IBM DATA SCIENCE CAPSTONE PROJECT

POSSIBILITY OF BUSINESS SUCCESS BASED ON CORRELATION BETWEEN EXISTING BUSINESSES

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INTRODUCTION

This project aims at using the correlation between number of existing businesses in the neighborhoods, to find patterns that may lead to a successful business.

The city in mind is the city of Alexandria, Egypt; a vibrant city with multiple opportunities in many differnet industries and businesses.

DATA ACQUISITION AND CLEANING

I will use the following technologies to gather data and information about businesses in Alexandria:

- BeautifulSoup

- Foursquare API

- Nominatim

In the cleaning phase, I removed any neighborhood that did not have a recorded location, and grouped all the data about each neighborhood into a single dataframe.
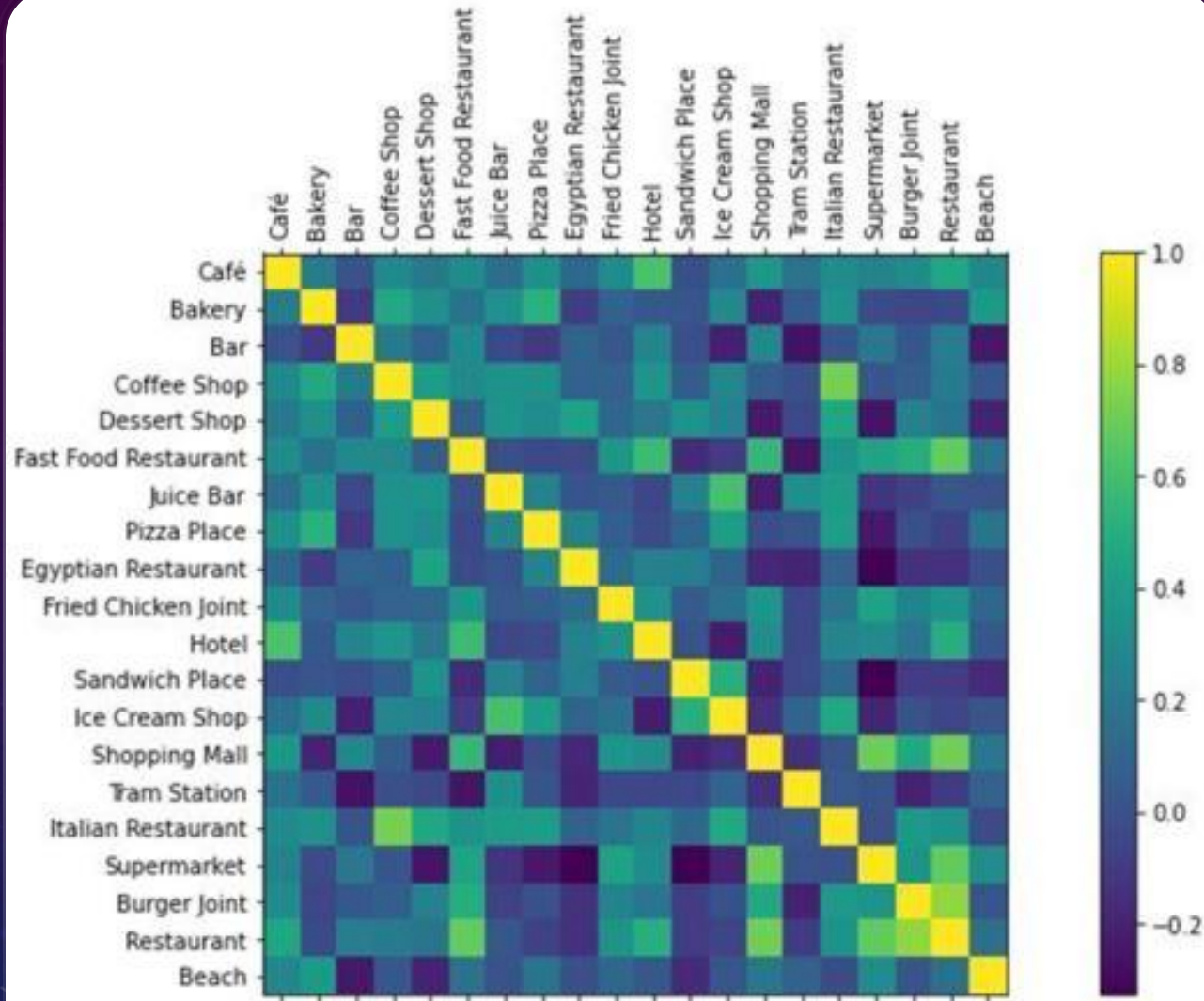
CORRELATION MATRIX

