

ISTANBUL CAR PARKING AREA

JULY 2020

INTRODUCTION

- Istanbul one of the most crowded cities in the world.
- Traffic is the biggest issue for the people in this city.
- But famous with social opportunities - hundreds of places in every corner
- So many car parking areas belong Istanbul Metropolitan Municipality but usually full. In my
- Any relation with these car parking areas and the popularity of venues in Istanbul?

	ParkID	ParkAdi	Latitude	Longitude	Kapasitesi	BosKapasite	ParkTipi	Ilce	Distance	UcretsizParklanmaDk
0	395	Yeşil Vadi Sokak 4	40.967072	29.105824	40	27	YOL ÜSTÜ	ATAŞEHİR	0.372	15
1	1189	İçerenköy Açık Otoparkı 1	40.976597	29.104545	600	600	AÇIK OTOPARK	ATAŞEHİR	0.696	15
2	2151	Bostancı Vergi Dairesi Açık Otoparkı	40.962531	29.108000	105	105	AÇIK OTOPARK	ATAŞEHİR	0.907	0
3	2150	Bostancı Vergi Dairesi Açık Otoparkı	40.962510	29.108060	105	0	AÇIK OTOPARK	ATAŞEHİR	0.911	0
4	1176	Kozyatağı Sebze-Meyve Hali	40.978484	29.102947	1500	1500	AÇIK OTOPARK	ATAŞEHİR	0.918	0

The data set of car parks in Istanbul api that was developed by Istanbul Metropolitan Municipality

