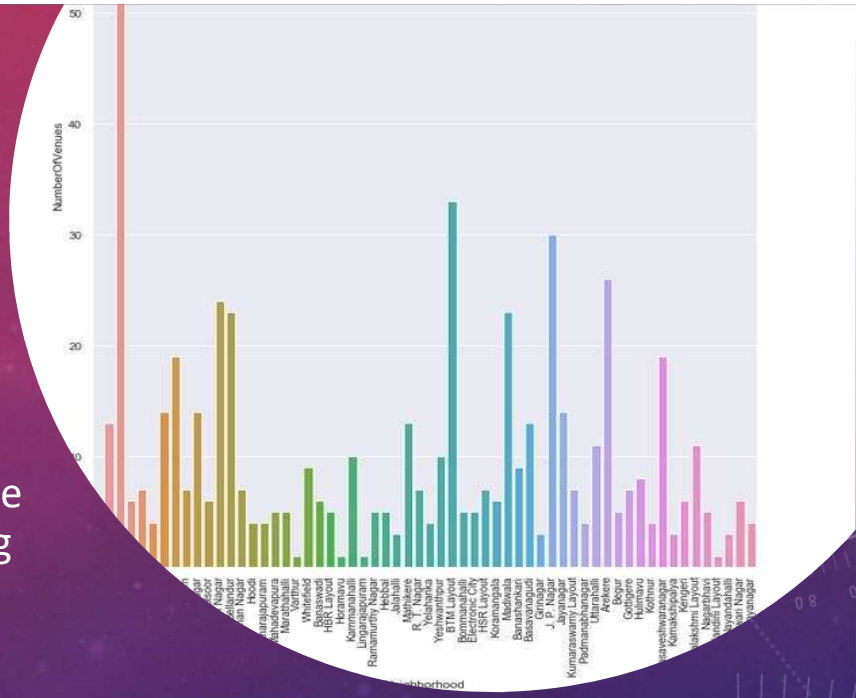
RESTAURANT RECOMMENDER SYSTEM

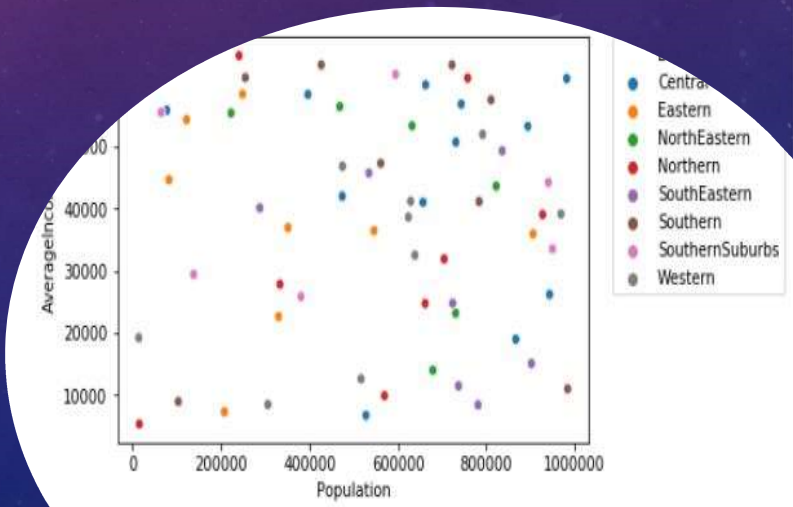
IBM CAPSTONE PROJECT.

