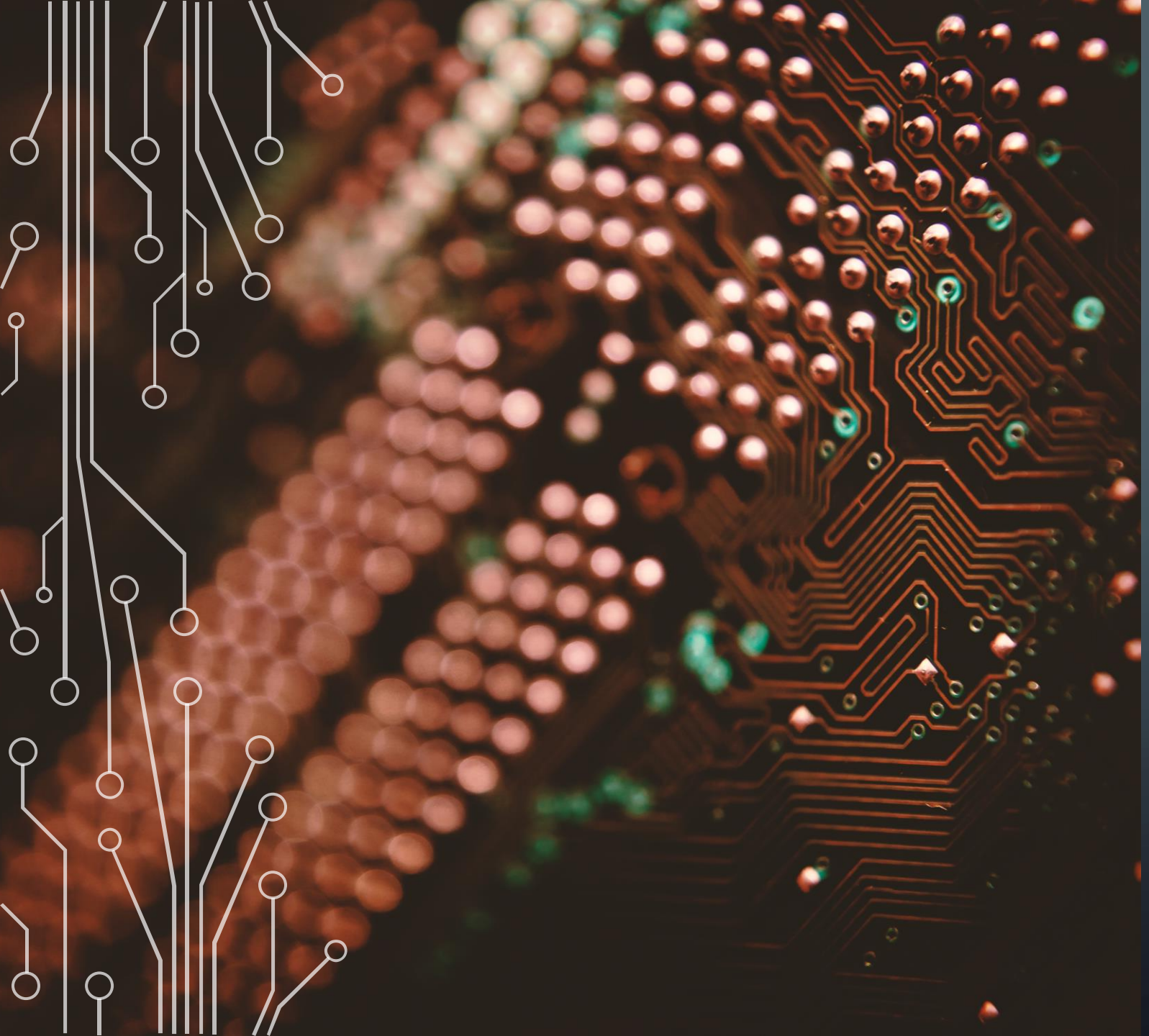
RESTAURANT RECOMMENDER SYSTEM

IBM CAPSTONE PROJECT

D. VIVEK NAYUDU



RESTAURANT RECOMMENDER SYSTEM

- DATA
- METHODOLOGY
- DATA VISUALIZATION
- RESULT & CONCLUSION

DATA SETS

	Borough	Neighborhood	Latitude	Longitude	Population	Normalized Population	Normalized Population	Averge Income	Normalized Income
0	Eastern	Mahal	21.144979	79.105782	23000	-1.803267	-1.803267	18450	-1.725391
1	Eastern	Sitabuldi	21.152451	79.080559	45435	-0.749180	-0.749180	34545	-1.015375
2	Eastern	Dhantoli	21.131060	79.077120	67456	0.285455	0.285455	83476	1.143169
3	Eastern	Itwari	21.149870	79.109741	56867	-0.212059	-0.212059	64356	0.299709
4	Eastern	Mominpura	21.151280	79.103550	45345	-0.753409	-0.753409	85769	1.244323
5	Eastern	Dharampeth	21.139700	79.063100	78888	0.822576	0.822576	45790	-0.519313
6	Eastern	Ramdaspeth	21.135800	79.076500	65656	0.200884	0.200884	26547	-1.368199
7	Eastern	Shraddhanand Peth	21.124100	79.058400	54656	-0.315941	-0.315941	23478	-1.503585
8	Western	Sadar	21.163000	79.073500	55667	-0.268440	-0.268440	87587	1.324522
9	Western	Civil Lines	21.152800	79.074700	32545	-1.354804	-1.354804	56779	-0.034543
10	Western	Gandhibagh	21.150400	79.102600	43546	-0.837933	-0.837933	83459	1.142420
11	Western	Nandanvan	21.138800	79.127600	68787	0.347990	0.347990	74895	0.764627
12	Western	Kalamna	21.164700	79.146900	87674	1.235378	1.235378	64756	0.317354
13	Western	Wardhaman Nagar	21.150000	79.137600	67735	0.298563	0.298563	86787	1.289231
