Database Project
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In Spring of 2019 I completed this Database project. I analyzed data on local restaurants in order to determine rating patterns for establishments, analyze restaurant categories in an area, and discovered categories that were heavily populated near my university. The technologies used were the following: Python, TablePlus, MySQL, Anaconda, and Tableau. I utilized Python to web scrape the data from the Yelp API. I used the following URL for our search: url='https://api.yelp.com/v3/businesses/search'
You can modify the parameters. We wanted to search for fast food near the LAX area and limited the search to 50 places: params = {'term':'fast food','location':'90045','limit':'50'}
Then, I made a get request to the API and if it was successful, I cleaned up the data by loading it as JSON. By viewing the first entry I was able to view the fields that were needed. I cleaned up the data even more due to the categories field having multiple dictionaries. To separate the data I used the pd.series in pandas to separate the dictionary into its own column. Then, I renamed the columns that had names separated by a period. I finalized and chose the columns I wanted and assigned them to a final data frame. Finally, I used the create engine to connect to a MySQL database. By knowing the different data types I was able to import from the data scrape I did in Python. I was able to view the data pertaining to the certain URL and my parameters. I was able to create several other tables by changing the parameters. Once the data was loaded, I was able to view each table. I used MySQL using the TablePlus GUI for relational databases.

I queried the database to gather and sort the data that I wanted to know. For example, I was able to query the database to search for restaurants that had a rating of less than 4. I was able to modify that to view all restaurants with a rating greater than 4.

MySQL 8.0.13 : localhost sakila : yelp : SQL Query

SQL Query | bars_yelp

```
19    `phone` text,
20    `latitude` double DEFAULT NULL,
21    `longitude` double DEFAULT NULL
22  ) ENGINE=InnoDB DEFAULT CHARSET=utf8;
23
24  SELECT *
25  FROM bars_yelp
26  WHERE rating < 4;
27
28  CREATE TABLE mexican_restaurants_yelp (
29    `name` text,
30    `price` text,
31    `rating` double DEFAULT NULL,
32    `review_count` bigint(20) DEFAULT NULL,
33    `url` text,
34    `category` text,
35    `category1` text,
```

This query is selecting all rows from the bars table and sorting them to show the bars rated less than 4.

No limit | Beautify ⌘I | Run Current ⌘↵

Run current query.

3 lines, 41 characters selected

name	price	rating	review_count	url	category
Purple Orchid	$$	3.5	261	https://www.yelp.com/biz/purple-orchid-el-segundo?adj...	Lounges
O'Malleys Pub	NULL	1	1	https://www.yelp.com/biz/o-malleys-pub-los-angeles?a...	Pubs
Game Sports Bar Restaurant & Lounge	$$	3.5	380	https://www.yelp.com/biz/game-sports-bar-restaurant-...	Sports Bars
Hangar 18	$$	3.5	35	https://www.yelp.com/biz/hangar-18-los-angeles-4?adj...	Sports Bars
Costero California Bar + Bistro	$$	3.5	80	https://www.yelp.com/biz/costero-california-bar-bistro-l...	American (New
The Office Downtown	$	3.5	45	https://www.yelp.com/biz/the-office-downtown-el-segu...	Dive Bars
Reilly's Pub - Terminal 1 at LAX Airport	$$	2.5	63	https://www.yelp.com/biz/reillys-pub-terminal-1-at-lax-...	Irish Pub
Century Taproom	$$	3.5	55	https://www.yelp.com/biz/century-taproom-los-angeles...	Beer Bar

Results from current query.

