

Recommending a Location within Coimbatore City to open a Restaurant

1. Introduction:

1.1 Background :

Opening a Restaurant and running it successfully, is not a simple endeavour. There are quite a lot of things one has to brainstorm before opening a restaurant like target customers, frequency of the customers, parking facility, ambient environment, signature dishes, competitors, etc. It would be a business savy for restaurant owners to get places to open their restaurants which answers several questions like:

- Number of restaurants within 1000 meters from a place
- Type of restaurants within 1000 meters from a place
- Ratings and Reviews of restaurants
- What are the popular venues within 1000 meters from that place ?

1.2 Business Problem :

This project aims to solve the following research question : "In Coimbatore City, if someone is looking to open a restaurant, where would we recommend that they open it?"

1.3 Interest :

Restaurant owners or Entrepreneurs would be interested to get to know a likely place within Coimbatore City to open a restaurant.

2. Data

2.1 Data Sources :

Targeting Coimbatore city, we will be requiring all the localities within Coimbatore city. Hence I searched for pincode details of Coimbatore city, which helped me to land in the following page:

<https://www.mapsofindia.com/pincode/india/tamil-nadu/coimbatore/>

Scraped the webpage to get the table with features "Location", "Pincode", "State", "District" using BeautifulSoup and Python requests library.

Later, using geopy geocoders, generated Latitude and Longitude of the locations in that aforementioned table, which will be used to get the venues within 1000 meters or 2000 meters radius using FourSquare API.

In Particular, as we are only interested in "Restaurant" type venues, we will filter the "Restaurant" type venues from the dataframe.

Two data sources are used here:

- <https://www.mapsofindia.com/pincode/india/tamil-nadu/coimbatore/>
- FourSquare location data API

Example DataFrame from mapsofindia:

	Location	Pincode	State	District
0	A.Nagore	642205	Tamil Nadu	Coimbatore
1	Achipatti	642002	Tamil Nadu	Coimbatore
2	Agraharapudur	641663	Tamil Nadu	Coimbatore
3	Agraharasamakulam	641110	Tamil Nadu	Coimbatore
4	Akilandapuram	642004	Tamil Nadu	Coimbatore
5	Akkamalai	642127	Tamil Nadu	Coimbatore

Example DataFrame from geocoders:

	Location	Pincode	State	District	Latitude	Longitude
0	A.Nagore	642205	Tamil Nadu	Coimbatore	10.8167	79.8404
1	Akilandapuram	642004	Tamil Nadu	Coimbatore	10.8601	77.8747
2	Akkamalai	642127	Tamil Nadu	Coimbatore	10.3317	77.0195
3	Alandurai	641101	Tamil Nadu	Coimbatore	10.9541	76.7905
4	Alathur	641655	Tamil Nadu	Coimbatore	10.6459	76.5436
5	Amaravathi Nagar	642102	Tamil Nadu	Coimbatore	17.405	78.4633
6	Ammapatti	642205	Tamil Nadu	Coimbatore	10.3497	78.5634
7	Anaikatti	641108	Tamil Nadu	Coimbatore	12.818	79.7279
8	Anaimalai	642104	Tamil Nadu	Coimbatore	10.5823	76.9343
9	Andipalayam	641687	Tamil Nadu	Coimbatore	11.0999	78.1092
10	Angalakurichi	642007	Tamil Nadu	Coimbatore	10.5284	76.9963
11	Annur	641653	Tamil Nadu	Coimbatore	11.233	77.1035
12	Arasur	641402	Tamil Nadu	Coimbatore	10.0405	79.0118
13	Athipalayam	641110	Tamil Nadu	Coimbatore	11.1291	76.9807
14	Bharathiyar University	641046	Tamil Nadu	Coimbatore	11.0381	76.879

Example DataFrame from FourSquare API:

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	A.Nagore	10.816698	79.840364	fathima oticals	10.810779	79.841934	Optical Shop
1	A.Nagore	10.816698	79.840364	RS wines	10.825323	79.834312	Bar
2	Alandurai	10.954117	76.790529	Vishali Bakes	10.951575	76.775734	Bakery
3	Alandurai	10.954117	76.790529	Alandurai	10.961470	76.805166	Bus Station
4	Alathur	10.645897	76.543608	basics life	10.645089	76.546015	Men's Store
5	Alathur	10.645897	76.543608	Alathur New Bus Stand	10.645226	76.539772	Bus Station
6	Alathur	10.645897	76.543608	HANA HOTEL	10.644548	76.550011	Fast Food Restaurant
7	Alathur	10.645897	76.543608	Hotel Gayathri	10.646148	76.553765	Hotel
8	Amaravathi Nagar	17.404956	78.463251	Cafe Niloufer & Bakers	17.399715	78.462881	Café
9	Amaravathi Nagar	17.404956	78.463251	Nizam club	17.403221	78.468729	Lounge