

# The Best Barbecue in Houston, TX

Viraj Singh

February 11, 2020

## 1. Introduction

### 1.1 Background

Texas can be called the barbecue capital of US, cities like Houston, Austin, Dallas being the prime destination for visitor from different parts of the world. Each year larger number of visitors comes to Texas, Houston being the largest city in Texas attracts large number of those visitors. Picking a barbecue joint in Houston for dinning out is no easy task, as there are larger number of barbecue restaurants with their own specialty.

### 1.2 Objective

In the current work a recommendation system is built to help visitor choose the best barbecue in city of Houston. Recommendation system is built using the foursquare venue data.

## 2 Data Acquisition and Processing

### 2.1 Data acquisition

- To select the data for building recommendation system Foursquare database is used. Houston, TX latitude and longitude with search radius of 30km is used to retrieve data from Foursquare via following command “ <https://api.foursquare.com/v2/venues/search>”. Search resulted in total of 50 restaurants listed below and shown on the map, see Figure 1. Foursquare provides restaurants, “id, name, location, latitude, longitude, street etc”. Data obtained from Foursquare is transformed into a pandas data frame via following command `dataframe = json_normalize(venues)`. A snapshot of data provided is shown in Figure 2.

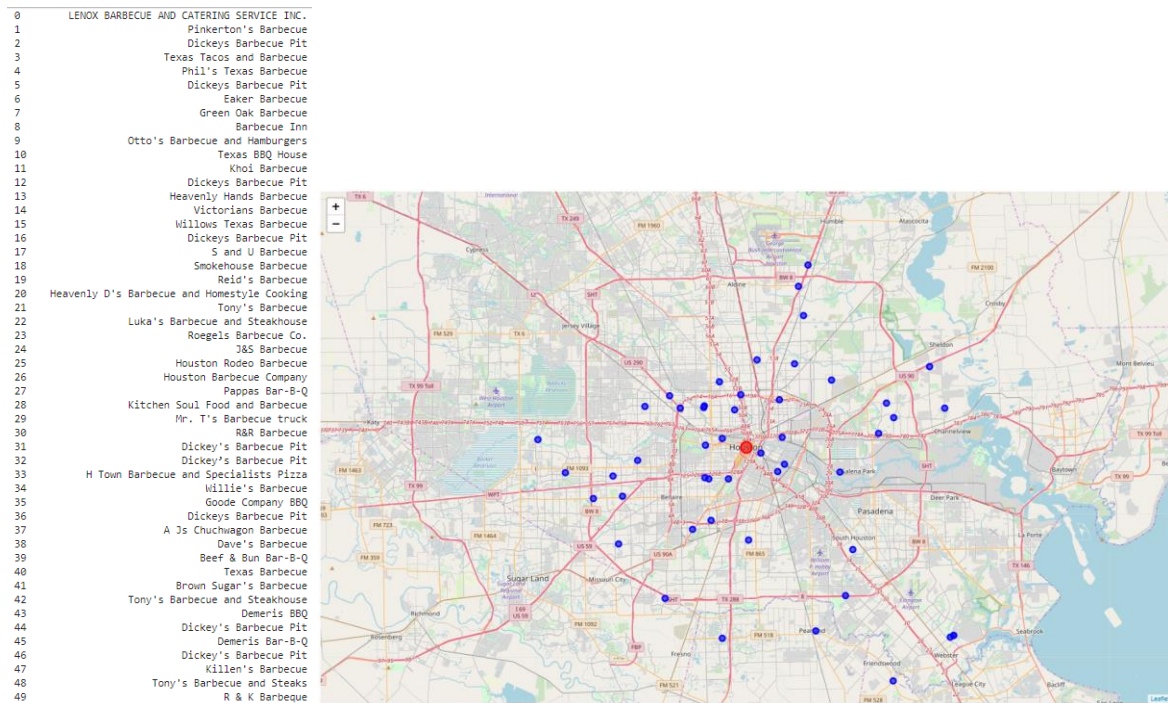


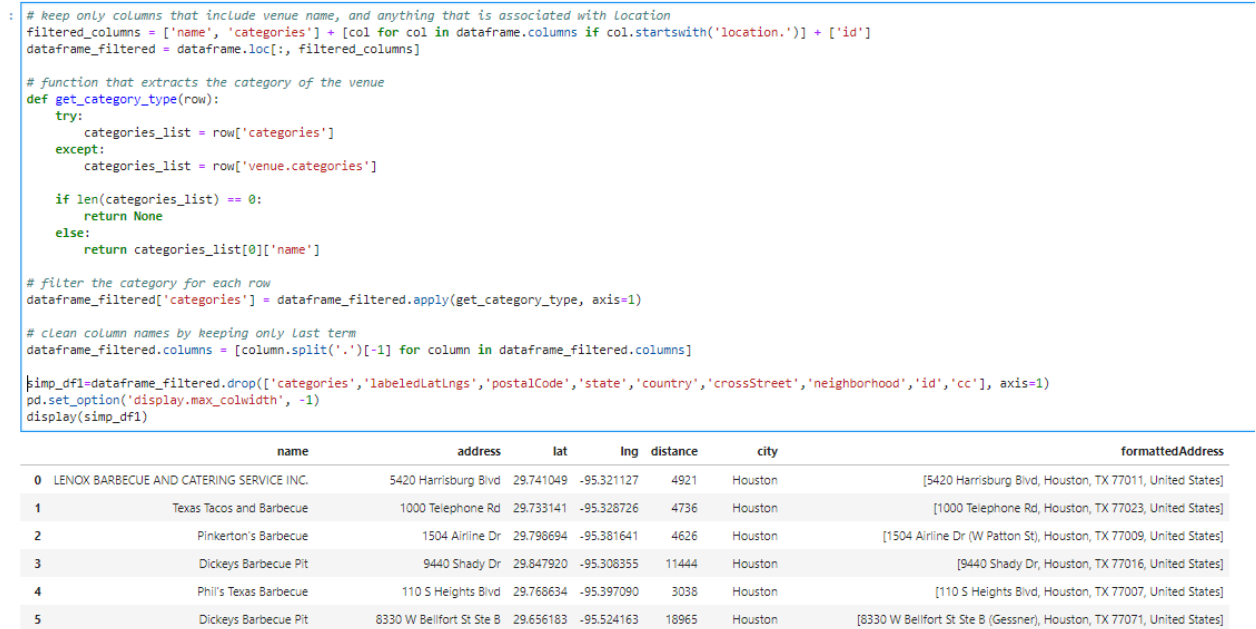
Figure 1: List of barbecue restaurants in Houston TX shown on the map