Fig 5. Correlations between venues in neighborhoods

From the correlation matrix we can see that their exist correlation between:

- Pizza places and the bakeries

- Hotels and the Cafes

- Italian restaurants and Coffee shops

- Juice bars and Ice cream shops

- And Restaurant, Burger Joint, Fast Food Restaurant and Malls, because usually they all exist in the same place.
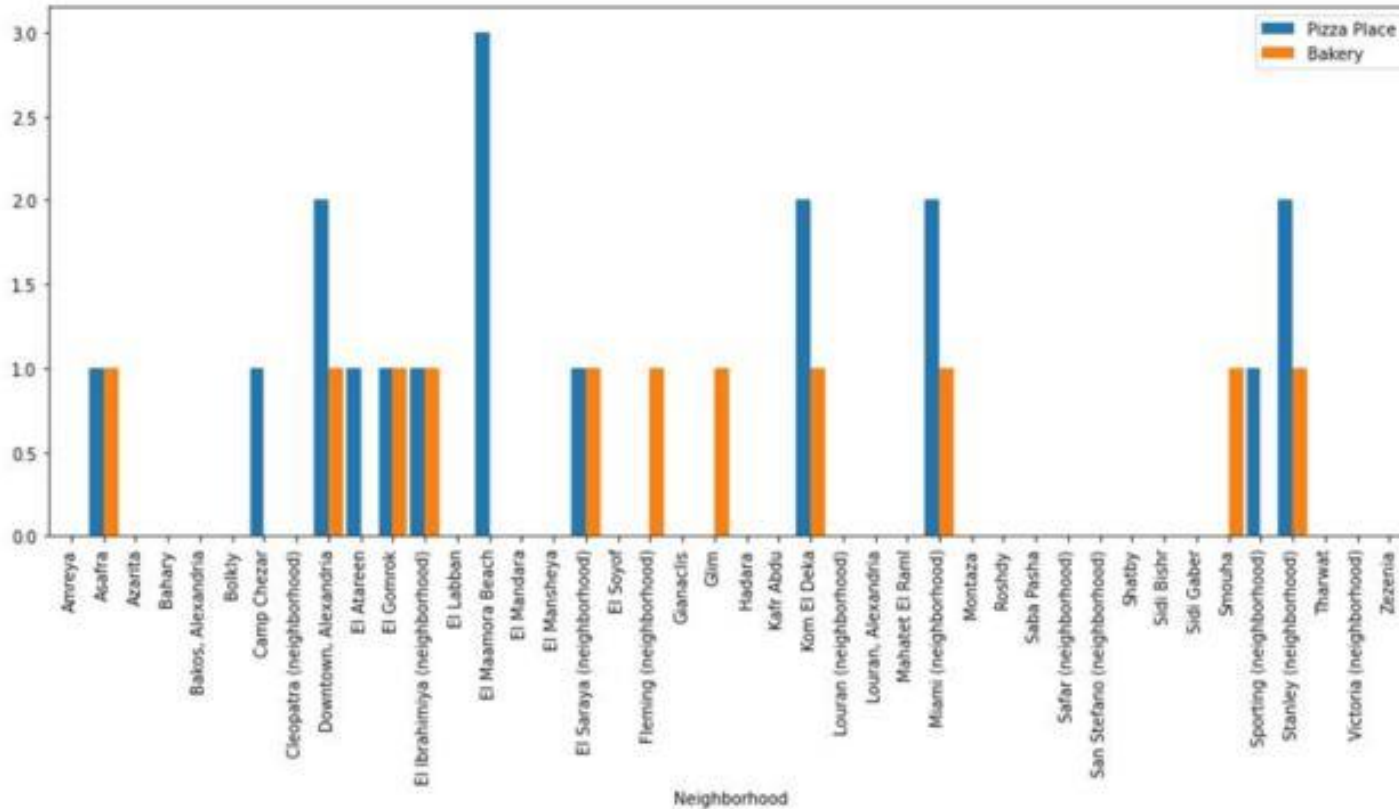
PIZZA PLACE BAKERY

Fig 6. Pizza places and Bakery in Alexandria

As we can see there is some correlation that pizza place relay on the products of a bakery to serve all sorts of pizza types, and for each two pizza places, there usually one bakery shop. And **El Maamora Beach** has three pizza places, with no bakery.

