

README

● Background

For our group project, as consultants, we organize reviews of restaurants in College Park for customers, aiming to reveal and connect customers with excellent local restaurants, create exquisite dining experiences and convenience. And according to the popularity of different cuisine restaurants and the number of comments on different platforms on the above provides insights for restaurant owners and potential investors.

● Clients

For our project, we have three main clients as listed below:

1. Students and local resides

These are the end-users of restaurant services in College Park. Our project intends to help these users identify restaurants with good reviews and make a wise choice when choosing restaurant services.

2. Restaurant Owners

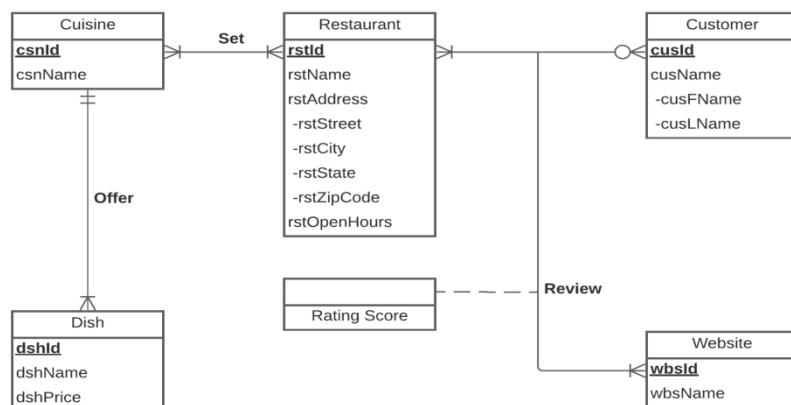
Our project also aims to provide the restaurant owners with insights into the dining services offered in College Park and help them with any expansion plans or any changes to the services offered based on the reviews collected.

3. Potential Investors

For investors who are looking to invest in opening a new restaurant, the consulting project seeks to help with insights on top cuisines that are liked by customers in this area.

● Data Sources

To have a more effective comparison, we have selected 10 cuisines, a total of 21 restaurants, and a total of 204 user reviews which were post in a month on three different platforms (Google map, Yelp, and TripAdvisor). Then we refer to the prices of some dishes on the official website of each restaurant.*



● ERD

Restaurant reviews for terps ERD
by BUDT703_Project_0506_10

- **SQL DDL**

1. **Create table**

```
CREATE TABLE [Reviews.Customer](
    cusId CHAR(4) NOT NULL,
    cusFName VARCHAR(20),
    cusLName VARCHAR(20),
    CONSTRAINT pk_Customer_cusId PRIMARY KEY(cusId))
```

The Customer table has 3 attributes namely cusId, cusFName, cusLName. The datatype of these three attributes is Character and the primary key for this table is cusId.

```
CREATE TABLE [Reviews.Restaurant](
    rstId CHAR(4) NOT NULL,
    rstName VARCHAR(50),
    rstStreet VARCHAR(50),
    rstCity VARCHAR(50),
    rstState CHAR(2),
    rstZip CHAR(5),
    rstOpenHours VARCHAR(30),
    CONSTRAINT pk_Restaurant_rstId PRIMARY KEY(rstId))
```

The Restaurant table has 7 attributes, rstId, rstName, rstCity,rstState,rstZip,rstOpenHours with a data type of character and rstZip also with a data type of varchar. The primary key of this table is rstId.

```
CREATE TABLE [Reviews.Cuisine](
    csnId CHAR(5) NOT NULL,
    csnName VARCHAR(20)
    CONSTRAINT pk_Cuisine_csnId PRIMARY KEY(csnId))
```

The cuisine table has 2 attributes namely csnId, csnName. These both have a character data type. And csnId is primary key of this table.

```

CREATE TABLE [Reviews.Dish] (
    dshId CHAR(4) NOT NULL,
    dshName VARCHAR(50),
    dshPrice DECIMAL(7,2),
    csnId CHAR(5) NOT NULL,
    CONSTRAINT pk_Dish_dshId PRIMARY KEY (dshId),
    CONSTRAINT fk_Dish_csnId FOREIGN KEY (csnId)
        REFERENCES [Reviews.Cuisine] (csnId)
        ON DELETE NO ACTION ON UPDATE NO ACTION)

```

There are 4 attributes dshId, dshName, dshPrice and csnId in this table. dshName, csnId and dshId are of Character data type and dshPrice has a decimal data type. The dshId is the primary key and csnId is the foreign key.

```

CREATE TABLE [Reviews.Website] (
    wbsId CHAR(4) NOT NULL,
    wbsName VARCHAR(20),
    CONSTRAINT pk_Website_wbsId PRIMARY KEY (wbsId))

```

Website table has 2 attributes wbsId, wbsName in this table and they are of character data type. And wbsId is the Primary key.

```

CREATE TABLE [Reviews.Set] (
    rstId CHAR(4) NOT NULL,
    csnId CHAR(5) NOT NULL,
    CONSTRAINT pk_Set_rstId_csnId PRIMARY KEY (rstId,csnId),
    CONSTRAINT fk_Set_rstId FOREIGN KEY (rstId)
        REFERENCES [Reviews.Restaurant] (rstId)
        ON DELETE CASCADE ON UPDATE CASCADE,
    CONSTRAINT fk_Set_csnId FOREIGN KEY (csnId)
        REFERENCES [Reviews.Cuisine] (csnId)
        ON DELETE NO ACTION ON UPDATE NO ACTION )

```

Set table has 2 attributes rstId and csnId of Character data type.

Both these are foreign keys and they make a composite primary key for this table.

```

CREATE TABLE [Reviews.Review] (
    rstId CHAR(4) NOT NULL,
    wbsId CHAR(4) NOT NULL,
    cusId CHAR(4) NOT NULL,
    ratingScore NUMERIC,
    CONSTRAINT pk_Review_rstId_wbsId_cusId PRIMARY KEY (rstId,wbsId,cusId),
    CONSTRAINT fk_Review_rstId FOREIGN KEY (rstId)
        REFERENCES [Reviews.Restaurant] (rstId)
        ON DELETE NO ACTION ON UPDATE NO ACTION,
    CONSTRAINT fk_Review_wbsId FOREIGN KEY (wbsId)
        REFERENCES [Reviews.Website] (wbsId)
        ON DELETE NO ACTION ON UPDATE NO ACTION,
    CONSTRAINT fk_Review_cusId FOREIGN KEY (cusId)
        REFERENCES [Reviews.Customer] (cusId)
        ON DELETE NO ACTION ON UPDATE NO ACTION)

```

Review table has 4 attributes. The rstId,wbsId,cusId with a Character data type and ratingScore with a Numeric data type. And rstId,wbsId,cusId are all foreign keys and they collectively make a composite primary key.

2. Insert data

In customer table(show partly)

```

INSERT INTO [Reviews.Customer] VALUES
    ('C001','Haleigh','Eppler'),
    ('C002','Alexis','Nicole'),
    ('C003','Antonio','HaileSelassie'),
    ('C004','Naudy','Leon'),
    ('C005','Saleem','Mohammed'),
    ('C006','Eunice',NULL),
    ('C007','victoria','moss'),
    ('C008','Christopher','Fuentes'),
    ('C009','Emma','Kelley'),
    ('C010','Amanda','Amanda'),
    ('C011','Marcos','Diaz'),
    ('C012','Sean','T'),
    ('C013','Amanda','Lazar'),
    ('C014','Nathan','Heinrich'),
    ('C015','Yanhuan','Renn'),
    ('C016','Mouhamad','Alem'),
    ('C017','Chris','W.'),
    ('C018','Kimberlee','Murphy'),
    ('C019','Emmy','Lang'),
    ('C020','michelle','michelle'),
    ('C021','Shane','Smith'),
    ('C022','Alexander','Campbell'),
    ('C023','Osman','Juarez'),
    ('C024','Osvaldo','Luna'),
    ('C025','jaquelinne','orantes'),
    ('C026','Brenda','G'),
    ('C027','Jay','T'),
    ('C028','Ana','Gutierrez'),
    ('C029','Antonio','M'),
    ('C030','Big Schlim','F'),
    ('C031','Schmidt','JM'),
    ('C032','Lucas','Barton'),
    ('C033','John','Puth'),
    ('C034','Neshonna',NULL),
    ('C035','Mary','K')

