**Introduction: Business Problem**

São Paulo is a huge city located in the State of São Paulo, Brazil. There are lots of companies locate there and every year people from all over the world come to São Paulo for business trips and they usually stay in hotels.

So, this project aims to find the best location for a Hotel. Specifically, it is targeted to stakeholders interested in opening a Hotel in São Paulo, Brazil. Using Data Science and Foursquare location data we will try to find a location with no hotels nearby.

**Data**

The following factors will influence our decision:

* Number of existing hotels in the neighborhood

I will use the spaced grid of locations, centered around São Paulo, to define the best neighborhood.

Following data sources will be needed to extract/generate the required information:

* Google Maps API will be used to find the coordinates of the neighborhoods.
* Foursquare API will be used to get the number of hotels.

**Methodology**

I used a list of main São Paulo neighborhoods extracted from <http://g1.globo.com/sao-paulo/noticia/2013/11/veja-distribuicao-oficial-dos-bairros-nas-cinco-regioes-da-cidade.html> and from the information extracted there I built my own data frame as shown below:

A screenshot of a cell phone

Description automatically generated

I got the Latitude and Longitude of the neighborhoods using google maps library and using Python folium library, I built a map to visualize the geographic details of São Paulo.

São Paulo Map:

A close up of a map

Description automatically generated

I used Foursquare to analyze the neighborhoods and find which companies those neighborhoods already have.

A screenshot of a cell phone

Description automatically generated

I filtered the data to get only the hotels. I clustered the neighborhoods and built below map:

A picture containing text, map

Description automatically generated

**Results**

As we can see in map below, the hotels are concentrated near the center of São Paulo. Neighborhoods as Perdizes, Morumbi, Indianópolis, Itaim Bibi, Barra Funda and others have four or five hotels in the same neighborhood. The most part of the neighborhoods has no hotels, as we can see in red on the map below.

A close up of a map

Description automatically generated

**Discussion**

As a stakeholder I would choose a neighborhood marked in red which means there is no hotels in that neighborhood.

**Conclusion**

In this project, I found São Paulo’s neighborhoods with no hotels in order to find the best location for a hotel. I identified the hotels in the city and built a map clustering the neighborhoods by quantity of hotels.

Most of the Hotels are concentrated in specific neighborhoods. Neighborhoods in cluster 5 are not a good location for a new Hotel, since it has a high concentration of Hotels and then a high competition. However, we have many neighborhoods with no Hotels and others with only one hotel nearby. This project can be helpful for stakeholders interested in opening a hotel in the city of São Paulo. So, I would recommend the stakeholders to consider neighborhoods on cluster 0 and 1 to build a new Hotel.