

# Coursera Capstone Project

## Report Section

### Report

This report includes two main report process .

First report is based on algorithm ( greater then 5 venue , less than 20 venue for the Restaurants,Cafes and Coffee Shops .

### Report of the Project

There are 108 Neighborhood in Ankaya , Çankaya . I will use all these datas and their locations to how many we have restaurant , cafes and coffee shop for each row

	Neighborhood	TrendRestaurant	TrendCoffee	TrendCafe
0	100.YIL	0	0.0	0.0
1	50.YIL MAHALLESİ	0	0.0	0.0
2	AHLATLIBEL MAHALLESİ	0	0.0	0.0
3	AKPINAR MAHALLESİ	1	0.0	0.0
4	ALACAATLI MAHALLESİ	1	0.0	0.0
5	ANITTEPE MAHALLESİ	1	0.0	0.0
6	ASAGI DIKMEN MAHALLESİ	1	0.0	1.0
7	ASAGI OVECLER MAHALLESİ	1	0.0	0.0
8	ASIKPASA MAHALLESİ	1	0.0	0.0
9	ATA MAHALLESİ	0	0.0	0.0
10	AYDINLAR	1	0.0	1.0
11	AYRANCI MAHALLESİ	0	0.0	0.0
12	BADEMLIDERE MAHALLESİ	0	0.0	0.0
13	BAGCILAR MAHALLESİ	1	0.0	0.0
14	BAHCELIEVLER MAHALLESİ	1	1.0	1.0
15	BALGAT MAHALLESİ	0	0.0	1.0
16	BARBAROS MAHALLESİ	1	1.0	1.0

This is a part of First Report , I have determining the more than 5 and Less than 20 venues in a neighborhood. So if this is true return 1 , if not return 0 . In this stage i know the best useful places and make a String report For all of them .

You can open the ALACAATLI MAHALLESİ's place a restaurant and its latitude and longitude's are 32.674141 39.848103  
 You can open the ANITTEPE MAHALLESİ's place a restaurant and its latitude and longitude's are 32.840637 39.9314478  
 You can open the ASAGI DIKMEN MAHALLESİ's place a restaurant and its latitude and longitude's are 32.8509755 39.8495837  
 You can open the ASAGI DIKMEN MAHALLESİ's place a Cafe Place'its latitude and longitude's are 32.8509755 39.8495837  
 You can open the ASAGI OVECLER MAHALLESİ's place a restaurant and its latitude and longitude's are 32.8266983 39.8893871  
 You can open the ASAGI OVECLER MAHALLESİ's place a Cafe Place'its latitude and longitude's are 32.8266983 39.8893871  
 You can open the ASIKPASA MAHALLESİ's place a restaurant and its latitude and longitude's are 32.8822409 39.9076096  
 You can open the AYDINLAR 's place a restaurant and its latitude and longitude's are 32.8357031 39.8785305  
 You can open the AYDINLAR 's place a Cafe Place'its latitude and longitude's are 32.8357031 39.8785305