```

In Restaurant table

```
INSERT INTO [Reviews.Restaurant] VALUES
('R001','Tacos a la Madre','5010 Berwyn Rd','College Park','MD','20740','13AM-20PM'),
('R002','Hanami Japanese Restaurant','8145 Baltimore Ave','College Park','MD','20740','13AM-20PM'),
('R003','Northwest Chinese Food','7313 Baltimore Ave suite E','College Park','MD','20740','13AM-20PM'),
('R004','Blaze Pizza','7419 Baltimore Ave','College Park','MD','20740','11AM-10PM AND 11AM -12AM'),
('R005','Seoul Spice','4200 Guilford Dr','College Park','MD','20740','10AM-10PM'),
('R006','Hard Times Cafe','4738 Cherryl Hill Rd','College Park','MD','20740','11AM-11PM'),
('R007','SUBWAY','3711 Campus Dr','College Park','MD','20740','8:30AM-10PM'),
('R008','CAVA','3711 Campus Dr Ste E','College Park','MD','20740','10:45AM-22PM'),
('R009','Taco Bell','8428 Baltimore Ave','College Park','MD','20740','8AM-1AM'),
('R010','Aroy Thai Restaurant','4511 College Ave','College Park','MD','20740','11:30AM-10:00PM'),
('R011','Jumbo Jumbo Cafe','3711 Campus Dr','College Park','MD','20740','10:30AM-10PM'),
('R012','Qu Japan','7406 Baltimore Ave ','College Park','MD','20740','11AM-9:15PM'),
('R013','Marathon Deli','7412 Baltimore Ave','College Park','MD','20740','10:00AM-10:00PM'),
('R014','College Park Grill','8321 Baltimore Ave','College Park','MD','20740','11:30AM-9:00PM'),
('R015','Sakura Seafood Buffet','9031 Baltimore Ave','College Park','MD','20740','11:00AM-9:30PM'),
('R016','Iron Pig BBQ','6107 GreenBelt Rd','College Park','MD','20740','12PM-10:30PM'),
('R017','Chick-fil-A','3972 Campus Dr','College Park','MD','20740','8AM-8:30PM'),
('R018','Potomac Pizza ','7777 Baltimore Ave','College Park','MD','20740','11AM-10PM'),
('R019','Kangnam Bbq Sports Bar & Grill','8503 Baltimore Ave','College Park','MD','20740','11AM-10PM'),
('R020','Mamma Lucia Pizza & Pasta','4734 Cherry Hill Rd','College Park','MD','20740','11AM-9PM'),
('R021','Pho Thom','7313 Rhode Island Ave','College Park','MD','20740','11AM-10PM')
```

In Disn table (show partly)

```
INSERT INTO [Reviews.Dish] VALUES
('D001','Three (3) Birria Quesatacos',14.50,'CN002'),
('D002','Birria Nachos A La Madre',14.50,'CN002'),
('D003','Gringas',10.00,'CN002'),
('D004','Birria Quesadilla',14.50,'CN002'),
('D005','Fried Soft Shell Crab',13.50,'CN003'),
('D006','Kani Su',9.50,'CN003'),
('D007','Dragon Ball',12.50,'CN003'),
('D008','Shrimp Tempura Appetizer',10.50,'CN003'),
('D009','Chicken Teriyaki Bowl',12.50,'CN003'),
('D010','Red Oil Sesame Dumplings',7.50,'CN001'),
('D011','Liangpi Cold Skin Noodles',8.50,'CN001'),
('D012','Beijing Smoke Pork Pancake',9.50,'CN001'),
('D013','Fried Tofu Burger',6.50,'CN001'),
('D014','Village Style Vegetable Salad',9.00,'CN001'),
('D015','Tossed Mung Clear Noodles In Sauce',7.50,'CN001'),
```

In Cuisine table

```
INSERT INTO [Reviews.Cuisine] VALUES
('CN001','Chinese'),
('CN002','Mexican'),
('CN003','Japanese'),
('CN004','American'),
('CN005','Italian'),
('CN006','Greek'),
('CN007','Mediterranean'),
('CN008','Thai'),
('CN009','Taiwanese'),
('CN010','Korean')
```

In Website table

```
INSERT INTO [Reviews.Website] VALUES
('W001','Google Map'),
('W002','Yelp'),
('W003','Tripadvisor')
```

In Set table

```
INSERT INTO [Reviews.Set] VALUES
('R001','CN002'),
('R002','CN003'),
('R003','CN001'),
('R004','CN004'),
('R005','CN010'),
('R006','CN004'),
('R007','CN003'),
('R008','CN007'),
('R009','CN002'),
('R010','CN008'),
('R011','CN009'),
('R012','CN003'),
('R013','CN006'),
('R014','CN004'),
('R015','CN001'),
('R016','CN010'),
('R017','CN004'),
('R018','CN005'),
('R019','CN010'),
('R020','CN005'),
('R021','CN008')
```

In Review table (show partly)

```
INSERT INTO [Reviews.Review] VALUES  
    ('R001', 'W002', 'C001', '5'),  
    ('R001', 'W002', 'C002', '5'),  
    ('R001', 'W002', 'C003', '5'),  
    ('R001', 'W002', 'C004', '5'),  
    ('R001', 'W002', 'C005', '5'),  
    ('R001', 'W002', 'C006', '3'),  
    ('R001', 'W002', 'C007', '5'),  
    ('R001', 'W002', 'C008', '5'),  
    ('R001', 'W002', 'C009', '5'),  
    ('R001', 'W002', 'C010', '5'),  
    ('R001', 'W002', 'C011', '5'),  
    ('R001', 'W002', 'C012', '4'),  
    ('R002', 'W002', 'C013', '5'),  
    ('R003', 'W002', 'C014', '5'),  
    ('R003', 'W002', 'C015', '5'),  
    ('R003', 'W002', 'C016', '3'),  
    ('R003', 'W002', 'C017', '3'),  
    ('R003', 'W002', 'C018', '5'),  
    ('R003', 'W002', 'C019', '4'),  
    ('R003', 'W002', 'C020', '5'),  
    ('R003', 'W002', 'C021', '1'),  
    ('R003', 'W002', 'C022', '3'),  
    ('R003', 'W002', 'C023', '2'),  
    ('R003', 'W002', 'C024', '5'),  
    ('R003', 'W002', 'C025', '4'),  
    ('R003', 'W002', 'C026', '3'),  
    ('R003', 'W002', 'C027', '5'),  
    ('R003', 'W002', 'C028', '4'),  
    ('R004', 'W001', 'C029', '1'),  
    ('R004', 'W001', 'C030', '4'),  
    ('R004', 'W001', 'C031', '5'),  
    ('R005', 'W002', 'C032', '5'),
```

• Cases and Applications

1. For each restaurant name, how many customer reviews, in the order of restaurant name?

SQL Code:

```
SELECT r.rstName, COUNT(re.cusId) AS 'Number of Customer Reviews'  
FROM [Reviews.Restaurant] r, [Reviews.Review] re  
WHERE r.rstId = re.rstId  
GROUP BY r.rstId, r.rstName  
ORDER BY r.rstName;
```

SQL Output:

rstName	Number of Customer Reviews
Aroy Thai Restaurant	2
Blaze Pizza	3
CAVA	5
Chick-fil-A	6
College Park Grill	5
Hanami Japanese Restaurant	1
Hard Times Cafe	3
Iron Pig BBQ	15
Jumbo Jumbo Cafe	3
Kangnam Bbq Sports Bar & Grill	9
Mamma Lucia Pizza & Pasta	13
Marathon Deli	31
Northwest Chinese Food	19
Pho Thom	11
Potomac Pizza	6
Qu Japan	2
Sakura Seafood Buffet	36
Seoul Spice	2
SUBWAY	5
Taco Bell	11
Tacos a la Madre	16

Tableau Visualization:

For each restaurant, what is the number of customers reviewed, in the order of restaurant Name?



We assume that the number of reviews can explain the popularity of the restaurant to a certain extent. In this figure, the count of rating score represented the popularity degree of customers. Sakura Seafood Buffet received 36 reviews in last month, so we concluded that the most popular restaurant was Sakura Seafood Buffet.

2.Which restaurants have an average rating score greater than or equal to 4.0?