Resouce: <https://api.ibb.gov.tr/ispark/Park>

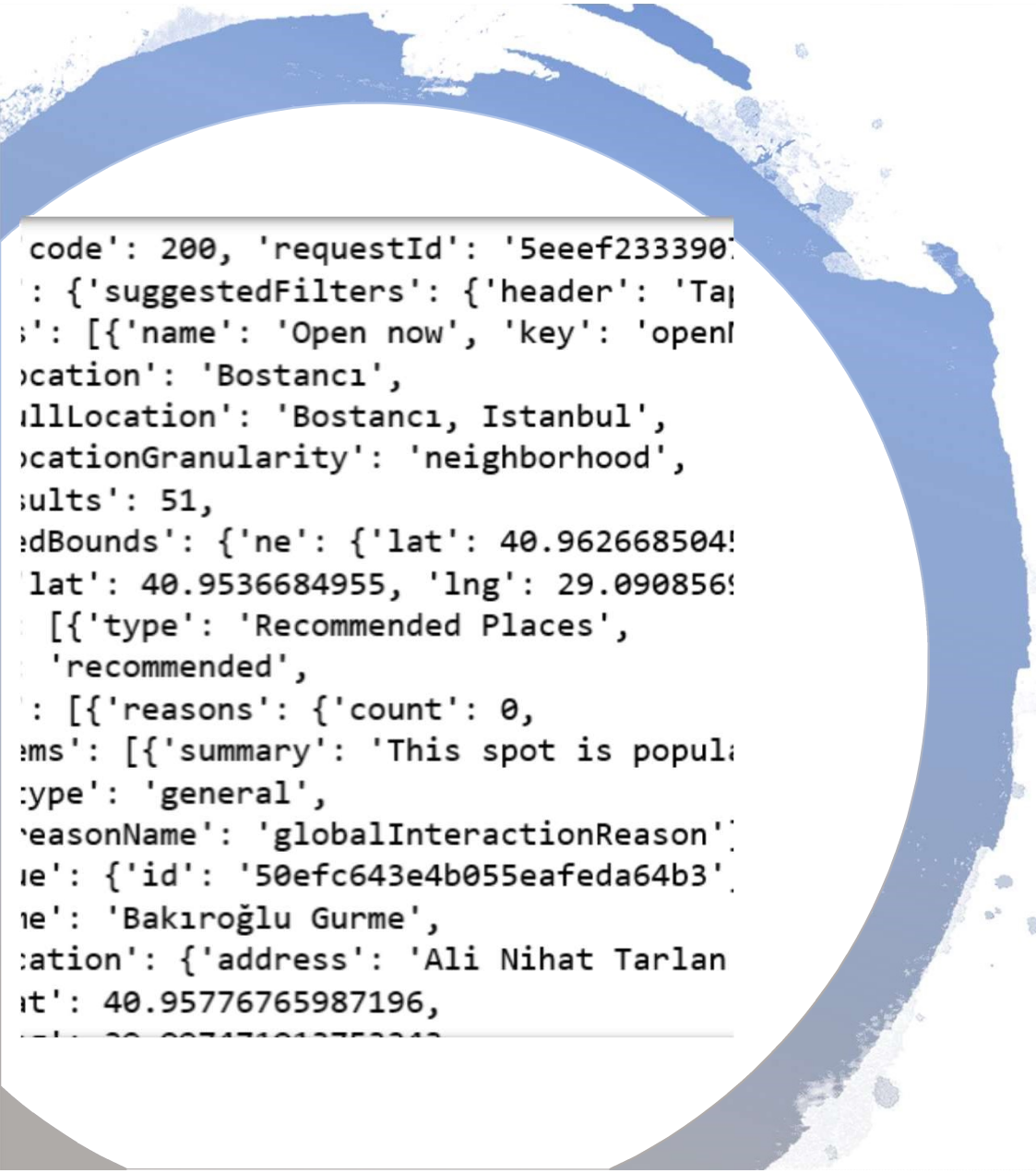
DATA



	İLCE	SEMT_ADİ_BUYUK	POSTA_KODU
0	BAKIRKÖY	ZEYTİNLİK	34140.0
1	BAKIRKÖY	CEVİZLİK	34142.0
2	BAKIRKÖY	KARTALTEPE	34144.0
3	BAKIRKÖY	ZUHURATBABA	34147.0
4	BAKIRKÖY	YEŞİLKÖY	34149.0

Boroughs and their neighbourhoods in İstanbul
got from an excel as free in one of GitHub
repositories.