	id	name	categories	referralid	hasPerk	location.address	location.lat	location.lng	location.labeledLatLngs	location.distance	location.formattedAddress	delivery.id	delivery.url	delivery.provider.name
0	4c2b847357a9c9b68708f667	LENOX BARBECUE AND CATERING SERVICE INC.	[[{"id": "4bf58d08d48988d1c941735", "name": "R..."}]]	V-	False	5420 Harrisburg Blvd	29.741049	-95.321127	[[{"label": "display", "lat": 29.741049, "lng": ...}]]	4921	[5420 Harrisburg Blvd, Houston, TX 77011, Unit...	NaN	NaN	NaN
1	56ace2ed498ef9af042bc63	Texas Tacos and Barbecue	[[{"id": "4bf58d08d48988d151941735", "name": "T..."}]]	V-	False	1000 Telephone Rd	29.733141	-95.328726	[[{"label": "display", "lat": 29.73314069606684, "lng": ...}]]	4736	[1000 Telephone Rd, Houston, TX 77023, United States]	1200066	https://www.grubhub.com/restaurant/texas-tacos-...	grubhub
2	584369e1b36042af42c3a6	Pinkerton's Barbecue	[[{"id": "4bf58d08d48988d1d931735", "name": "B..."}]]	V-	False	1504 Airline Dr	29.798694	-95.381641	[[{"label": "display", "lat": 29.7986937626297, "lng": ...}]]	4626	[1504 Airline Dr (W Patton St), Houston, TX 77...	NaN	NaN	NaN
3	5a9faf4eeef98efa347ecb22	Dickeys Barbecue Pit	[[{"id": "4bf58d08d48988d1c941735", "name": "R..."}]]	V-	False	9440 Shady Dr	29.847920	-95.308355	[[{"label": "display", "lat": 29.84792003, "lng": ...}]]	11444	[9440 Shady Dr, Houston, TX 77016, United States]	NaN	NaN	NaN
4	4f32439619636c91c7c56c0e	Phil's Texas Barbecue	[[{"id": "4c4ab7105d754a06374d81259", "name": "F..."}]]	V-	False	110 S Heights Blvd	29.766634	-95.397090	[[{"label": "display", "lat": 29.766634, "lng": ...}]]	3038	[110 S Heights Blvd, Houston, TX 77007, United States]	NaN	NaN	NaN