SQL Code:

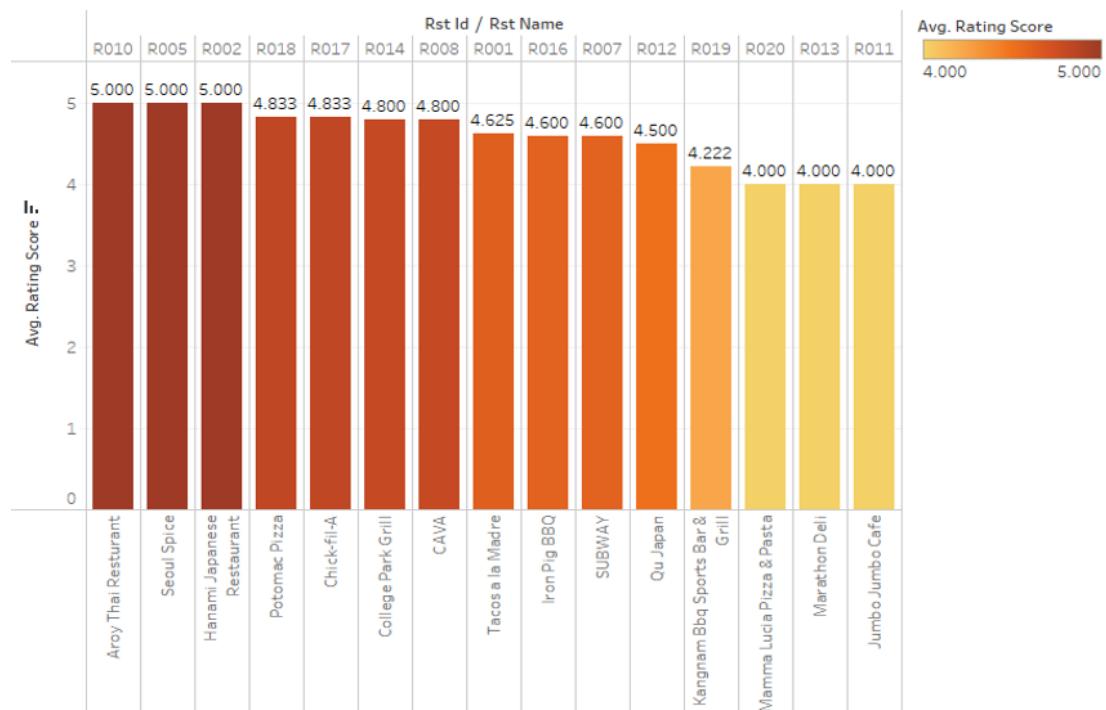
```
SELECT r.rstId,r.rstName, AVG(re.ratingScore) AS 'Average Score'  
FROM [Reviews.Restaurant] r,[Reviews.Review] re  
WHERE r.rstId=re.rstId  
GROUP BY r.rstId,r.rstName  
HAVING AVG(re.ratingScore)>=4  
ORDER BY AVG(re.ratingScore) DESC;
```

SQL Output:

rstId	rstName	Average Score
R002	Hanami Japanese Restaurant	5.000000
R005	Seoul Spice	5.000000
R010	Aroy Thai Restaurant	5.000000
R017	Chick-fil-A	4.833333
R018	Potomac Pizza	4.833333
R014	College Park Grill	4.800000
R008	CAVA	4.800000
R001	Tacos a la Madre	4.625000
R007	SUBWAY	4.600000
R016	Iron Pig BBQ	4.600000
R012	Qu Japan	4.500000
R019	Kangnam Bbq Sports Bar & Grill	4.222222
R020	Mamma Lucia Pizza & Pasta	4.000000
R013	Marathon Deli	4.000000
R011	Jumbo Jumbo Cafe	4.000000

Tableau Visualization:

Which restaurants have an average rating score greater than or equal to 4?



We ranked the restaurants in descending order of average score and set the colors in descending order of the average score. The darker the color, the higher the average score. We assumed that customer might choose restaurants with higher rating scores. Consumers can refer to this result to choose a restaurant with a better experience. And Aroy Thai Restaurant, Seoul Spicy, Hanami Japanese Restaurant are the restaurants with the highest average scores.

3.What is the website with the most reviews from customers?

SQL Code:

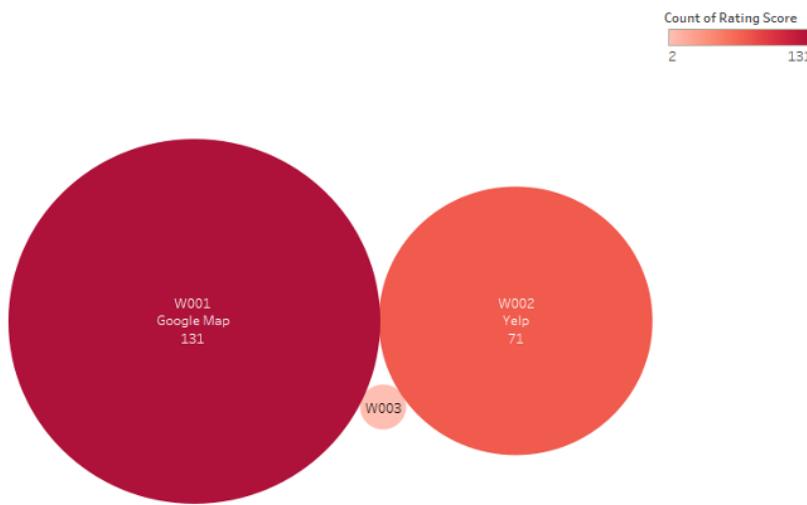
```
SELECT w.wbsId, w.wbsName, COUNT(w.wbsId) AS 'Number of Customer Reviews'
FROM [Reviews.Website] w, [Reviews.Review] re
WHERE w.wbsId = re.wbsId
GROUP BY w.wbsId, w.wbsName
ORDER BY COUNT(w.wbsId) DESC;
```

SQL Output:

wbsId	wbsName	Number of Customer Reviews
W001	Google Map	131
W002	Yelp	71
W003	Tripadvisor	2

Tableau Visualization:

What is the website with the most reviews from customers?



We used count of rating scores last month on each website to measure the number of users (who made reviews). In this figure, we found that last month more customers reviewed on Google Map. In general, Google Map might be more popular.

4.What are the average rating score and number of reviews of each cuisine?

SQL Code:

```

SELECT s.csnName, AVG(re.ratingScore) AS 'Average Rating Score', COUNT(re.ratingScore) AS 'Number of Reviews'
FROM [Reviews.Review] re, [Reviews.Set] se,[Reviews.Cuisine] s
WHERE se.rstId = re.rstId AND se.csnId = s.csnId
GROUP BY s.csnName
ORDER BY AVG(re.ratingScore) DESC

```

SQL Output:

csnName	Average Rating Score	Number of Reviews
Mediterranean	4.800000	5
Japanese	4.625000	8
Korean	4.500000	26
Mexican	4.296296	27
American	4.294117	17
Italian	4.263157	19
Greek	4.000000	31
Taiwanese	4.000000	3
Chinese	3.509090	55
Thai	3.230769	13

Tableau Visualization:

What are the Average Rating Score and Number of reviews of each cuisine?



We measured the popularity degree in two dimensions, average rating score and number of reviews. Measurement in one dimension might lead to logical error. For example, Mediterranean cuisine had an average score of 4.800 but it received 5 reviews only. An average score of 4.800 did not mean that more Mediterranean cuisine was more popular, because 5 reviews cannot represent the general situation.

Chinese cuisine had an average score of 3.509 and received 55 reviews. It was more reliable and reasonable to conclude customer reviews on Chinese cuisine are mixed because the number of reviews was relatively large but the average score relatively low.

We concluded that Korean cuisine and Mexican cuisine were more popular in College Park, so we suggested more investment in them. If investors plan to open new restaurant in College Park, it might be a good choice to open Korean and Mexican restaurants.

5. To find for each cuisine, what are the total reviews on all websites and the reviews from each website?

SQL Code:

```
SELECT s.csnName, COALESCE(w.wbsName, 'Total Websites') AS 'wbsName',
       COUNT(re.ratingScore) AS 'Number of Customer Reviews'
  FROM [Reviews.Website] w, [Reviews.Review] re, [Reviews.Cuisine] s,
       [Reviews.Set] se
 WHERE re.wbsId=w.wbsId AND re.rstId=se.rstId AND se.csnId=s.csnId
 GROUP BY s.csnName, ROLLUP (w.wbsName)
```

SQL Output:

	csnName	wbsName	Number of Customer Reviews
1	American	Google Map	12
2	American	Tripadvisor	2
3	American	Yelp	3
4	American	Total Websites	17
5	Chinese	Google Map	35
6	Chinese	Yelp	20
7	Chinese	Total Websites	55
8	Greek	Google Map	24
9	Greek	Yelp	7
10	Greek	Total Websites	31
11	Italian	Google Map	17
12	Italian	Yelp	2
13	Italian	Total Websites	19
14	Japanese	Google Map	6
15	Japanese	Yelp	2
16	Japanese	Total Websites	8
17	Korean	Google Map	11
18	Korean	Yelp	15
19	Korean	Total Websites	26
20	Mediterr...	Google Map	5
21	Mediterr...	Total Websites	5
22	Mexican	Google Map	11
23	Mexican	Yelp	16
24	Mexican	Total Websites	27
25	Taiwan...	Google Map	2
26	Taiwan...	Yelp	1
27	Taiwan...	Total Websites	3
28	Thai	Google Map	8
29	Thai	Yelp	5
30	Thai	Total Websites	13

Tableau Visualization:

For each cuisine, what are the total reviews on all websites and the reviews from each website?



