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Final Project data checkpoint

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Project code: https://github.com/hongyv0627/Final_Project.git

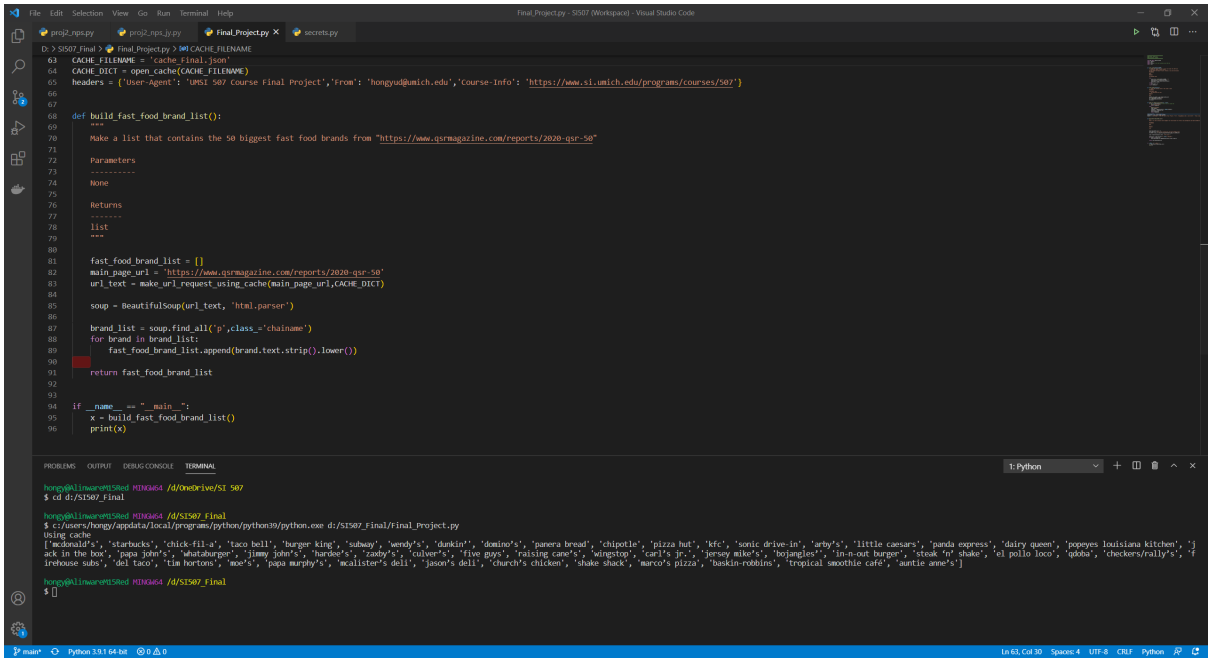
Data sources:

I use two APIs and one website for collecting data sources.

The first website is QSR50 ranking:

https://www.qsrmagazine.com/reports/2020-qsr-50

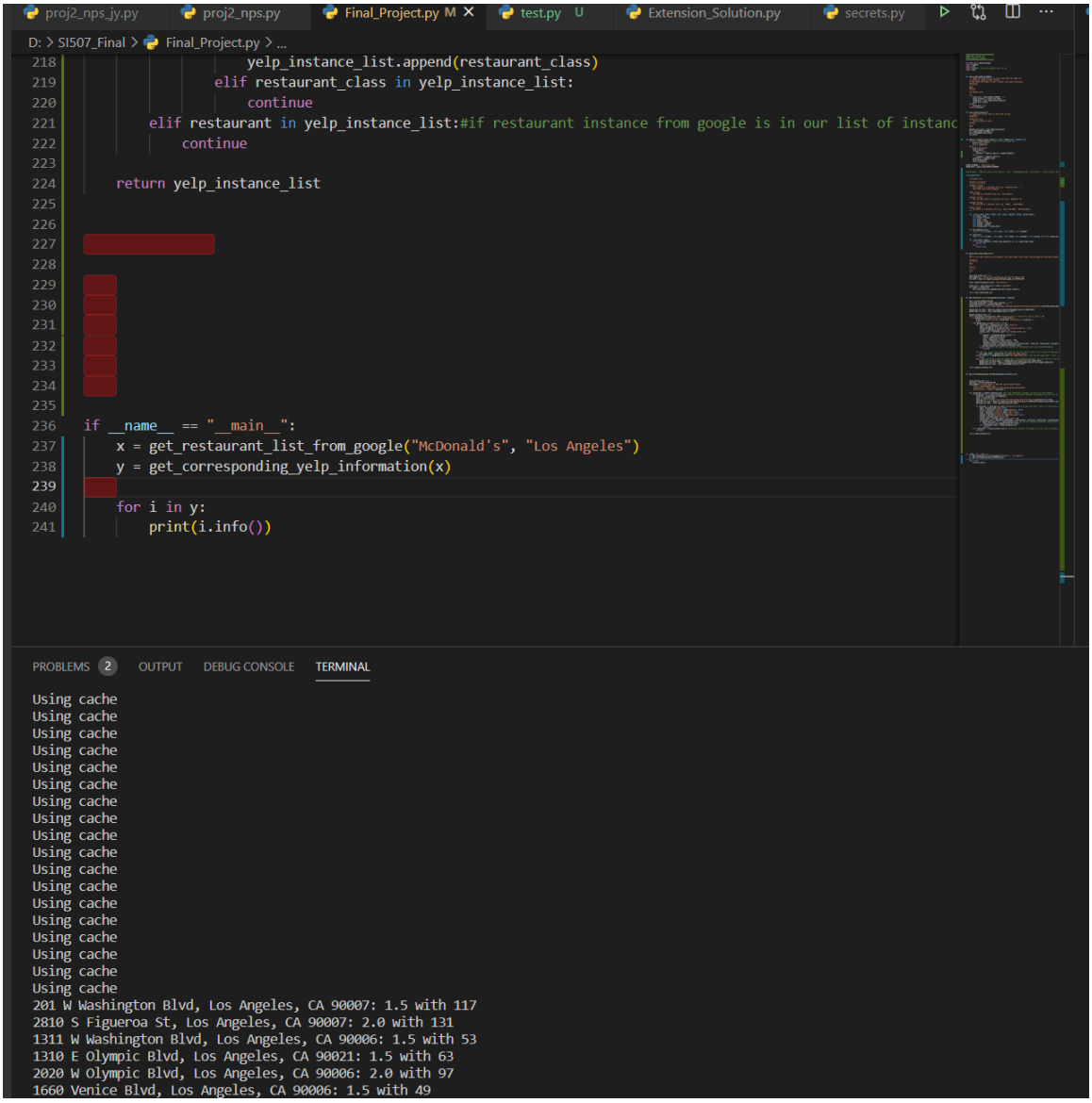
This ranking lists the 50 biggest fast-food brands in United States in 2020. I use web scraping to access the data, and also caching is used. In practice, users will only be allowed to search one of the 50 brands for their weighted rating.



The first API is Google Places API: https://developers.google.com/maps/documentation/places/web-service/overview . The format is in JSON. I use API key to access the data, and also caching is used. I try to search the McDonald's in Los Angeles (in practice the brand name and location will be the user's input), and google places API returns 60 object results, which is good. I choose the following fields: name; address, including street address, city, state, and zip code; rating, and total number of reviews.

The second API is Yelp fusion API: https://www.yelp.com/developers/documentation/v3/get_started . I use the name and address information from the result of google places API to search the restaurant's corresponding yelp rating and total number of reviews. I use API key to access the data, and also caching is used. In our case, foreign key would be name and address. Name and address links our two SQL tables. The fields are the same as Google Places API: name; address, including street address, city, state, and zip code; rating, and total number of reviews.

Below is the screenshot of caching: x is the function we get restaurants object from Google Places API, and y is the function we get restaurants object from Yelp Fusion API.



As I said before, I use the restaurant's name and address that I get from Google Places API as my search term of Yelp Fusion API. Therefore, name and address will be the foreign key that links our two table. Primary key is just an auto-incremented ID, which has no relationship to our foreign key. Below is the screen shot of Google table and Yelp table:

Google Table:

	ID	Name	Street	City	State	Zipcode	Google_rating	Google_review_count
	过滤	过滤	过滤	过滤	过滤	过滤	过滤	过滤
1	1	McDonald's	201 W Washington Blvd	Los Angeles	CA	90007	2.7	5295
2	2	McDonald's	690 Alameda St	Los Angeles	CA	90021	3.7	2082
3	3	McDonald's	2810 S Figueroa St	Los Angeles	CA	90007	3.9	2459
4	4	McDonald's	1311 W Washington Blvd	Los Angeles	CA	90006	3.7	1480
5	5	McDonald's	1763 W Century Blvd	Los Angeles	CA	90047	3.6	1025
6	6	McDonald's	2020 W Olympic Blvd	Los Angeles	CA	90006	3.6	1862
7	7	McDonald's	1845 S La Cienega Blvd	Los Angeles	CA	90035	3.6	1349
8	8	McDonald's	5223 W Century Blvd	Los Angeles	CA	90045	3.7	1798
9	9	McDonald's	1310 E Olympic Blvd	Los Angeles	CA	90021	3.6	1985
10	10	McDonald's	6904 La Tijera Blvd	Los Angeles	CA	90045	3.9	1158
11	11	McDonald's	4166 Melrose Ave	Los Angeles	CA	90029	3.8	2243
12	12	McDonald's	3124 N San Fernando Rd	Los Angeles	CA	90065	3.6	1465
13	13	McDonald's	11300 National Blvd	Los Angeles	CA	90064	3.8	1042
14	14	McDonald's	1716 Marengo St	Los Angeles	CA	90033	3.9	2260
15	15	McDonald's	1210 S Soto St	Los Angeles	CA	90023	3.8	1111
16	16	McDonald's	10011 S Avalon Blvd	Los Angeles	CA	90003	3.8	1861
17	17	McDonald's	1160 Rosecrans Ave	Los Angeles	CA	90059	3.8	1341
18	18	McDonald's	5930 W Pico Blvd	Los Angeles	CA	90035	4	890
19	19	McDonald's	1007 N Western Ave	Los Angeles	CA	90029	3.7	1657
20	20	McDonald's	3602 South La Brea Ave	Los Angeles	CA	90016	3.7	1098
21	21	McDonald's	3501 S La Cienega Blvd	Los Angeles	CA	90016	3.6	1311
22	22	McDonald's	5450 Sunset Blvd	Los Angeles	CA	90027	3.7	1607
23	23	McDonald's	1625 Wilshire Blvd	Los Angeles	CA	90017	3.7	2193
24	24	McDonald's	341 S Vermont Ave	Los Angeles	CA	90020	3.7	2477