DATA



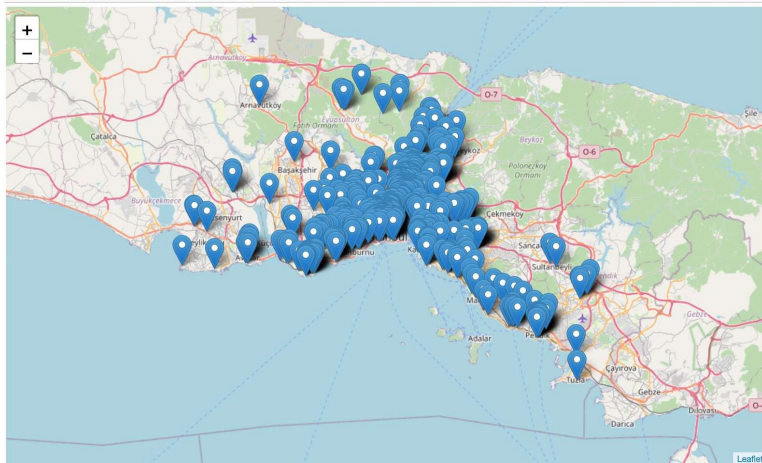
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{
  'code': 200, 'requestId': '5eeef233390',
  'filters': {'suggestedFilters': {'header': 'Tags',
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    'location': 'Bostancı',
    'fullLocation': 'Bostancı, Istanbul',
    'locationGranularity': 'neighborhood',
    'results': 51,
    'redBounds': {'ne': {'lat': 40.962668504, 'lng': 29.0908569},
      'sw': {'lat': 40.9536684955, 'lng': 29.0908569}},
