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COMPANY NAME

Applied Data Science Capstone-final
report

best place for opening a gym

CONTACT:

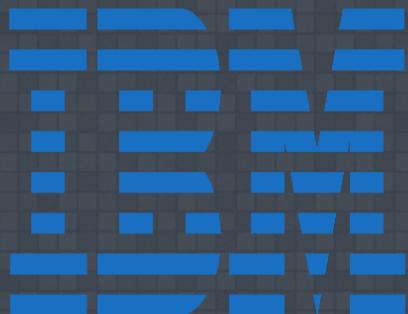
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DATE:
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SUMMARY



Introduction



This report is for the final course of the Data Science Specialization. A 9-courses series created by IBM, hosted on Coursera platform . So i decided to find solutions for investor to find the best place to invest their money .

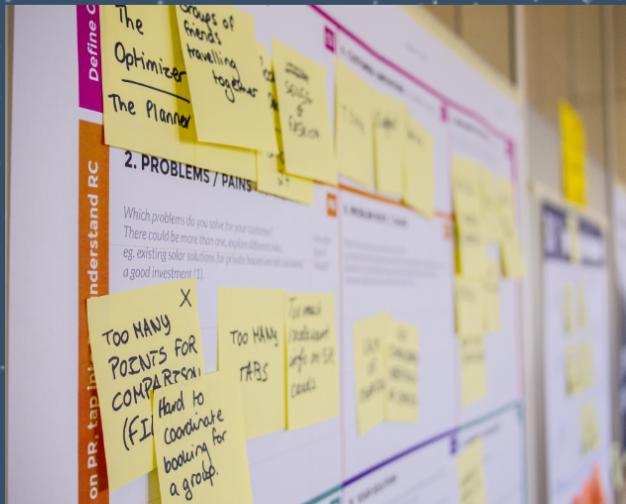


At first , we know that health is the most important thing in our life . so , we should have a sport routine and behavior , consequently we must eat healthy food and go to the **gym** to keep our body strong and our life better



So many investor find that invest in gyms is one of the best investment , but always there are some difficult in the planning phase .