You can open the BAGCILAR MAHALLESI's place a restaurant and its latitude and longitude's are 32.8818864 39.8996915  
You can open the BAHCELIEVLER MAHALLESI's place a restaurant and its latitude and longitude's are 32.8262218 39.9284122  
You can open the BAHCELIEVLER MAHALLESI's place a Coffee Shop'its latitude and longitude's are 32.8262218 39.9284122  
You can open the BAHCELIEVLER MAHALLESI's place a Cafe Place'its latitude and longitude's are 32.8262218 39.9284122  
You can open the BALGAT MAHALLESI's place a Cafe Place'its latitude and longitude's are 32.8176287 39.908709  
You can open the BARBAROS MAHALLESI's place a restaurant and its latitude and longitude's are 32.8634167 39.9051105  
You can open the BARBAROS MAHALLESI's place a Coffee Shop'its latitude and longitude's are 32.8634167 39.9051105  
You can open the BARBAROS MAHALLESI's place a Cafe Place'its latitude and longitude's are 32.8634167 39.9051105  
You can open the BAYRAKTAR MAHALLESI's place a restaurant and its latitude and longitude's are 32.878661 39.9023295  
You can open the KUCUKESAT MAHALLESI's place a Coffee Shop'its latitude and longitude's are 32.8669496 39.9079342  
You can open the KUCUKESAT MAHALLESI's place a Cafe Place'its latitude and longitude's are 32.8669496 39.9079342  
You can open the CEBECI 's place a restaurant and its latitude and longitude's are 32.8659258 39.9246123  
You can open the CEBECI 's place a Cafe Place'its latitude and longitude's are 32.8659258 39.9246123  
You can open the CEVIZLIDERE MAHALLESI's place a restaurant and its latitude and longitude's are 32.8166365 39.8837917  
You can open the CUMHURİYET MAHALLESI's place a restaurant and its latitude and longitude's are 32.8563875 39.9233628  
You can open the CUMHURİYET MAHALLESI's place a Cafe Place'its latitude and longitude's are 32.8563875 39.9233628  
You can open the CAMLITEPE MAHALLESI's place a restaurant and its latitude and longitude's are 32.8703441 39.9260981  
You can open the CAMLITEPE MAHALLESI's place a Cafe Place'its latitude and longitude's are 32.8703441 39.9260981  
You can open the CAYYOLU 's place a restaurant and its latitude and longitude's are 32.6920147 39.8974973  
You can open the CAYYOLU 's place a Cafe Place'its latitude and longitude's are 32.6920147 39.8974973  
You can open the CUKURAMBAR 's place a restaurant and its latitude and longitude's are 32.8025628 39.9031675  
You can open the DOGUS MAHALLESI's place a restaurant and its latitude and longitude's are 32.8685389 39.9104653  
You can open the EHLİBEYT 's place a restaurant and its latitude and longitude's are 32.8165784 39.8921644  
You can open the EHLİBEYT 's place a Coffee Shop'its latitude and longitude's are 32.8165784 39.8921644  
You can open the EHLİBEYT 's place a Cafe Place'its latitude and longitude's are 32.8165784 39.8921644  
You can open the EMEK 's place a restaurant and its latitude and longitude's are 32.8149486 39.9232052  
You can open the ERTUGRULGAZI 's place a restaurant and its latitude and longitude's are 32.8800296 39.9282818  
You can open the ERZURUM 's place a Cafe Place'its latitude and longitude's are 32.8736235 39.9328097  
You can open the ESATOGLU 's place a restaurant and its latitude and longitude's are 32.8645584 39.9114387

You can open the FAKULTELER 's place a restaurant and its latitude and longitude's are 32.8749996 39.9284247

You can open the FIDANLIK 's place a restaurant and its latitude and longitude's are 32.8616048 39.9249419

You can open the FIDANLIK 's place a Cafe Place'its latitude and longitude's are 32.8616048 39.9249419

You can open the GUVENEVLER 's place a restaurant and its latitude and longitude's are 32.8536465 39.8976421

You can open the GUVENEVLER 's place a Coffee Shop'its latitude and longitude's are 32.8536465 39.8976421

You can open the GUVENEVLER 's place a Cafe Place'its latitude and longitude's are 32.8536465 39.8976421

You can open the GUZELTEPE 's place a restaurant and its latitude and longitude's are 32.8477291 39.8840334

You can open the HILAL 's place a restaurant and its latitude and longitude's are 27.137014 38.4224902

You can open the HILAL 's place a Coffee Shop'its latitude and longitude's are 27.137014 38.4224902

You can open the HILAL 's place a Cafe Place'its latitude and longitude's are 27.137014 38.4224902

You can open the ILERI 's place a restaurant and its latitude and longitude's are 32.8691802 39.9216132

You can open the ILERI 's place a Cafe Place'its latitude and longitude's are 32.8691802 39.9216132

You can open the ILKADIM 's place a restaurant and its latitude and longitude's are 32.8423104 39.883762

