

Week 4 IBM Applied Data Science

Coursera Capstone Project

IBM Applied Data Science

Optimum location to set up a new club in
Mumbai

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Data

- For the purpose of our study, we require a detailed list of all the areas ,locations along with their latitudes and longitudes of Mumbai city. We require a web scraping tool such as BeautifulSoup which can help us to get the relevant table containing the tables of areas and locations.
- For the purpose of finding the latitudes and longitudes, we can use the geolocator API. However, this is a tedious process. Thankfully, in our case, web scrapped data already contained the latitudes and longitudes. Hence, they could be scrapped using the BeautifulSoup tool. A screenshot of the web scrapped data when put into a data frame is show below.

	Area	Location	Latitude	Longitude
0	Amboli	Andheri,Western Suburbs	19.1293	72.8434
1	Chakala\Andheri,	Western Suburbs	19.111388	72.860833
2	D.N. Nagar	Andheri,Western Suburbs	19.124085	72.831373
3	Four Bungalows	Andheri,Western Suburbs	19.124714	72.82721
4	Lokhandwala	Andheri,Western Suburbs	19.130815	72.82927
5	Marol	Andheri,Western Suburbs	19.119219	72.882743
6	Sahar	Andheri,Western Suburbs	19.098889	72.867222
7	Seven Bungalows	Andheri,Western Suburbs	19.129052	72.817018
8	Versova	Andheri,Western Suburbs	19.12	72.82
9	Mira Road	Mira-Bhayandar,Western Suburbs	19.284167	72.871111
10	Bhayandar	Mira-Bhayandar,Western Suburbs	19.29	72.85
11	Uttan	Mira-Bhayandar,Western Suburbs	19.28	72.785
12	Bandstand Promenade	Bandra,Western Suburbs	19.042718	72.819132
13	Kherwadi	Bandra,Western Suburbs	19.0553	72.8314
14	Pali Hill	Bandra,Western Suburbs	19.068	72.826
15	I.C. Colony	Borivali (West),Western Suburbs	19.247039	72.84983
16	Gorai	Borivali (West),Western Suburbs	19.250057	72.782021
17	Dahisa	Western Suburbs	19.250069	72.859347
18	Aarey Milk Colony	Goregaon,Western Suburbs	19.148493	72.881756
19	Bangur Nagar	Goregaon,Western Suburbs	19.167362	72.832252
20	Jogeshwari West	Western Suburbs	19.12	72.85

- For the purpose of web scrapping, we utilised the data from www.wikipedia.com .
- We use the Foursquare API (www.foursquare.com) to get the various search results using the previously obtained list of latitudes and longitudes of various areas of Mumbai. These search results are stored in pandas data frame for better readability. A screenshot of the data obtained from Foursquare when restructured into a data frame looks as follows.

	Area	Location	Area latitude	Area longitude	Venue name	Venue latitude	Venue longitude	Venue category
0	Amboli	Andheri, Western Suburbs	19.1293	72.8434	Cafe Arfa	19.128930	72.847140	Indian Restaurant
1	Amboli	Andheri, Western Suburbs	19.1293	72.8434	5 Spice , Bandra	19.130421	72.847206	Chinese Restaurant
2	Amboli	Andheri, Western Suburbs	19.1293	72.8434	Subway	19.127860	72.844461	Sandwich Place
3	Amboli	Andheri, Western Suburbs	19.1293	72.8434	Cafe Coffee Day	19.127748	72.844663	Coffee Shop
4	Amboli	Andheri, Western Suburbs	19.1293	72.8434	V33	19.129068	72.843670	Gym
5	Amboli	Andheri, Western Suburbs	19.1293	72.8434	Delhi Zaika	19.132159	72.844406	Halal Restaurant
6	Amboli	Andheri, Western Suburbs	19.1293	72.8434	Bhardawadi Ground	19.126143	72.843548	Park
7	Amboli	Andheri, Western Suburbs	19.1293	72.8434	Nukkad Food Bistro	19.126058	72.846618	Fast Food Restaurant
8	Chakala\tAndheri,	Western Suburbs	19.111388	72.860833	Courtyard Mumbai International Airport	19.114167	72.864131	Hotel
9	Chakala\tAndheri,	Western Suburbs	19.111388	72.860833	Faaso's	19.113938	72.862330	Fast Food Restaurant
10	Chakala\tAndheri,	Western Suburbs	19.111388	72.860833	NH1 Kitchen and Bar	19.111335	72.858639	Cocktail Bar
11	Chakala\tAndheri,	Western Suburbs	19.111388	72.860833	Cafe Coffee Day	19.112272	72.861106	Café
12	Chakala\tAndheri,	Western Suburbs	19.111388	72.860833	Sai Palace Hotel	19.115373	72.860571	Hotel
13	Chakala\tAndheri,	Western Suburbs	19.111388	72.860833	Hit & Run	19.107787	72.863333	Falafel Restaurant
14	Chakala\tAndheri,	Western Suburbs	19.111388	72.860833	Pizza Hut	19.112928	72.864434	Pizza Place
15	Chakala\tAndheri,	Western Suburbs	19.111388	72.860833	The Mirador Mumbai	19.111462	72.860667	Asian Restaurant
16	Chakala\tAndheri,	Western Suburbs	19.111388	72.860833	MoMo Cafe	19.113682	72.864117	Restaurant
17	Chakala\tAndheri,	Western Suburbs	19.111388	72.860833	Big Cinemas	19.112662	72.859120	Multiplex
18	Chakala\tAndheri,	Western Suburbs	19.111388	72.860833	Shree	19.112256	72.861113	Restaurant
19	Chakala\tAndheri,	Western Suburbs	19.111388	72.860833	Nagpal Fish n Fry	19.107860	72.863312	Seafood Restaurant
20	Chakala\tAndheri,	Western Suburbs	19.111388	72.860833	Buckets And Tuckets	19.114376	72.861630	Fast Food Restaurant
21	Chakala\tAndheri,	Western Suburbs	19.111388	72.860833	Sangam BIG Cinemas	19.112427	72.864916	Multiplex
22	Chakala\tAndheri,	Western Suburbs	19.111388	72.860833	Zesto	19.112974	72.864416	Café
23	Chakala\tAndheri,	Western Suburbs	19.111388	72.860833	Enrich	19.112863	72.864551	Salon / Barbershop
24	D.N. Nagar	Andheri, Western Suburbs	19.124085	72.831373	Joey's Pizza	19.126762	72.830001	Pizza Place