New Hotel Opening

Location Prediction

IBM DATA SCIENCE CAPSTONE

OUR BIG IDEA

Build a new hotel in the economical capital city of Douala Cameroon, in west Africa, where expatriates and tourists from around the world mingle for business and pleasure.

THE CHALLENGE

The Hotel should be built:

• Where expatriates and tourists from around the world mingle for business and pleasure.

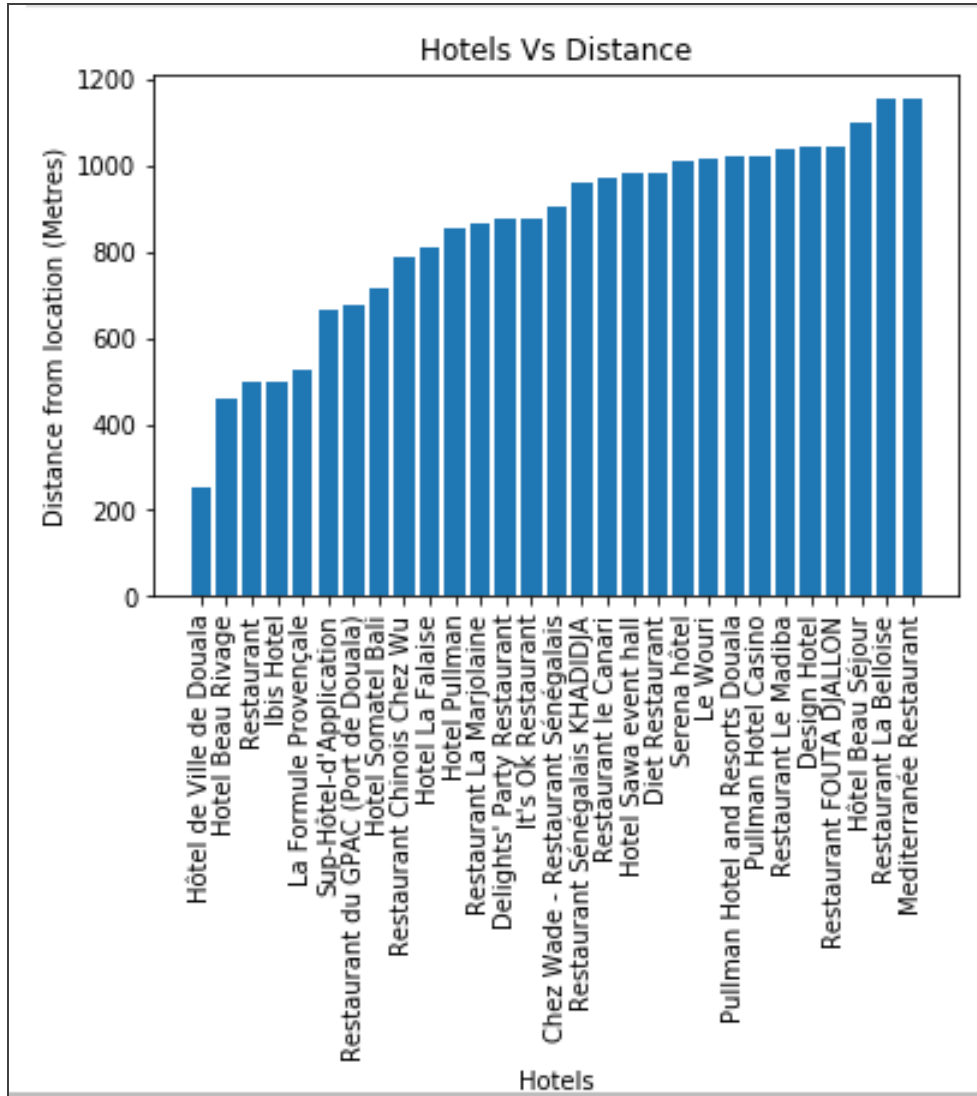•The location should be near the sea where most 5 stars hotels and restaurants are located

DATA SOURCE

We will be completely working on Foursquare data to explore and try to locate our new hotel where more venues like church, sports centers, beach, museums, shopping centers, memorials that are present nearby.