You can open the ILKADIM 's place a Cafe Place'its latitude and longitude's are 32.8423104 39.883762

You can open the ILKBAHAR's place a restaurant and its latitude and longitude's are 32.8578 39.8605958

You can open the INCESU 's place a restaurant and its latitude and longitude's are 32.8670045 39.9202132

You can open the KAVAKLIDERE 's place a restaurant and its latitude and longitude's are 32.8584563 39.9116905

You can open the KAVAKLIDERE 's place a Coffee Shop'its latitude and longitude's are 32.8584563 39.9116905

You can open the KAVAKLIDERE 's place a Cafe Place'its latitude and longitude's are 32.8584563 39.9116905

You can open the KIZILAY 's place a restaurant and its latitude and longitude's are 32.8539748 39.9208443

You can open the KIZILAY 's place a Cafe Place'its latitude and longitude's are 32.8539748 39.9208443

You can open the KIZILIRMAK 's place a restaurant and its latitude and longitude's are 32.8105319 39.9041442

You can open the KIZILIRMAK 's place a Cafe Place'its latitude and longitude's are 32.8105319 39.9041442

You can open the KOCATEPE 's place a restaurant and its latitude and longitude's are 32.8607575010483 39.9166056

You can open the KOCATEPE 's place a Coffee Shop'its latitude and longitude's are 32.8607575010483 39.9166056

You can open the KORKUTREIS 's place a restaurant and its latitude and longitude's are 32.8517951 39.926101

You can open the KORKUTREIS 's place a Cafe Place'its latitude and longitude's are 32.8517951 39.926101

You can open the KUCUKESAT 's place a restaurant and its latitude and longitude's are 32.8632316 39.9096736

You can open the KUCUKESAT 's place a Coffee Shop'its latitude and longitude's are 32.8632316 39.9096736

You can open the KUCUKESAT 's place a Cafe Place'its latitude and longitude's are 32.8632316 39.9096736

You can open the KOCATEPE 's place a restaurant and its latitude and longitude's are 32.8607575010483 39.9166056

You can open the KOCATEPE 's place a Coffee Shop'its latitude and longitude's are 32.8607575010483 39.9166056

You can open the MALAZGIRT's place a restaurant and its latitude and longitude's are 32.8311986 39.8687451

You can open the MALTEPE 's place a restaurant and its latitude and longitude's are 32.8426869 39.932343

You can open the MALTEPE 's place a Cafe Place'its latitude and longitude's are 32.8426869 39.932343

You can open the MEBUSEVLERI 's place a restaurant and its latitude and longitude's are 32.8344196 39.9313702

You can open the MEBUSEVLERI 's place a Cafe Place'its latitude and longitude's are 32.8344196 39.9313702

You can open the MESRUTTIYET's place a restaurant and its latitude and longitude's are 32.8559925 39.9178001

You can open the MESRUTTIYET's place a Coffee Shop'its latitude and longitude's are 32.8559925 39.9178001

You can open the MIMAR SINAN 's place a restaurant and its latitude and longitude's are 32.8551269 39.9303454

You can open the MIMAR SINAN 's place a Cafe Place'its latitude and longitude's are 32.8551269 39.9303454

You can open the MURAT 's place a restaurant and its latitude and longitude's are 32.8744324 39.9020596

You can open the MUSTAFA KEMAL 's place a restaurant and its latitude and longitude's are 32.768018 39.9108081

You can open the MUSTAFA KEMAL 's place a Coffee Shop'its latitude and longitude's are 32.768018 39.9108081

You can open the MUSTAFA KEMAL 's place a Cafe Place'its latitude and longitude's are 32.768018 39.9108081

You can open the NACI CAKIR 's place a restaurant and its latitude and longitude's are 32.8418273 39.8762152

You can open the NACI CAKIR 's place a Cafe Place'its latitude and longitude's are 32.8418273 39.8762152