Figure 2: Snapshot of raw data

## 2.2 Data Processing:

- Thereafter dataframe is cleaned to included only the information relevant to venue such as name, address, city, distance etc. Figure 3, shows command and cleaned list of barbecue in Houston TX

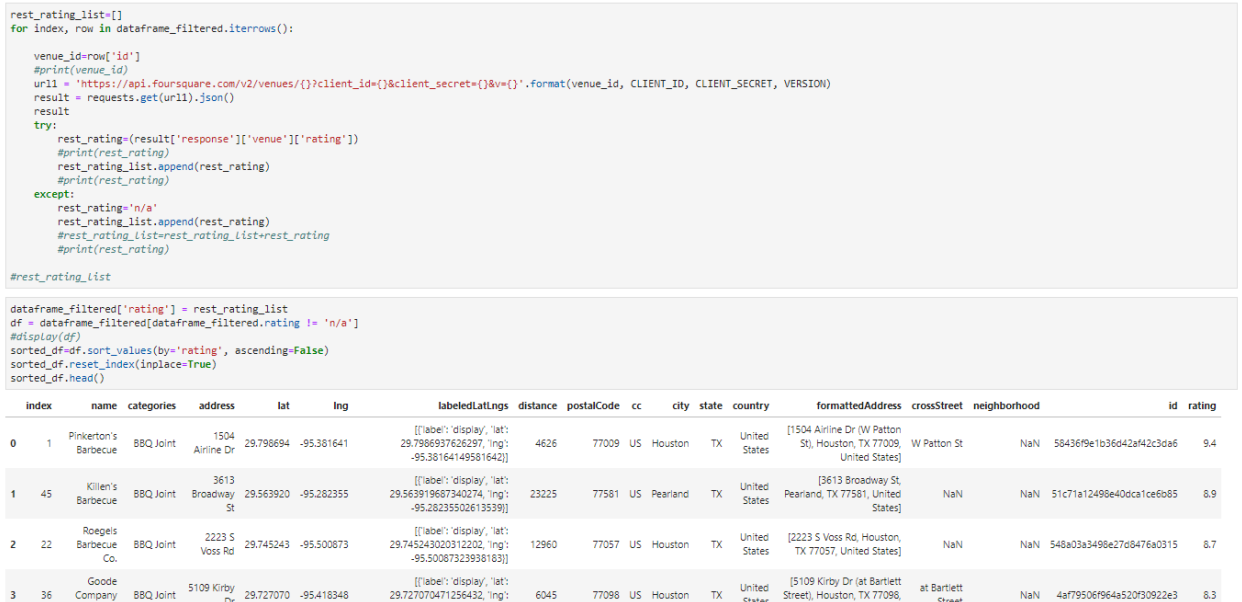


**Figure 3: Simplified and cleaned dataset (only top 5 rows are shown)**

- Using the restaurant ID obtained from Foursquare data, additional query is made on Foursquare to retrieve the rating of venue using the following command  
<https://api.foursquare.com/v2/venues>.
- Foursquare rated each restaurant on a scale of 1-10, 10 being the highest score. For some restaurants rating is not available, those restaurants are dropped from the list. See Figure 4