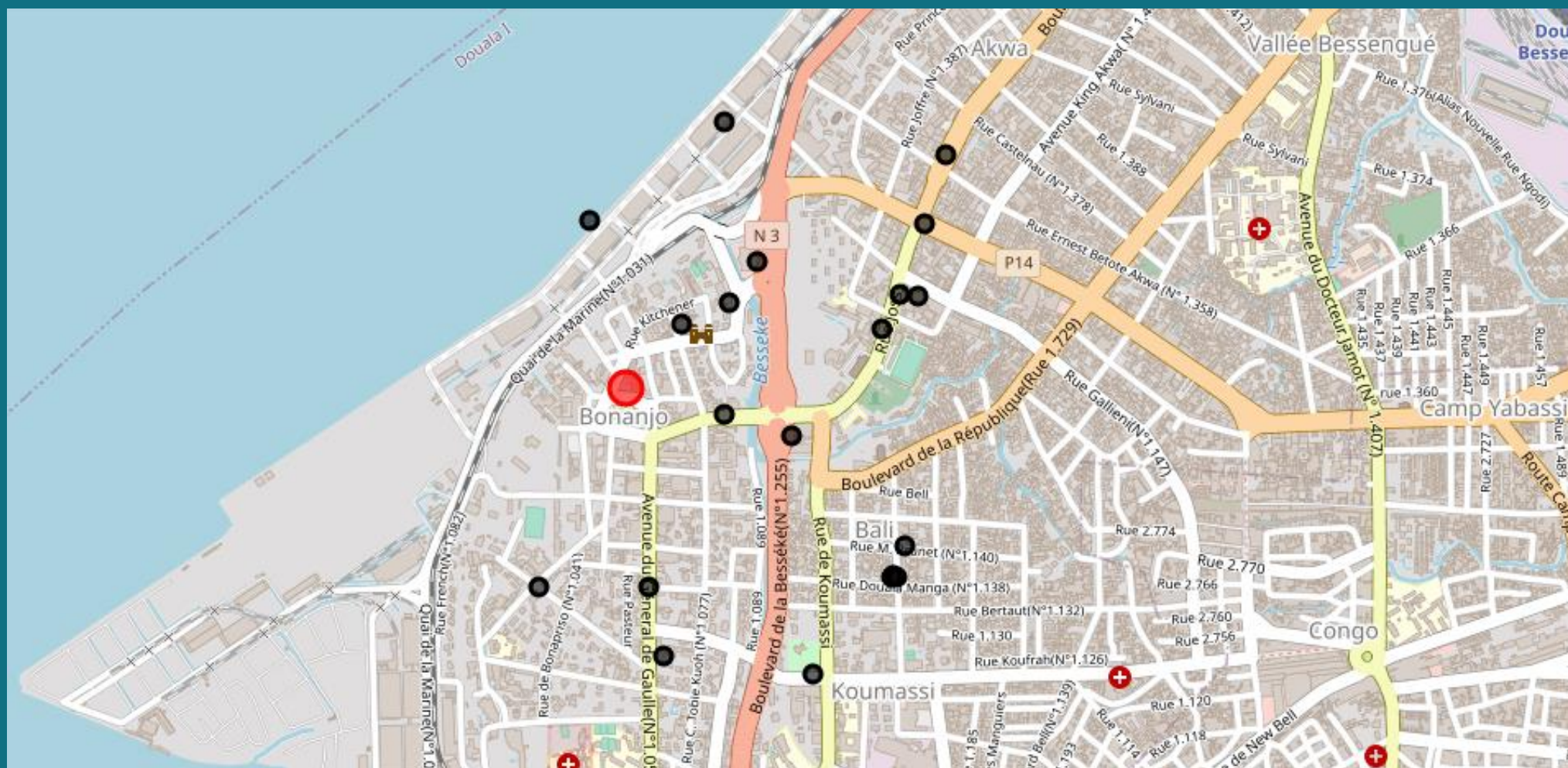**How will we be solving using this data?**

