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CAPSTONE PROJECT

THE BATTLE OF NEIGHBORHOODS
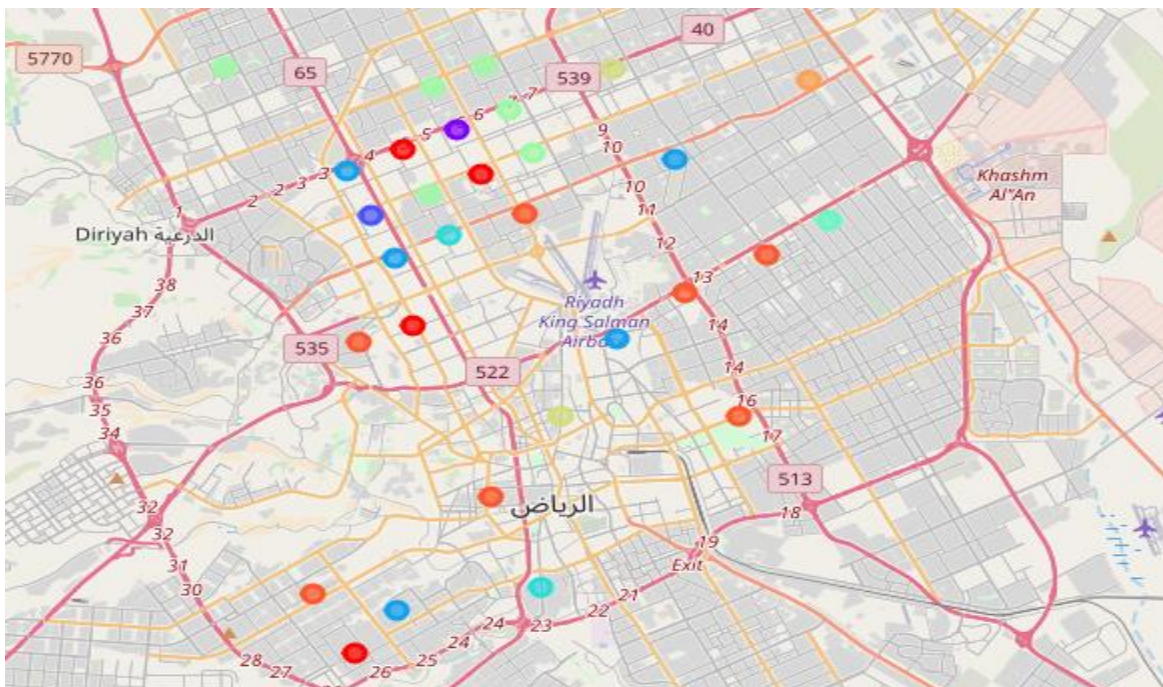
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INTRODUCTION

Have you ever considered opening a business in Riyadh, Saudi Arabia? I bet most of you did and you spent a lot of time thinking about the best location for your business. Well, think no more, with this application, all you have to do is to specify what type of business you are interested in investing in, and it will tell you what neighborhood is best for you. Isn't that great!

BACKGROUND

Saudi Arabia is now seeing a huge increase in a startup business. This is especially true for the center of Saudi Arabia, aka. Riyadh city.
In this project, I will propose an application, meant for individuals who are interesting in starting up a business, that will help them pick the right neighborhood for their business.

DATA USED

The data first was consisted of neighborhoods' names, latitude, and longitude. Then, this information was passed to FourSquare to get the nearby venues. Finally, all were combined in a huge dataframe to analysis.

Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
Al Falah	99	99	99	99	99	99
Al Izdihar	100	100	100	100	100	100
Al Jazirah	33	33	33	33	33	33
Al Maizilah	47	47	47	47	47	47
Al Malaz	100	100	100	100	100	100
Al Masani	52	52	52	52	52	52
Al Maseef	100	100	100	100	100	100
Al Mughrizat	100	100	100	100	100	100
Al Mursalat	100	100	100	100	100	100
Al Muruj	82	82	82	82	82	82
Al Olaya	72	72	72	72	72	72

Figure1: A sample of the resultant dataframe grouped by neighborhood

MODEL

After breaking the dataframe into a large set of features based on the category of venues, A prediction can be made using the minimum hamming distance.

What is the best neighborhood for a Coffee Shop?

```
getBestBusinessNeighborhood('Coffee Shop')
```

'An Nazim'

What is the best neighborhood for a Donut Shop?

```
getBestBusinessNeighborhood('Donut Shop')
```

'Al Jazirah'

What is the best neighborhood for a Fast Food Restaurant?

```
getBestBusinessNeighborhood('Fast Food Restaurant')
```

'Al Mursalat'

What is the best neighborhood for an Electronics Store?

```
getBestBusinessNeighborhood('Electronics Store')
```

'Al Falah'

Figure2: Some test-cases

CONCLUSION

Saudi Arabia is now seeing a huge increase in a startup business. An application, meant for individuals who are interesting in starting up a business, that will help them pick the right neighborhood for their business is proposed. The model uses hamming distance to predict the best desirable place for one business.