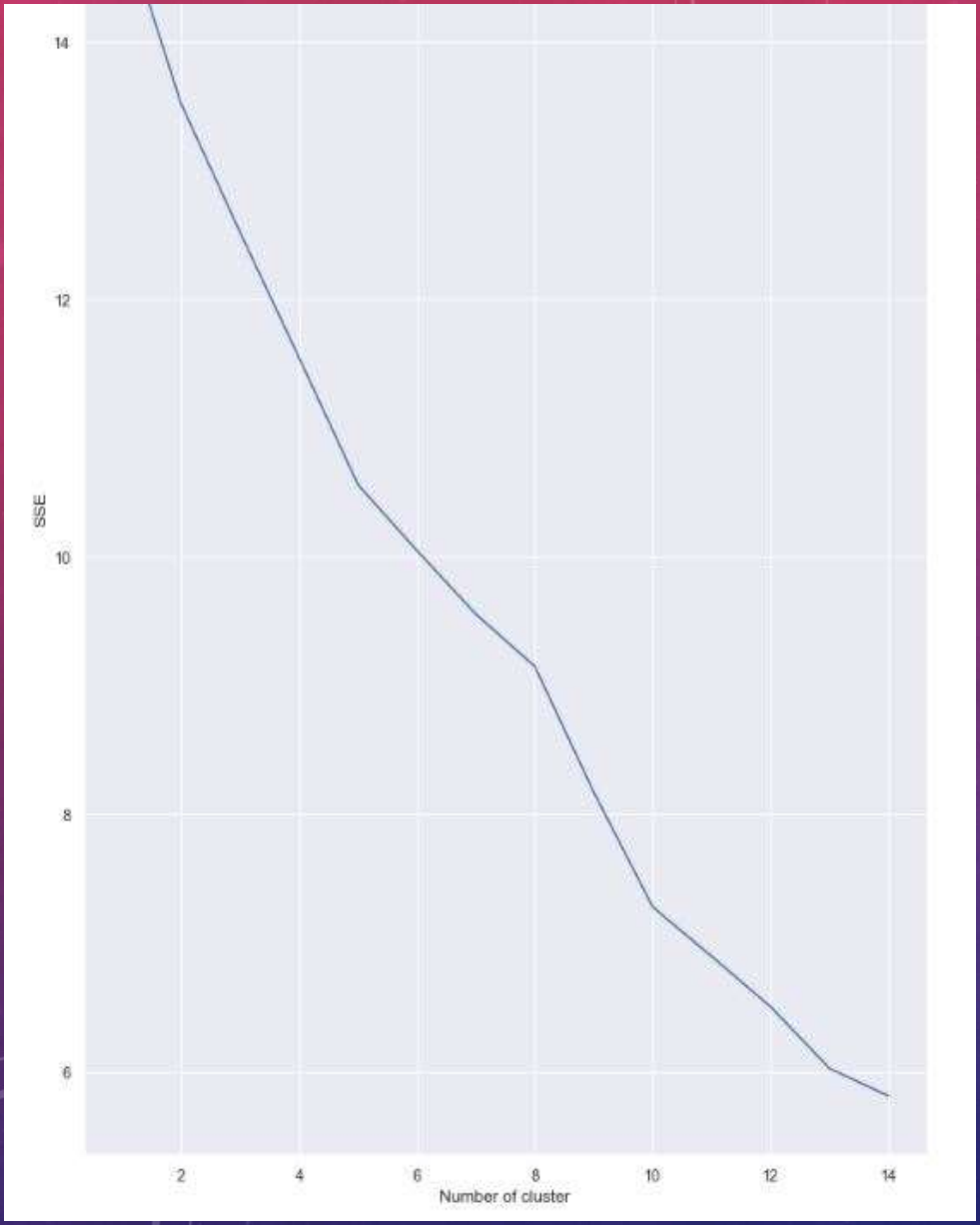
METHODOLOGY

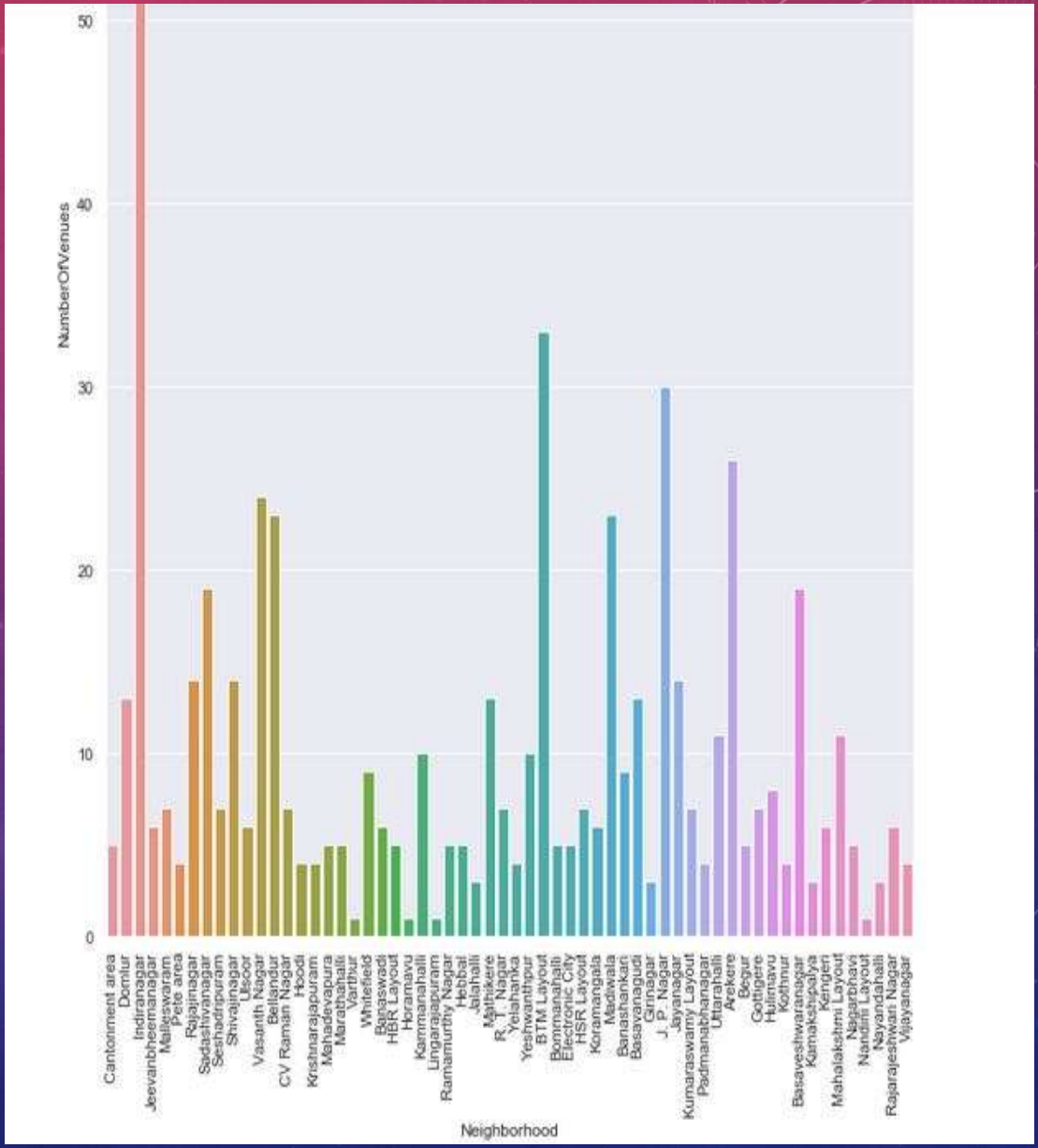
Recommender System

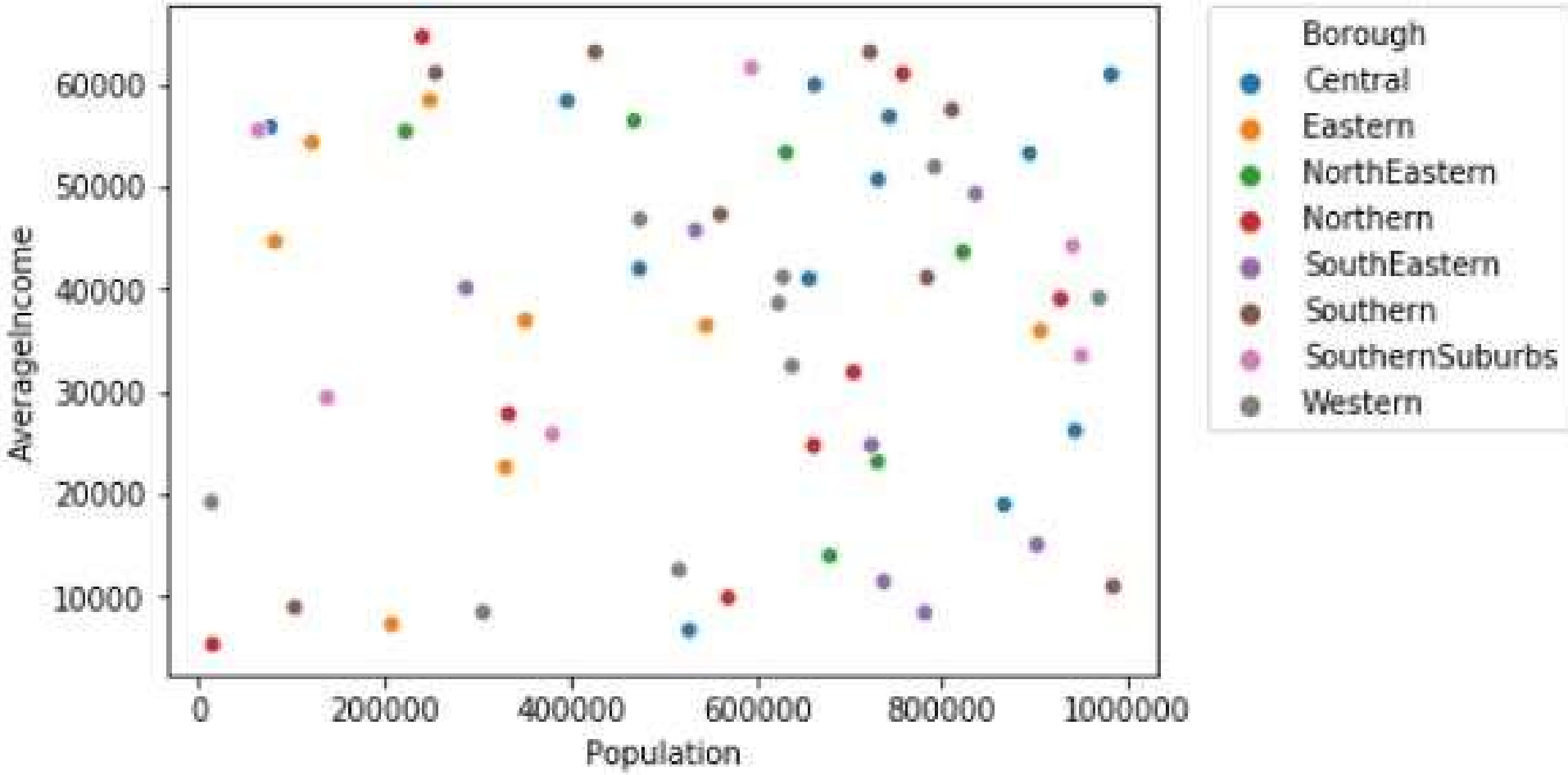
- Machine learning
- Exploratory analysis
- Inferential analysis






SSE
Number of cluster
14
12
10
8
6
2
4
6
8
10
12
14


NumberOfVenues
Neighborhood
50
40
30
20
10
0
Cantonment area
Domlur
Indiranagar
Jeevanbheemanagar
Malleswaram
Pete area
Rajajinagar
Sadashivanagar
Seshadripuram
Shivajinagar
Ulsoor
Vasanth Nagar
Bellandur
CV Raman Nagar
Hoodi
Krishnarajapuram
Mahadevapura
Marathahalli
Varthur
Whitefield
Banaswadi
HBR Layout
Horamavu
Kammanahalli
Lingarajapuram
Ramamurthy Nagar
Hebbal
Jalahalli
Mathikere
R. T. Nagar
Yelahanka
Yeshwanthpur
BTM Layout
Bommanahalli
Electronic City
HSR Layout
Koramangala
Madiwala
Banashankari
Basavanagudi
Girinagar
J. P. Nagar
Jayanagar
Kumaraswamy Layout
Padmanabhanagar
Uttarahalli
Arekere
Begur
Gottigere
Hulimavu
Kothnur
Basaveshwaranagar
Kamakshipalya
Kengeri
Mahalakshmi Layout
Nagarbhavi
Nandini Layout
Nayandahalli
Rajarajeshwari Nagar
Vijayanagar


AverageIncome
60000
50000
40000
30000
20000
10000
0
200000
400000
600000
800000
1000000
Population
Borough
Central
Eastern
NorthEastern
Northern
SouthEastern
Southern
SouthernSuburbs
Western