We will looking for midpoint area of venues to locate our new hotel. Before that our major focus will be on all venues present in and around the core place of downtown Douala.
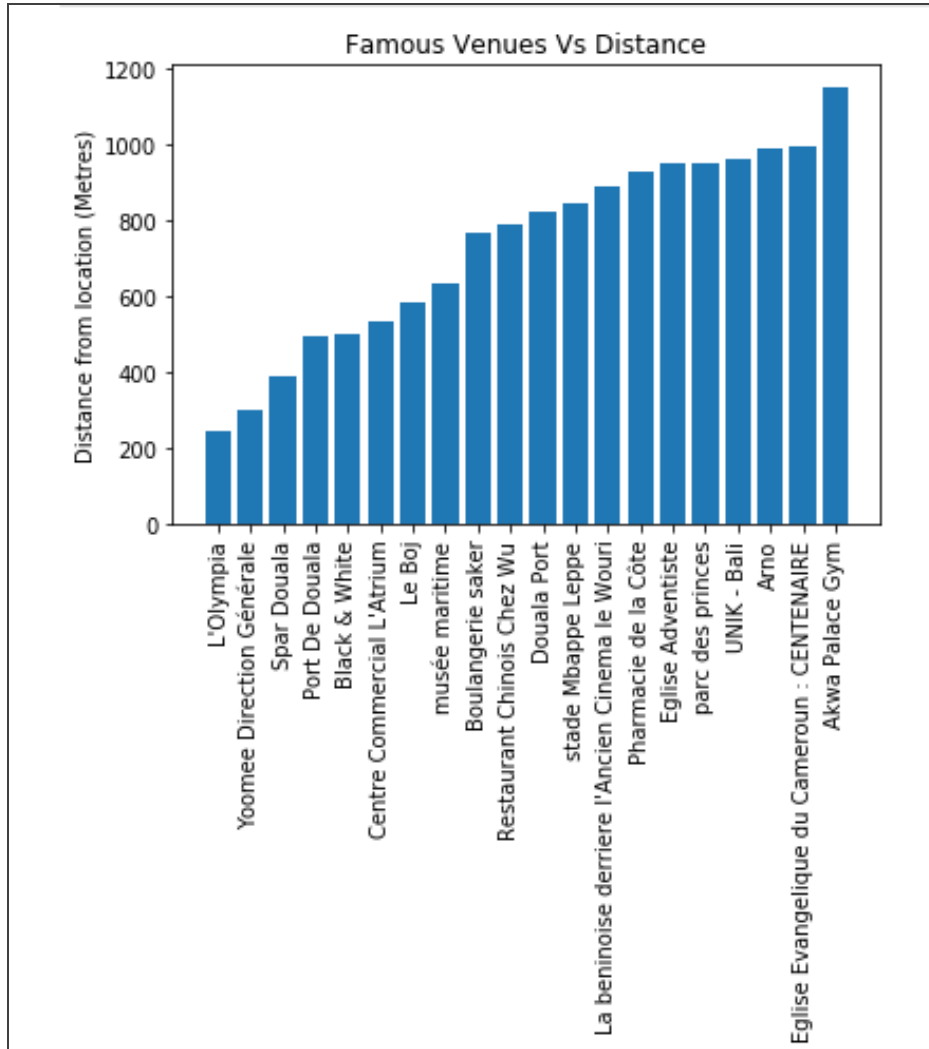
Hotels Vs Distance

