

Title: Capstone Project - A recommendation system for coworking spaces in Tunisia
(week 2)

Presented by: Aymen Soussi, Data Scientist

Date: 22/02/2019

Motivation

Coworking spaces is a new concept in Tunisia, those places offer to any new start up the chance to meet other startups in the same place so that they can communicate with each other's and exchange experiences between each other's when they need.

Another important factor is that those places try to provide startups with all what their needs (private desktops, imprints, meetup rooms, cafés, drinks and foods.

Research Question:

- Can we provide a recommendation system to new startups so that they can find the best coworking space for them based on the governorate in which they are ?

Dataset details:

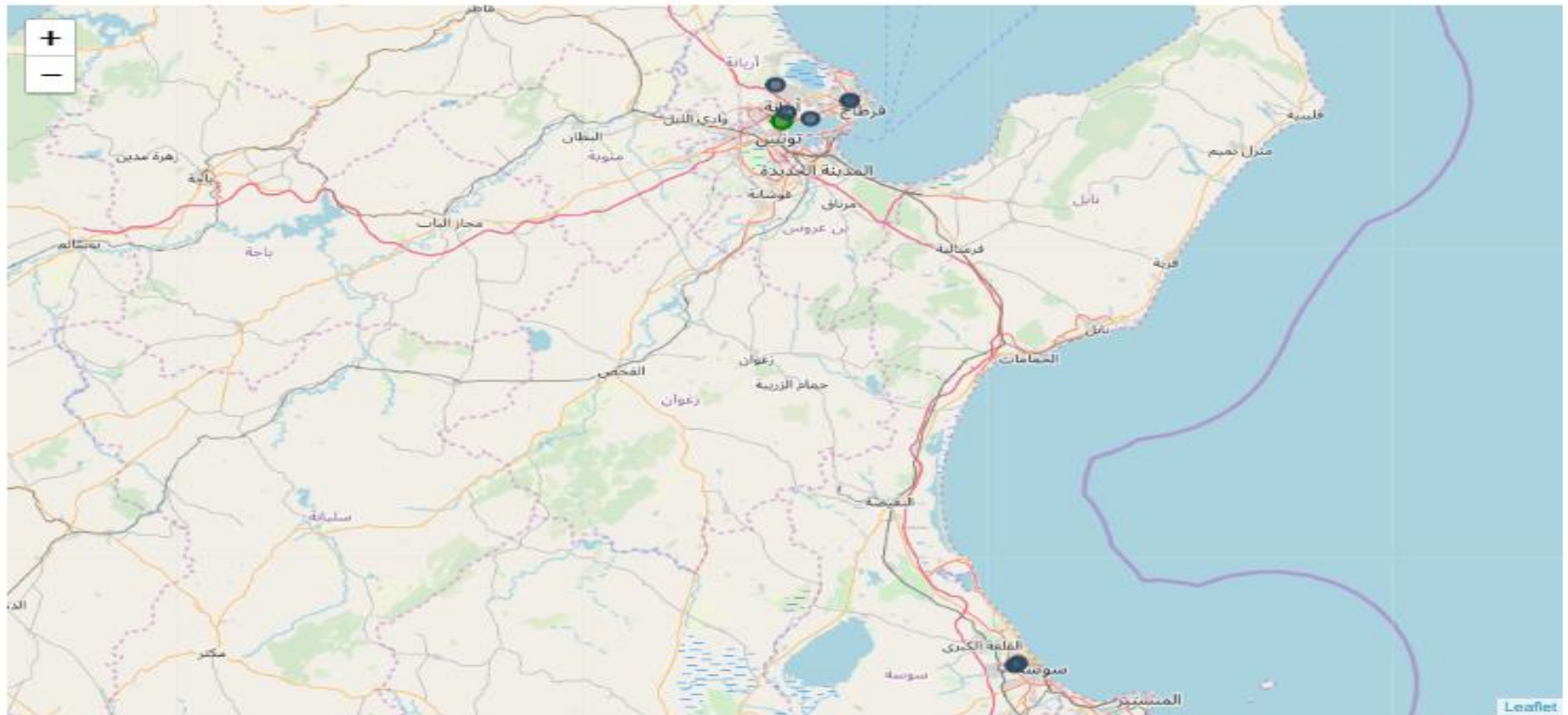
- We will use Foursquare API to search for venues and make the call to the Foursquare database and in return, We will use K-means clustering to do classification for coworking spaces :
- `'https://api.foursquare.com/v2/venues/search?client_id={}&client_secret={}&ll={},{&v={}&query={}&radius={}&limit={}'.format(CLIENT_ID, CLIENT_SECRET, latitude, longitude, VERSION, ***_query, radius, LIMIT)`