Conclusion:

The probability of a successful bakery project in El Maamora Beach neighborhood is **High.**
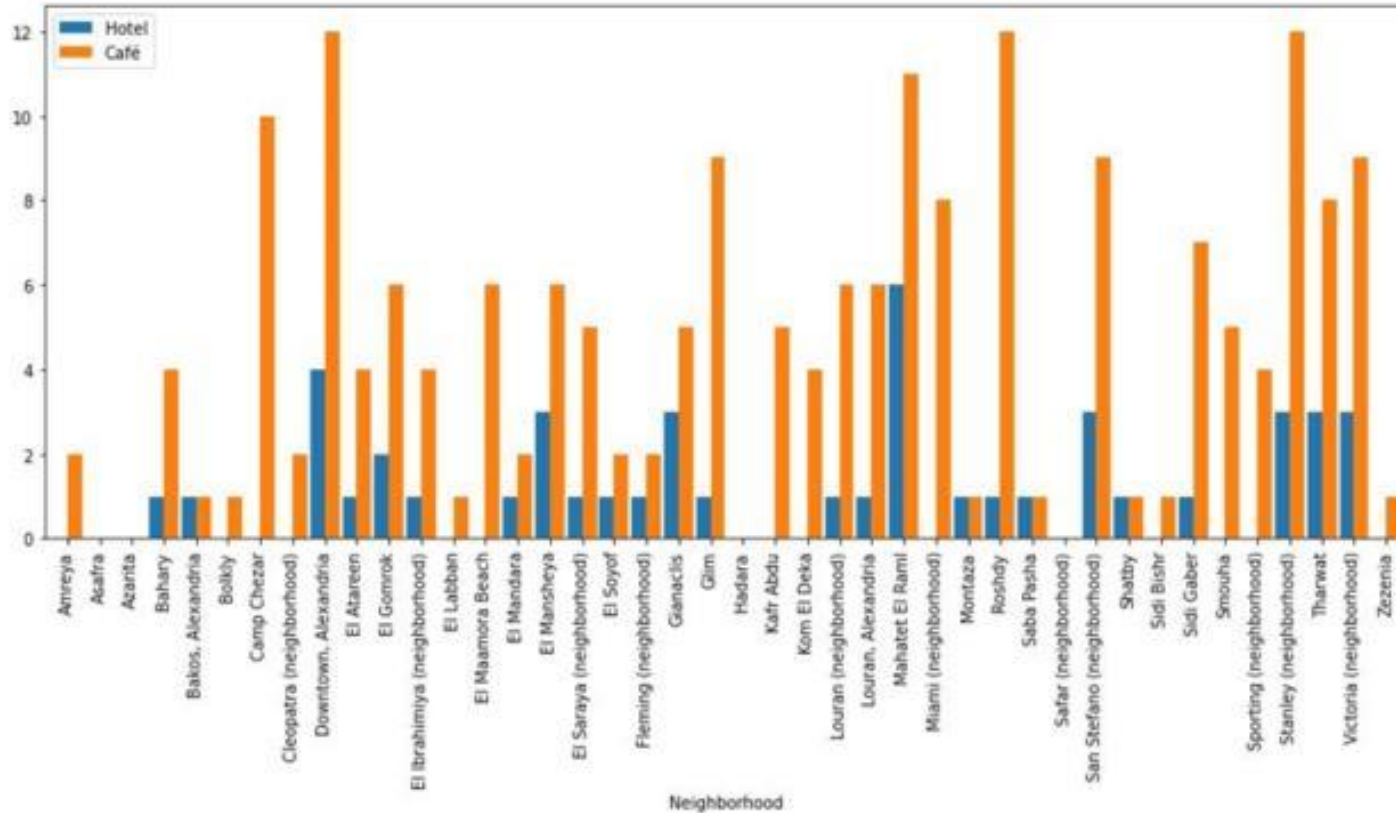
HOTEL CAFE

Fig 7. Pizza places and Bakery in Alexandria

While having some outliers like *Camp Chezar* neighborhood - that have no hotels but high number of cafes, that is because it is a campus area of Alexandria University so there are a lot of students going there -, except there is a general trend that with higher number of hotels, there is a higher number of cafes.