HOTELS

- There are 29 hotels/restaurants within 1km radius captured by Foursquare data engine.
- Hotel de ville de Douala is the closest to all other hotels
- Hotel Beau sejour remains the farthest
- Average distance between all hotels to our core location is 853 meters
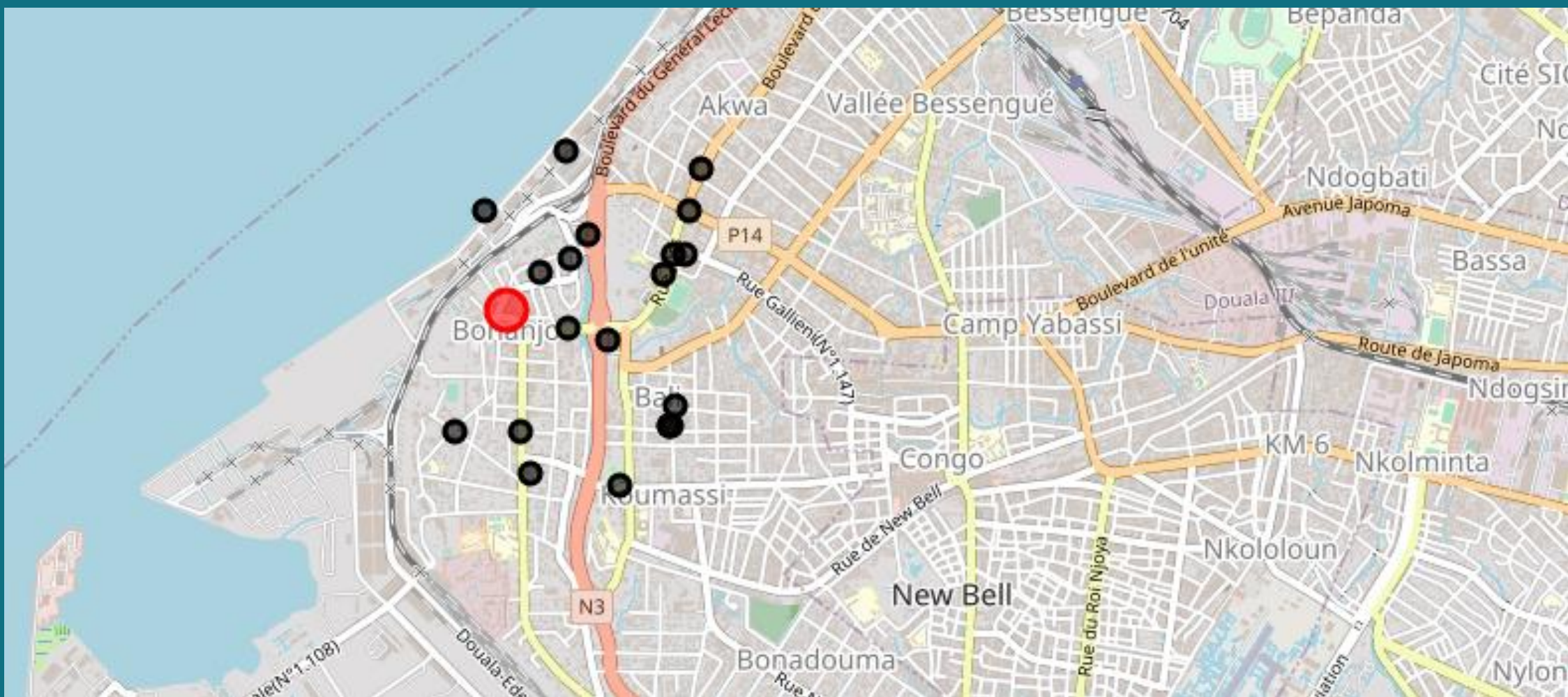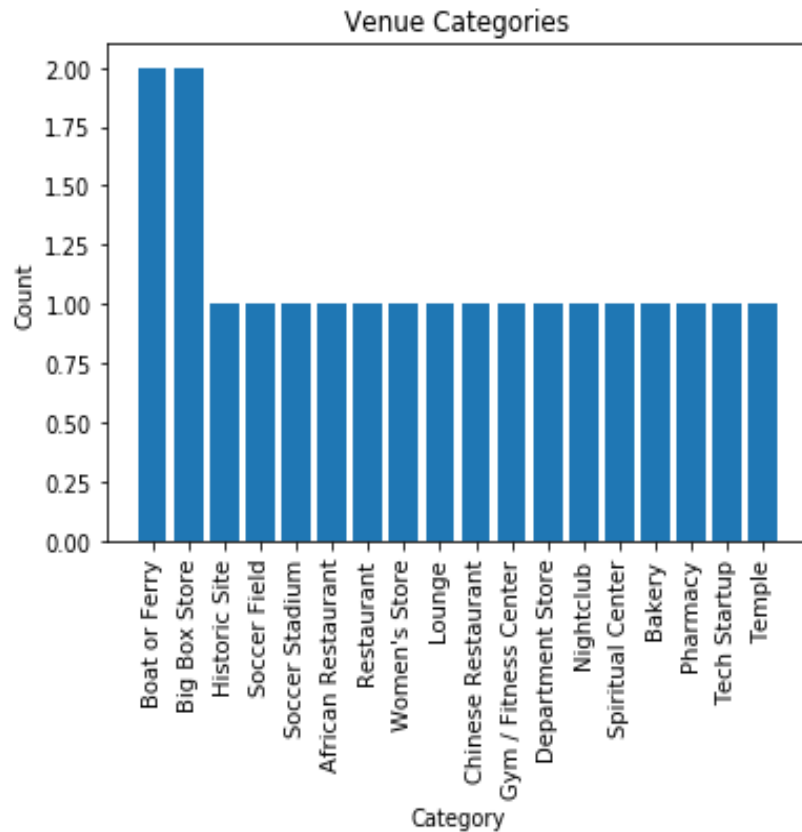
HOTELS MAP

