

Capstone Project - The Battle of Neighborhoods

1. Introduction/Business Understanding

1.1 Description of the problem

The business problem that we make is facing the biggest soccer league event in Europe, the UEFA Champions League Final 2020 scheduled to be played at the Atatürk Olympic Stadium in Istanbul, Turkey, how could we provide support to different visitors that coming from many countries to list and visualize Istanbul districts that fit their needs in term of culinary/ food venues.

1.2 Discussion of the background

With a population of 15.5 million people and one of the largest cities in the world established on two continental continents, namely Asia and Europe, estimates that hundreds of thousands of visitors from local and abroad will be crowded in the city of Istanbul to attend the biggest football event this coming Europe.

Besides that, with this very vital city location, you can see a modern western city combined with a traditional eastern city where many cultural differences, multi-religious, historic buildings, shopping centers, a lively nightlife scene, real estate investment, and entertainment venues making the interest of many tourists to visit this historic city in Turkey as a tourist destination.

Istanbul has a lot of culinary types that offer a variety of domestic food and also a choice of food from around the world and places to eat in 39 different districts consisting of 25 districts sit on the European side, and 14 rest on the Asian side. Because of the enormous size of these districts, to get to know them all would take a lifetime so it is very difficult for newcomers especially those who want to go to restaurants to choose the type of restaurant that suits their tastes from the wide variety of information in the media.

In this Capstone Project, the problem solving steps will be carried out on how to utilize Foursquare location data and use one of the machine learning techniques, namely clustering to make an analysis and decision to determine which neighborhoods are in accordance with the tastes of customers in the city of Istanbul when the big event was held.

2. Data

In this Capstone Project we need the data needed to be processed and analyzed, including

- **List of districts of Istanbul**

Source : https://en.wikipedia.org/wiki/List_of_districts_of_Istanbul

The list of districts of Istanbul data in the form of this table will be taken from Wikipedia through the scrapping method to then be cleaned, explored, and processed then to add coordinates in each district in Istanbul can automatically use the geocoder class of Geopy client.

- **Food Venue/Restaurants in each neighborhoods of Istanbul City**

Source : Foursquare APIs

By using this Foursquare APIs after logging in using registered credentials, we will get all the closest places from all neighborhoods in Istanbul City so that we can get restaurants by filtering the data of the closest places from all the neighborhoods.