DATASETS

	Borough	Neighborhoods	Population	Normalized_population
0	Central	Cantonment area	866377	0.880810
1	Central	Domlur	743186	0.755567
2	Central	Indiranagar	474289	0.482190
3	Central	Jeevanbheemanagar	527874	0.536668
4	Central	Malleswaram	893629	0.908516

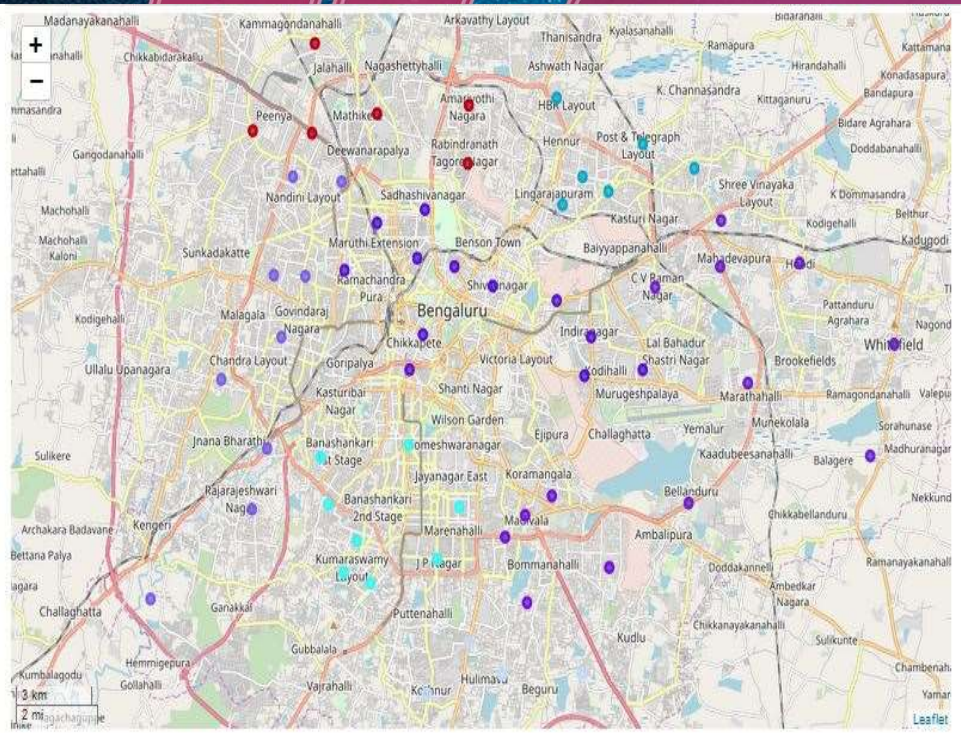
	Neighborhood	Borough	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Cantonment area	Central	12.972442	77.580643	Hotel Fishland	12.975569	77.578592	Seafood Restaurant
1	Cantonment area	Central	12.972442	77.580643	Sapna Book House	12.976355	77.578461	Bookstore
2	Cantonment area	Central	12.972442	77.580643	Vasudev Adigas	12.973707	77.579257	Indian Restaurant
3	Cantonment area	Central	12.972442	77.580643	Adigas Hotel	12.973554	77.579161	Restaurant
4	Cantonment area	Central	12.972442	77.580643	Kamat Yatrinivas	12.975985	77.578125	Indian Restaurant

Borough	Neighborhoods	Latitude	Longitude
Central	Cantonment area	12.972442	77.580643
Central	Domlur	12.960992	77.638726
Central	Indiranagar	12.971891	77.641151
Central	Jeevanbheemanagar	12.962900	77.659500
Central	Malleswaram	13.003100	77.564300
Central	Pete area	12.962700	77.575800
Central	Rajajinagar	12.990100	77.552500
Central	Sadashivanagar	13.006800	77.581300
Central	Seshadripuram	12.993500	77.578700
Central	Shivajinagar	12.985700	77.605700

