

Exploring Ahmedabad

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1. INTRODUCTION

1.1 Background

Ahmedabad is the largest city in the state of Gujarat, IN located in the western India. It has emerged as an important economic and industrial hub and it is amongst the fastest growing cities in India. Ahmedabad is an economic hub excelling in textile industries, pharma Industries, manufacturing industries and tertiary activities like commerce, communication and construction. Apart from that Ahmedabad was declared as India's first UNESCO World Heritage City. Thus it experiences a lot of tourists and business official visits. Therefore, Proper information about the hotels for better stopovers, tourist location, travel means and other features of the city can be helpful for planning visits.

1.2 Problem

Data knowledge about the above various features can include foursquare-API abstracting venue's locational information and neighborhoods, stay charges, ratings, absolute distances, blog data regarding the region, and some local entity data.

1.3 Interest

Visiting the public will be interested to gather such relevant data also the local public can access this data for regular plans.

2. DATA ACQUISITION

2.1 Data Sources

The locational data of the venues like the hotels, popular tourist picked locations, heritage sites, and other respective venues are analyzed through the Foursquare API(<https://foursquare.com/>) and other data about the city and travel options is gathered through Wikipedia(<https://en.wikipedia.org/wiki/Ahmedabad>) and Wikitravel(<https://wikitravel.org/en/Ahmedabad>) with all data sources updated between November 2019 to April 2020.

2.2 Data Wrangling

Locational data was abstracted through the Foursquare API in JSON format and converted it into pandas dataframe. The different venues were identified with their names and a respective location.

There were several problems with the data set, firstly there were missing values in the column of address and ratings. Secondly, columns of latitude and longitude were in the wrong format for the title which made it difficult to include them during the map plotting using the folium library.

Third, there was no statistical data available for the means of travel In as well as travel Around. Only the description was on the hand.

2.3 Feature Selection

After data wrangling, the dataset obtained sixteen different column features in which many features were describing the same characteristics and some column features were out of the scope of the assignment. Thus I discarded the redundant column features and kept only features with relevant correlation with the virtue of this assignment. And these same features were taken for all the venue categories(a total of four such).

Kept Features	Removed Features
Name, Location address, Latitude, Longitude, Categories	Location, Country, Location Distance, Location.crossStreet, referrals, Location.formattedAddress, id

```
dataframe.head()
```

Out[8]:

categories	hasPerk	id	location.address	location.cc	location.city	location.country	location.crossStreet	location.distance	location.formattedAddress	location.labeledLatLngs	location.lat
[[{"id": "8988d1f931735", "name": "B..."}]]	False	5242eeef498e9a1c1330272	Paldi	IN	Ahmedabad	India	NaN	1398	[Paldi, Ahmedabad, Gujarat, India]	[[{"label": "display", "lat": 23.01996388787424...}]]	23.019964
[[{"id": "8988d1f931735", "name": "H..."}]]	False	51571331e4b0ac343e03959	NaN	IN	NaN	India	NaN	1890	[India]	[[{"label": "display", "lat": 23.03029750708967...}]]	23.030298
[[{"id": "8988d1f931735", "name": "H..."}]]	False	4bd78b85304fce72d1b033ab	434/1 Mithakali Six Cross Roads,	IN	Ahmedabad	India	Navrangpura	1831	[434/1 Mithakali Six Cross Roads, (Navrangpura...]	[[{"label": "display", "lat": 23.02961890337576...}]]	23.029619
[[{"id": "8988d10941735", "name": "I..."}]]	False	5003dca9e4b0a74a536bfc06	Hotel Nishant	IN	Ahmedabad	India	Teen Darwaza	461	[Hotel Nishant (Teen Darwaza), Ahmedabad, Guja...]	[[{"label": "display", "lat": 23.02418122132545...}]]	23.024181
[[{"id": "9074f5e4b0100", "name": "B..."}]]	False	5661c32e498e648e4595ec4	NaN	IN	NaN	India	NaN	569	[India]	[[{"label": "display", "lat": 23.02653731969047...}]]	23.026537

Fig3.1. all features abstracted through API

3. EXPLANATORY DATA

3.1 Target

Being an economic hub and heritage city, Ahmedabad experiences a lot of visits every variable time interval. Having proper knowledge about the city, various venues, hotels, heritage, and entertainment sites will be very beneficial to plan the visits according to itself.

3.2 Mapping the venues

Majorly hotels near to the railway station and airport so it becomes relevant to board in, accessible to all the transporting options and near to all the famous restaurants, tourist sites, and entertainment.

