Capstone Project

Using Foursquare API and Clustering Algorithms for Trip Planning

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Version 1.0 (Week 4)

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1. Introduction

The project is inspired by my personal planned vacation to Italy in the summers of 2020. For anyone that has travelled abroad, they will know that there is frantic planning of places to see, things to do, experiences to try – all in a specified number of days. Planning usually involves scouring Google and finding recommendations but this can take a lot of time and effort.

The idea behind this project is to develop a methodology that would be easily replicable and scalable for any such trip, and provide the foundational information for trip planning in a minimal amount of time. Given some inputs (discussed in later sections), the program provides visualization of the itinerary on the map of the target city.

The project not only can appeal to travellers, but it can also be the foundation for development of any trip planning application. Right now, the scope of the project is limited to just clustering the places to see but in the future this can be aggregated with transportation data, budget planning tools, and operating hours of target places to provide a holistic experience to end users.

In terms of Capstone Project, this is not the typical scenario of comparing neighbourhoods. However, the techniques learned in the course are all applicable here and therefore this project falls in the scope of the Capstone Project.

2. Data Description

2.1. User Input Data

Data required from the user for the project is:

- Target city e.g. Florence, Italy
- Number of days to spend in target city e.g. 4 days
- Venue categories e.g. museums, landmarks, parks etc.
- Foursquare credentials

2.2. Data Fetched from Foursquare

Data that is fetched from Foursquare is following:

- Venues of the specified categories for the specified target city. Refer to the following article for details of this search: https://developer.foursquare.com/docs/api/venues/search
- Venue details (specifically their rating) for each venue from the above search. Refer to the following article for the details of this search: https://developer.foursquare.com/docs/api/venues/details

2.3. Output Data

The output data of the project is:

- Cluster labels for all the landmarks/places-to-see (each cluster label refers to the day of the vacation) and visualization of all landmarks/places-to-see with their respective colour differentiation on a map
- Itinerary listing all the landmarks/places-to-see for each day and sorted by their ratings