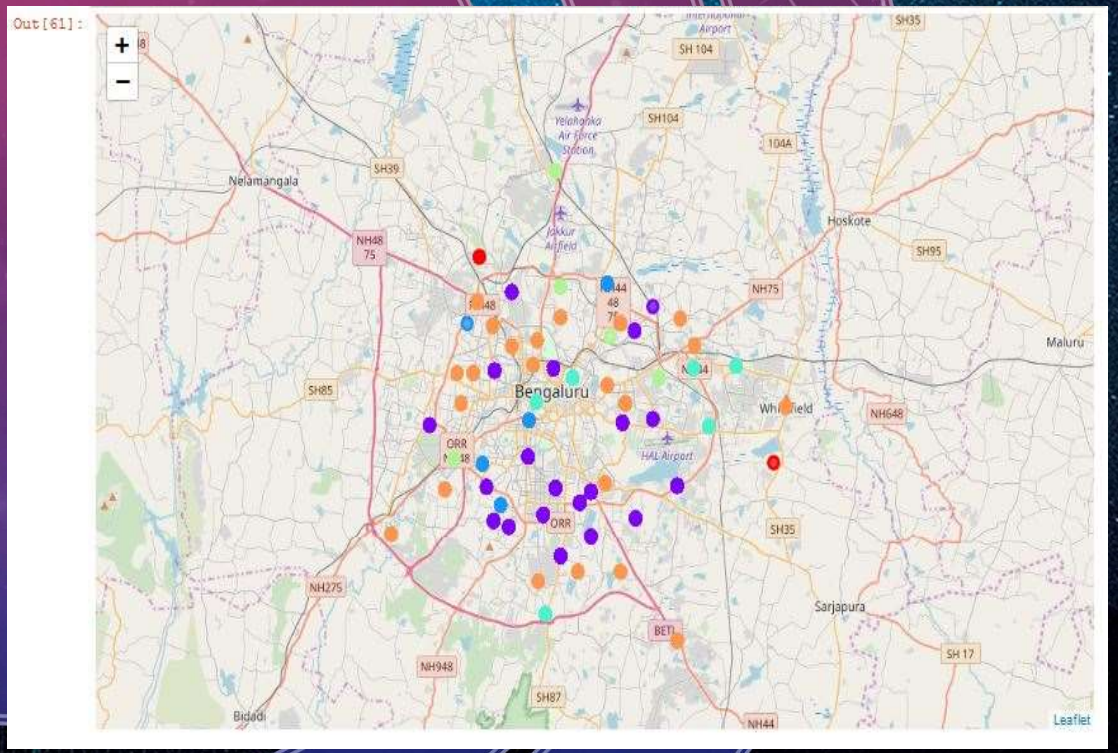
	Borough	Neighborhoods	AverageIncome	Normalized_income
0	Central	Cantonment area	18944.099792	0.293051
1	Central	Domlur	56837.022198	0.879225
2	Central	Indiranagar	41991.817435	0.649581
3	Central	Jeevanbheemanagar	6667.447632	0.103140
4	Central	Malleswaram	53270.063892	0.824047

MAPPING AND CLUSTERING

Out[14]:



Out[61]:



