Queens

Restaurant Type

1. Analyze the cluster character can help the stake holders:
    a. location cluster and restaurant type

2. Cluster the candidate location for helping operation team:
    a. Analyze the current restaurant type
    b. Cluster the different restaurant type in each cluster

Data Acquisition and Cleaning

1. Google API
   a. Use Google API to get the location - longitude and latitude
   b. Get the candidate location geometry informatino
2. Foursquare API
   a. Get the restaurants' information and the schools information by using Foursquare API
3. Create candidate location
   a. Calculate the candidate locations
4. Data flow
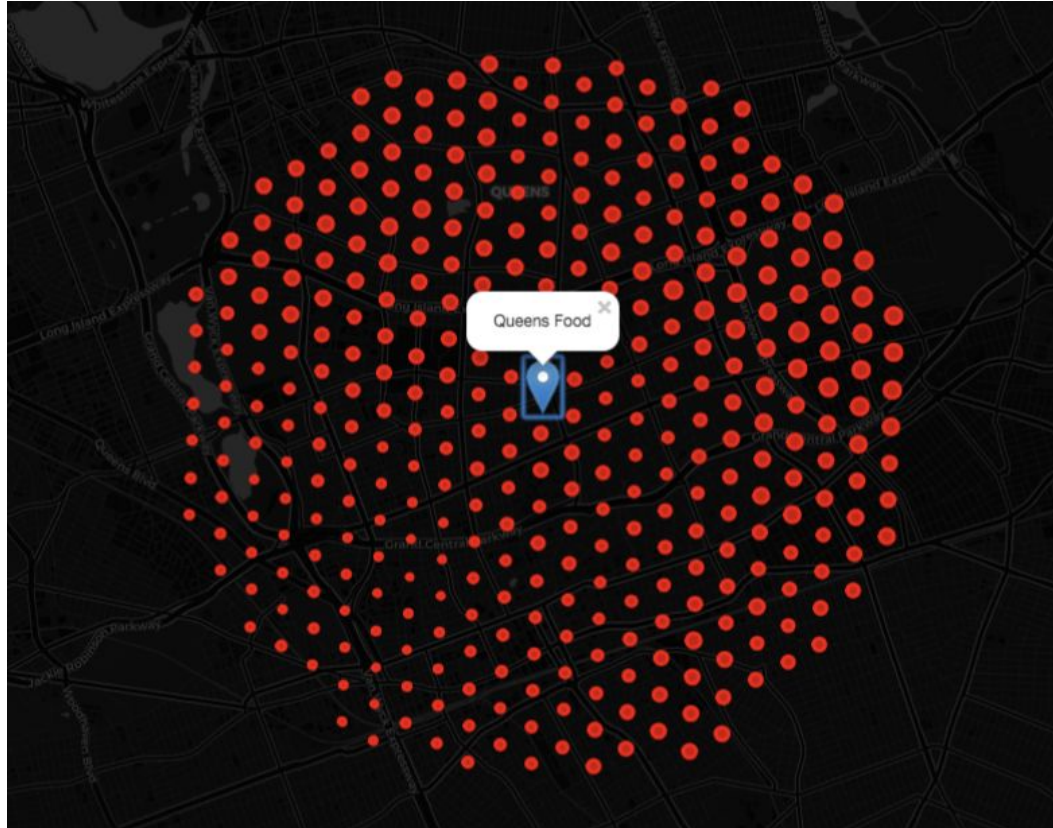   a. Get the geometry information
   b. Calculate candidate geometry information, under the conditions like ~5km from Queens center
   c. Get the detailed information in each circle by using Foursquare API
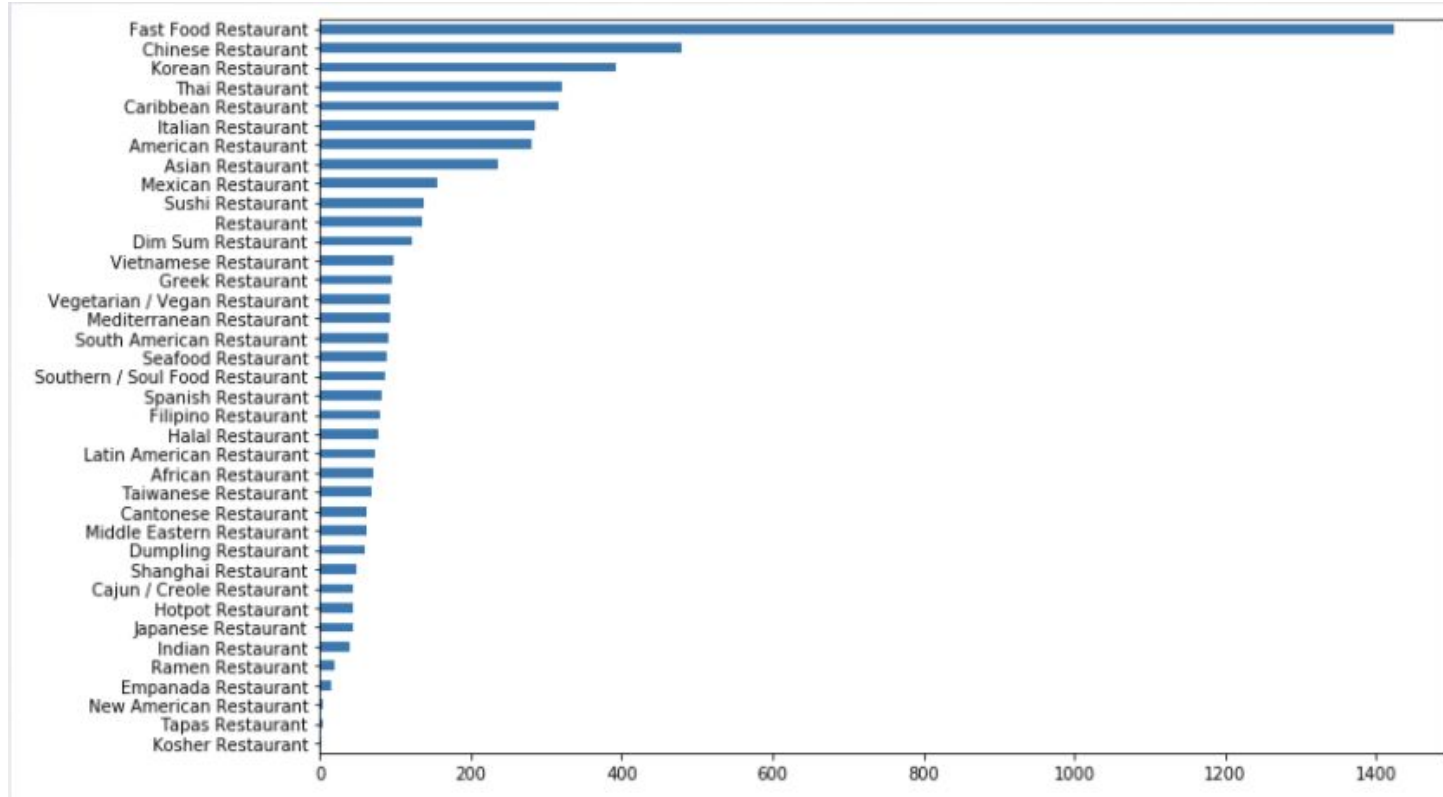
Data Flow