Conclusion: Due to the overwhelming number of cafes in Alexandria it is **NOT** recommended to open a cafe.
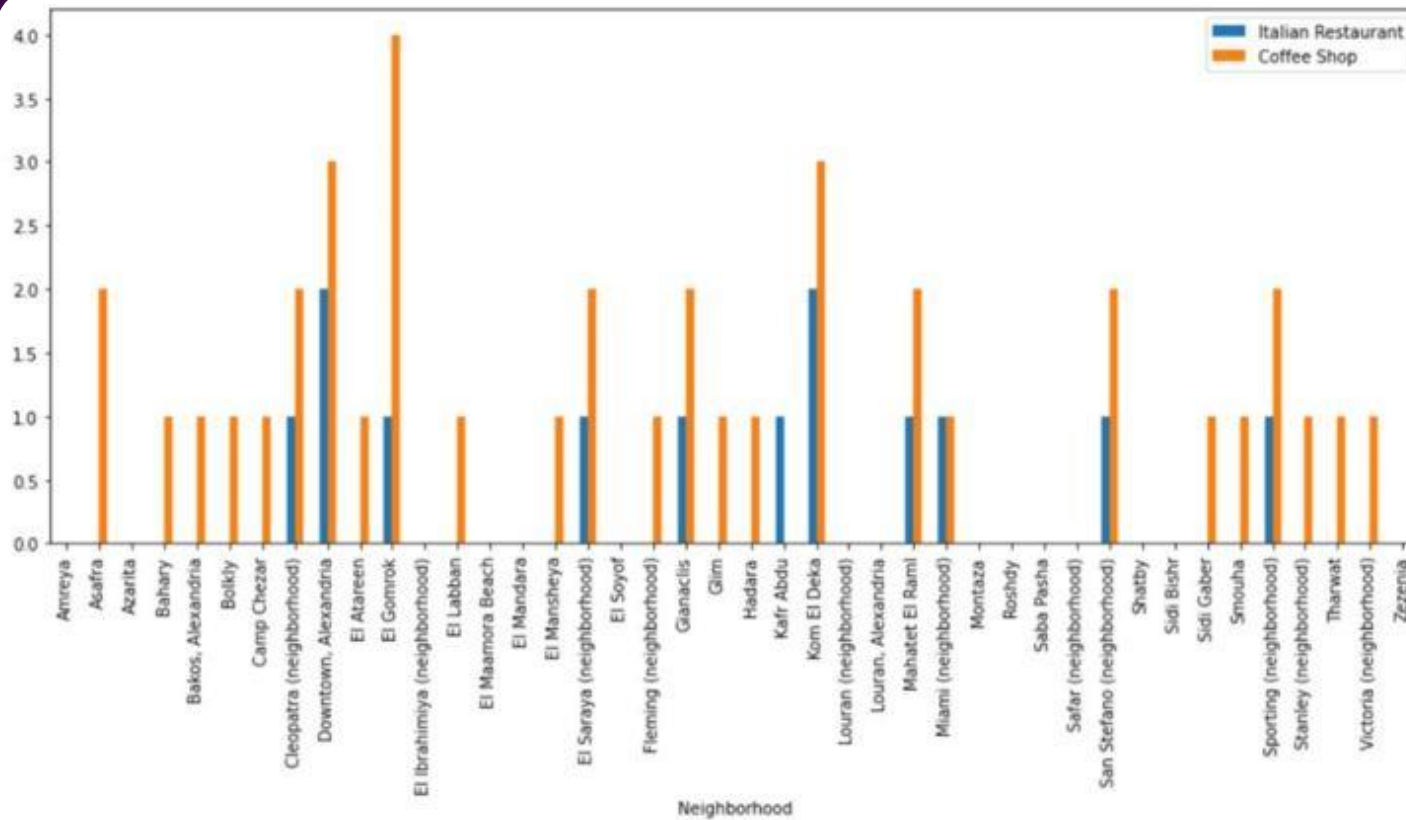
ITALIAN – RESTAURANT COFFE SHOP

