Capstone Project – Week 5

In this week, you will continue working on your capstone project. Please remember by the end of this week, you will need to submit the following:

1. A full report consisting of all of the following components (**15 marks**):

- Introduction where you discuss the business problem and who would be interested in this project.

- Data where you describe the data that will be used to solve the problem and the source of the data.

- Methodology section which represents the main component of the report where you discuss and describe any exploratory data analysis that you did, any inferential statistical testing that you performed, if any, and what machine learnings were used and why.

- Results section where you discuss the results.

- Discussion section where you discuss any observations you noted and any recommendations you can make based on the results.

- Conclusion section where you conclude the report.

2. A link to your Notebook on your Github repository pushed showing your code. (**15 marks**)

Introduction

We are a consulting company helping the small or medium enterprise to introduce the French and Monegasque market. We are doing Market studies to help our client to better understand the market there are preparing to inter into. Today a client that is already owning a Spa in Paris would like to introduce the Monegasque Market and Asked for our help to do so. They need to know the number of Spa already Established in Monaco and in which location exactly there are placed.

Data

We will use the Data from Monaco coming from the Foursquare API to locate the different spa in the city.

	name	categories	lat	lng
0	Hôtel Hermitage Monte-Carlo	Hotel	43.738618	7.426009
1	Chanel Boutique	Boutique	43.739505	7.425488
2	Thermes Marins Monte-Carlo	Spa	43.737498	7.426704
3	Louis Vuitton	Boutique	43.739061	7.426720
4	Crystal Bar	Bar	43.738031	7.425736
5	Hôtel de Paris	Hotel	43.739149	7.427685
6	Le Grill	Restaurant	43.738563	7.427572
7	Valentin	Italian Restaurant	43.739717	7.424846
8	Gucci	Shop & Service	43.738080	7.427231
9	Place du Casino	Plaza	43.739467	7.427746
10	Le Louis XV - Alain Ducasse	French Restaurant	43.739281	7.427631

Methodology

We are going to extract the Data Venues in Monaco from the Foursquare API. Once it is done, we will organize those venues by category in order to get the name and the number of the Spa venue category.
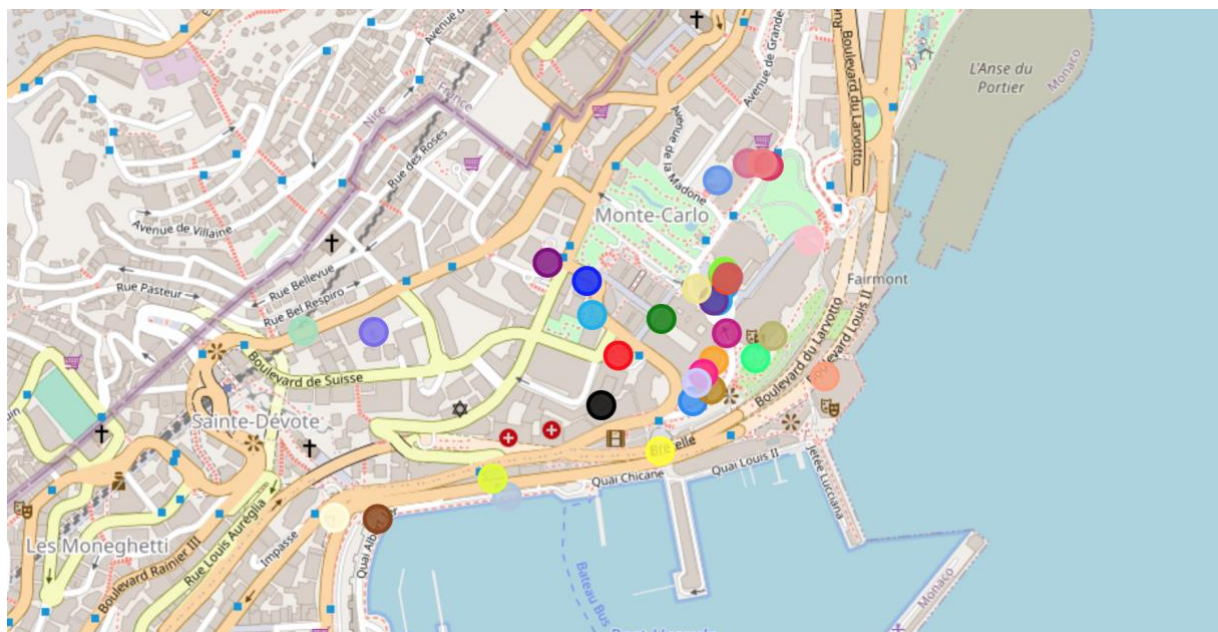
```python
# one hot encoding
monaco_onehot = pd.get_dummies(nearby_venues[['name']], prefix="", prefix_sep="")

# add categories column back to dataframe
monaco_onehot['categories'] = nearby_venues['categories']

#move categories column to the first position
categories = monaco_onehot['categories']
monaco_onehot.drop(labels=['categories'], axis=1,inplace = True)
monaco_onehot.insert(0, 'categories', categories)
monaco_onehot.head()
```

	categories	Adagio Palais Josephine	Auditorium Rainier III	Billionaire Club & Lounge	Boutique Orange	Buddha-Bar	Caffe Milano	Café de Paris	Carol Joy Spa at Fairmont Monte Carlo	Casino de Monte-Carlo	Casino du Café de Paris	Chanel Boutique	Christian Louboutin	Crystal Bar	Côté Jardin	Dior	Fla
0	Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	Boutique	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	
2	Spa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3	Boutique	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4	Bar	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	

We will then cluster the frame that we have by taking in account those venue to get an idea of how is organized the city. A map will be created to get a full sight of the situation.

Results

The foursquare API results show that 4 Spas are located in the Monaco area. Among them, the majority is located around the Square Beaumarchais. Right behind the commercial area but except the commercial area there is no other stores near the Spas. Between the Saint Devote

and the Monte Carlo borough.

	categories	Adagio Palais Josephine	Auditorium Rainier III	Billionaire Club & Lounge	Boutique Orange	Buddha-Bar	Caffe Milano	Café de Paris	Carol Joy Spa at Fairmont Monte Carlo	Casino de Monte-Carlo	Casino du Café de Paris	Chanel Boutique	Christian Louboutin	Crystal Bar	Côté Jardin	Dior	Fl
32	Spa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Discussion

As client going into Spas are looking for peace our recommendation should be located in the same area of the other spa. Or find an area closer to another one with a lot of other stores but in that is still quiet. (refer the map).

Conclusion

There are several opportunities for our client to enter the Monegasque market as there is not a lot of Spa located in Monaco. The secret is to find a quiet place located to another neighbor with several stores that will attract prospects.