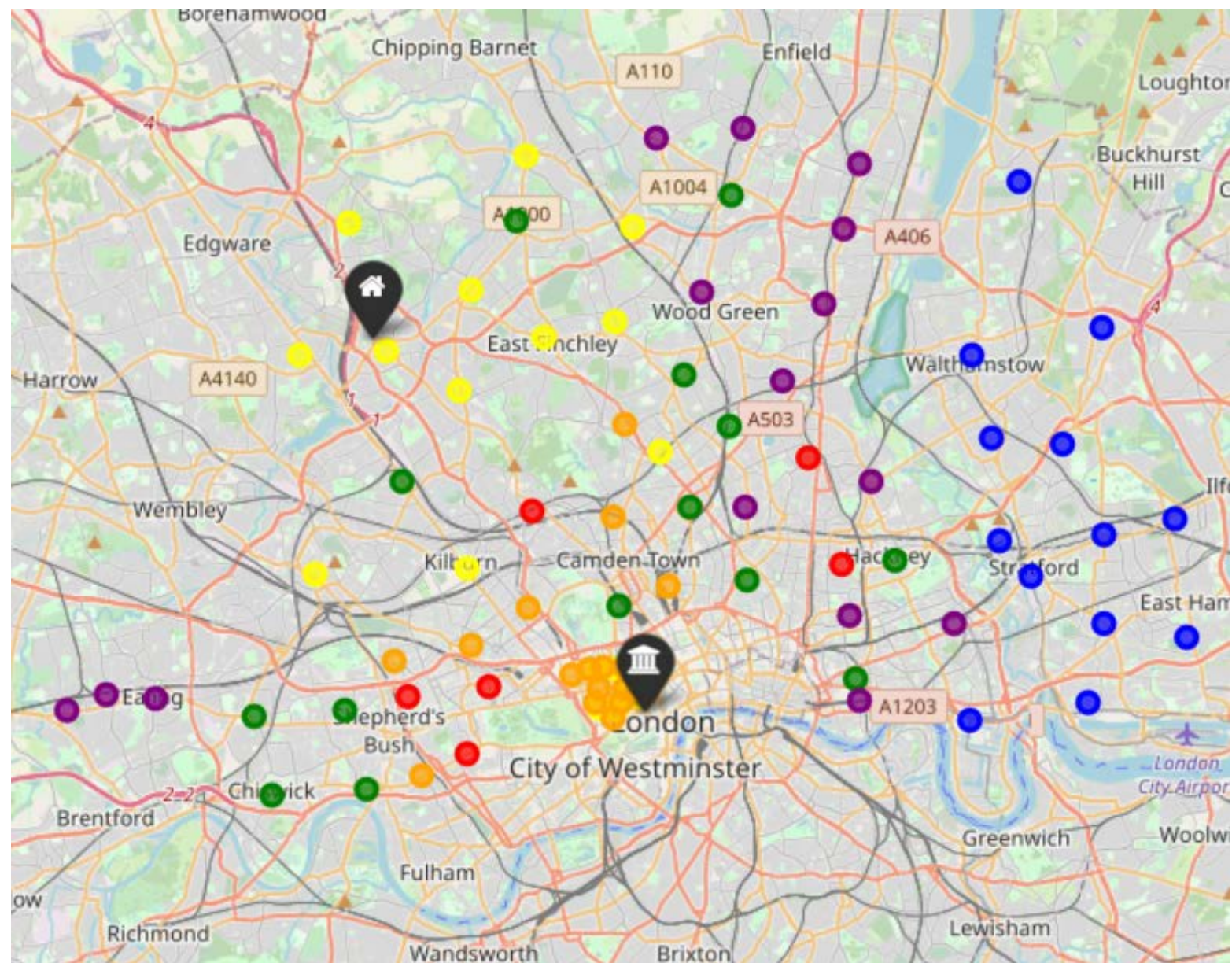


K-Means model

A K-Means clustering model was selected with a K parameter equal to 6.



Results



Results

	Rent	Distance University	Distance Centre	Total Distance	Cafes	Shops	Color
Labels							
0	1208.000000	27.359682	17.334177	44.693859	0.307692	0.307692	blue
1	1255.842105	8.546234	7.800424	16.346658	0.052632	0.000000	yellow
2	1352.071429	12.465440	9.709652	22.175092	0.500000	1.142857	green
3	1807.500000	12.159583	7.615900	19.775483	2.500000	0.333333	red
4	1926.894737	11.639398	3.264114	14.903511	0.210526	0.157895	orange
5	1288.000000	16.754072	13.157733	29.911805	0.000000	0.000000	purple

Interpretation of results

- **Label 0 (blue):** lowest rent, but far from university and city centre. Also a medium number of cafes and shops.
- **Label 1 (yellow):** second lowest rent, shortest distance to university and short distance to city centre. No supermarkets in the area and very low number of cafes.
- **Label 2 (green):** affordable rents, medium distance to university and city centre. Good number of cafes and supermarkets.
- **Label 3 (red):** expensive area, medium distance to university but close to city centre. A great number of cafes and medium number of supermarkets.
- **Label 4 (orange):** very expensive area, located in city centre, medium distance to university. A medium number of cafes and medium-low number of supermarkets.
- **Label 5 (purple):** cheap rents, far from both university and city centre. No cafes or shops.

Conclusions

The most suitable regions assuming that a low rent is desired are:

- If the main priority is being close to university, then the user should choose the **yellow regions (1)**.
- If on the contrary the number of cafes and supermarkets is relevant, the user should go for the **green regions (2)**.