In the tree map, the color and size represent count of rating scores of last month.

Chinese, Greek, American and Italian restaurants received much more reviews from Google map and we concluded that people, who prefer Chinese, Greek, American and Italian food, were more likely to search restaurants on Google Map. Therefore, we suggested new Chinese restaurants owners invest more on google map to raise their advertisement and online service to attract more customers.

Besides, last month Korean restaurants received more reviews from Yelp and we concluded that people who prefer Korean food tended to search restaurants on Yelp. However, Kangnam BBQ Sports Bar & Grill received less reviews on Yelp than on Google Map. We inferred that it was some problems on their advertising, especially photos, that made Kangnam BBQ less attractive in Korean restaurants.

Combine 4 and 5, our project can help investors to decide most popular cuisine to choose and proper website to make advertising. We suggested investor open Korean or Mexican restaurants and invest more on Yelp. In addition, our project can help existing restaurants find their problems on advertisement and online service.

We found that many restaurants have no relevant review information on the TripAdvisor platform, or only relevant information from a few years ago. This side reflects that the platform has gradually withdrawn from the consumer market, or its market share has been occupied by other platforms.

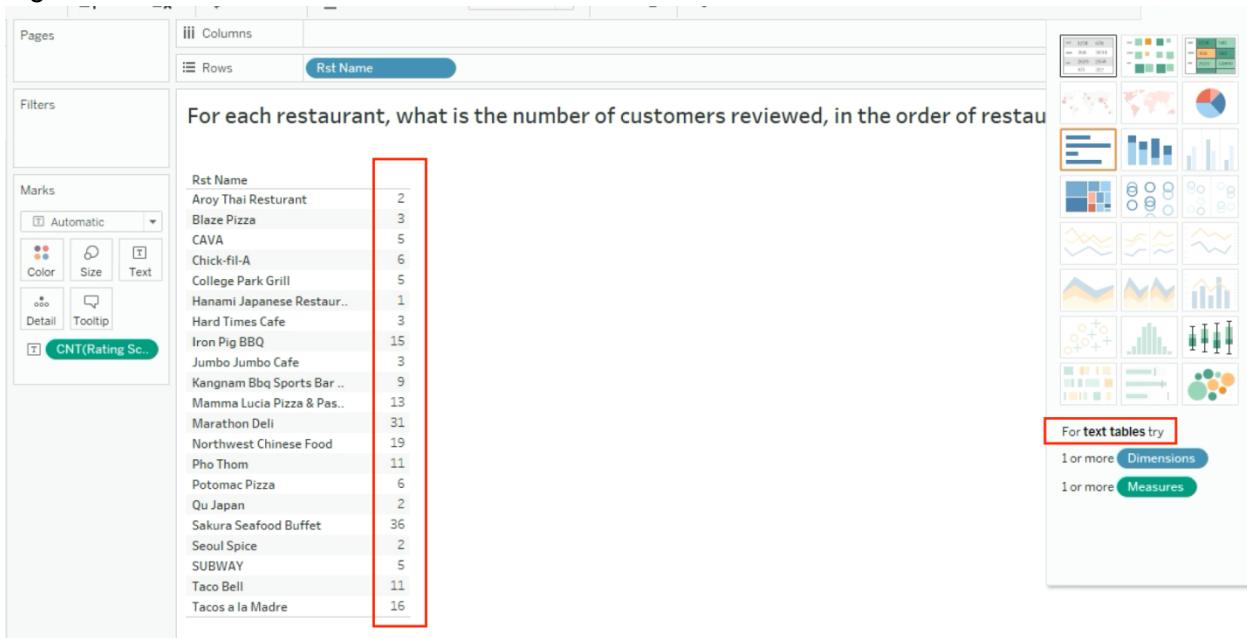
● How to test?

Customers can get conclusions from the running results of SQL and tableau at the same time. The difference between them is that the result of SQL is relatively fixed and the result of T is more flexible and sensitive.

Customers can set filters or change image types on Tableau according to their needs to get more intuitive conclusions. And We use the above four cases to illustrate.

1. For each restaurant name, how many customer reviews, in the order of restaurant name?

Figure1:

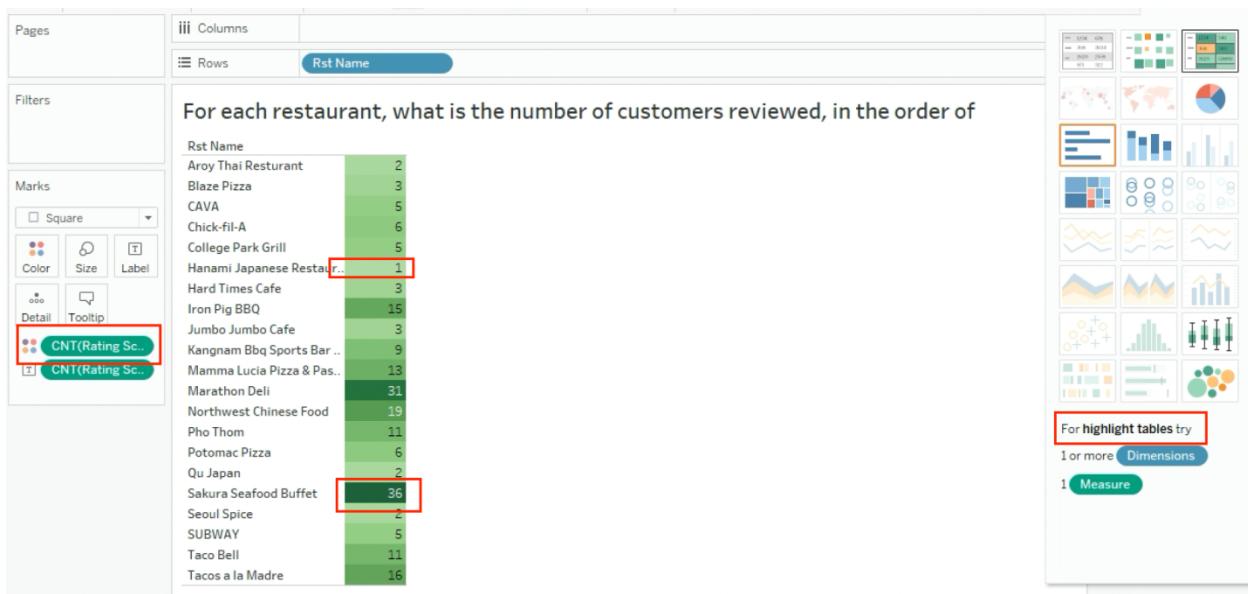


In figure1, using a text table, customers can see the number of reviews in the corresponding restaurant. However, it is not possible to distinguish the restaurant with the most reviews from the restaurant with the least at a glance.

There are two ways to change the graphics to give customers an intuitive feeling.