You can open the NAMIK KEMAL 's place a restaurant and its latitude and longitude's are 32.8492258 39.9188438

You can open the NAMIK KEMAL 's place a Cafe Place'its latitude and longitude's are 32.8492258 39.9188438

You can open the NASUH AKAR 's place a Cafe Place'its latitude and longitude's are 32.8231465 39.9095743

You can open the OGUZLAR 's place a restaurant and its latitude and longitude's are 32.8189293 39.9013312

You can open the OGUZLAR 's place a Cafe Place'its latitude and longitude's are 32.8189293 39.9013312

You can open the OSMAN TEMIZ 's place a restaurant and its latitude and longitude's are 32.8376098 39.8729724

You can open the ON CEBECI 's place a restaurant and its latitude and longitude's are 32.8659258 39.9246123

You can open the ON CEBECI 's place a Cafe Place'its latitude and longitude's are 32.8659258 39.9246123

You can open the OVECLER 's place a restaurant and its latitude and longitude's are 32.8304861 39.8875322

You can open the PROF. DR. AHMET TANER KISLALI 's place a Cafe Place'its latitude and longitude's are 32.6842705 39.8714318

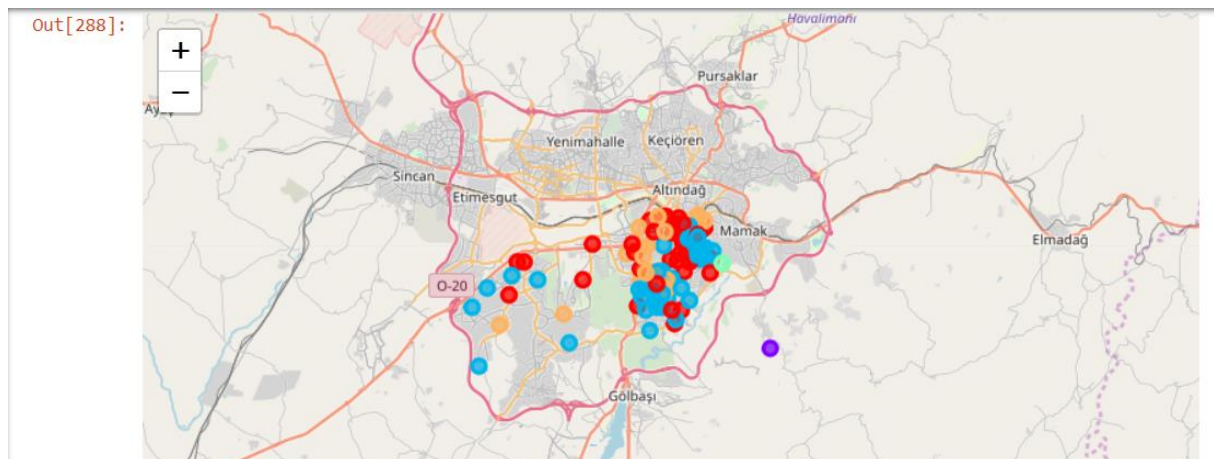
You can open the REMZI OGUZ ARIK 's place a restaurant and its latitude and longitude's are 32.8557176 39.903584