14	Western	Seminary Hills	21.166000	79.055000	23467	-1.781325	-1.781325	85768	1.244279
15	Western	Police Line Takli	21.177200	79.067700	76754	0.722312	0.722312	56762	-0.035293
16	Western	Mankapur	21.184600	79.078800	43557	-0.837416	-0.837416	34576	-1.014008
17	Western	Pachpaoli	21.162000	79.105800	53457	-0.372275	-0.372275	37486	-0.885636
18	Western	Vayusena Nagar	21.161600	79.015000	34523	-1.261870	-1.261870	84379	1.183004
19	Northern	Ravi Nagar	21.149100	79.055000	78788	0.817878	0.817878	47578	-0.440437
20	Northern	Byramji Town	21.173300	79.082200	78784	0.817690	0.817690	57687	0.005512
21	Northern	Chaoni	21.146633	79.088860	54645	-0.316457	-0.316457	38457	-0.842801

	Borough	Neighborhood	Latitude	Longitude	Population	Averge Income
0	Eastern	Mahal	21.144979	79.105782	23000	18450
1	Eastern	Sitabuldi	21.152451	79.080559	45435	34545
2	Eastern	Dhantoli	21.131060	79.077120	67456	83476
3	Eastern	Itwari	21.149870	79.109741	56867	64356
4	Eastern	Mominpura	21.151280	79.103550	45345	85769

	Borough	Neighborhood	BoroughLatitude	BoroughLongitude	VenueName	VenueLatitude	VenueLongitude	VenueCategory
0	Eastern	Mahal	21.144979	79.105782	karmaveer book depot	21.145136	79.105995	Bookstore
1	Eastern	Mahal	21.144979	79.105782	Ghate Milk Center	21.147249	79.103875	Indian Restaurant
2	Eastern	Mahal	21.144979	79.105782	raam bhandar	21.147359	79.108110	Breakfast Spot
3	Eastern	Mahal	21.144979	79.105782	Ajra	21.146498	79.102303	Asian Restaurant
4	Eastern	Sitabuldi	21.152451	79.080559	Inspire Apple Store	21.153496	79.078711	Electronics Store