Google API → Create Candidate

↓

Foursquare API
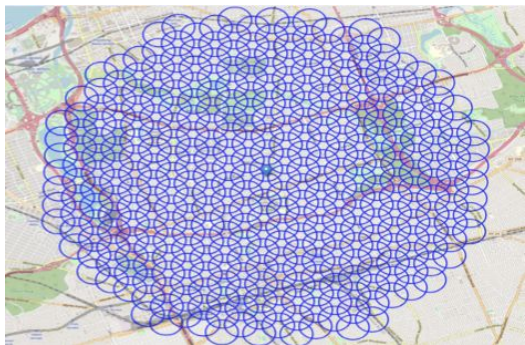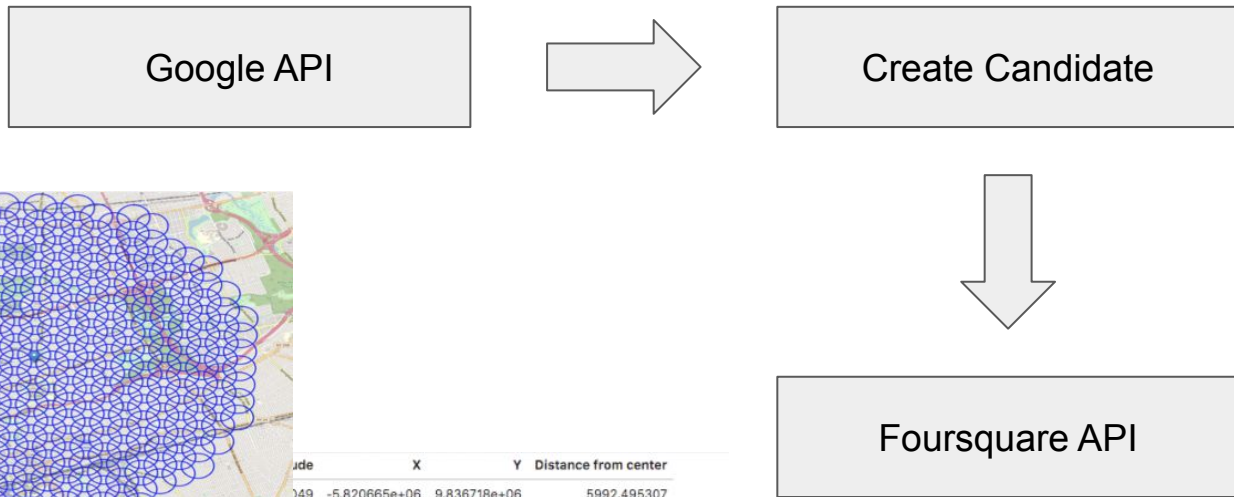
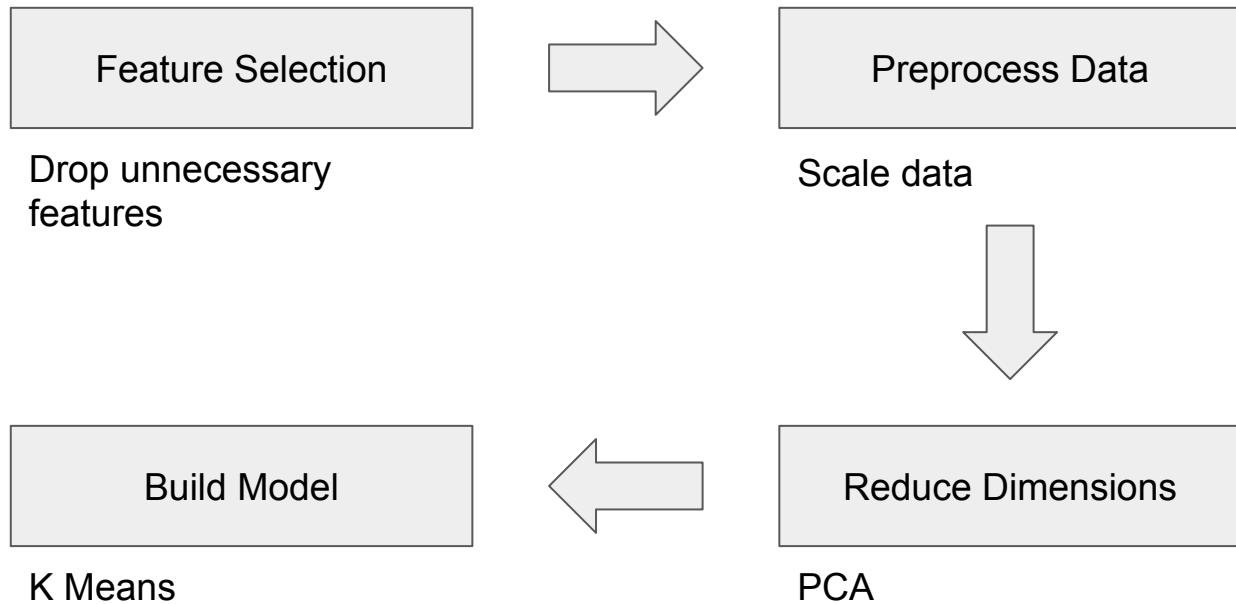|		ude	X	Y	Distance from center
		049	-5.820665e+06	9.836718e+06	5992.495307
		895	-5.820065e+06	9.836718e+06	5840.376700
2	89-28 213th St, Queens Village, NY 11427	40.723589	-5.819465e+06	9.836718e+06	5747.173218
3	214-46 Whitehall Terrace, Jamaica, NY 11427	40.727124	-5.818865e+06	9.836718e+06	5715.767665
4	218-17 Grand Central Pkwy, Jamaica, NY 11427	40.730659	-5.818265e+06	9.836718e+06	5747.173218
5	220-24 Hartland Ave, Jamaica, NY 11427	40.734194	-5.817665e+06	9.836718e+06	5840.376700
6	220-72 77th Ave, Flushing, NY 11364	40.737730	-5.817065e+06	9.836718e+06	5992.495307

Note: the latitude/longitude column header labels are partially cut off in the image; visible values include -73.750740, -73.750586, -73.750431, -73.750276, -73.750122.

