

IBM Data Science Professional Certificate

Suitable places for a Greek Restaurant in Toronto

Introduction

The union of restaurants in Greece contact my company (Data Analytics SA - a data analysis company) to produce a report in order to find if there are opportunities for opening a restaurant with Greek cuisine in Toronto, Canada.

Business problem

The objective of the project is to find the most suitable place(s) in order for someone to open a Greek cuisine restaurant in Toronto, Canada. To answer this question our company used data science methods and tools (such as machine learning algorithms).

Needed Data

In order to produce the report we need data that will help us to answer the main question and at this stage they will be very basic such as a list of neighborhoods in Toronto, Canada along with their latitude and longitude and some venue data related to Greek restaurants.

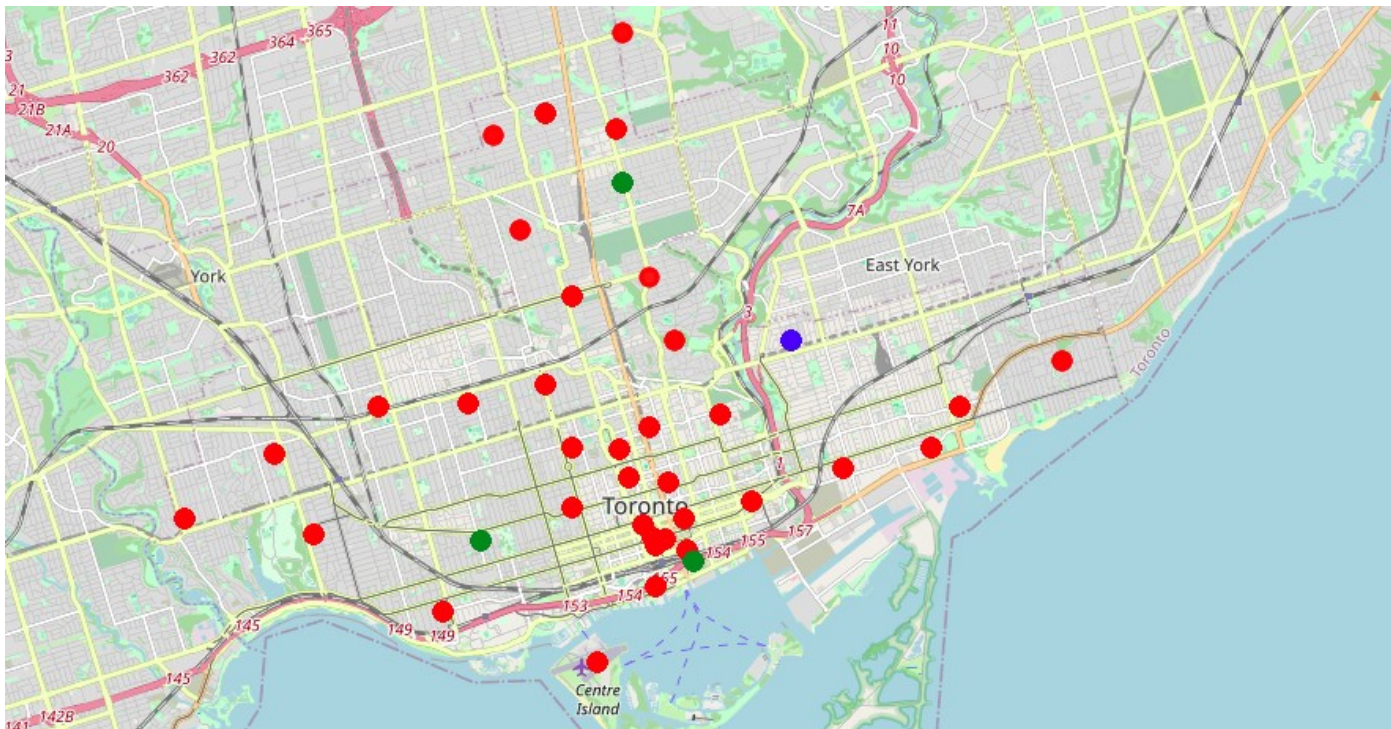
Methodology

The following took place during our analysis:

- **Get a list of neighborhoods in Toronto using pandas library and its HTML scrapping capabilities**
- **Find the corresponding coordinates and joined then with the neighborhoods**
- **Utilizing Foursquare API to pull a list of top 100 venues within 500 meters radius**
- **Finally the K-meas cluster algorithm was used (with $k = 3$) to cluster the neighborhoods.**

Results

The utilization of the K-means algorithm produced the following results:



Results

Most of the Greek restaurants are in cluster 1 (red dots) which is found in the areas of The Danforth West and Riverdale.

The clusters 0 (blue dots) and 2 (green dots) seems to have the same amount of Greek Restaurants and are located in the areas of Berczy Park, Little Portugal, Trinity, Davisville, Toronto Dominion Centre, Design Exchange, First Canadian Place and Underground city.

The recommendation to the union is that places around clusters 0 and 2 are more suitable to open an authentic Greek restaurant.