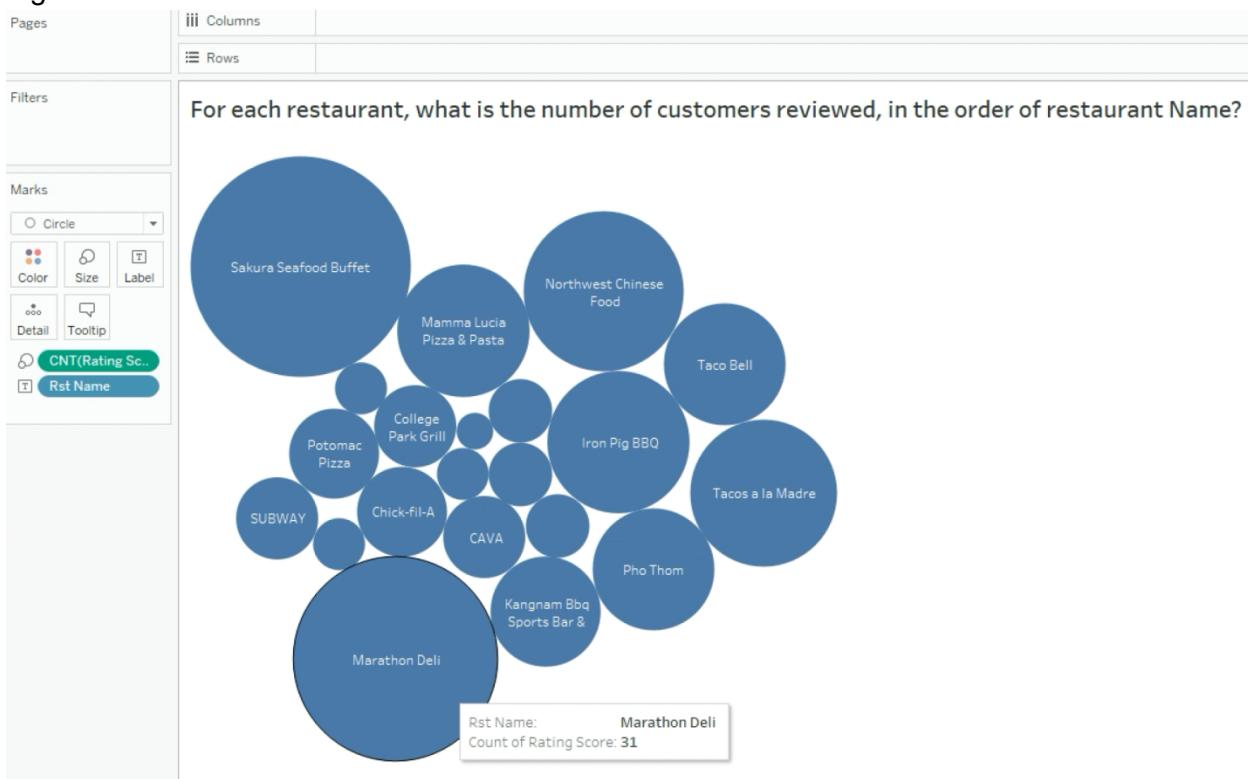
One method is to change the graph type to highlight table. The color is positively correlated with the number of restaurant reviews. The darker the color, the greater the number of restaurant reviews. Customers can tell at a glance that the restaurant with the most reviews is Sakura Seafood Buffet with 36 reviews and the least number of reviews is Hanami Japanese Restaurant with 1 review in Figure2.

Figure 2:



Another method is to change the graph type to a packed bubble plot (in Figure 3). Customers can distinguish the restaurant with the most reviews from the restaurant and with the least by the size of the circle. But in Figure 3, customers cannot see the details of the number of comments directly from the picture.

Figure 3:



Customers can drag the rating scores to the label box and change the default sum to count, so that the details of the number of reviews for each restaurant can be displayed on the picture (Figure 4).

Figure 4(processing)::

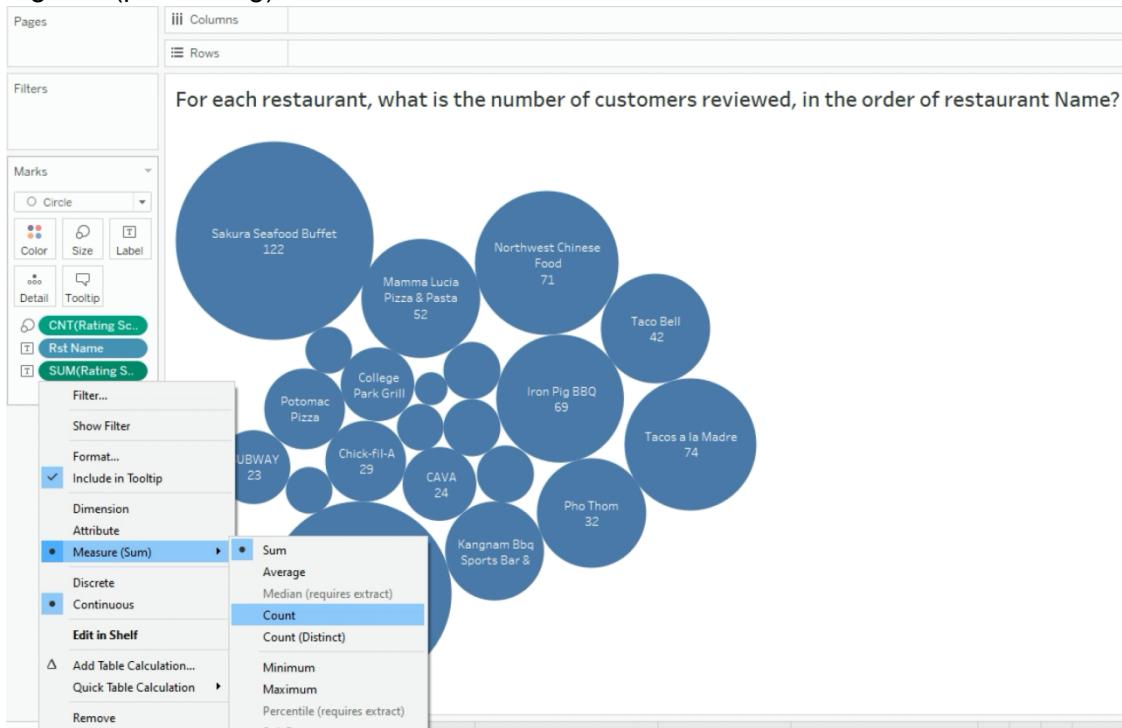
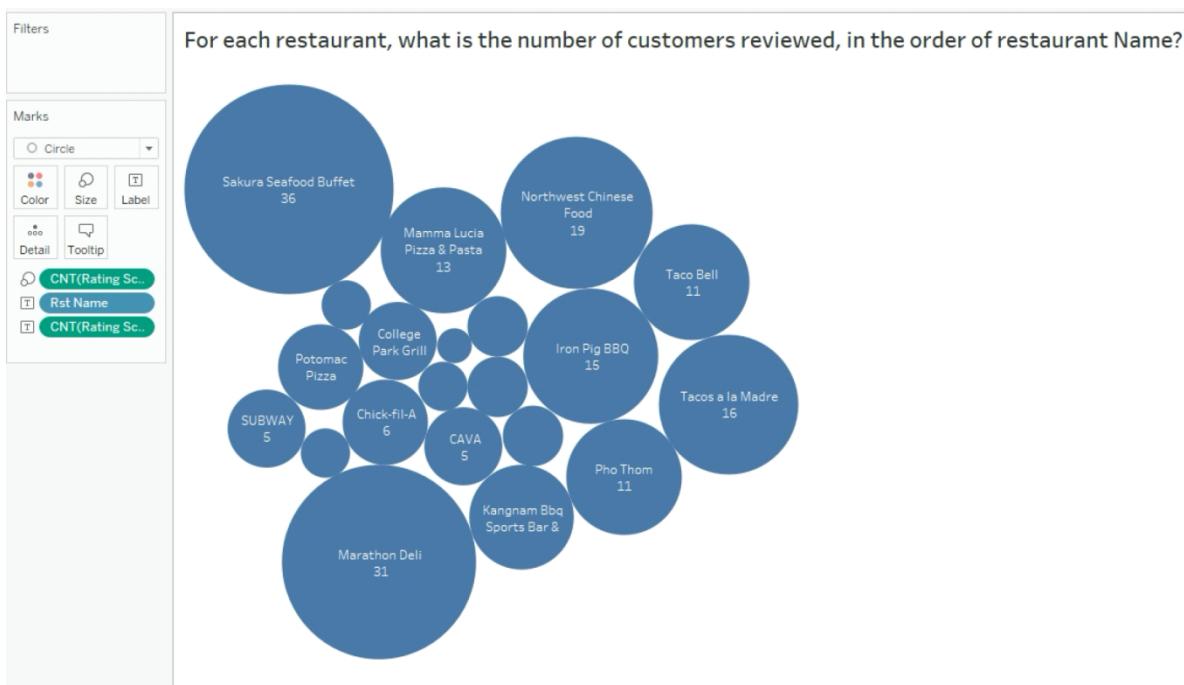


Figure 4 :



Customers can also highlight the content they want to see by setting the color and the size of the circle at the same time (Figure 5). Customers can obtain effective information through the size of the circle and the shade of the color at the same time. The larger the circle, the greater the number of comments. The darker the color, the greater the number of restaurant reviews. However, the label detail information in this way is easily limited by the character length. As shown in Figure 5, the label details cannot be displayed on some smaller circles. So we didn't use this method in the final slide show. But move the mouse over the graph to see the detailed information(Figure 6).

