Overview

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Introduction

London: Vibrant, diverse and full of business opportunities. Consists of 32 boroughs and also the City of London, allowing for an opportunity to see investment flourish and business thrive

Scouting for business opportunities using business category popularity as the basis for investment pitch.

Data Description and Methodology

1 Data Extraction and cleaning

2 Data Analysis

Data Extraction and Cleaning

Web-scraping

```python
url ="https://en.wikipedia.org/wiki/List_of_London_boroughs"
page = urllib.request.urlopen(url)
soup = BeautifulSoup(page, "lxml")
print (soup.prettify())

#using beautifulsoup to find the tables section on the wikipedia page
all_tables= soup.find_all("table")
all_tables

right_table=soup.find('table', class_='wikitable sortable')
right_table
```

	Borough	Local Authority	Population Estimate 2013
0	Barking and Dagenham	Barking and Dagenham London Borough Council	194,352\n
1	Barnet	Barnet London Borough Council	369,088\n
2	Bexley	Bexley London Borough Council	236,687\n
3	Brent	Brent London Borough Council	317,264\n
4	Bromley	Bromley London Borough Council	317,899\n
5	Camden	Camden London Borough Council	229,719\n
6	Croydon	Croydon London Borough Council	372,752\n

Foursquare API to explore Boroughs

	Borough	Borough Latitude	Borough Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Barking and Dagenham	51.554117	0.150504	Central Park	51.559560	0.161981	Park
1	Barking and Dagenham	51.554117	0.150504	Lara Grill	51.562445	0.147178	Turkish Restaurant
2	Barking and Dagenham	51.554117	0.150504	Asda	51.565770	0.143393	Supermarket
3	Barking and Dagenham	51.554117	0.150504	BP	51.549951	0.161963	Gas Station
4	Barking and Dagenham	51.554117	0.150504	Iceland	51.560578	0.147685	Grocery Store

Analyse each borough

```python
# one hot encoding
london_onehot = pd.get_dummies(london_venues[['Venue Category']], prefix="", prefix_sep="")

# add borough column back to dataframe
london_onehot['Borough'] = london_venues['Borough']

# move neighborhood column to the first column
fixed_columns = [london_onehot.columns[-1]] + list(london_onehot.columns[:-1])
london_onehot = london_onehot[fixed_columns]

london_onehot.head()
```