4 ms | 8 rows | Export... | Show message

Export table to a CSV file

```
SELECT * FROM `yelp`.`fast_food_yelp` LIMIT 300 OFFSET 0;

-- 2020-12-06 00:35:06.7810
SELECT COUNT(*) as count FROM `yelp`.`fast_food_yelp`;

-- 2020-12-06 00:37:32.8690
SELECT * FROM `yelp`.`bars_yelp` LIMIT 300 OFFSET 0;

-- 2020-12-06 00:37:32.8710
```
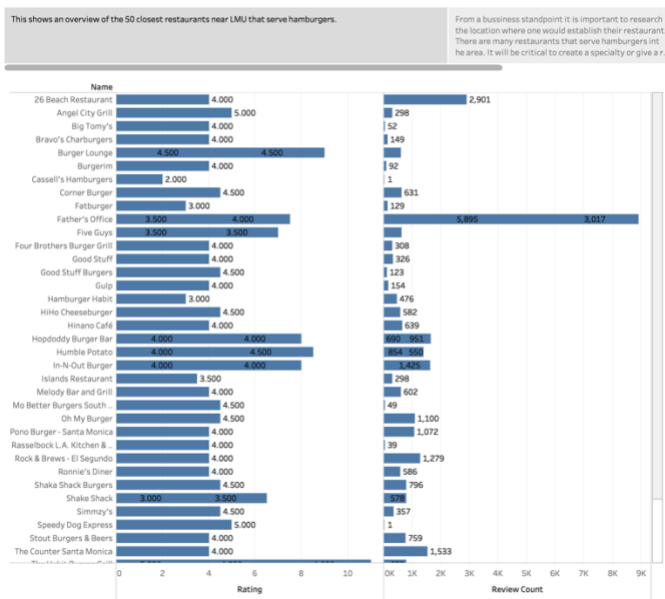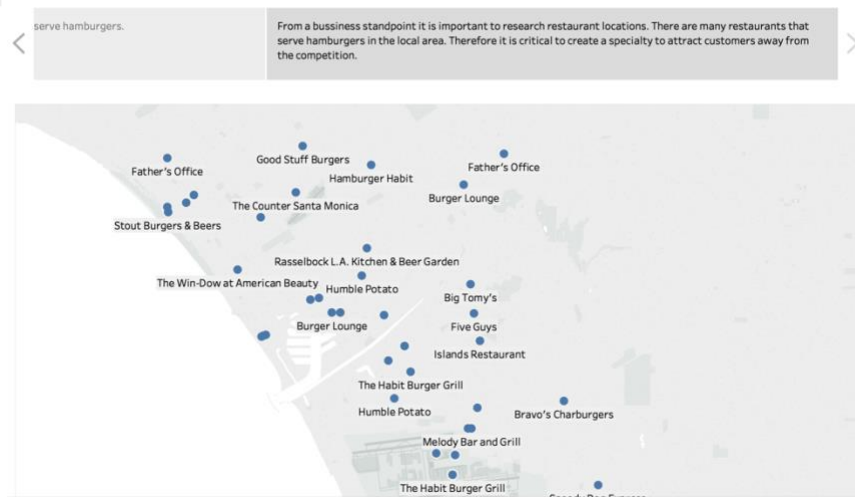
Exported Fast Food table to a csv file.

address1	category	category1	category2	city	latitude	longitude	name	phone	price	rating	review_count	url
9149 S Sepulveda Blvd	Burgers	Fast Food		Los Angeles	33.9537021005473	-118.396771789024	In-N-Out Burger	18007861000	$	4	1426	https:
11750 Jefferson Blvd	Fast Food			Los Angeles	33.98618929	-118.4007124	Chick-fil-A	13103918364	$	3.5	408	https:
1 World Way	Burgers	American (Traditional)	Fast Food	Los Angeles	33.946711	-118.407369	Shake Shack		$$	3	216	https:
8321 Lincoln Blvd	American (New)	Burgers	Asian Fusion	Los Angeles	33.9620098	-118.4214944	Humble Potato	13239892242	$$	4	855	https:
5908 W Manchester Ave	Fast Food	Burgers	Coffee & Tea	Los Angeles	33.959655	-118.386112	McDonald's	13104103200	$	2	109	https:
7101 W Manchester Ave	Mexican	Tex-Mex		Los Angeles	33.95998	-118.41685	Benny's Tacos & Chicken Rotisserie	13106708226	$	4.5	1659	https:
1 World Way	Chinese	Fast Food		Los Angeles	33.9463629896365	-118.401084467769	Panda Express	14247509969		4.5	2	https:
8500 Lincoln Blvd	Tex-Mex	Fast Food	Mexican	Los Angeles	33.96078	-118.4198	Taco Bell	13106704050	$	1.5	67	https:
1 World Way	Fast Food			Los Angeles	33.9444	-118.39844	Chick-fil-A	13103438309	$	3.5	14	https:
8651 La Tijera Blvd	Mexican			Los Angeles	33.95878	-118.39312	Del Taco	13106455667	$	3	79	https:
2171 Rosecrans Ave	Burgers	Fast Food	American (Traditional)	El Segundo	33.902242932206	-118.386249414674	Shake Shack	14243972170	$$	3.5	576	https:
600 N Sepulveda Blvd	Burgers	Fast Food		El Segundo	33.9239348022482	-118.395639595857	In-N-Out Burger	18007861000	$	4	208	https:
7360 La Tijera Blvd	Fast Food	Burgers		Los Angeles	33.97117	-118.37818	Wendy's	13106458396	$	3	60	https:
13425 Washington Blvd	Burgers	Fast Food		Marina Del Rey	33.9917	-118.44606	In-N-Out Burger	18007861000	$	4	598	https:
5625 W Century Blvd	Fast Food	Burgers		Los Angeles	33.94619	-118.37955	Carl's Jr.	13106428931	$	2	186	https:
8730 S Sepulveda Blvd	Asian Fusion	Fast Food		Los Angeles	33.9579588	-118.3958601	Flame Broiler	13106706279	$	2.5	98	https:
5307 W Century Blvd	Tacos	Fast Food	Tex-Mex	Los Angeles	33.94565	-118.37331	Taco Bell	13106495506		1	1	https:
307 N Sepulveda Blvd	Mexican	Fast Food		El Segundo	33.9196429750764	-118.396466445089	Chipotle Mexican Grill	13104261437	$	3	259	https:
630 N Sepulveda Blvd	Fast Food	Mexican		El Segundo	33.9245509750383	-118.395872697098	El Pollo Loco	13103220808	$	3.5	112	https:

Once I had the different tables created, I established a connection to my Tableau desktop application. I created data visualizations to come to conclusions about the data gathered. Data visualizations helped create a story about the data collected.
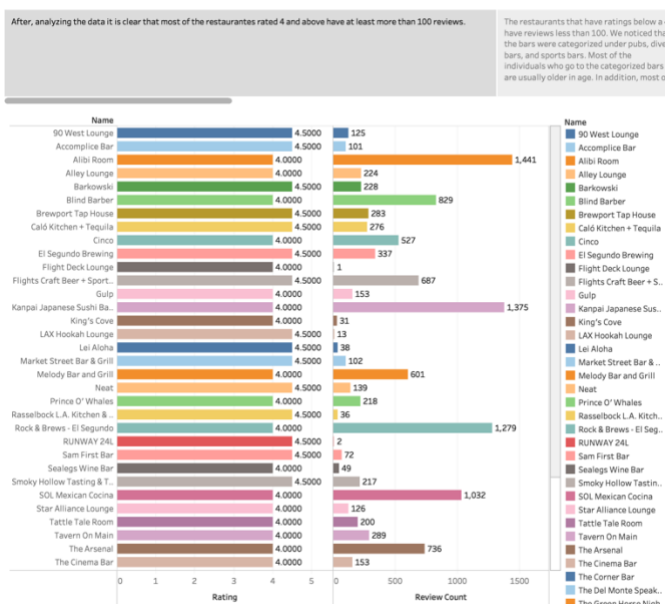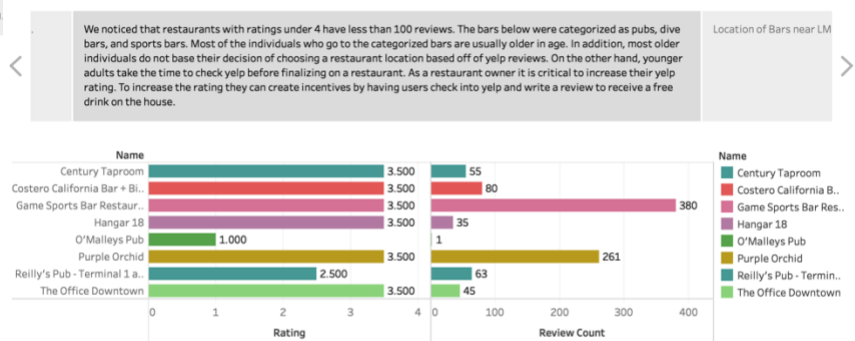
Burger Locations near LMU

Bars Near LMU

Outcomes:
I was able to utilize the Yelp API to create a table in my database. I then created visual to analyze the data. It clearly showed what restaurant categories were lacking in certain areas. The data collected might help a business owner view the competition and how they might want to make their business stand out.

Link to Code

Link to Slides

Link to Tableau PowerPoint Slides