Fig 8. Italian restaurant and a Coffee shop in Alexandria

There is **no clear indication** on the success or failure of opening an Italian restaurant or a coffee shop.
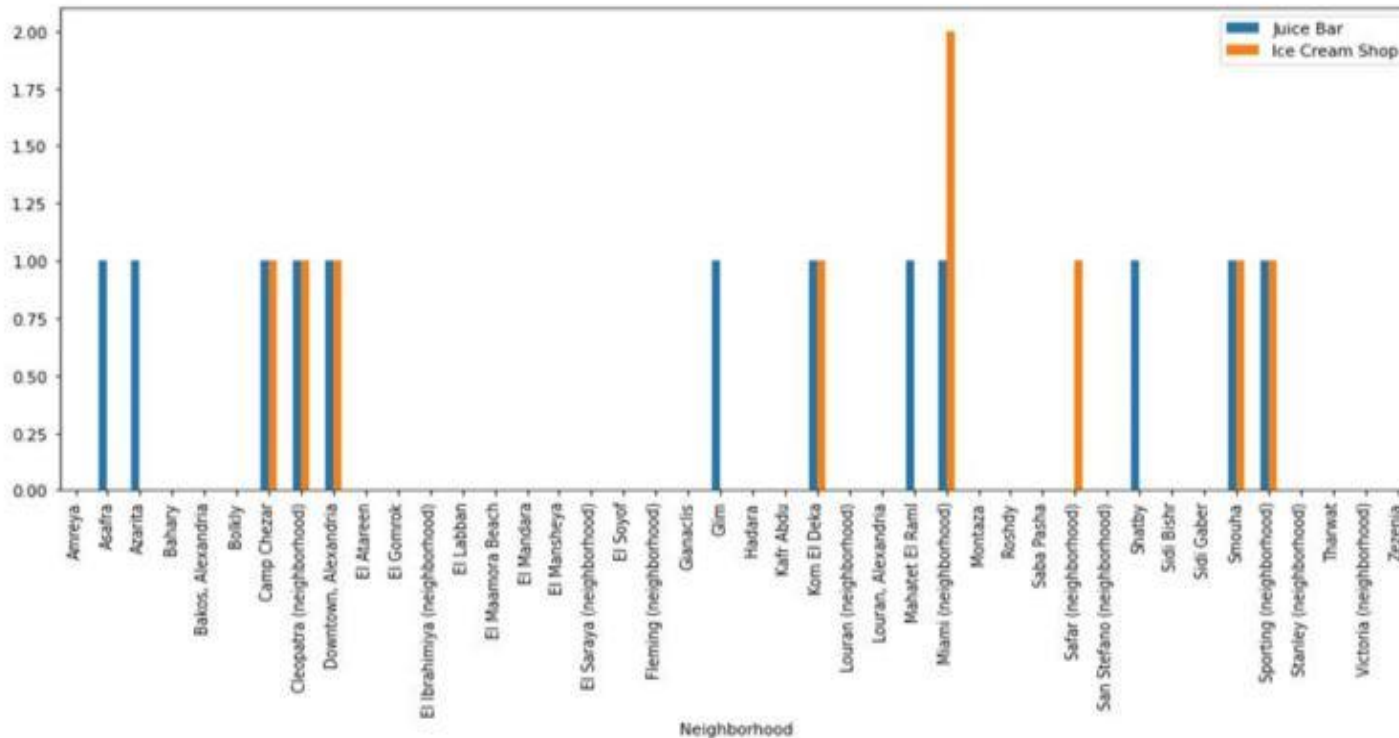
JUICE BAR
ICE CREAM SHOP

Fig 9. Juice bar and an Ice cream shop in Alexandria

In this option, opening an ice cream shop, or a juice bar appears to be new, or at least not popular yet, because their exist a number of both all-around Alexandria, so opening an ice cream shop, or a juice bar in one of the neighborhoods that don't have one might be an advantage.

Conclusion:

The probability of opening a successful ice cream shop or a juice bat in a neighborhood that don't have either one of them is **Medium**.

CONCLUSION

In this project we walked-through the idea of using correlation between existing different categories of businesses to identify the possibility of a successful business.

And we figured out that there are four possible options to investigate:

- Pizza Place and a Bakery
- Hotel and a Café
- Italian restaurant and a Coffee shop
- Juice bar and an Ice cream shop

THANK YOU !

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