Yelp Table:

	ID	Name	Street	City	State	Zipcode	Yelp_rating	Yelp_review_count
	过滤	过滤	过滤	过滤	过滤	过滤	过滤	过滤
1	1	McDonald's	201 W Washington Blvd	Los Angeles	CA	90007	1.5	117
2	2	McDonald's	2810 S Figueroa St	Los Angeles	CA	90007	2.0	131
3	3	McDonald's	1311 W Washington Blvd	Los Angeles	CA	90006	1.5	53
4	4	McDonald's	1310 E Olympic Blvd	Los Angeles	CA	90021	1.5	63
5	5	McDonald's	2020 W Olympic Blvd	Los Angeles	CA	90006	2.0	97
6	6	McDonald's	1660 Venice Blvd	Los Angeles	CA	90006	1.5	49
7	7	McDonald's	4011 S Central	Los Angeles	CA	90011	1.0	43
8	8	McDonald's	1625 Wilshire Blvd	Los Angeles	CA	90017	2.0	120
9	9	McDonald's	690 Alameda St	Los Angeles	CA	90021	2.0	99
10	10	McDonald's	4000 S Figueroa St	Los Angeles	CA	90037	1.5	50
11	11	McDonald's	1071 Martin Luther King Jr Blvd	Los Angeles	CA	90037	1.5	66
12	12	McDonald's	1800 S Western Ave	Los Angeles	CA	90006	1.5	85
13	13	McDonald's	405 N Alvarado St	Los Angeles	CA	90026	2.0	83
14	14	McDonald's	1210 S Soto St	Los Angeles	CA	90023	1.5	33
15	15	McDonald's	341 S Vermont Ave	Los Angeles	CA	90020	1.5	171
16	16	McDonald's	1118 Slauson Ave	Los Angeles	CA	90011	1.5	92
17	17	McDonald's	695 S Western Ave	Los Angeles	CA	90005	2.0	200
18	18	McDonald's	3737 Soto St	Vernon	CA	90058	2.5	31
19	19	McDonald's	2215 W Martin Luther King Jr Blvd	Los Angeles	CA	90008	1.5	47
20	20	McDonald's	988 W Slauson Ave	Los Angeles	CA	90044	1.5	36
21	21	McDonald's	1763 W Century Blvd	Los Angeles	CA	90047	2.0	37
22	22	McDonald's	1406 W Manchester Ave	Los Angeles	CA	90047	1.5	37
23	23	McDonald's	2900 Imperial Hwy	Inglewood	CA	90303	1.5	77
24	24	McDonald's	501 W Imperial Hwy	Los Angeles	CA	90044	1.5	98

When the project is finished, users can input their interested fast food brand name and their interested city name. However, their brand name will be restricted to 50 biggest fast food brands. After they input brand name, such as McDonald's, and city name, such as Los Angeles, the project will use google places API to help them find decades of McDonald's (maximum 100) in Los Angeles Area, with each McDonalds' rating and number of reviews being provided. Then, using Yelp Fusion API, each McDonald that we get from Google Places API will get their corresponding Yelp rating and number of reviews. If the number of McDonald's is 60, then finally we have 60 google rating and number of reviews, as well as 60 yelp rating and number of reviews.

After getting data, users can choose to calculate the weighted average rating for each restaurant, and plot the histogram, or choose to calculate the difference of rating, and plot the histogram. I can also provide some statistical properties if users want to examine, such as variance and skewness. Since we have a lot of data, and they may contributes to a distribution, we can do a lot of things with the data.