METHODOLOGY

Machine Learning

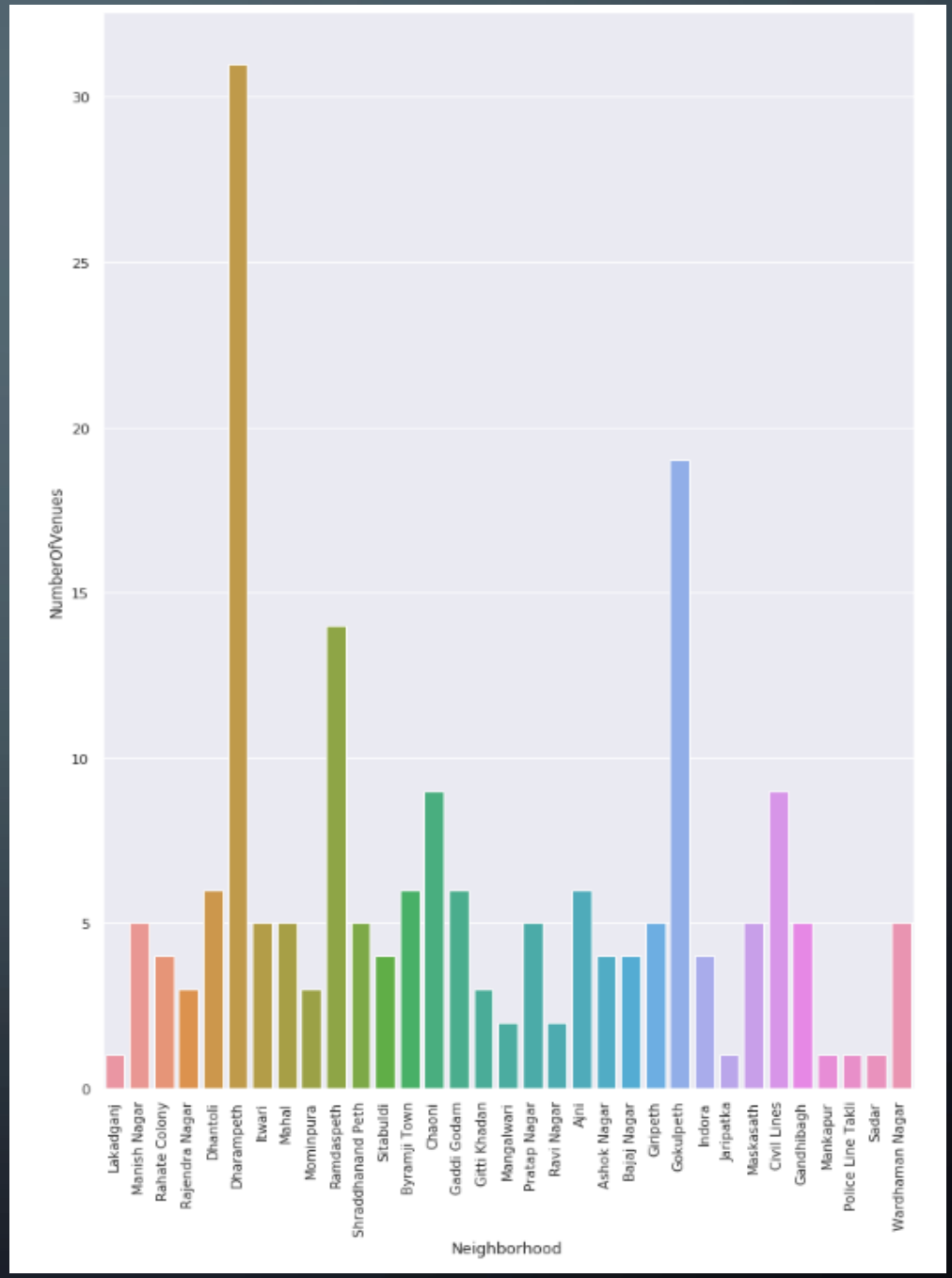
+

Inferential Analysis

→ Recommender System