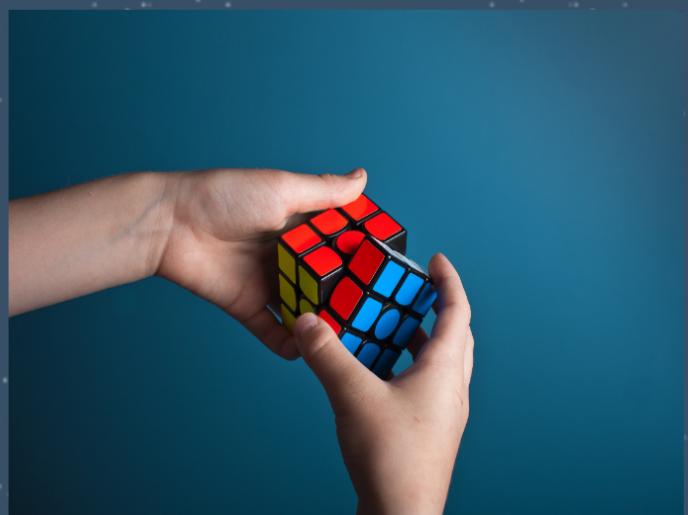
Business Problem



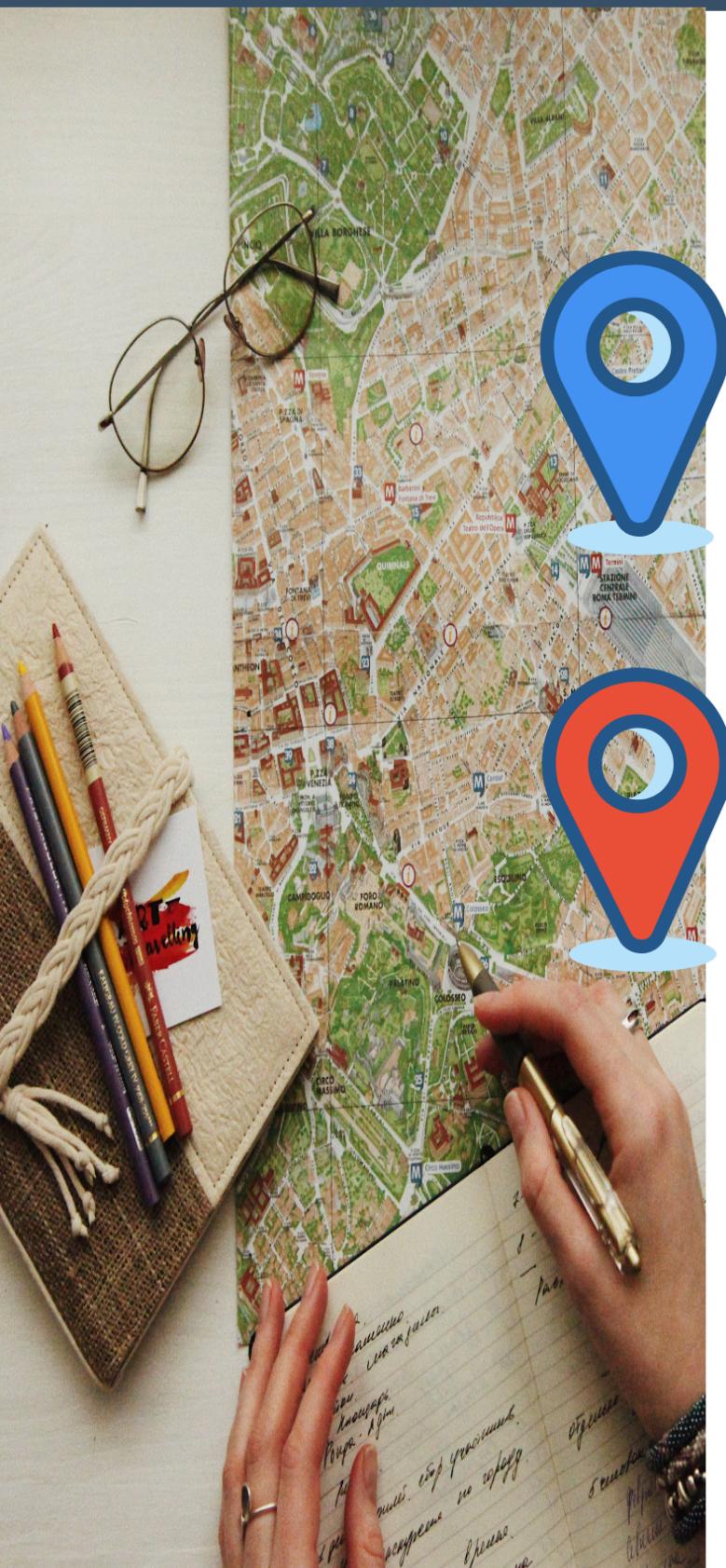
In business, the most important phase is the planning but some investor forget the importance of the geo place (location of the project), the type of client (age , behavior ..) and the competition with other investor , and finnaly they fail in their project

Problem solution

he best way to make a the best dicission is by usinig a reliable data and make a good model to solve the problem . So in this case i suggest using data to find the best geo place to start the gym project , also , i suggest to target the place with highest young/adult(16-50) population because there are the regular member of the gym



Data



first we will use population data from Tunisian National Institut of Statistics to find which neighborhood have the highest population

also we will use foursquare API to download the geo place data of the other gym in the city.

Methodology and Tools

after download population data , we converted them to dataframe (pandas) , cleaned them and we sort the neighborhoods order by the rate of population

	Neighborhood	19 - 15 year	29 - 20 year	39 - 30 year	49 - 40 year	age_value_sum	latitude	longitude
3	BAB BHAR	5.26	24.29	19.08	12.90	61.53	36.858155	10.336782
19	LAGOULETTE	6.04	17.84	18.95	13.93	56.76	36.807612	10.171900
14	SIDI HASSINE	7.83	18.01	16.63	13.48	55.95	36.796857	10.176149
20	LE KRAM	6.49	17.10	17.68	14.20	55.47	36.804447	10.165551
11	SIJOURNI	6.84	16.56	16.40	14.48	54.28	36.816163	10.162096