VENUES

- There are 22 venues within 1km radius captured by Foursquare data engine.

- L'Olympia, Spar Douala and Port de Douala are the closest venues to our core location

- Akwa Palace gym remains the farthest venue

VENUES MAP

Venue Categories

VENUES CATEGORIES

Even though we didn't have immense data to consider distribution of categories we could see that:

• Boat of Ferry

• Soccer Stadium

•Historic site

• Temple

are more common venues

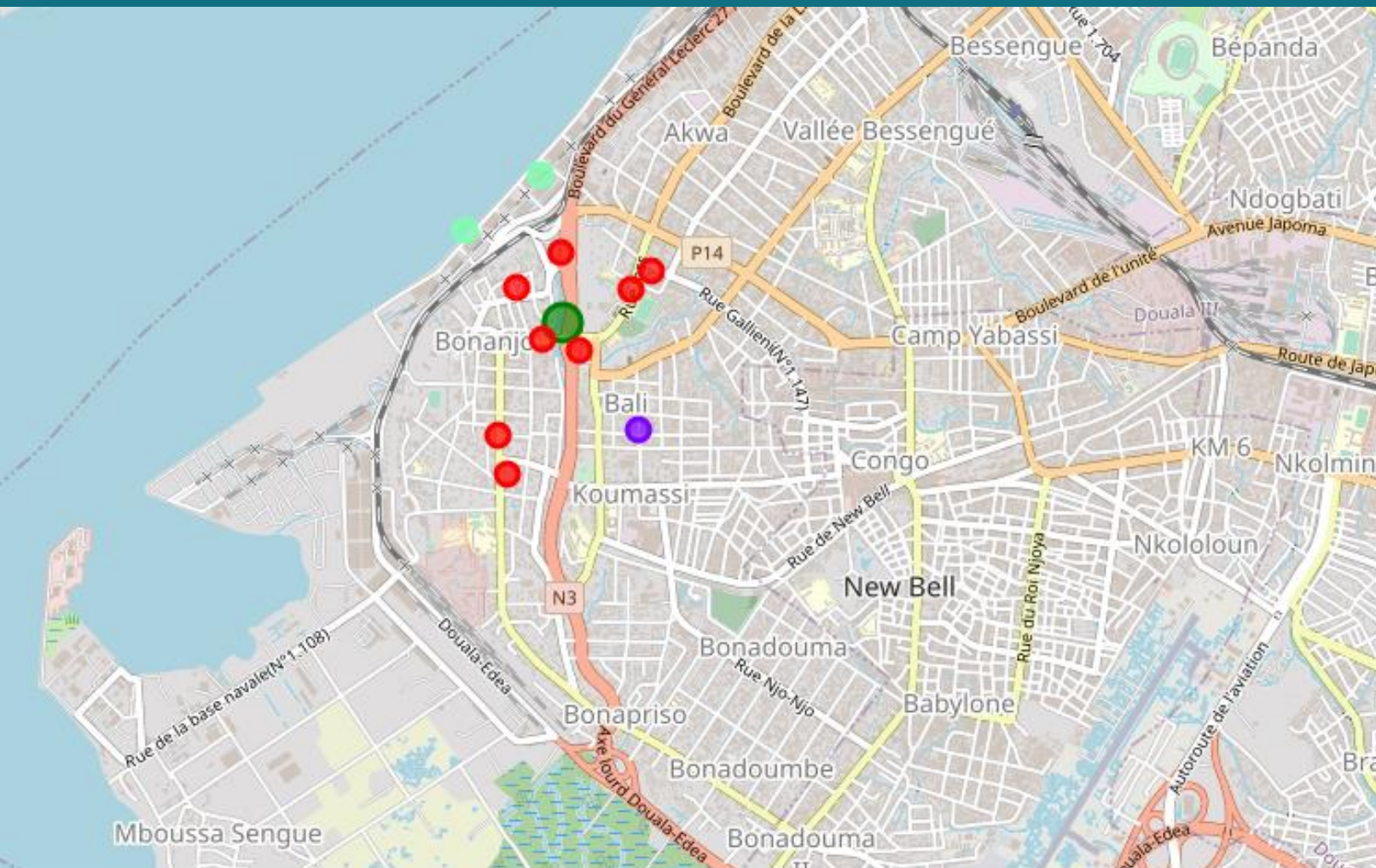|	Venue	Rating	distance	Tips
0	L'Olympia	8.2	246	6
1	Black & White	8	501	2
2	Le Boj	8	581	13
3	Centre Commercial L'Atrium	7.3	531	1
4	Boulangerie saker	6.1	765	5
5	Yoomee Direction Générale	No Rating Yet	297	2
6	Port De Douala	No Rating Yet	495	2
7	Restaurant Chinois Chez Wu	No Rating Yet	786	2
8	Douala Port	No Rating Yet	820	1
9	UNIK - Bali	No Rating Yet	958	1
10	La beninoise derriere l'Ancien Cinema le Wouri	No Rating Yet	890	1

