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Applied Data Science

Coursera Capstone Project

Battle of the Neighborhoods:
Location selection for a Restaurant start-up

INTRODUCTION

Most startups find choosing a location for their businesses difficult. Even after streamlining to a populated City or State, narrowing down to a specific Local Government Area without bias is usually an issue. I aim to solve this issue by Engineering a system that analyses the different areas in a State and gives the Entrepreneur the best possible location to start with.

For this project, the target audience are **restaurant** startups. I know quite a number of Entrepreneurs facing this dilemma and I am sure the results of this will be useful to them. This analysis assumes that these restaurants target office workers as customers. This can of course be easily tweaked if need be. The aim is to create a system that can be easily modified to suit a new situation.

The selected state for this project is Lagos, Nigeria as it is where I reside currently and I aim to provide a solution to a local problem.

DATA

Getting data for this project was a nigh herculean task but I was successful. I was able to obtain this json file from the HUMANITARIAN DATA EXCHANGE JSON REPOSITORY. It contains the geographical details of Local Government Areas in Nigeria and I plan to extract those of Lagos from it. A section of the .geojson file is displayed below:


```
{"type":"Feature","geometry":{"type":"Polygon","coordinates":[[[3.332283973693848,6.648791790008602],[3.32
8931093216056,6.643056869506893],[3.326539993286247,6.623510837554989],[3.31771993637085,6.620203971862793
],[3.301352977752799,6.620390892028865],[3.290610074996948,6.627117156982422],[3.286653041839657,6.6534519
19555721],[3.28961110115057,6.672671794891414],[3.30701494216919,6.657254219055176],[3.317653894424552,6.6
44631862640495],[3.332283973693848,6.648791790008602]]]},"properties":{"ID_0":163,"ISO":"NGA","NAME_0":"Ni
geria","ID_1":25,"NAME_1":"Lagos","ID_2":507,"NAME_2":"Agege","HASC_2":null,"CCN_2":0,"CCA_2":null,"TYPE_2
":"Local Authority","ENGTYPE_2":"Local
Authority","NL_NAME_2":null,"VARNAME_2":null}},{"type":"Feature","geometry":{"type":"Polygon","coordinates
":[[[3.307024002075252,6.477795124054069],[3.3164160251618,6.482667922973633],[3.326337099075317,6.4827308
65478516],[3.338913917541618,6.475834846496696],[3.342958927154598,6.455029010772762],[3.331623077392578,6
.452916145324821],[3.322557926178035,6.446716785430908],[3.312277078628597,6.454857826232967],[3.306322097
778434,6.471779823303223],[3.307024002075252,6.477795124054069]]]},"properties":{"ID_0":163,"ISO":"NGA","N
AME_0":"Nigeria","ID_1":25,"NAME_1":"Lagos","ID_2":508,"NAME_2":"Ajeromi/Ifelodun","HASC_2":null,"CCN_2":0
,"CCA_2":null,"TYPE_2":"Local Authority","ENGTYPE_2":"Local
Authority","NL_NAME_2":null,"VARNAME_2":null}},
```


I also plan to use the Foursquare location data to get information about the offices in the different areas and their corresponding categories. Below is a sample Data Frame of the search result for Kosofe Local Government Area in Lagos.

[41]:

	name	categories	lat	lng
0	Ketu Kosofe Post Office	Post Office	6.592355	3.394546
1	Office Everything	Paper / Office Supplies Store	6.613891	3.357690
2	Ketu Kosofe Post Office	Post Office	6.605957	3.384407
3	Akinwunmi Ambode Campaign Office	Non-Profit	6.550345	3.389895
4	FRSC Office Bariga	Government Building	6.549866	3.393374
5	Dstv office at yaba	Miscellaneous Shop	6.551776	3.378519
6	LASAA Office, Alpha Plaza	Building	6.616348	3.386052