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| Neighborhood Battle-London Borough  2019 |
|  |
| August 17  Authored by: Sharmila |



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# Introduction

# The intention of this project is to perform a neighborhood analysis on the venues of all the boroughs of London.

# The essence of the analysis would be concentrated on suggesting a tourist which borough or area in London to concentrate on to have most fun in his/her trip.

# The Venues would be segregated based on the category and the borough with concentrated venues would be highlighted.

# Executive Summary

# If a person who have no clue about London want to have a tour, this analysis would be of great help to him/her to decide on the complete itinerary for his/her trip.

# Data Section

# The Borough details of London was acquired from [here](https://en.wikipedia.org/wiki/List_of_London_boroughs), just the list of boroughs were obtained from this table.

# Another table “Postcode\_districts.csv” was downloaded from London open data repository to get the London Postcode details. The fields were filtered out and only the required fields were used in the analysis.

# Methodology

# Data cleansing and Data Wrangling

# Two tables has been acquired as mentioned in the Data section and from the first table only the list of boroughs were filtered out from the Wikipedia table.

# The second table “Postcode\_districts.csv” has the postcode details and Latitude and Longitude details for the boroughs.

# Postcodes relevant to the list of Boroughs from the first table are selected from the table and saved into a data frame say LondonData.

# Geographic coordinates of London were derived, and a map has been plotted with the postcodes and latitude and longitude details from the filtered data frame to visualize the all the relevant London borough postcodes on a map.

# Foursquare API

# FourSquare API call has been made next to get all the relevant venues for the coordinates of London city(Central London)

# The foursquare API returned 100 venues as a Data Frame “nearby\_venues\_London”

# These venues has been segregated based on the category obtained from the foursquare API along with the key words like “Restaurants”, “Bars”, etc., to divide those venues into various groups.

# The venues has been segregated into 5 different categories of interest to tourist,

# Eateries

# Historic places

# Recreational spots

# Shopping venues

# Parks and Gardens

# Based on this segregation, it was understood that Central London is rich with Historic venues with numerous restaurants and recreational spots.

# A screenshot of a cell phone Description automatically generated

# A function “getlatlang” has been written to get the central geographical coordinates of each Borough in London. Unique borough names have been retrieved from the data frame “LondonData”.

# These borough details were passed to the function and the latitude and longitude for each borough was obtained.

# These details were passed to call the function to make the foursquare API call to get the venue details of each of the borough and accumulate and present it as a pandas data frame “nearby\_venues”

# The Venues obtained were also divided into 5 groups as in central London data.

# As shown in the above plot, rest of London has innumerable Restaurants, and a lot of shopping centers.

# Finally, the London boroughs were clustered with the K means clustering algorithm into 5 clusters.

# 10 most common venues in each neighborhood has be obtained and listed. Cluster label obtained from the K means algorithm was clubbed with this file with the 10 most common venue details for each borough.

# Along with its latitude and longitude details.

# Then the venues in the clustered were plotted on a map of London as shown in the image below.

# A picture containing text, map Description automatically generated

# The Boroughs and their venue count were plotted in a bar chart as shown in the below image

# A close up of a logo Description automatically generated

# As per the above plot,

# Kingston upon Thames

# Southwark

# Islington

# Ealing

# Westminster

# Are the boroughs with most number of venues which could interest the tourist other than central London which has 100 venues itself.

# Result/Conclusion

# Based on the detailed analysis done on the London venues it could be concluded that,

# Tourist who are interested in history and heritage could choose to spend time in Central London.

# Tourist who are interested in shopping and need a variety of food options could choose among the rest of the London boroughs for their tour.

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