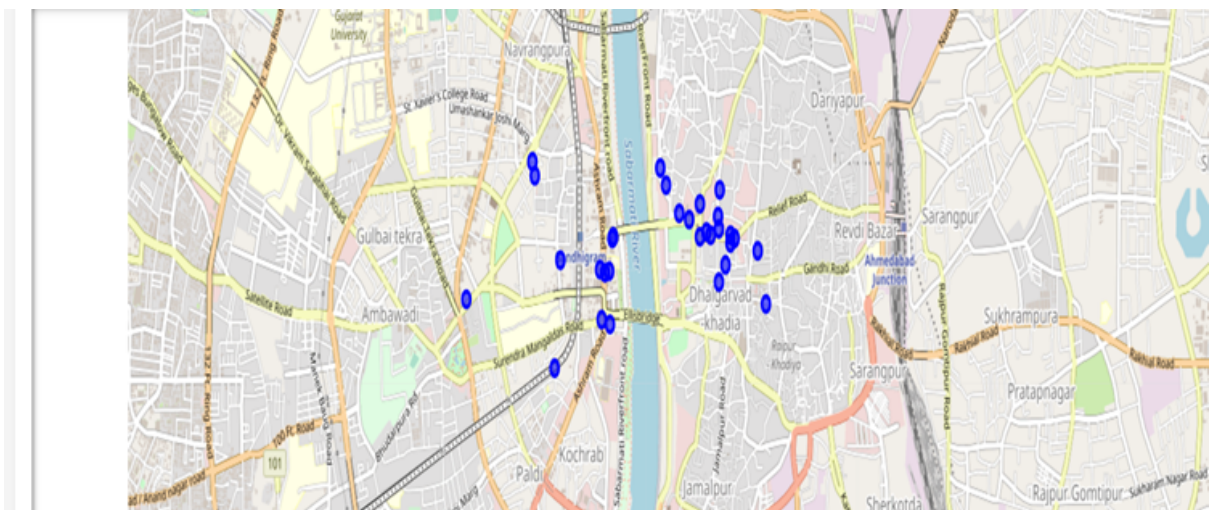


Fig 3.2.Hotels Map-plotting

Sites for entertainment and heritage sites across the city.

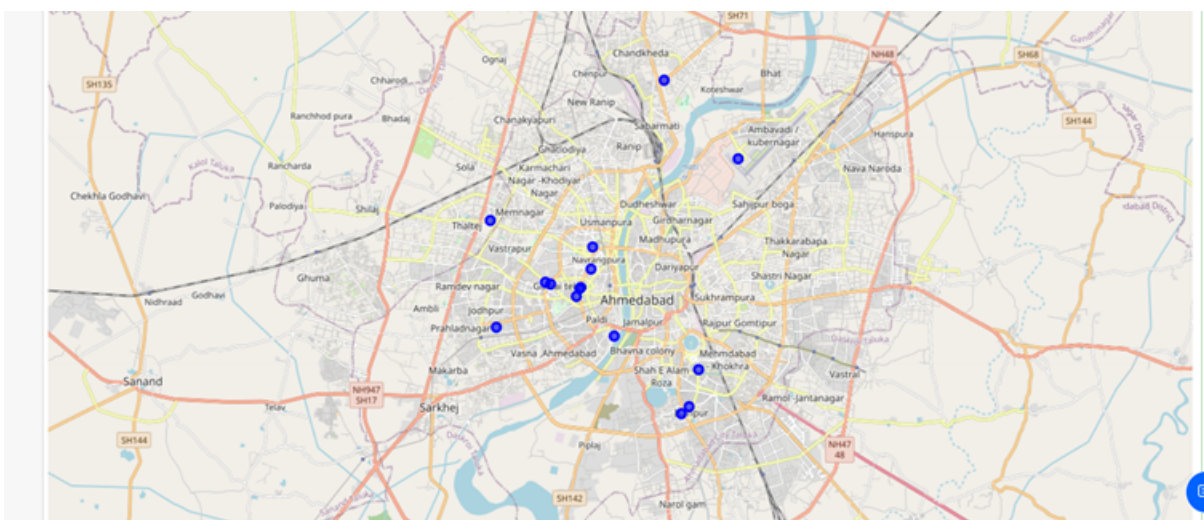


Fig3.3. entertainment-and-heritage sites

Plot for the best restaurants with famous cuisine, dishes, and heritage luxury. Restaurants across Ahmedabad are not only famous for their food but also their culture, luxury, traditional cuisine, and rich services.

