

Capstone Project

ART VENUE EXPLORATION

INTRODUCTION

Background:

- There are many people we know including me, who indulge art. We always would love to have a certain guidance or pointers to some of the places with great and popular art across the world.
- let's go through all cities across globe and pick out the art venues. Cluster these places and reveal the most famous art places to visit. One might find this information analysis helpful while during their travelling.

Interest:

- Travellers might be interested in using such clustering analysis to easily decide or prioritize their route map of art venues.

DATA SECTION

- It is evident that a comprehensive dataset is required that possesses these values for a wide range of cities. We can collect a reliable dataset from the site 'SimpleMaps'. This dataset has 225 countries with their respective capital cities, Latitudes and Longitudes. The cities would be filtered for art areas and then applied through Foursquare API to find individual venues nearby places for art.

Dataset Characteristics:

- Resource: 'www.simplemaps.com'
- Number of rows: 225 - i.e., there are 225 Countries with respective Capitals
- Then we try to apply the acquired location data to explore the surrounding art venues utilizing the Foursquare API. Through the "explore" option, we check for top 25 art venues within approximately 10 km radius around every city center and receive "Venue", "Venue Latitude", "Venue Longitude" and "Venue Category" columns for all 3316 rows.

METHODOLOGY

- Analyzing the procured dataset, we obtain a redefined version including 41 unique categories into columns. The cells contain the number of entities belonging to the respective category in the city. Utilizing the above dataset, we need to apply the DBSCAN from sklearn library which runs DBSCAN clustering from vector array or distance matrix. After the tuning of the parameters of the model the result contains 5 different clusters.

RESULTS

- Providence has more venues than Hartford (512 vs 460)
- Federal Hill has the most venues in Providence
- Downtown has the most venues in Hartford
- Most of venues in Federal Hill are restaurants, bars
- Venues in Downtown Hartford are more diverse includes: banks, concert hall, gyms...
- Bars, Restaurants, Bakeries, and Diners are very common in Providence
- Hartford is more about commercial

DISCUSSION

- Through the outlined methodology and procedure, we organize the datasets into required clusters. Utilizing different Epsilon parameters in to applied DBSCAN Model returns different number of clusters comprising similar results. The best result is as shown above. I hope that these results as evident to cluster the common art venues which are more profound, preferred and aid in travellers and venturists to develop theri understanding and aid in their decision to choose various art places.

CONCLUSION

From the project, we can conclude the following:

For travellers:

- Providence may be congenial for spending a considerable amount of time relishing the local food and cuisine.
- Hartford is not as adept in cuisine but is more commercial.

For business owners:

- Providence is lucrative and welcoming for startups or businesses pertaining to food and travel industry
- Hartford is profitable for investing the insurance industry