Use Foursquare data and retrieve restaurants rating

If no rating is available ignore the restaurant



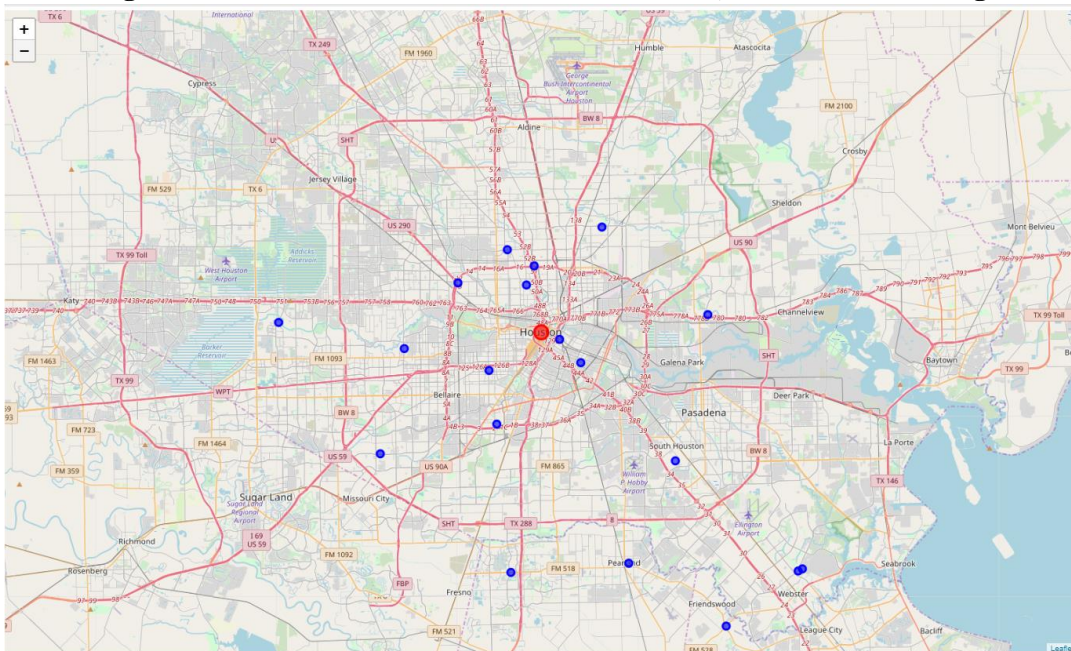
**Figure 4: Shows the code use to retrieve rating of barbecue restaurant and rating column added to right in the data set.**

### 3 Results

Based upon the rating of barbecue restaurants data frame is sorted to have the highest rated barbecue at the top. Complete list of barbecue restaurants along with their rating is given in Figure 5. Out of 50 barbecues only 19 are rated, Figure 6 shows the rated restaurants on a map.

	name	address	lat	lng	distance	city	formattedAddress	rating
0	Pinkerton's Barbecue	1504 Airline Dr	29.798694	-95.381641	4626	Houston	[1504 Airline Dr (W Patton St), Houston, TX 77009, United States]	9.4
1	Killen's Barbecue	3613 Broadway St	29.563920	-95.282355	23225	Pearland	[3613 Broadway St, Pearland, TX 77581, United States]	8.9
2	Roegels Barbecue Co.	2223 S Voss Rd	29.745243	-95.500873	12960	Houston	[2223 S Voss Rd, Houston, TX 77057, United States]	8.7
3	Goode Company BBQ	5109 Kirby Dr	29.727070	-95.418348	6045	Houston	[5109 Kirby Dr (at Bartlett Street), Houston, TX 77098, United States]	8.3
4	Demeris Bar-B-Q	1702 West Loop N	29.800557	-95.448452	9074	Houston	[1702 West Loop N, Houston, TX 77008, United States]	8.1
5	Pappas Bar-B-Q	4430 I-45 North	29.815303	-95.374125	6305	Houston	[4430 I-45 North (btwn Crosstimbers & Airline), Houston, TX 77022, United States]	8.1
6	R & K Barbeque	911 Normandy St #A	29.773785	-95.205646	15746	Houston	[911 Normandy St #A, Houston, TX 77015, United States]	7.9
7	Barbecue Inn	116 W Crosstimbers St	29.828555	-95.400292	8364	Houston	[116 W Crosstimbers St (Yale St), Houston, TX 77018, United States]	7.3
8	Houston Rodeo Barbecue	NaN	29.681663	-95.410571	9548	Houston	[Houston, TX 77054, United States]	7.2
9	Dickeys Barbecue Pit	8330 W Bellfort St Ste B	29.656183	-95.524163	18965	Houston	[8330 W Bellfort St Ste B (Gessner), Houston, TX 77071, United States]	6.8
10	Dickey's Barbecue Pit	9759 FM 1960 Bypass Rd W	29.650374	-95.237315	17463	Humble	[9759 FM 1960 Bypass Rd W (Whitaker Rd), Humble, TX 77338, United States]	6.7
11	Dickey's Barbecue Pit	210 E Parkwood Ave Ste F	29.510601	-95.187760	32670	Friendswood	[210 E Parkwood Ave Ste F, Friendswood, TX 77546, United States]	6.7
12	Dickeys Barbecue Pit	9440 Shady Dr	29.847920	-95.308355	11444	Houston	[9440 Shady Dr, Houston, TX 77016, United States]	6.7
13	Dickey's Barbecue Pit	11401 Broadway St	29.556069	-95.397132	22761	Pearland	[11401 Broadway St, Pearland, TX 77584, United States]	6.7
14	Texas BBQ House	2401 Texas St	29.753241	-95.349842	1838	Houston	[2401 Texas St, Houston, TX 77003, United States]	6.3
15	Texas Tacos and Barbecue	1000 Telephone Rd	29.733141	-95.328726	4736	Houston	[1000 Telephone Rd, Houston, TX 77023, United States]	6.3
16	Dickey's Barbecue Pit	1109 Bay Area Blvd	29.557583	-95.117862	32962	Houston	[1109 Bay Area Blvd, Houston, TX 77058, United States]	6.3
17	Tony's Barbecue and Steakhouse	17052 Saturn Ln	29.559097	-95.113657	33147	Houston	[17052 Saturn Ln, Houston, TX 77058, United States]	6.1
18	Houston Barbecue Company	1127 Eldridge Pkwy	29.767516	-95.623095	24698	Houston	[1127 Eldridge Pkwy (Enclave Pkwy), Houston, TX 77077, United States]	5