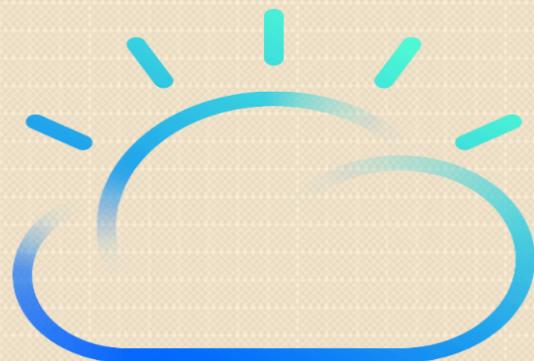
so we get this result

we use foursquare API to find the coordinate of other gyms , therfore , we get this result

Out[98]:

	name	categories	address	cc	city	country	distance	formattedAddress	labeledLatLngs	lat	lng	neighborhood	postalCode	state
0	California Gym	Gym	Nan	TN	تونس	تونس	1047	[تونس, تونس]	[{"label": "display", "lat": 36.80984090312947, "lng": 10.183320}	36.809841	10.183320		Nan	Gouvernorat de Tunis
1	Galaxy Gym	Gym / Fitness Center	Rue Hassinette	TN	تونس	تونس	2124	[Rue Hassinette, تونس, تونس]	[{"label": "display", "lat": 36.82259784908282, "lng": 10.186654}	36.822598	10.186654	Montplaisir	Nan	Gouvernorat de Tunis
2	5ème Avenue Gym	Gym	Nan	TN	تونس	تونس	1453	[تونس]	[{"label": "display", "lat": 36.8011262143136, "lng": 10.186049}	36.801123	10.186049		Nan	Nan
3	California Gym	Gym	32, rue Manoubi Bel Hassine	TN	أريانة	تونس	6261	[32, rue Manoubi Bel Hassine, أريانة, تونس]	[{"label": "display", "lat": 36.86030457226683, "lng": 10.147317}	36.860305	10.147317	Ennaser II	Nan	Gouvernorat de l'Ariana
4	Gym Box	Gym / Fitness Center	Nan	TN	تونس	تونس	5020	[تونس]	[{"label": "display", "lat": 36.85251, "lng": 10.166544}	36.852510	10.166544		Nan	Nan
5	Gold's Gym	Gym / Fitness Center	Nan	TN	تونس	تونس	4530	[تونس]	[{"label": "display", "lat": 36.83536743546226, "lng": 10.134722}	36.835367	10.134722	Cité Ibn Kaldoun	Nan	Nan