You can open the REMZI OGUZ ARIK 's place a Coffee Shop'its latitude and longitude's are 32.8557176 39.903584  
You can open the REMZI OGUZ ARIK 's place a Cafe Place'its latitude and longitude's are 32.8557176 39.903584  
You can open the SAGLIK MAHALLESI's place a restaurant and its latitude and longitude's are 32.8590893 39.9270565  
You can open the SAGLIK MAHALLESI's place a Cafe Place'its latitude and longitude's are 32.8590893 39.9270565  
You can open the SANCAK 's place a restaurant and its latitude and longitude's are 32.8651633 39.8678456  
You can open the SEYRANBAGLARI 's place a restaurant and its latitude and longitude's are 32.8671952 39.9162036  
You can open the SOKULLU MEHMET PASA 's place a restaurant and its latitude and longitude's are 32.8343978 39.8901779  
You can open the SOKULLU MEHMET PASA 's place a Cafe Place'its latitude and longitude's are 32.8343978 39.8901779  
You can open the SOGUTOZU's place a restaurant and its latitude and longitude's are 32.8077904 39.910884  
You can open the SOGUTOZU's place a Coffee Shop'its latitude and longitude's are 32.8077904 39.910884  
You can open the SOGUTOZU's place a Cafe Place'its latitude and longitude's are 32.8077904 39.910884  
You can open the SEHIT CENGİZ KARACA 's place a restaurant and its latitude and longitude's are 32.8288757 39.8751478  
You can open the SEHIT CEVDET ÖZDEMİR's place a restaurant and its latitude and longitude's are 32.8320137 39.8804693  
You can open the SEHIT CEVDET ÖZDEMİR's place a Cafe Place'its latitude and longitude's are 32.8320137 39.8804693  
You can open the UMUT 's place a restaurant and its latitude and longitude's are 32.8746033 39.9058554  
You can open the UMIT's place a restaurant and its latitude and longitude's are 32.6997299 39.8968773  
You can open the UMIT's place a Cafe Place'its latitude and longitude's are 32.6997299 39.8968773  
You can open the UNIVERSİTELER's place a restaurant and its latitude and longitude's are 32.7579269212796 39.88392275  
You can open the UNIVERSİTELER's place a Coffee Shop'its latitude and longitude's are 32.7579269212796 39.88392275  
You can open the YILDIZEVLER 's place a restaurant and its latitude and longitude's are 32.8576908 39.8771737  
You can open the YUKARI BAHCELİEVLER's place a restaurant and its latitude and longitude's are 32.8297005733745 39.9206207  
You can open the YUKARI BAHCELİEVLER's place a Coffee Shop'its latitude and longitude's are 32.8297005733745 39.9206207  
You can open the YUKARI BAHCELİEVLER's place a Cafe Place'its latitude and longitude's are 32.8297005733745 39.9206207  
You can open the YUCETEPE 's place a restaurant and its latitude and longitude's are 32.8408492 39.9207809

As you can see above . We have found the best places for opening restaurants , cafes and coffee shops .

The Second stage of my report is willing to give more information about venues . In this moment , we would list 10 most popular venues in the Datas because maybe in the future

my stakeholders would change their mind and swap their jobs to the new industry . For this i would give clustering informations like .



There are 5 Clusters in the Cankaya based on their venue similarities . These are ;

In [291]: `cankaya_merged.loc[cankaya_merged['Cluster Labels'] == 1, cankaya_merged.columns[[0] + list(range(5, cankaya_merged.columns.get_loc('Cluster Labels')))]`

Out[291]:

Neighborhood	Cafe	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	Cc
YAKUPABDAL	0	1	Dive Bar	Yoga Studio	Farm	Fast Food Restaurant	Field	Film Studio	Fish & Chips Shop	Fish Market	Fish Taverna	

In [292]: `cankaya_merged.loc[cankaya_merged['Cluster Labels'] == 2, cankaya_merged.columns[[0] + list(range(5, cankaya_merged.columns.get_loc('Cluster Labels')))]`

Out[292]:

	Neighborhood	Cafe	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue
2	AHLATLIBEL MAHALLESİ	0	2	Pool	Hot Dog Joint	Middle Eastern Restaurant	Bakery	Gym / Fitness Center	Pet Service	Scenic Lookout
8	ASIKPASA MAHALLESİ	1	2	Bakery	Park	Gym	Fast Food Restaurant	Restaurant	Turkish Restaurant	Optical Shop
9	ATA MAHALLESİ	1	2	Park	Pizza Place	Grocery Store	Bakery	Dessert Shop	Turkish Restaurant	Café
13	BAGCILAR MAHALLESİ	1	2	Turkish Restaurant	Food Truck	Seafood Restaurant	Middle Eastern Restaurant	Kebab Restaurant	Park	Hotel
17	BAYRAKTAR MAHALLESİ	1	2	Turkish Restaurant	Middle Eastern Restaurant	Park	Food Truck	Dessert Shop	Gym / Fitness Center	Hotel
19	BAGLAR MAHALLESİ	3	2	Turkish Restaurant	Meyhane	Hotel	Nightclub	Seafood Restaurant	Restaurant	Middle Eastern Restaurant
20	BOZTEPE MAHALLESİ	0	2	Soccer Stadium	Convenience Store	Turkish Restaurant	Department Store	Pedestrian Plaza	Pastry Shop	Park

```
cankaya_merged.loc[cankaya_merged['Cluster Labels'] == 3,cankaya_merged.columns[[0] + list(range(5, can
```