Restaurant Information

Restaurant Number

Cluster Flow

Feature Selection

Drop unnecessary
features

Preprocess Data

Scale data

Build Model

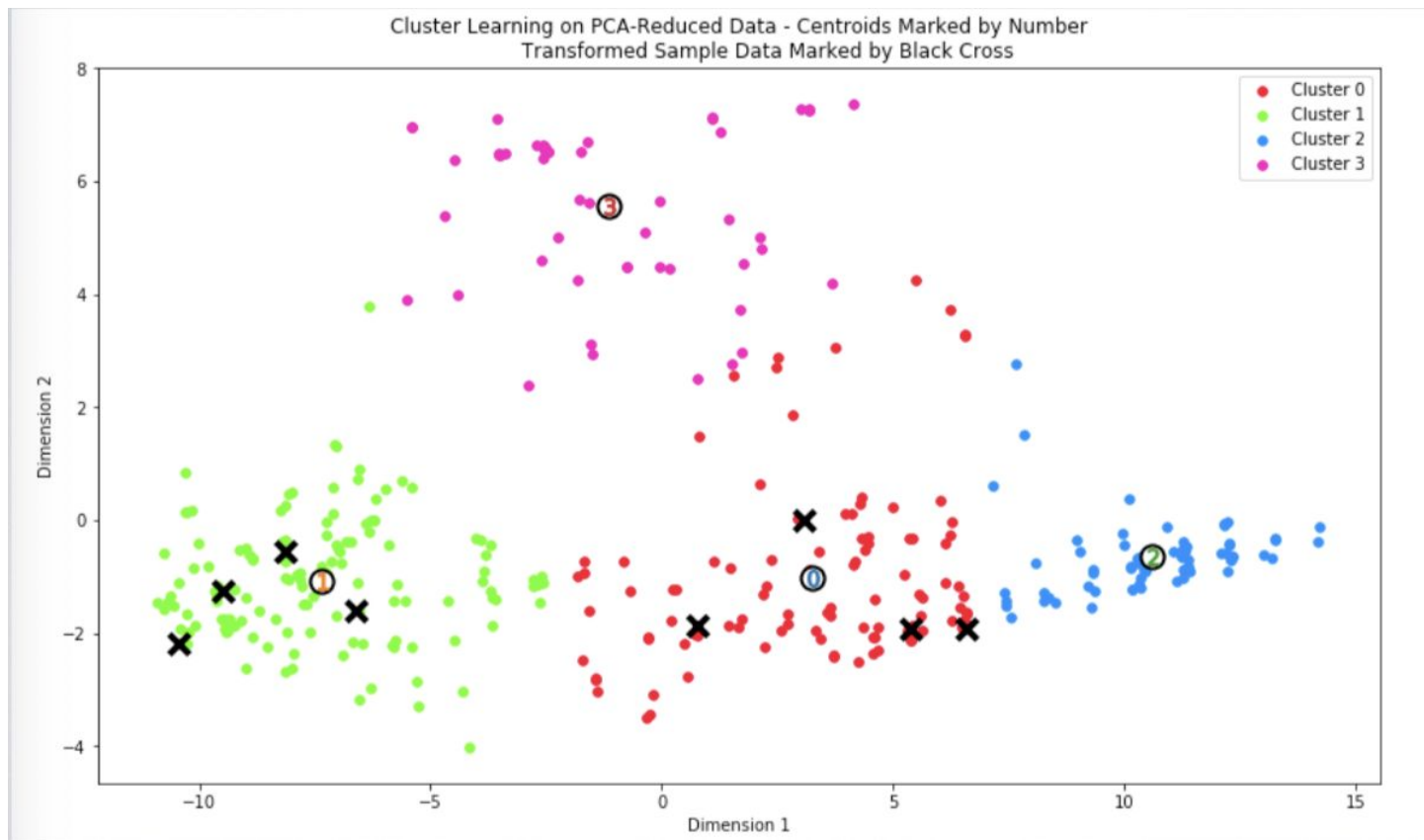K Means

Reduce Dimensions

PCA