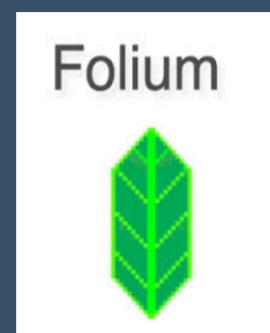
IBM Watson
studio



python



Pandas



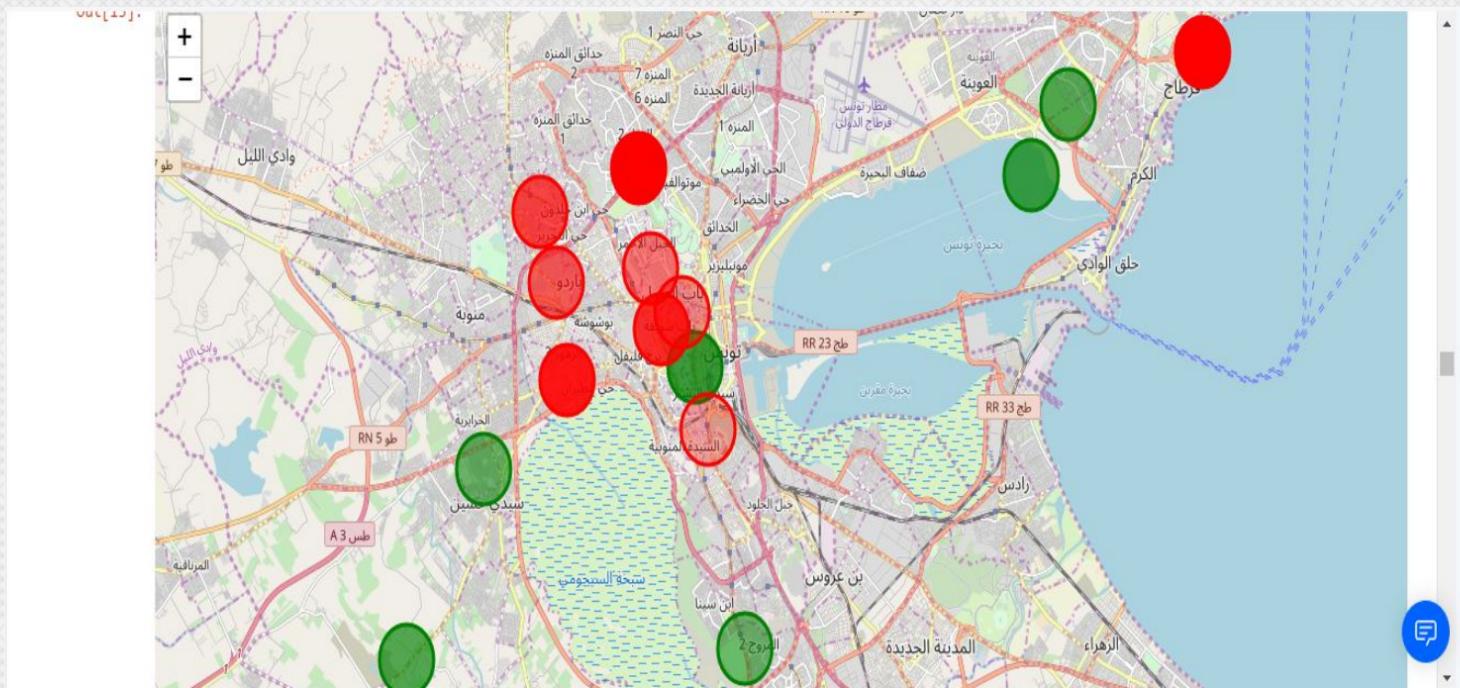
Folium

pandas

folium

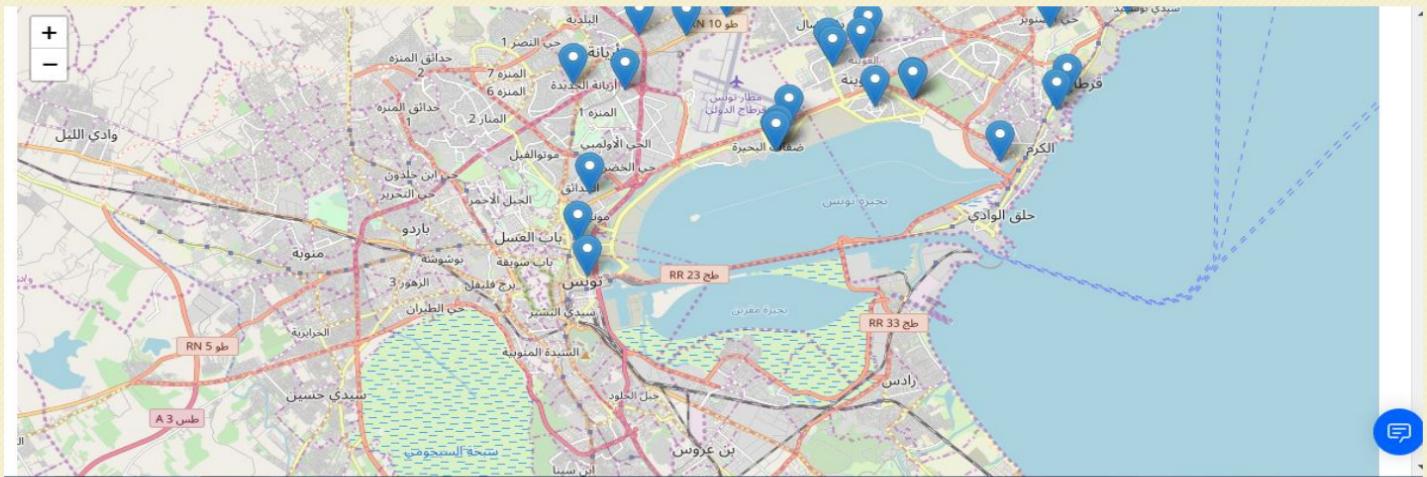
Results

we visualize population data using folium map to get this result

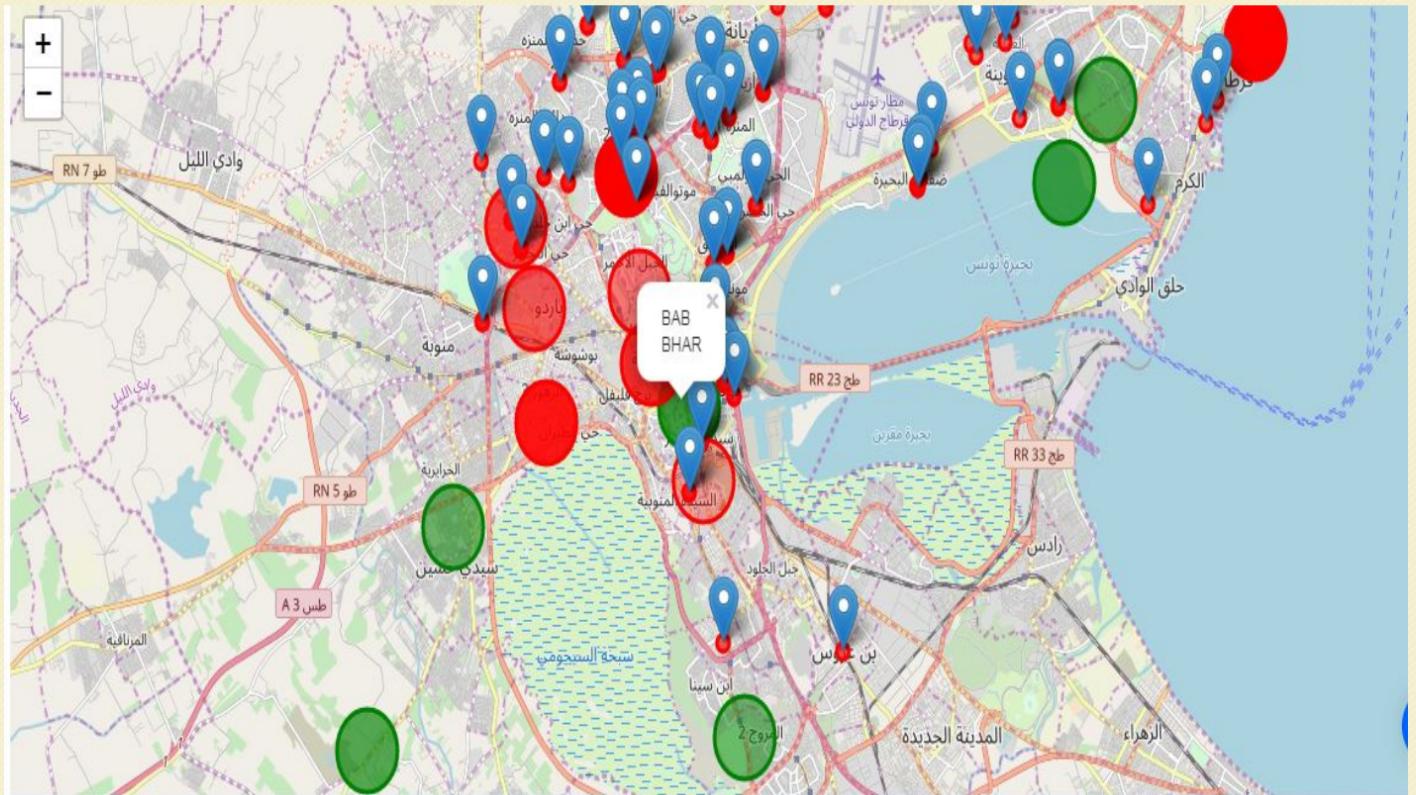


the green circle indicate that the neighborhood have a high population , otherwise , the red circle indicate that the neighborhood have low population

we visualize gym data (from foursquare) using folium map to get this result



we merge the two maps to get this final result



finally , i think that this map will help the investor to pick the right place to start his project .

Conclusion:

I m sure that this capstone project can upgrade if we collect more data and analyse them correctly , for example , if we get data of the behavior of people , or their income , or their social statue . This data science search will be absolutely more accurate . So , more data more analytic more accuracy

Refereneces

①

<https://foursquare.com/developers>

②

<http://ins.nat.tn/>

감사합니다

GRAZIE VINAKA

TERIMA KASIH

THANK
YOU TAKK

謝
謝

ありがとう

merci

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