	Neighborhood	Cafe	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue
82	ORTA IMRAHOR	0	3	Garden	Bar	Yoga Studio	Flea Market	Field	Film Studio	Fish & Chips Shop	Fish Market	Fish Taverna

```
cankaya_merged.loc[cankaya_merged['Cluster Labels'] == 2,cankaya_merged.columns[[0] + list(range(5, can
```

	Neighborhood	Cafe	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue
2	AHLATLIBEL MAHALLESİ	0	2	Pool	Hot Dog Joint	Middle Eastern Restaurant	Bakery	Gym / Fitness Center	Pet Service	Scenic Lookout
8	ASIKPASA MAHALLESİ	1	2	Bakery	Park	Gym	Fast Food Restaurant	Restaurant	Turkish Restaurant	Optical Shop
9	ATA MAHALLESİ	1	2	Park	Pizza Place	Grocery Store	Bakery	Dessert Shop	Turkish Restaurant	Café
13	BAGCILAR MAHALLESİ	1	2	Turkish Restaurant	Food Truck	Seafood Restaurant	Middle Eastern Restaurant	Kebab Restaurant	Park	Hotel
17	BAYRAKTAR MAHALLESİ	1	2	Turkish Restaurant	Middle Eastern Restaurant	Park	Food Truck	Dessert Shop	Gym / Fitness Center	Hotel
19	BAGLAR MAHALLESİ	3	2	Turkish Restaurant	Meyhane	Hotel	Nightclub	Seafood Restaurant	Restaurant	Middle Eastern Restaurant
20	BOZTEPE MAHALLESİ	0	2	Soccer Stadium	Convenience Store	Turkish Restaurant	Department Store	Pedestrian Plaza	Pastry Shop	Park

```
cankaya_merged.loc[cankaya_merged['Cluster Labels'] == 4,cankaya_merged.columns[[0] + list(range(5, can
```

	Neighborhood	Cafe	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue
4	ALACAATLI MAHALLESİ	2	4	Breakfast Spot	Convenience Store	Shipping Store	Kebab Restaurant	Café	Stadium	Turkish Restaurant
7	ASAGI OVECLER MAHALLESİ	4	4	Café	Turkish Restaurant	Restaurant	Steakhouse	Electronics Store	Kebab Restaurant	Paper / Office Supplies Store
15	BALGAT MAHALLESİ	7	4	Kebab Restaurant	Dessert Shop	Café	Turkish Restaurant	Restaurant	Steakhouse	Coffee Shop
18	BEYTEPE MAHALLESİ	2	4	Breakfast Spot	Kebab Restaurant	Café	Fried Chicken Joint	Turkish Restaurant	Steakhouse	Buffet
23	CEVIZLIDERE MAHALLESİ	1	4	Bakery	Restaurant	Coffee Shop	Coworking Space	Café	Office	Electronics Store
25	CAMLITEPE MAHALLESİ	7	4	Café	Bakery	Restaurant	Fast Food Restaurant	Dessert Shop	Diner	Turkish Home Cooking

As you can see there are 5 clusters above , according to these when we look at the clusters ;

Our algorithms is very fitted because neither lack of customers nor overwhelming trend we get . Our Report is finished right now . Thank you for everything IBM .