Figure 5 :

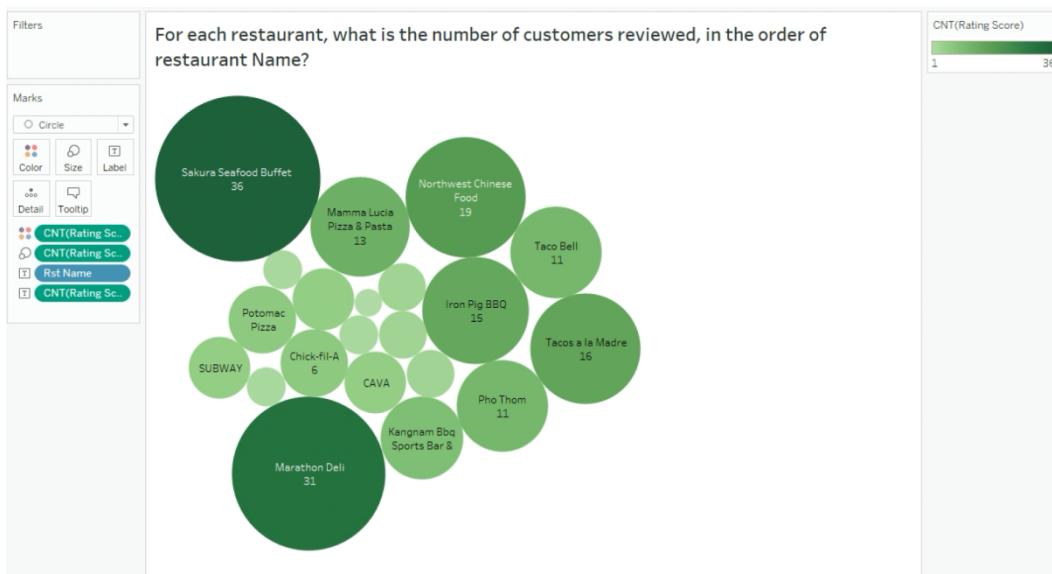
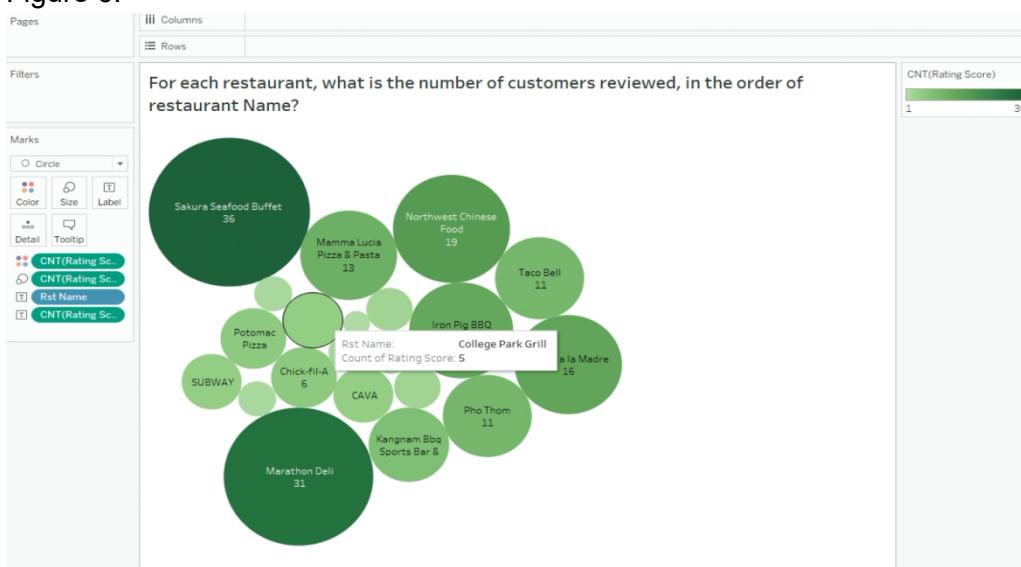


Figure 6:



2.Which restaurants have an average rating score greater than or equal to 4.0?

In Figure 7, customers can click this button to change the ascending or descending filter of average rating scores to find the restaurant with the most reviews or the restaurant with the least reviews or change the filter to order the restaurants by restaurant id in Figure 8.

Figure 7:

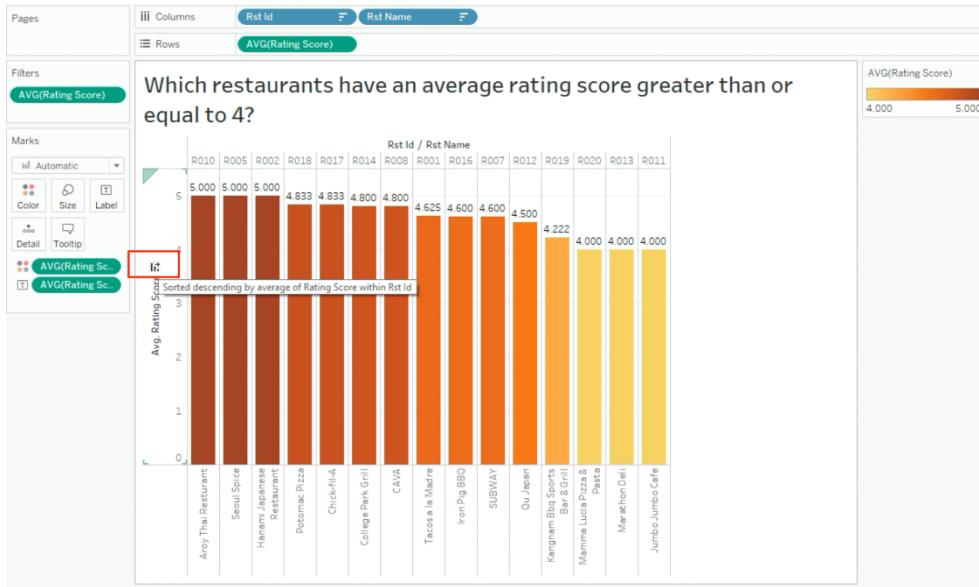
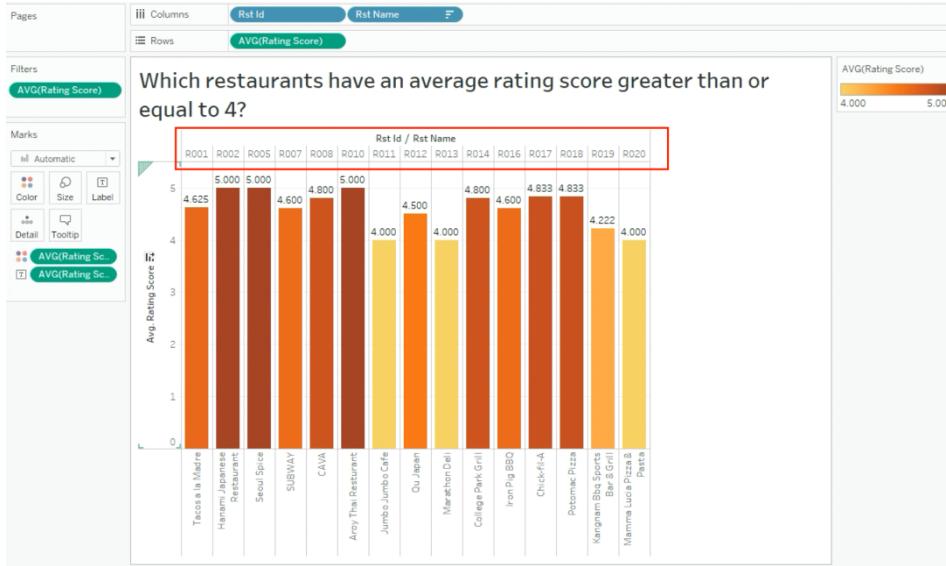


Figure 8:



At the same time, customers can also select the results on the original map for new screening according to their own needs. For example, suppose a customer wants to know from the original picture a restaurant with an average score of full marks. He only needs to select bars which the average scores are equal to 5 points, and then click keep only, the system will automatically show the result plot a restaurant with 5 points, and the legend will automatically change to 5 points(Figure 9).

