



New hotel in Barcelona

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Overall

Business Problem

- STARHOTEL is a company who already have hotels in Spain and now wants to open a new hotel this year in Barcelona, the city of the famous football team FC Barcelone. It is also known as the 2nd largest city in Spain, top 10 attractive destination and the city appeals lots of tourists every year.
- Opening a new hotel in Barcelona is considered a good decision. Location is one of most important feature that the company concerns. However, STARHOTEL hasn't got much information about the city yet. Barcelona has 10 different districts and it will be very risky if no research done before choosing a specific district. Therefore, this project comes to identify the best district to open the new hotel in Barcelona



Target

Now we will try to find the answers to the following questions:

- Which info that STARHOTEL should use to choose the district of their new hotel?
Which specific district is that?
- What is the district in the 2nd place that can replace the 1st one we find out (if needed)
- The related hotels in the same area those could affect and be the competitors of our new hotel

Data source

Geographic data

- We will need geographic information of the 10 districts in Barcelona, as well as their latitude and longitude coordinates. The information can be found here:

https://en.wikipedia.org/wiki/Districts_of_Barcelona

Venues data

- To analyze our district, we will base on the information of the venues in each district, which we can get through Foursquare API. The source of the data is on

<https://developer.foursquare.com/docs/places-database/>

Method and Environment

Code using Jupyter notebook - Python 2.7

Main packages will be used:

- pandas to work with dataframe
- beautifulsoup to get data from web
- folium to build map
- scikitlearn to run kmeans clustering
- foursquare API to get venues information

Code

Code could be found here:

https://github.com/duyennt97/Coursera_Capstone/blob/master/New%20hotel%20in%20Barcelona.ipynb

Report

Report could be found here:

https://github.com/duyennt97/Coursera_Capstone/blob/master/New%20hotel%20in%20Barcelona-report.pdf

Result

With the clustering result, we can divide the 10 district of Barcelona into 5 different group:

1. "The crowded districts" those are popular with a lot of attraction like Restaurants, Hotel, Plaza and Drinking places
2. The districts with Restaurants, Cafe and Park but less common in Hotel
3. "The peaceful" one with Bar, Park, Playground but less common in Hotel
4. "The busy district" which Restaurant, Cafe, Sport area is popular but Hotel is not in the top 10
5. "The student/sporty district" which Hotel and Restaurant don't appear in top 10 but most are Sport areas

Discussion

Base on the type of the Hotel, the business should choose the group that suitable for them. Let have some discussion about these groups:

1. The first group seems to be the best choice if the business are confident to compete the other hotels. The common places are Restaurant, Plaza and Drinking places, which makes the district in this group become potential place with lots of people
2. The 2nd and 3rd group have less common in Hotel. Our business should consider to build a hotel here and it can be special here.
3. The 2 last groups seem to be places for young people, especially students, so may be building hotel there is not a good idea



Thank you for reading