RESULTS AND CONCLUSION

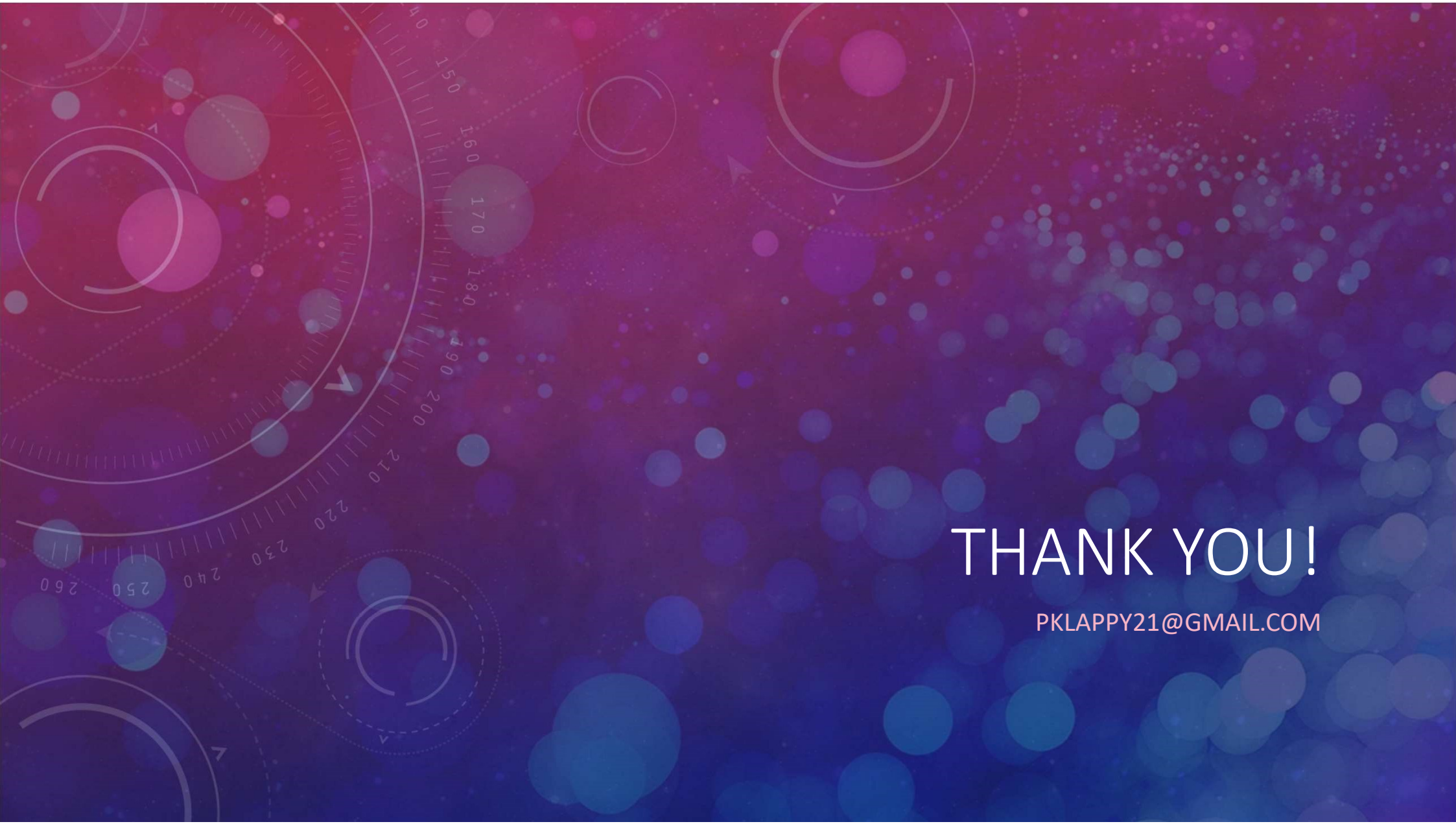
```
--------- Arekere ---------
                                  Venue  Frequency
0    Venue Category_Indian Restaurant       0.23
1  Venue Category_Sporting Goods Shop       0.15
2          Venue Category_Pizza Place       0.08
3     Venue Category_Department Store       0.08
4          Venue Category_Liquor Store       0.04


--------- BTM Layout ---------
                                              Venue  Frequency
0              Venue Category_Indian Restaurant       0.18
1                   Venue Category_Snack Place       0.09
2                 Venue Category_Ice Cream Shop       0.09
3                   Venue Category_Pizza Place       0.06
4  Venue Category_Vegetarian / Vegan Restaurant       0.06


--------- Banashankari ---------
                                    Venue  Frequency
0        Venue Category_Indian Restaurant       0.22
1                     Venue Category_Café       0.22
2              Venue Category_Men's Store       0.11
3  Venue Category_North Indian Restaurant       0.11
4            Venue Category_Clothing Store       0.11
```

Out[211]:

	Neighborhoods	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	Ranking
0	Basaveshwaranagar	Venue Category_Ice Cream Shop	Venue Category_Indian Restaurant	Venue Category_Fast Food Restaurant	[0.6426377807870477]
1	Begur	Venue Category_Indian Restaurant	Venue Category_Indian Sweet Shop	Venue Category_Food Court	[0.7361321887351776]
2	Electronic City	Venue Category_Outlet Store	Venue Category_Furniture / Home Store	Venue Category_Bus Stop	[0.5423513638809381]


THANK YOU!
PKLAPPY21@GMAIL.COM