Figure 9(Processing):

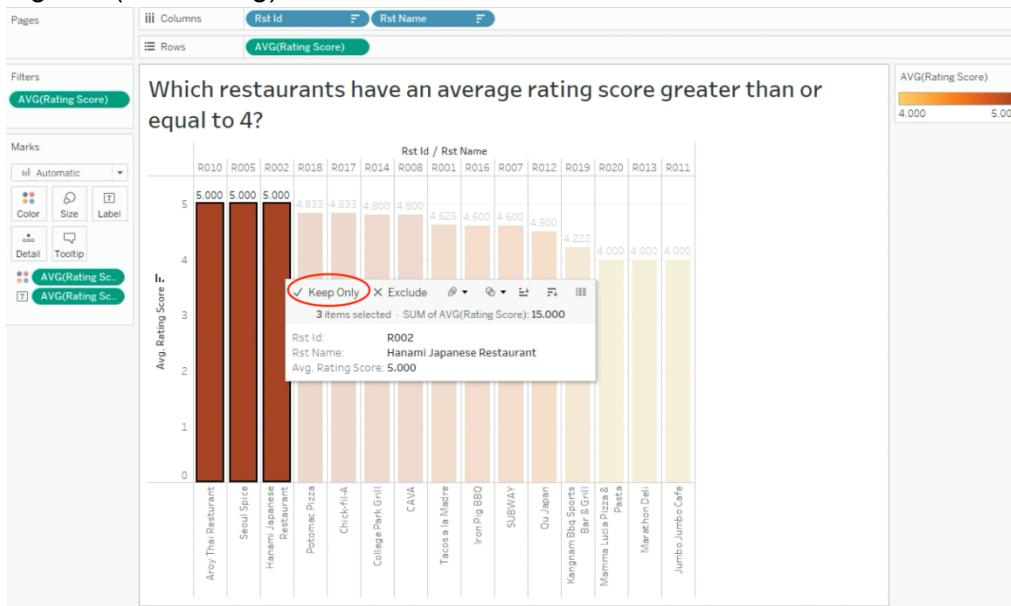
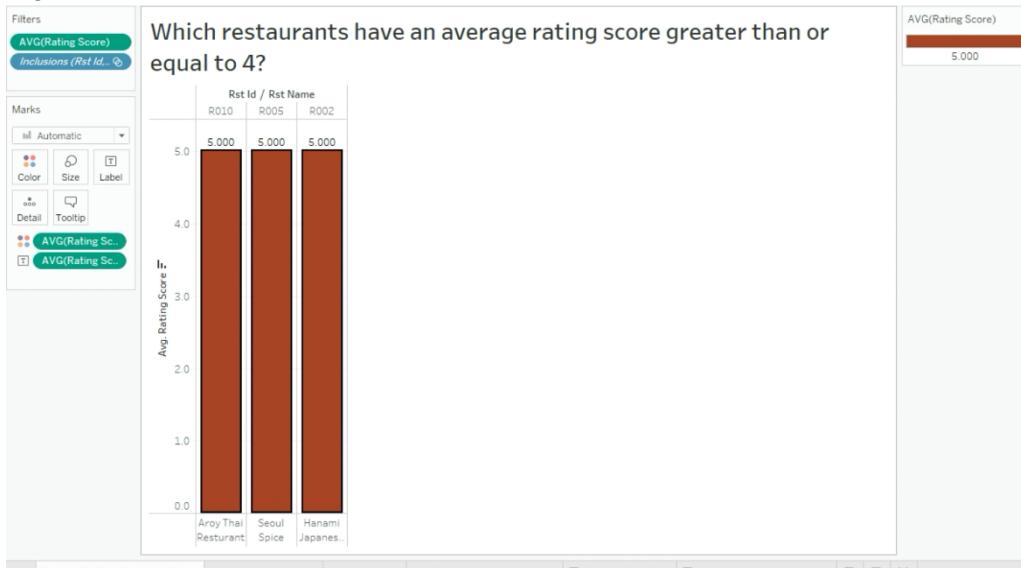


Figure 9:



3.What are the average rating score and number of reviews of each cuisine?

Customers can make pictures of different angles to get corresponding information by changing the object settings of sort.

Customers can rank the restaurant with the highest average score and the number of reviews corresponding to that restaurant by sorting the average score in descending order(Figure10).

Customers can also sort the number of reviews in descending order to get the restaurant with the most reviews and the average score corresponding to the restaurant(Figure11).

Figure10:

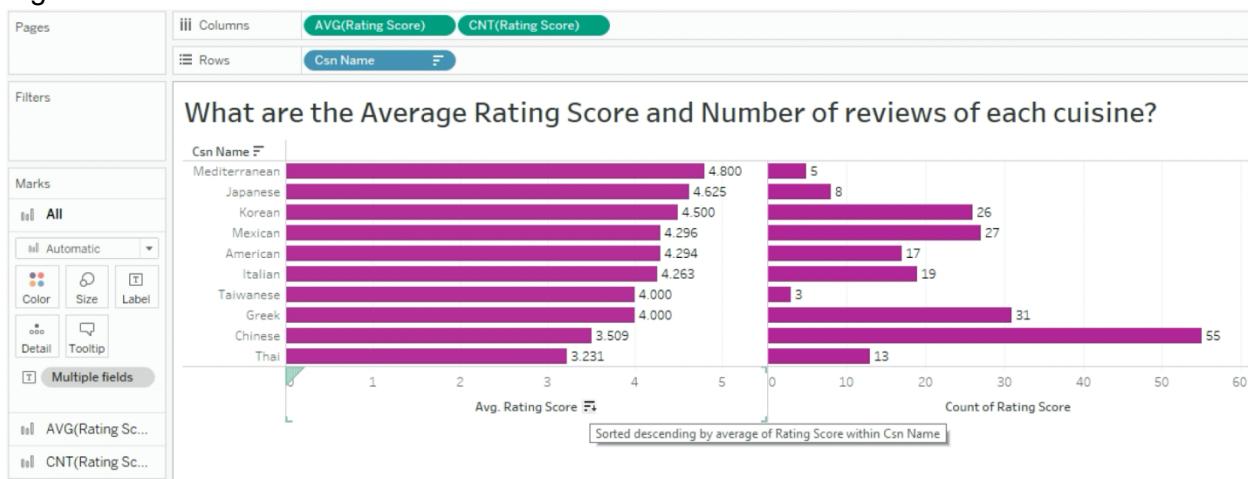


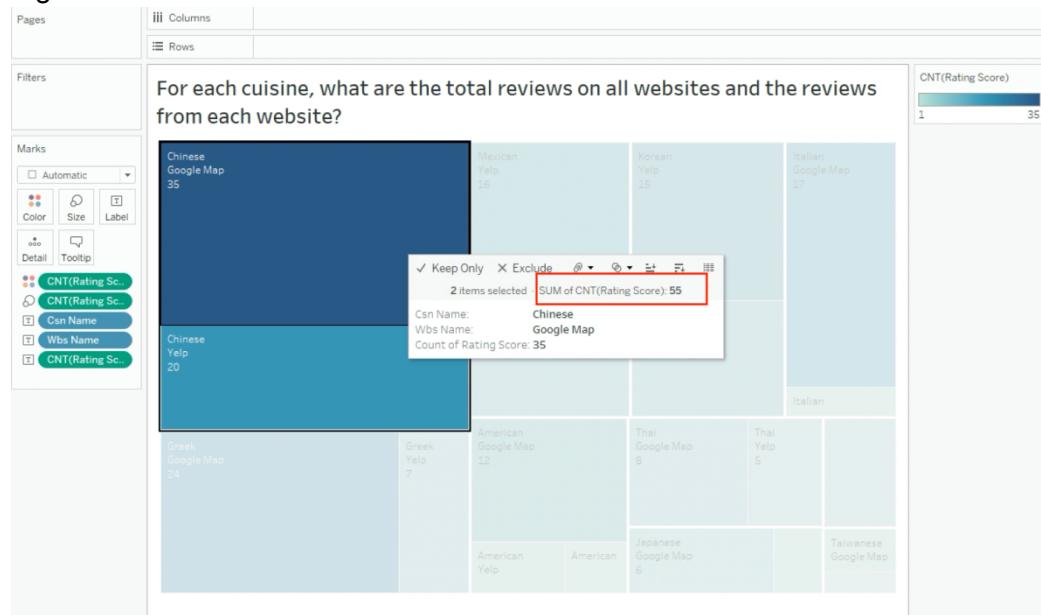
Figure 11:



4. To find for each cuisine, what are the total reviews on all websites and the reviews from each website?

Customers can know the total number of reviews of the same cuisine on the three platforms by viewing the treemap, and know the cuisine with the most visits to estimate its popularity (Figure 12).

Figure 12:



Customers can also get the number of reviews of different cuisines on different platforms. Restaurant owners and investors can place targeted advertisements based on the popularity of the cuisine on different platforms.