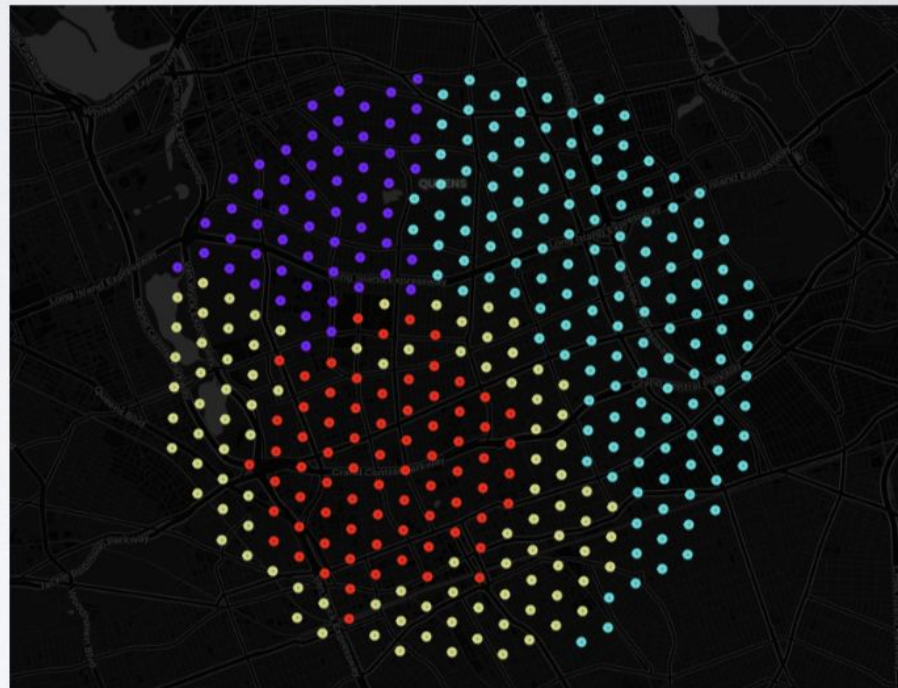
PCA Result
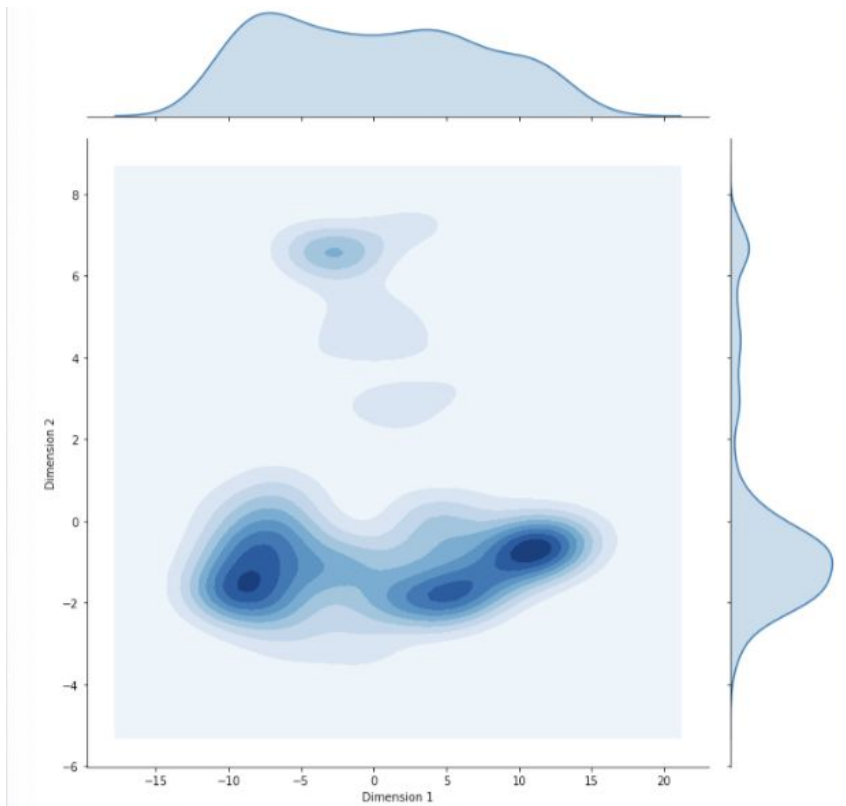
Analyze the main two components KDE visualizaion.
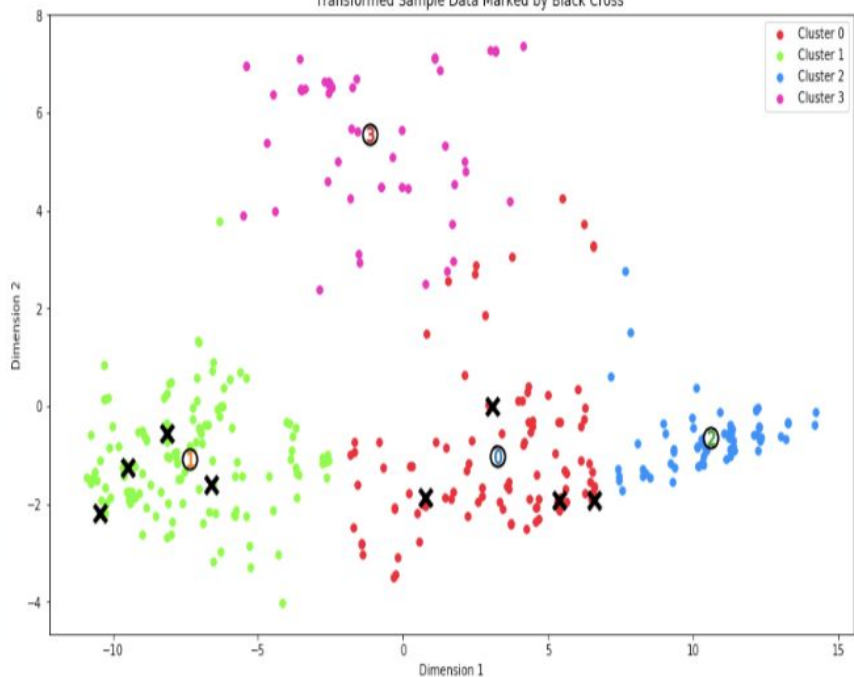
We can find that there are four clusters.