    'type': 'Recommended Places',
    'recommended': true,
    'reasons': {'count': 0, 'items': [{ 'summary': 'This spot is popular',
      'type': 'general',
      'reasonName': 'globalInteractionReason',
      'reason': {'id': '50efc643e4b055eafeda64b3', 'name': 'Bakıroğlu Gurme',
        'location': {'address': 'Ali Nihat Tarlan', 'lat': 40.95776765987196, 'lng': 29.0908569}}]}}]}
```

Data of venues in İstanbul from Foursquare API

DATA

METHODOLOGY

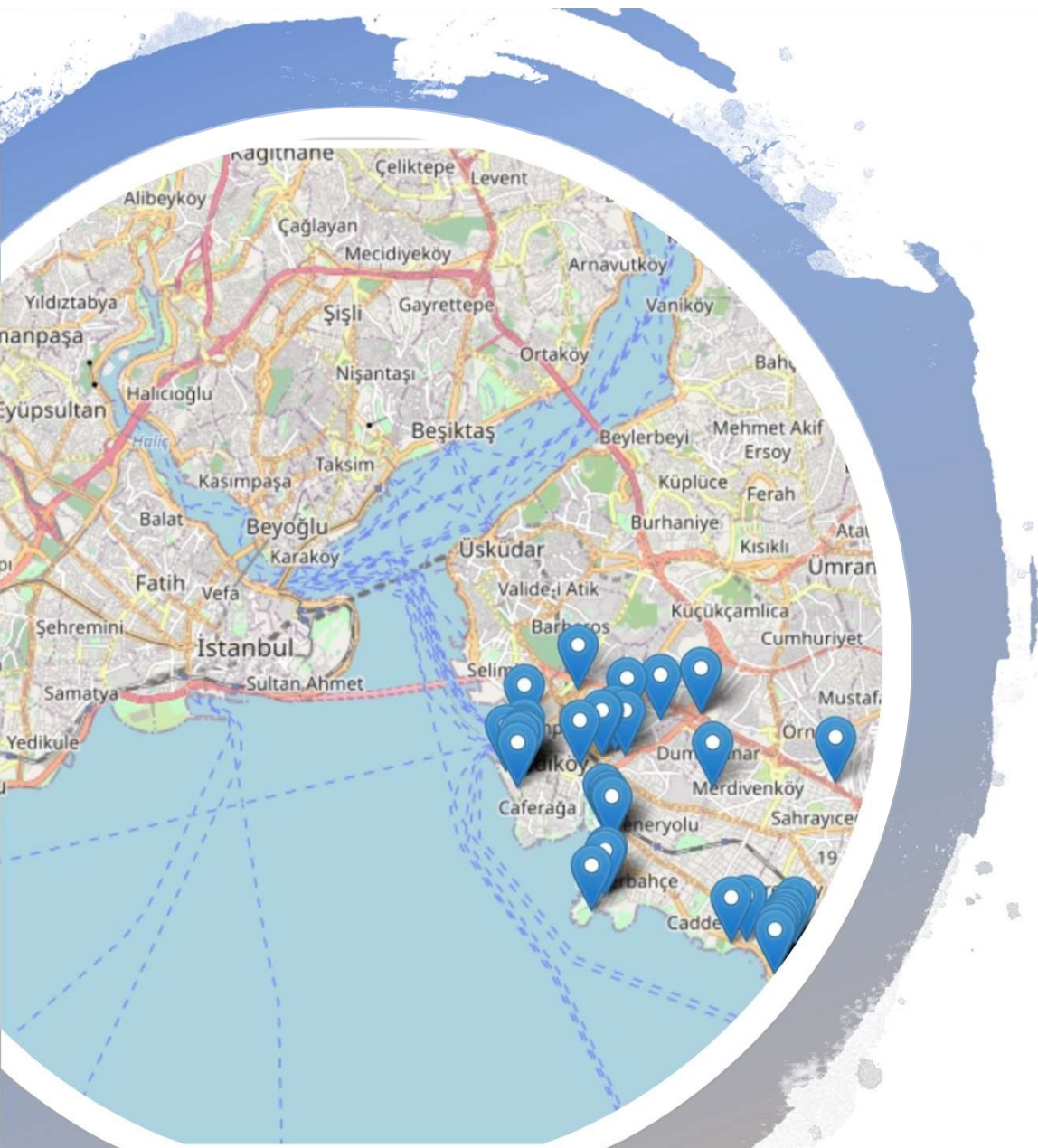
- K-Mean Clustering