RATINGS AND TIPS

- L'Olympia has the highest rating

- Le Boj has gotten the highest number of tips

- Other interested venues could be Black & White,

Centre commercial L'Atrium and Boulangerie Saker

CLUSTERING AND MIDPOINT OF VENUES

- The idea is to produce the center location of all famous top rated/tips venues

- We will take average of all centroids based on clusters found.

- Then will take the midpoints of all shortlisted rated venues.

- Finally, we will get the mean of both and decide our final location

- We've looked at 3 clusters and they were sorted as shown on the next slide

CLUSTER MAP

The location gives the central point to visit all other venues. Hence this can be locked down to attract all tourists

FINAL PREDICTED LOCATION

✓ Final location is pointed at 4.04391295,9.6901047

✓ My predicted location and core location are very close to each other which is expected, as this has central attraction;

✓ Most common categories of venues are Night clubs, Church, Mall. In downtown Douala, average distance between all hotels is 853 meters.

MAJOR COMPETITORS

These hotels will be our competitors as they are close to our predicted location

- ✓ Ibis Hotel
- ✓ Pullman Hotel
- ✓ Sawa Hotel

DISCUSSION & CONCLUSION

- From above reports, we could get an idea why the predicted location is pointed/clustered on the given spot.

- KMeans have figured out the most common place for all the venues. This output was very adjacent to the core location. This proves the accurate spotting of our predicted algorithm.

- Despite of the findings, there were some lack in data. Tips and ratings were missing for most of the venues. Also when I compared foursquare data with google map ,I could see there were many hotels and venues found missing in foursquare

- As a business person, one would be able to set up a hotel/restaurant on given spot. This will bring revenue automatically as we have selected a well known area.

- It was wonderful journey for me in IBM capstone and other courses. Thanks to Coursera for keeping Skilful instructors with their awesome materials

THANK YOU!

IBM Data Science Capstone