Cluster Report

Cluster Learning on PCA-Reduced Data - Centroids Marked by Number
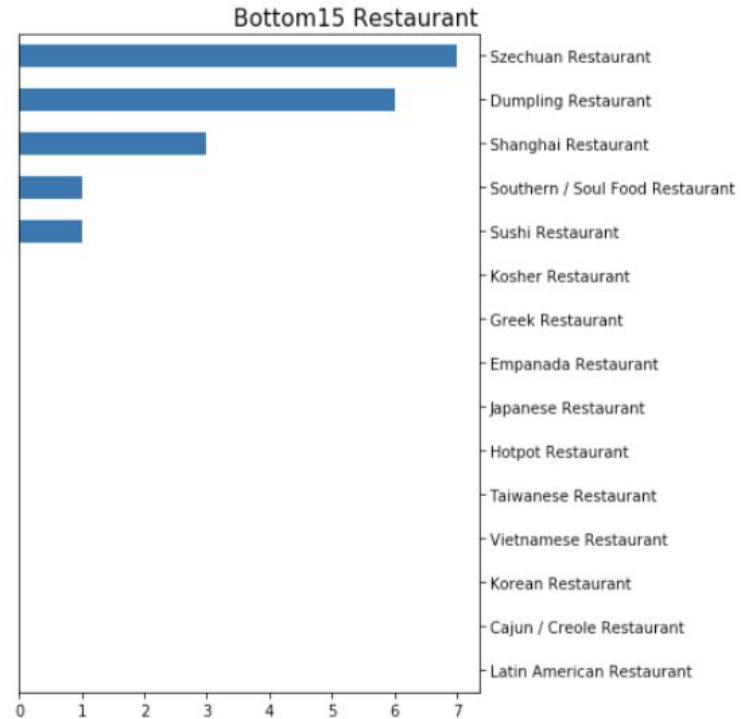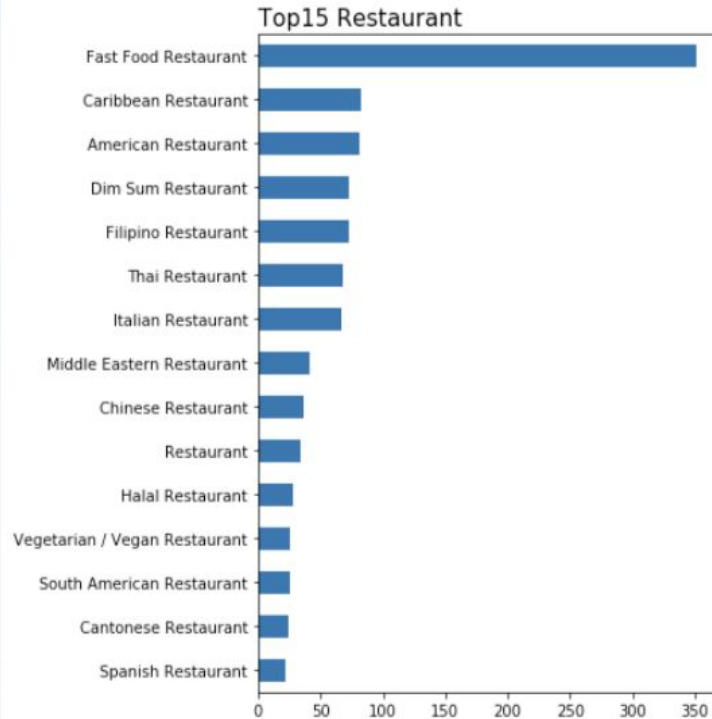Transformed Sample Data Marked by Black Cross