- Before getting the result, I had to clean, prepare data in the correct form. Thus, I remove the null data and correct the latitude and longitude data for some neighbourhoods.



ISTANBUL MAP

To show the distribution of car parking area in the city

METHODOLOGY



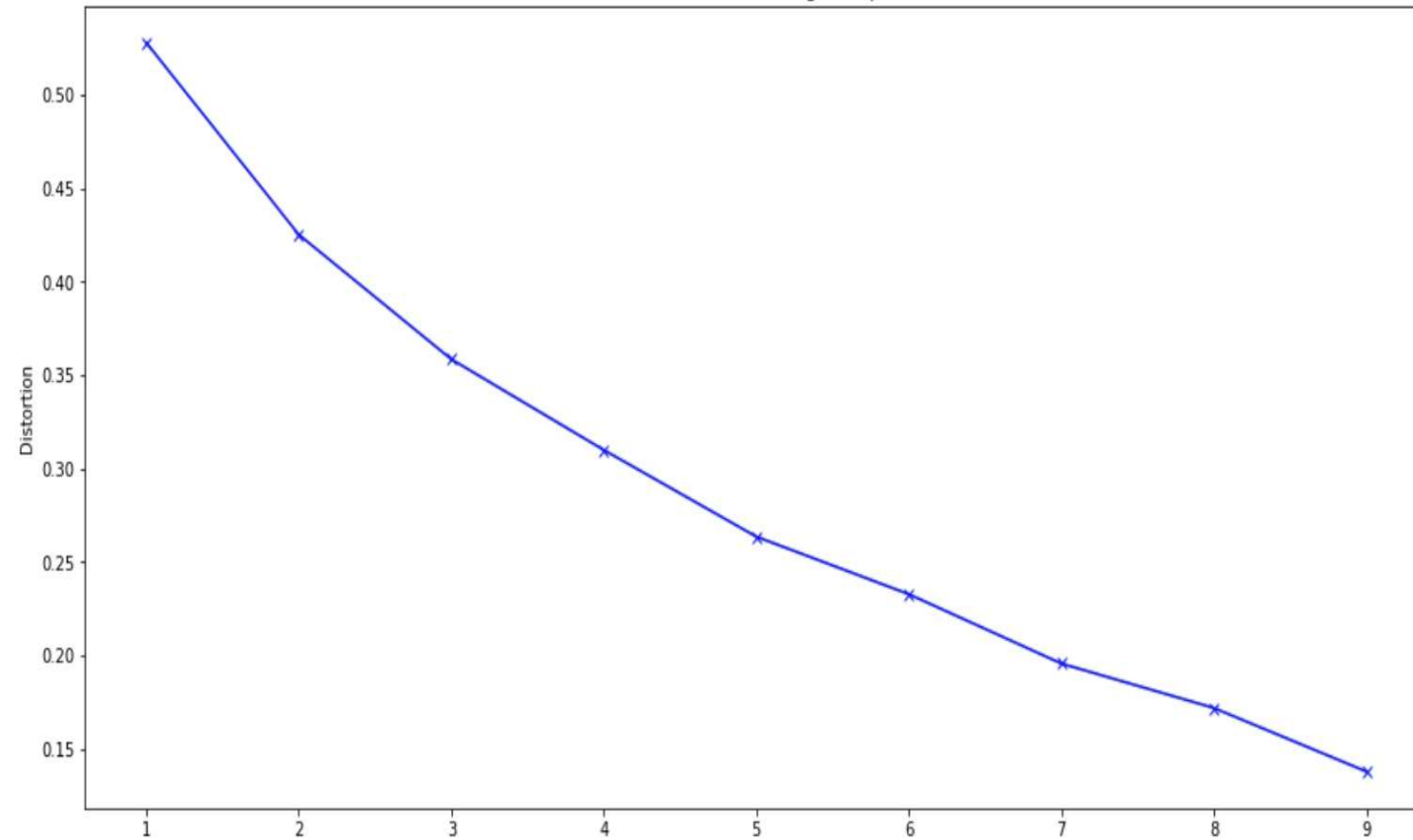
KADIKOY MAP

To show the distribution of car parking area in Kadikoy

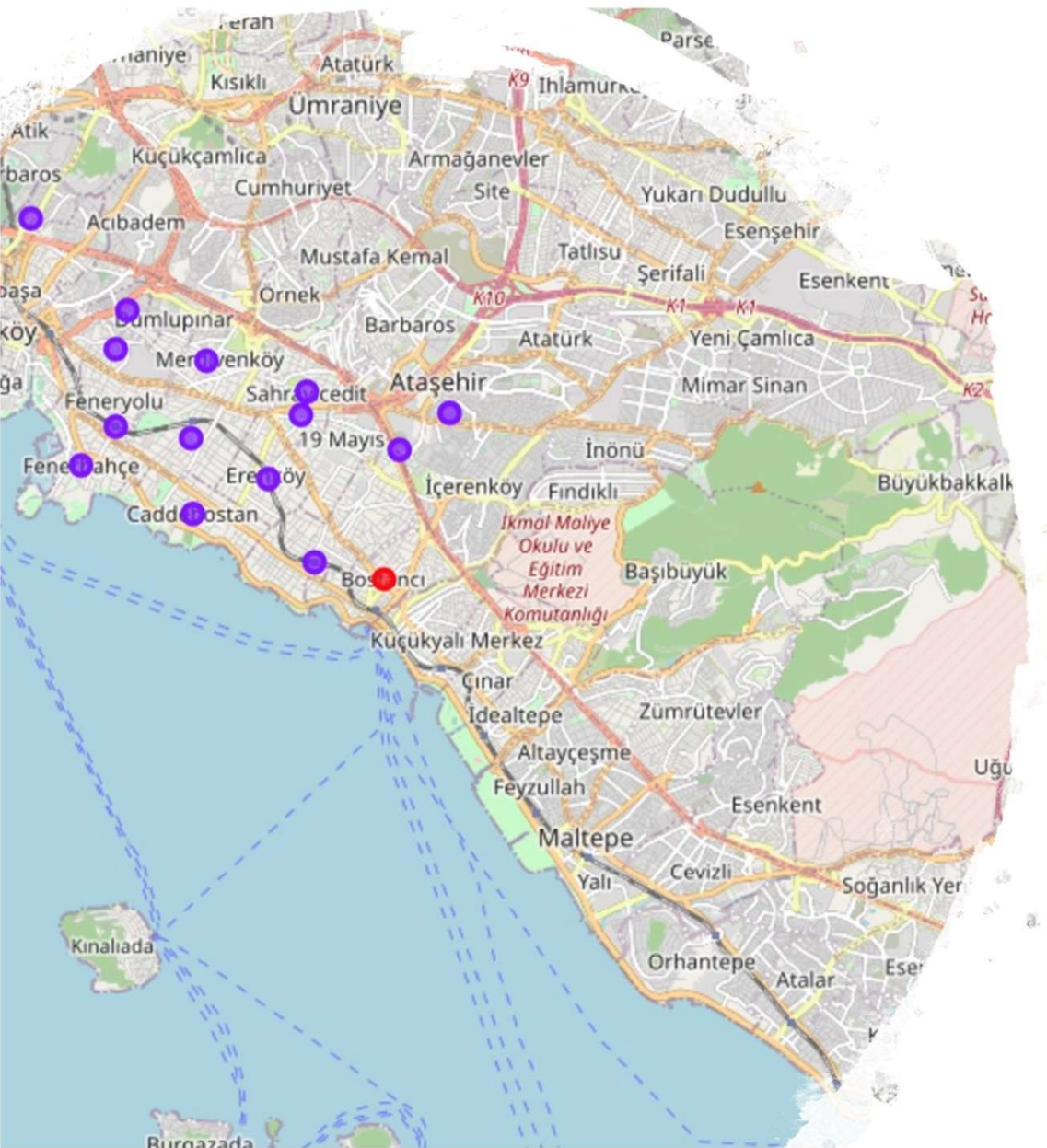
METHODOLOGY

METHODOLOGY

The Elbow Method showing the optimal k

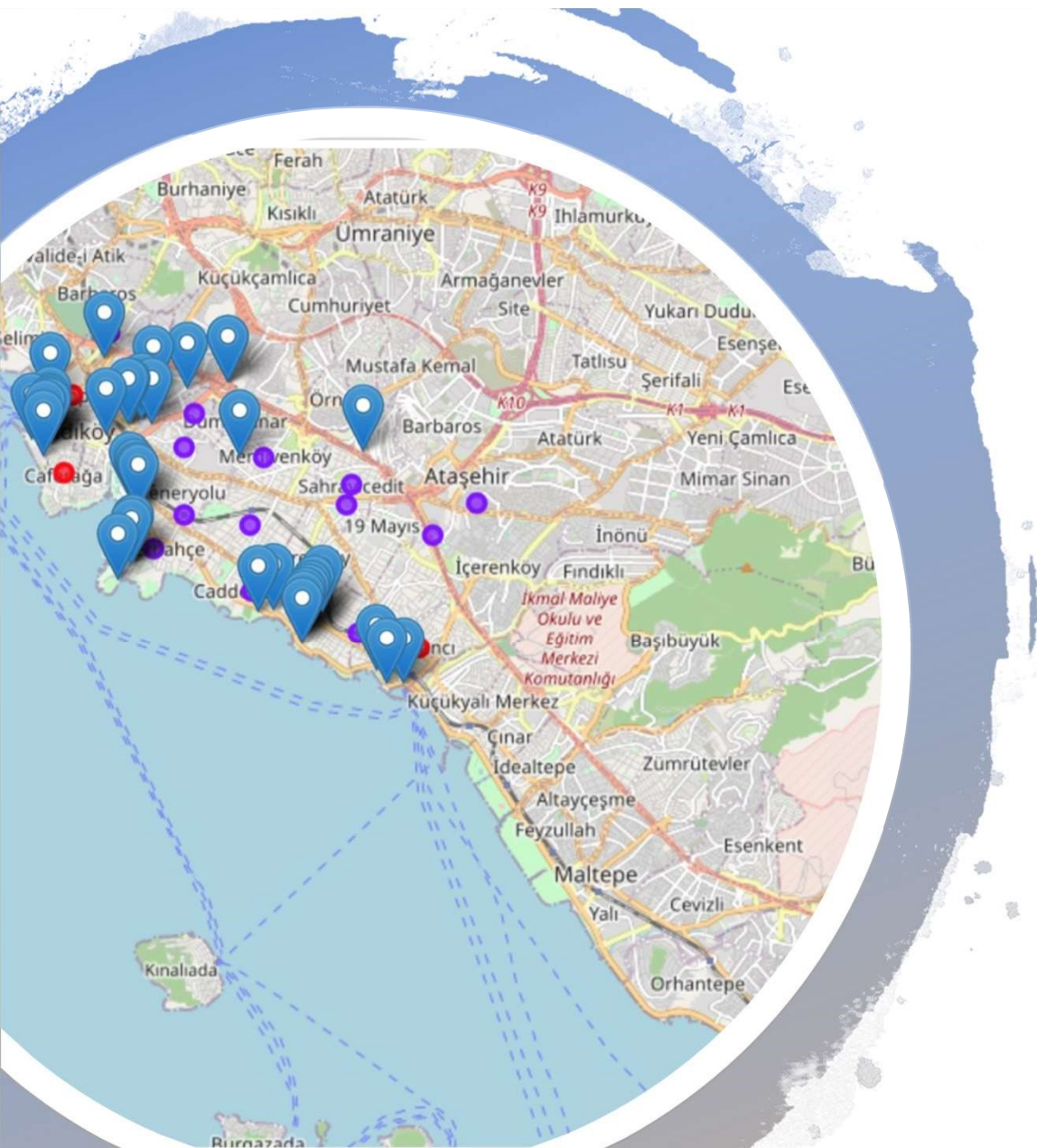


ELBOW METHOD IS USED TO FIND
OPTIMAL K



After clustering, each clusters on the map

METHODOLOGY



To display relation between Clusters and Car
Parking Areas in Kadikoy

METHODOLOGY

CONCLUSION

- There is no meaningful relation between the distribution of car parking area and the popularities of the venues
- For the future research, we should look at the other reasons to find the reason of the popularity of the venues:
 - Number of Instagram posts
 - The offices nearby the venues
 - How close the public transportation