

The Battle of Neighborhoods - Week 4 - Part B

A description of the problem and a discussion of the background. (15 marks)

Title: Restaurant Recommender System for Chennai

Data Requirements:

To build a Restaurant Recommender model for Chennai location, we need below data:

1. Chennai's geographical coordinates (latitude and longitude) to find neighborhood details.
2. Population of the neighborhood where the restaurant is located.
3. Restaurant details in locality and its cuisines.

Let's take detail look at each of these:

1. To access each restaurants in neighborhood location, we need it's Latitude and Longitude so that we can point at its coordinates and create a map displaying all the restaurants with its labels respectively.
2. Population of a neighborhood is very important factor to determine a restaurant's growth. More people visit, better the restaurant will be rated because it is accessed by different people with different taste.
3. Income level of a neighborhood is also very important factor. If people in a neighborhood earns more than an average income, then it is likely that they will spend more. So restaurant can access market demand to income of a neighborhood.

Data Collection:

1. Chennai neighborhood location coordinates were available in below website.
https://chennaiiq.com/chennai/latitude_longitude_areas.asp
2. I have scrapped list of neighbor's using BeautifulSoup4 from this site. Chennai has 4 boroughs and 64 neighborhoods. These details will be used to create dataframe.

List of Chennai City Latitude Longitude			
Borough	Neighbourhood	Latitude	Longitude
South	Adyar Bus Debot.	12°59'50" N	80°15'25" E
South	Adyar Signal	13°00'23" N	80°15'27" E
South	Alandur	13°00'28" N	80°12'35" E
West	Ambattur	13°06'36" N	80°10'12" E
West	Anna Arch	13°04'28" N	80°13'06" E
West	Anna Nagar Roundana	13°05'04" N	80°13'05" E
West	Anna Nagar West Terminus	13°05'35" N	80°11'55" E
South	Anna University Entrance	13°00'29" N	80°14'06" E
West	Avadi	13°07'13" N	80°06'36" E
Central	Basin Bridge	13°06'08" N	80°16'17" E
West	Chennai Airport	12°59'32" N	80°10'10" E
Central	Chennai Central	13°04'56" N	80°16'32" E
West	Chennai Mofussil Bus Terminus (CMBT)	13°04'04" N	80°12'21" E
West	Chennai Trade Center	13°00'53" N	80°11'28" E
East	Chepaukam Stadium	13°03'51" N	80°15'59" E
Central	chetput	13°04'24" N	80°14'34" E
Central	Chintadripet	13°04'18" N	80°16'26" E
West	Chintamani Signal	13°05'06" N	80°13'27" E

Population by borough was given in below website.

<https://www.census2011.co.in/census/metropolitan/435-chennai.html>

The dataframe for Chennai Borough population list:

Borough	Population	Male	Female
Chennai North	1,636,732	825,844	810,888
Chennai South	1,466,723	755,841	710,882
Chennai West	1,026,648	525,840	500,808
Chennai East	844,757	435,642	410,115
Ambattur	466,205	234,923	231,282
Avadi	345,996	175,658	170,338
Tiruvottiyur	249,446	125,300	124,146
Pallavaram	215,417	107,925	107,492
Tambaram	174,787	89,060	85,727
Alandur	164,430	82,332	82,098
Madavaram	119,105	59,887	59,218

But for our recommender system we need population by neighborhood. So I have assumed neighborhood population based on the borough population and may be inaccurate. Since the main idea to get the working model.

The dataframe for Chennai neighborhood population looks like:

List of Chennai City Population		
Borough	Neighbourhood	Population
South	Adyar Bus Debot.	23109
South	Adyar Signal	10545
South	Alandur	15768
West	Ambattur	46205
West	Anna Arch	36265
West	Anna Nagar Roundana	30289
South	Anna University Entrance	5409
West	Avadi	15768
Central	Basin Bridge	70221
West	Chennai Airport	6409
Central	Chennai Central	5405
West	Chennai Mofussil Bus Terminus (CMBT)	16419
West	Chennai Trade Center	20400
East	Chepaukam Stadium	25298
Central	chetput	60787
Central	Chintadripet	101128

FourSquare API:

Foursquare was used to fetch top restaurants based on corresponding coordinates for Chennai neighborhood. Foursquare map produced by marking top neighborhood Restaurants in Chennai city.