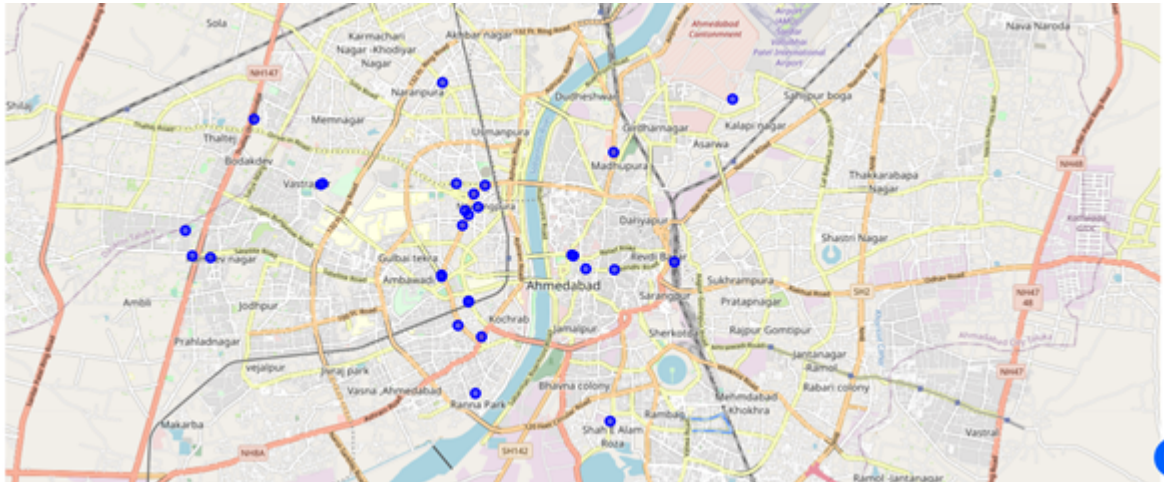


Fig3.4 Restaurants_map-plotting

Major top picks considered by foursquare and highly rated sites by foursquare users.

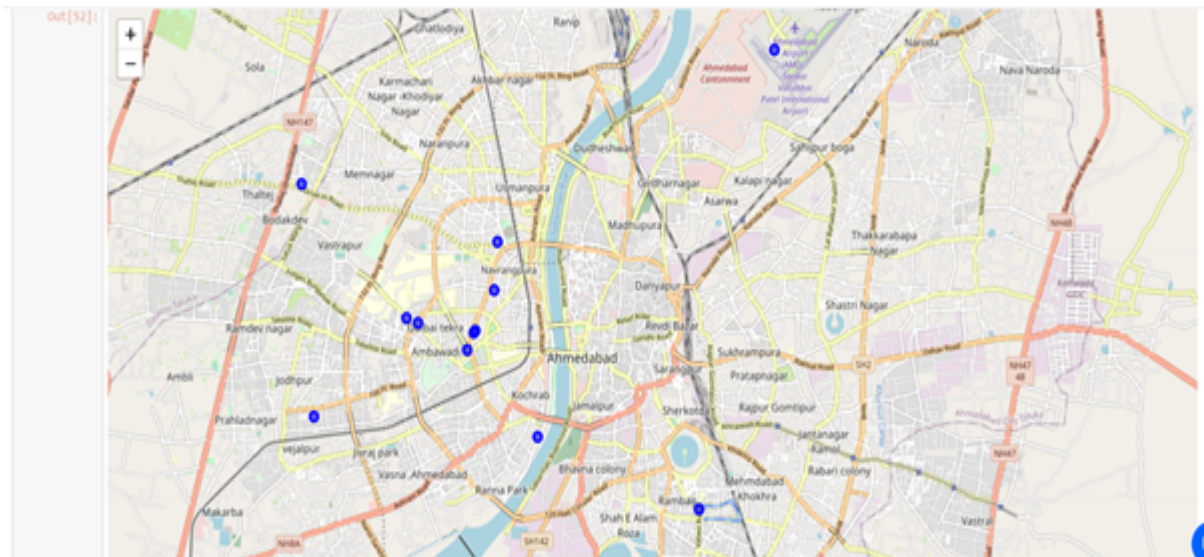


Fig3.5 Top-picks_map-plotting

3.3 Traveling IN

Traveling in can be categorized into three sections:

- I. By Air,
- II. By Train,
- III. By Road

The air traffic at Ahmedabad Airport has seen a huge rise in passenger growth. It experienced the highest international passenger fliers growth in the country approximately around 22.6 percent during the last year. Parallely, the Ahmedabad Railway station experiences a huge passenger crowd. Making it the second busiest railway station in the western railway zone. By road, Ahmedabad is connected to the major cities like Vadodara, Gandhinagar, Surat, Mumbai, and many interstate major cities through direct highways and expressways.

3.4 Traveling Around

Ahmedabad is a vast city ranging from around 450km squares to 480km square. But it has very fluid transporting connectivities around the city including the public transport services, private taxis/auto-rickshaws supported by huge road connectivities and different types of road-runways to control traffic.

Majorly traveling around can be optioned between:

- I. Public Transport, including:
 - a. AMTS(Ahmedabad Municipal Transport Service),
 - b. BRTS(Bus Rapid Transit Service),
 - c. Metro project under construction.
- II. Private Transport, including:

Taxis, Auto-rickshaws, and all major online cab services.

4. CONCLUSION

This study explores different categories of venues including hotels, restaurants, heritage, and cultural sites, tourist venues and unique destinations that visitors coming to Ahmedabad can discover with suitable traveling options to move in and around the city. Here in this study I abstracted all the above locational data from Foursquare API and then using the folium library, plotted the map for all the resultant venues concerning their latitude and longitude with correlation to all the characteristics like distance from airport and railway station, accessibility to the transport options and other venue categories. This study can be useful in helping visitors coming to Ahmedabad city in several ways. For example, A visitor can plan to book a hotel at an appropriate distance from the airport or railway station for easy and quick boarding.