+

Exploratory Analysis



METHODOLOGY

Machine Learning

+

Inferential Analysis

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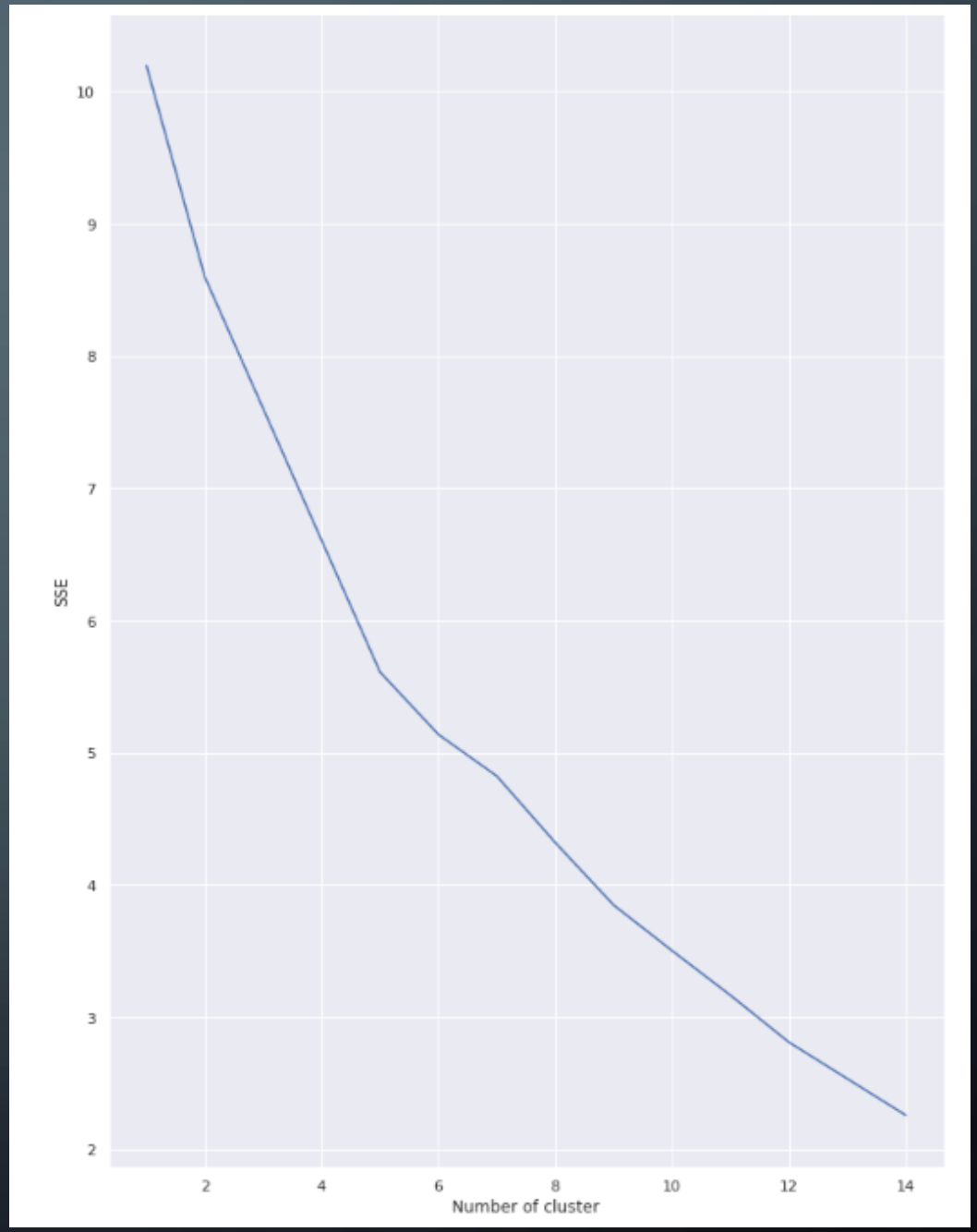
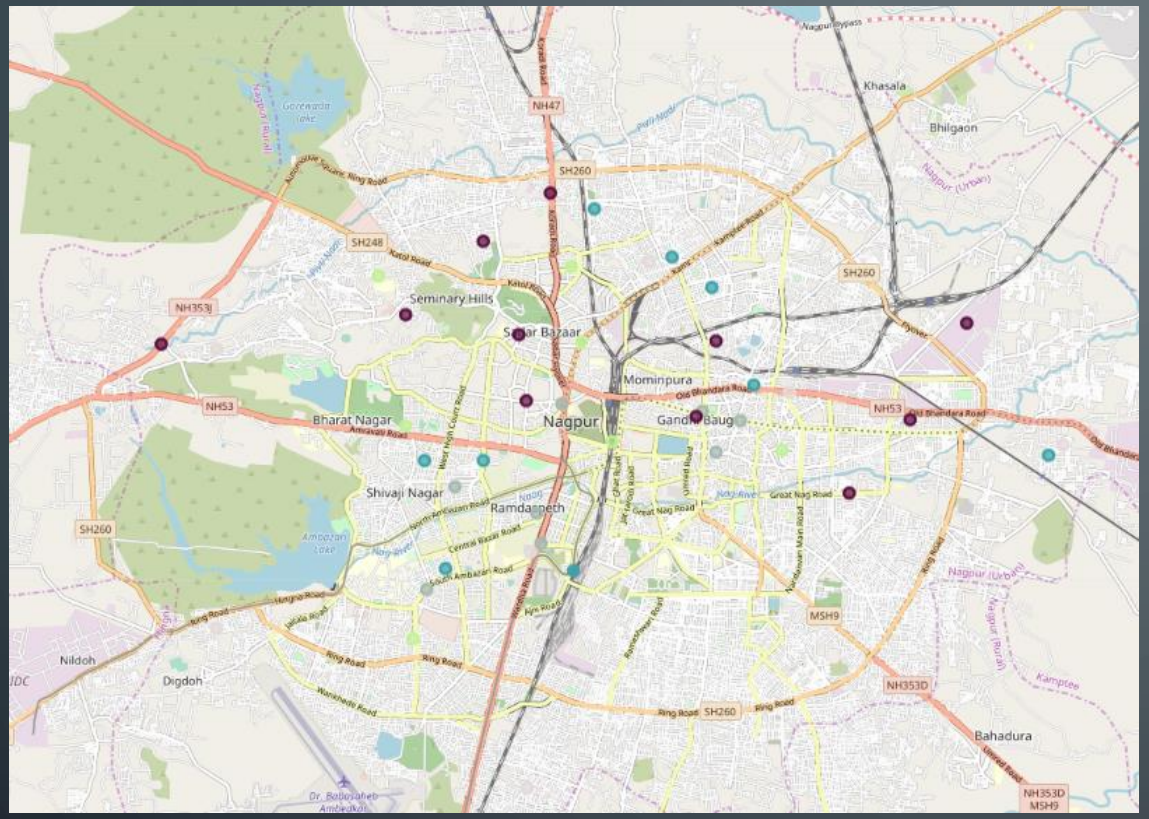
Exploratory Analysis