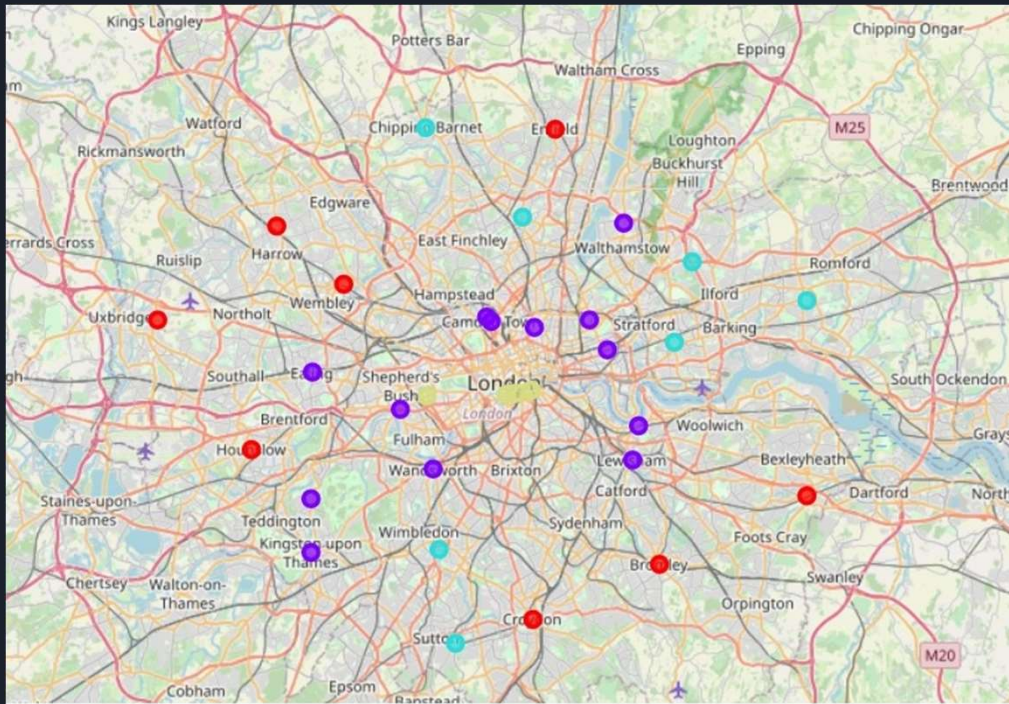|	Borough	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
0	Barking and Dagenham	Grocery Store	Gas Station	Supermarket	Park	Pub	Bar	Furniture / Home Store	Café	Coffee Shop	Shopping Mall
1	Barnet	Coffee Shop	Pub	Grocery Store	Pizza Place	Pharmacy	Golf Course	Café	Bookstore	Sandwich Place	Park
2	Bexley	Pub	Fast Food Restaurant	Clothing Store	Chinese Restaurant	Hotel	Supermarket	Coffee Shop	Italian Restaurant	Greek Restaurant	Pharmacy
3	Brent	Coffee Shop	Sandwich Place	Grocery Store	Hotel	Clothing Store	Pizza Place	Indian Restaurant	Supermarket	Park	Burger Joint

Data Analysis

Group cluster using top 10 most popular venue

- K-means cluster analysis

	Borough	Local Authority	Population Estimate 2013	Latitude	Longitude	Cluster Label	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	Barking and Dagenham	Barking and Dagenham London Borough Council	194,352	51.554117	0.150504	2	Grocery Store	Gas Station	Supermarket	Park	Pub	Bar	Furniture / Home Store	Café	Coffee Shop	Shopping Mall
1	Barnet	Barnet London Borough Council	369,088	51.653090	-0.200226	2	Coffee Shop	Pub	Grocery Store	Pizza Place	Pharmacy	Golf Course	Café	Bookstore	Sandwich Place	Park
2	Bexley	Bexley London Borough Council	236,687	51.441679	0.150488	0	Pub	Fast Food Restaurant	Clothing Store	Chinese Restaurant	Hotel	Supermarket	Coffee Shop	Italian Restaurant	Greek Restaurant	Pharmacy
3	Brent	Brent London Borough Council	317,264	51.563826	-0.275760	0	Coffee Shop	Sandwich Place	Grocery Store	Hotel	Clothing Store	Pizza Place	Indian Restaurant	Supermarket	Park	Burger Joint
4	Bromley	Bromley London Borough Council	317,899	51.402805	0.014814	0	Pub	Clothing Store	Pizza Place	Park	Coffee Shop	Indian Restaurant	Gym / Fitness Center	Sandwich Place	Grocery Store	Burger Joint

Results

- Red: Pubs and coffee shops, Indian restaurants

- Purple : Most common venue is pubs,followed by coffee shops

- Blue: Grocery stores and Pubs, fast food and Italian restaurant in 2nd and 3rd most common venues for some boroughs

- Yellow: Hotels

https://github.com/shahs1005/Battle-of-the-Neighbourhoods/blob/master/Capstone(1).ipynb

Recommendations

1

Coffee Shops

- Red and Purple cluster.
- 1st and 2nd most popular venue

2

Restaurants

- Indian Restaurant
  - most popular in Hounslow
  - 2nd most popular in Harrow

Further Work

- Explore coffee shop density in red and purple boroughs

- Socioeconomic demographics

- Ethnic mix in boroughs to understand popularity of Indian Restaurants

Thank you