Example of Data:

```
0 Jasmine Hall Coworking Space
1 Cogite Coworking Space
2 SDC Coworking Space
3 Creativia coworking
4 Creativa Coworking
5 Hive12 Coworking Space
6 Orga Coworking Space
Name: name, dtype: object
```

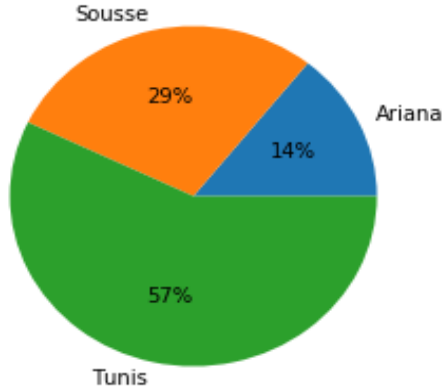
	categories	hasPerk	id	location.address	location.cc	location.city	location.country	location.cross Street	location.d
0	'4bf58dd8d48988d174941735', name: 'C...	False	5557005f498eb83989a94550	Immeuble Cercle des Bureaux, Étage 1, Bureau B...	TN	Centre Urbain Nord, Tunis	تونس	NaN	
1	'4bf58dd8d48988d174941735', name: 'C...	False	51e80c16498ead24aa09da6f	1 Place Tahar Haddad, Les berges Du Lac	TN	تونس	تونس	Hotel Acropole	
2	'4bf58dd8d48988d174941735', name: 'C...	False	55ae7265498e46e4bbc202d4	NaN	TN	NaN	تونس	NaN	
3	'4bf58dd8d48988d124941735', name: 'O...	False	57e15b5f498e0ccb0cf8430e7	b 9, étage 1, centre millenium	TN	La Marsa	تونس	RN9	
4	'4bf58dd8d48988d124941735', name: 'O...	False	57e15af7498e21bfa0e5ba72	b9, étage 1, centre millenium	TN	La Marsa	تونس	RN9	
5	'4bf58dd8d48988d174941735', name: 'C...	False	5a7b3257d807ee3ef81b3d4c	NaN	TN	سوسة	تونس	NaN	
6	'4bf58dd8d48988d174941735', name: 'C...	False	5a01ec0867a9fe7ac8b039a7	NaN	TN	NaN	تونس	NaN	

Map of coworking spaces in Tunisia based on the data we have (they are marked with blue points)



Distribution of data between gouvernements

The percentage of Coworking Spaces between the Gouvernements



```
coworking_dataframe.groupby('location.state')['id'].count()
```

```
location.state
Gouvernorat de Ariana    1
Gouvernorat de Sousse    2
Gouvernorat de Tunis     4
Name: id, dtype: int64
```

- We have found only 7 coworking spaces distributed by 1 (14%) in Ariana, 2 (29%) in Sousse and 4 (57%) based in Tunis government .

Conclusion

- For those who's are in Tunis government they have more chances to get to a coworking space.
- The data was very limited and we need more data so that we can make better analyses about coworking spaces because in origin we have more than 70 coworking spaces based in this country but we have found only 7 coworking (less than 10%)

References

- Foursquare API for developers: <https://developer.foursquare.com/>
- Matplotlib documentation: <https://matplotlib.org/>