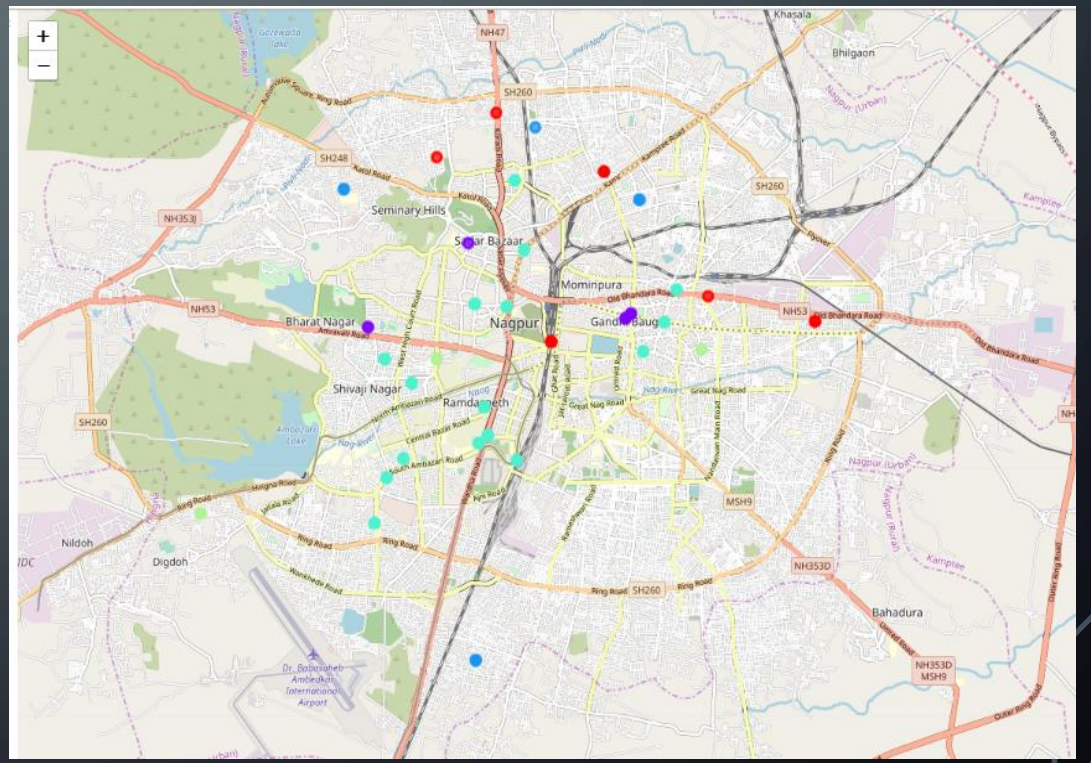
→

Recommender System



MAPPING AND CLUSTERING





RESULT AND CONCLUSION

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--------- Ajni ---------
                              Venue  Frequency
0      Venue Category_Train Station       0.17
1             Venue Category_Diner       0.17
2  Venue Category_Indian Restaurant       0.17
3           Venue Category_Platform       0.17
4   Venue Category_Business Service       0.17


--------- Ashok Nagar ---------
                              Venue  Frequency
0   Venue Category_Asian Restaurant       0.25
1           Venue Category_Pharmacy       0.25
2     Venue Category_Ice Cream Shop       0.25
3  Venue Category_Indian Restaurant       0.25
4                Venue Category_ATM       0.00


--------- Bajaj Nagar ---------
                              Venue  Frequency
0  Venue Category_Falafel Restaurant       0.25
1   Venue Category_Asian Restaurant       0.25
2         Venue Category_Pizza Place       0.25
3              Venue Category_Plaza       0.25
4                Venue Category_ATM       0.00


--------- Byramji Town ---------
                              Venue  Frequency
0       Venue Category_Coffee Shop       0.17
1              Venue Category_Gym       0.17
2           Venue Category_Bakery       0.17
3       Venue Category_Pizza Place       0.17
4  Venue Category_Department Store       0.17
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[106]:

	Neighborhoods	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	Ranking
0	Ajni	Venue Category_Platform	Venue Category_Train Station	Venue Category_Business Service	[0.9333333333333333]
1	Bajaj Nagar	Venue Category_Plaza	Venue Category_Asian Restaurant	Venue Category_Falafel Restaurant	[0.501003109799038]
2	Byramji Town	Venue Category_Gym	Venue Category_Fast Food Restaurant	Venue Category_Department Store	[0.7068074161641663]

- The recommender system is a system that considers factors such as population, income and makes use of Foursquare API to determine nearby venues.
- It is a powerful data driven model whose efficiency may decrease with more data but accuracy will increase.
- It will help users to finish their hunger by providing the best recommendation to fulfil all their needs.

THANK YOU