Cluster Report

Cluster Learning on PCA-Reduced Data - Centroids Marked by Number
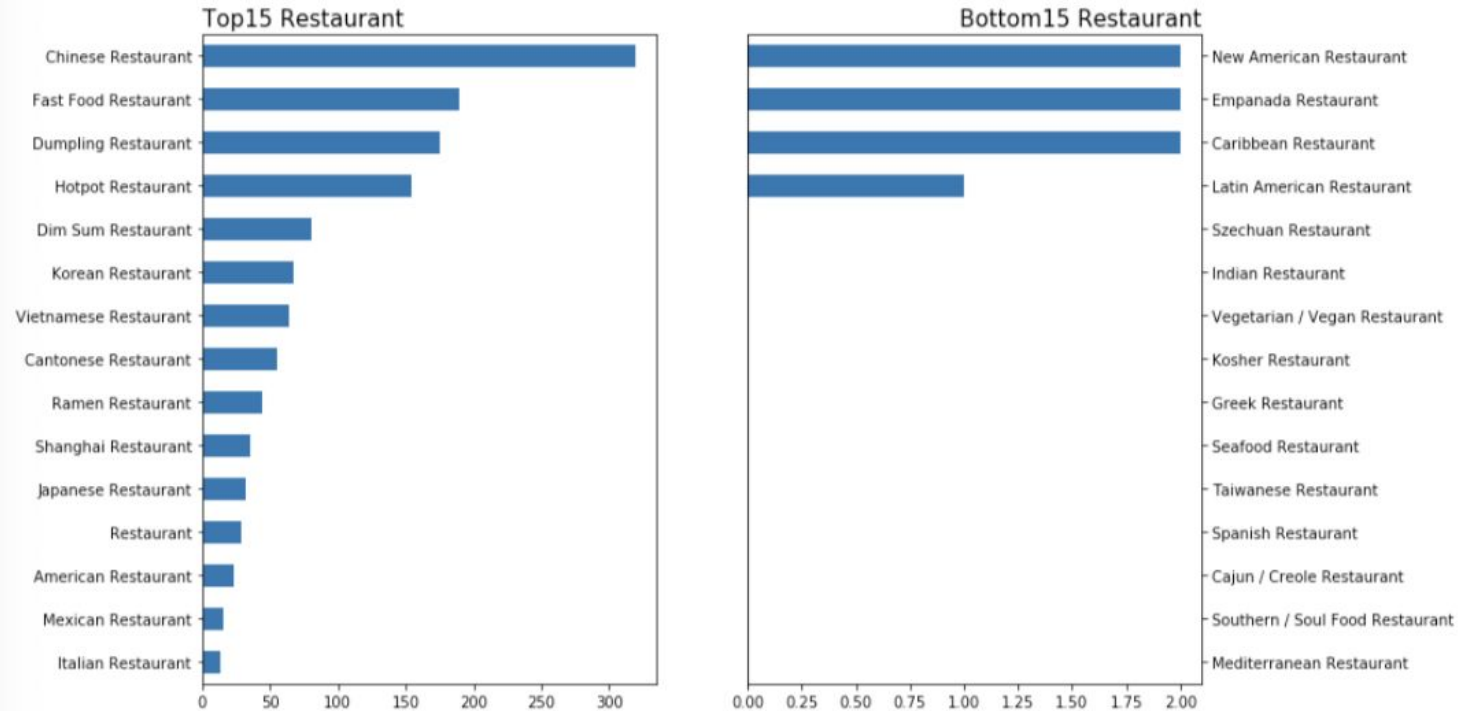Transformed Sample Data Marked by Black Cross