Figure 13:



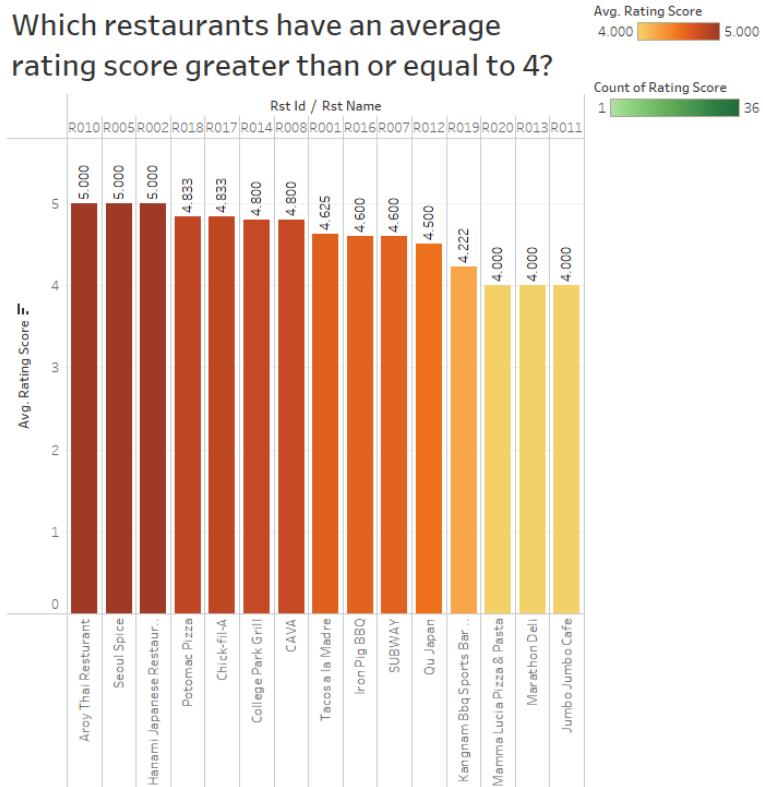
In addition, we made the dashboard from two different perspectives, the customer perspective and the restaurant owners and investor perspective. Customers can link multiple worksheets at the same time.

Customer Version Dashboard

For each restaurant, what is the number of customers reviewed, in the order of restaurant Name?

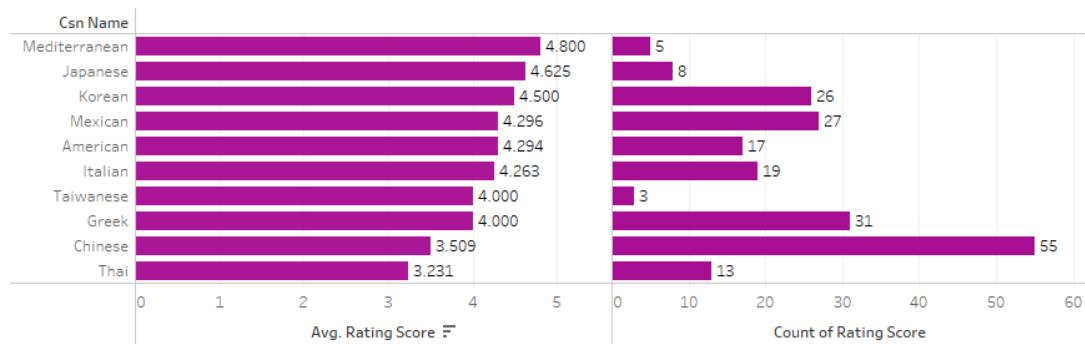
Rst Name	
Aroy Thai Restaurant	2
Blaze Pizza	3
CAVA	5
Chick-fil-A	6
College Park Grill	5
Hanami Japanese ..	1
Hard Times Cafe	3
Iron Pig BBQ	15
Jumbo Jumbo Cafe	3
Kangnam Bbq Spor..	9
Mamma Lucia Pizz..	13
Marathon Deli	31
Northwest Chines..	19
Pho Thom	11
Potomac Pizza	6
Qu Japan	2
Sakura Seafood Bu..	36
Seoul Spice	2
SUBWAY	5
Taco Bell	11
Tacos a la Madre	16

Which restaurants have an average rating score greater than or equal to 4?



Restaurant Owners and Investors

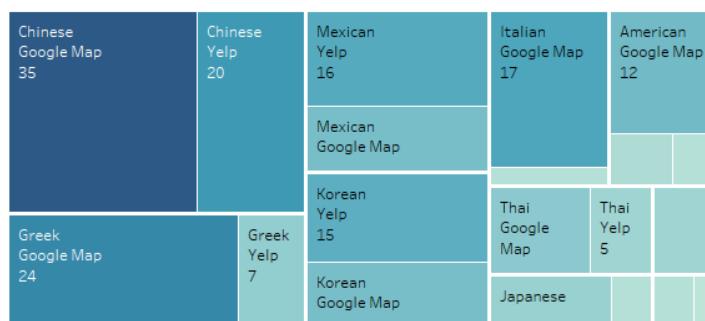
What are the Average Rating Score and Number of reviews of each cuisine?



What is the website with the most reviews from customers?



For each cuisine, what are the total reviews on all websites and the reviews from each website?



• Reference and Data Source Link*

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<https://www.tacosalamadre.com>

<https://www.google.com/maps/place/Tacos+a+la+Madre/@38.9948416,-76.9280426,17z/data=!4m1!1m6!3m5!1s0x89b7c7941fad021:0x7cf18970e6cf5fd9!2sTacos+a+la+Madre!8m2!3d38.9948382!4d-76.925855>

<https://www.yelp.com/biz/tacos-a-la-madre-college-park-2?osq=Tacos+a+la+Madre>

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<https://www.seoulspice.com>

<https://www.google.com/maps/place/SEOULSPICE/@38.9803307,-76.9448893,17z/data=!3m2!4b1!5s0x89b7c695a1bffdcb:0xd616e460485a657!4m5!3m4!1s0x89b7c769313ca56f:0x5a0820c5d8301ef6!8m2!3d38.9803399!4d-76.9427134>

<https://www.yelp.com/biz/seoulspice-college-park?osq=SEOULSPICE>

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6. Hard Times Cafe

<https://www.hardtimes.com/location/hard-times-college-park/>

<https://www.google.com/maps/place/Hard+Times+Cafe/@39.0160552,-76.930321,17z/data=!3m2!4b1!5s0x89b7c40d3f3d9783:0x8c2110655cbb0a8f!4m5!3m4!1s0x89b7c41297b6b557:0x8fd741d1613c139f!8m2!3d39.0160552!4d-76.9281323>

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8. CAVA

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<https://www.yelp.com/biz/cava-college-park?osq=cava>

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<https://www.google.com/maps/place/Aroy+Thai+Restaurant/@38.9818013,-76.9392825,17z/data=!3m2!4b1!5s0x89b7c6be9a3747b9:0x1c7518e01de535a5!4m5!3m4!1s0x89b7c6be98589031:0xd586cfb4e93837ba!8m2!3d38.981861!4d-76.9370633>

<https://www.yelp.com/biz/aroy-thai-restaurant-college-park>

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13. Marathon Deli

<https://www.marathondelimd.com>

<https://www.google.com/maps/place/Marathon+Deli/@38.9813421,-76.9403699,17z/data=!3m2!4b1!5s0x89b7c6bef4cdcaa49:0x2026f3a6c2e6e75f!4m5!3m4!1s0x89b7c6be62e05f21:0xd539e7c956b7df8e!8m2!3d38.981343!4d-76.9380722>

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14. College Park Grill

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<https://www.yelp.com/biz/college-park-grill-college-park?osq=College+Park+Grill>

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15. Sakura Seafood Buffet

<http://sakuraseafoodbuffet.com>

<https://www.google.com/maps/place/Sakura+Seafood+Buffet/@39.0007705,-76.9326162,17z/data=!3m2!4b1!5s0x89b7c41cc9d28fc:0x956133abefaf642a!4m5!3m4!1s0x89b7c41cc7f8e549:0x4cce67aedd90c3d!8m2!3d39.0008088!4d-76.9305097>

<https://www.yelp.com/biz/sakura-seafood-and-supreme-buffet-college-park?osq=Sakura+Seafood+Buffet>

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17. Chick-fil-A

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18. Potomac Pizza - College Park

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19. Kangnam BBQ

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<https://www.google.com/maps/search/chick-flick-a/@38.9931793,-76.9346151,17z>

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