**Figure 5: List of barbecue restaurants in Houston, TX with their rating**

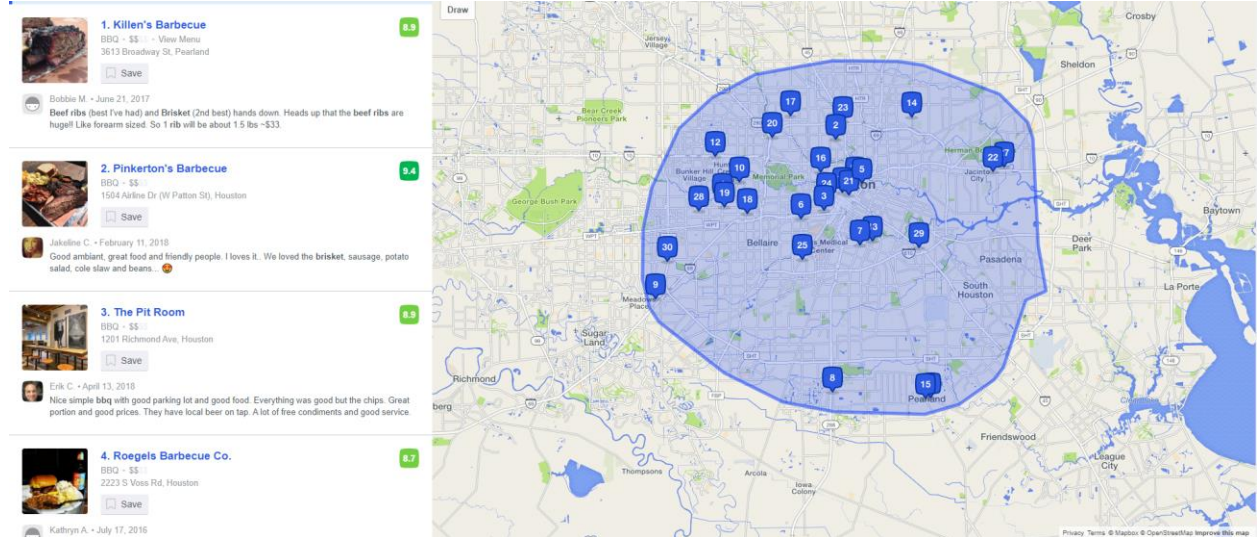


**Figure 6: Map showing the location of 19 rated restaurants in Houston metro**

Based upon the current analysis using the Foursquare data top three barbecue restaurants are **Pinkertons, Killen's and Roegel's** with rating of **9.4, 8.9 and 8.7** respectively. Further results of



current work are compared with Foursquare public website. Figure 7 shows the top 4 restaurants in Houston. It is important to note that, 3 barbecue out of top 4 are same what this analysis predicts.



**Figure 7: Map showing the top barbecue restaurants in Houston TX using the Foursquare public website.**

## 4 Summary and Conclusion

In the current work, model is built to determine the best barbecue restaurant in Houston, TX. For the constructing the recommendation system, Foursquare venue data and rating index of 1-10 is used, 10 being best is used. Out of 50 barbecue joints, Pinkerton's Barbecue, Killens Barbecue and Roegels Barbecue are the best in Houston TX. In future, user comments/likes can be combined with foursquare data to improve the model.