COURSERA CAPSTONE:

OPENING A GYM IN BARCELONA

1. INTRODUCTION

The city of Barcelona, Spain is one of the most visited cities in the world. Its beautiful beach landscapes, important monuments and culture are, without a shadow of doubt relevant factors affecting its tourism. Its economy is based upon this area, and many families and individuals depend on it.

It is a well acknowledged truth that during the current situation (where the whole Spanish population is in quarantine due to the coronavirus crisis), many people have lost their job, as hotels/restaurants/museums have had to close due to the disappearance of clientele.

This situation has left many people unemployed, seeking for new opportunities to sustain their life in Barcelona.

Generally, it is expected that these people are going to try to use the current situation to start their own business, and the area of fitness and health, obviously related to gyms is going to be an emergent opportunity in the near future.

Moreover, this is a priori one of the most interesting areas to start a new business, as when the quarantine is over, it is expected that many people will be returning to their previous lifestyle of going to the gym, and as well, many new people will be entering gyms, as they will be fed up of their inactivity, caused by the isolation.

2. BUSSINESS PROBLEM

The aim of this project is to analyse whether opening a gym in the city of Barcelona, Spain is a good opportunity or not.

Throughout the use of Data Science, paired with Machine Learning algorithms (such as K-means clustering), the different suburbs in the city will be classified according to the amount of gyms they have or do not have. By doing so, it will be determined if opening a gym is a good opportunity as a whole, and if so, what are the best suburbs to do so in Barcelona.

3. **DATA**

For solving this problem, various data sources will be used. Firstly, the following Wikipedia page, https://en.wikipedia.org/wiki/Districts_of_Barcelona, will be used to obtain the name of all the neighborhoods of the city. We will do so by performing web-scrapping techniques, more specifically Python requests and the beautiful soup package.

By doing this we define the scope of the project, that is no other than the city of Barcelona.

We will also need information about venues in every neighborhood, specially gyms, that we will obtain through the Foursquare API. To do so, it is necessary to previously obtain the data regarding latitude and longitude for every neighborhood in the city, for what we will use the python geocoder package.