Cluster I Report

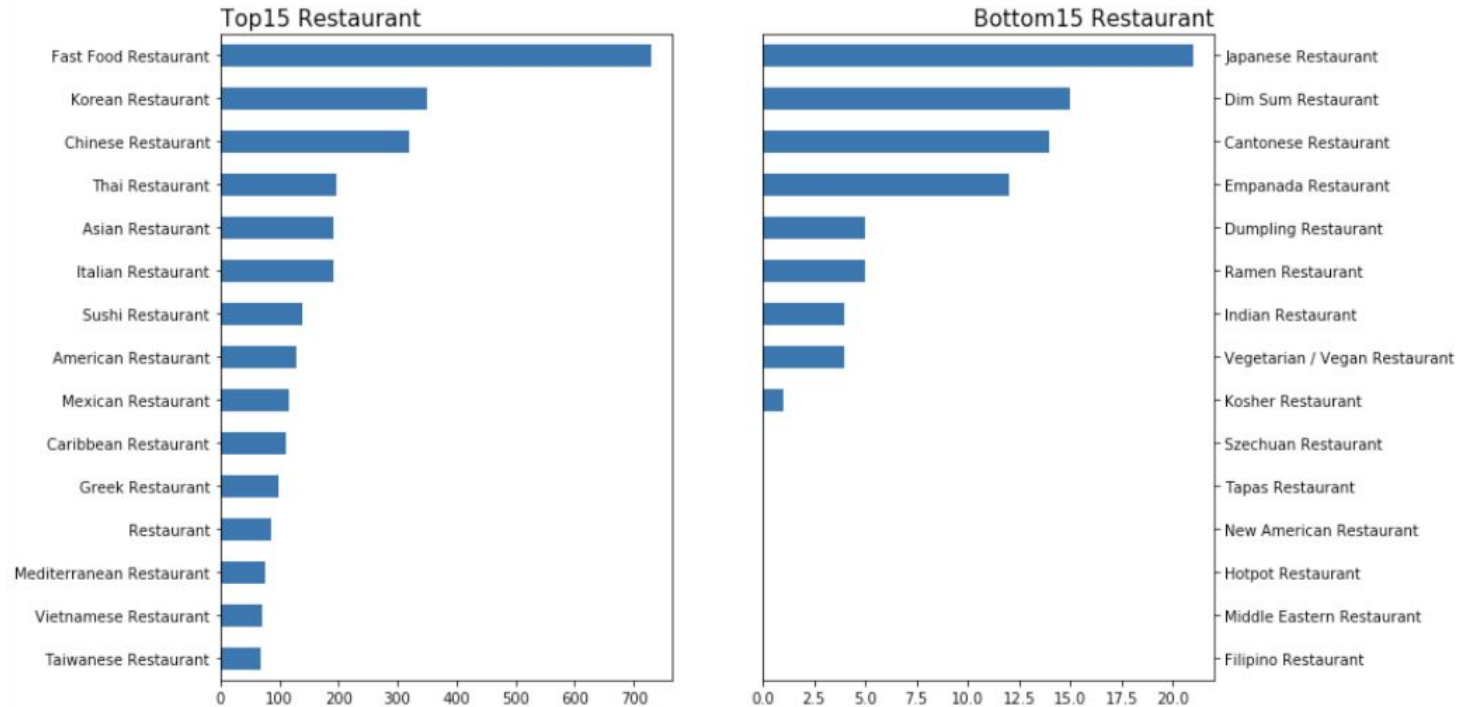
Total Number Of Different Restaurant Type In Cluster I

Cluster II Report

Total Number Of Different Restaurant Type In Cluster II

Cluster III Report

Total Number Of Different Restaurant Type In Cluster III

Cluster IV Report

Total Number Of Different Restaurant Type In Cluster IV