Case Study

Restaurant Operation Analysis

Project Brief

RESTAURANT OPERATIONS ANALYSIS

THE SITUATION

You've just been hired as a **Data Analyst** for the Taste of the World Café, a restaurant that has diverse menu offerings and serves generous portions

THE ASSIGNMENT

The Taste of the World Café debuted a new menu at the start of the year

You've been asked to dig into the customer data to see which menu items are doing well / not well and what the top customers seem to like best

THE OBJECTIVES

1. Explore the menu_items table to get an idea of what's on the new menu
2. Explore the order_details table to get an idea of the data that's been collected
3. Use both tables to understand how customers are reacting to the new menu

MAVEN ANALYTICS

1. Write a query to find the number of items on the menu.

```
11
12
13 •    select count(distinct item_name) as total_items from menu_items;
14
15
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

total_items
32

2. What are the least and most expensive items on the menu?

```
5
6
7   select item_name,price
8   from menu_items
9   where
10  price = (select max(price) from menu_items);
11
```

Result Grid | Filter Rows: | Export: | Wrap Cell Cont

item_name	price
Shrimp Scampi	19.95

```
11  select item_name,price
12  from menu_items
13  where
14  price = (select min(price) from menu_items);
15
16
17
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content

item_name	price
Edamame	5.00

3. How many Italian dishes are on the menu?
What are the least and most expensive Italian dishes on the menu?

```
15
16 •    Select category, count(item_name),max(price),min(price)
17      from menu_items
18      group by category
19      having category = "Italian";
20
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

	category	count(item_name)	max(price)	min(price)
▶	Italian	9	19.95	14.50

4. How many dishes are in each category?
What is the average dish price within each category?

```
21
22 •    Select category,
23      count(item_name) as total_items,
24      round(avg(price),2) as avg_price
25      from menu_items
26      group by category;
```

Result Grid | Filter Rows: | Export:

category	total_items	avg_price
American	6	10.07
Asian	8	13.48
Mexican	9	11.80
Italian	9	16.75

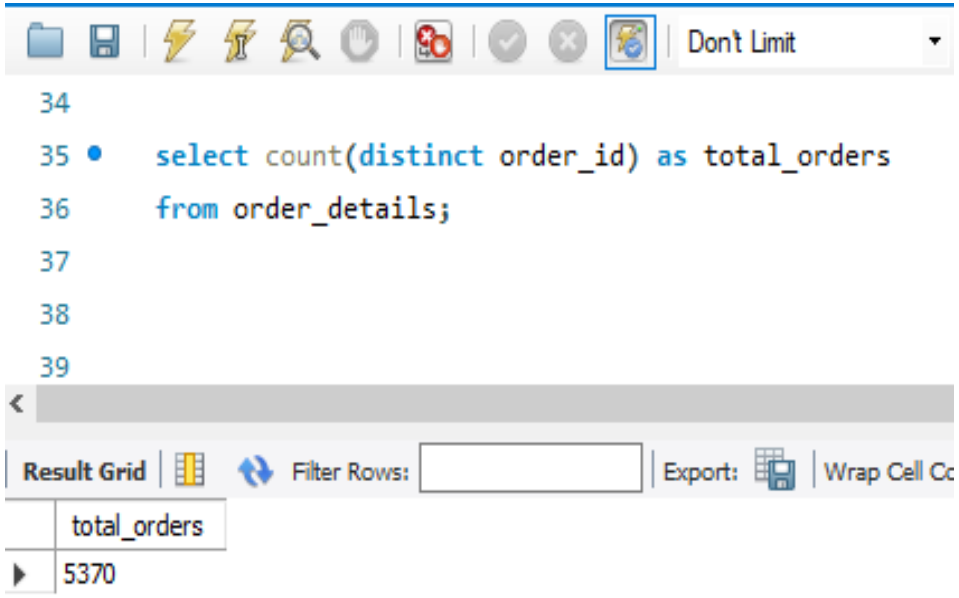
5. View the **order_details** table. What is the date range of the table?

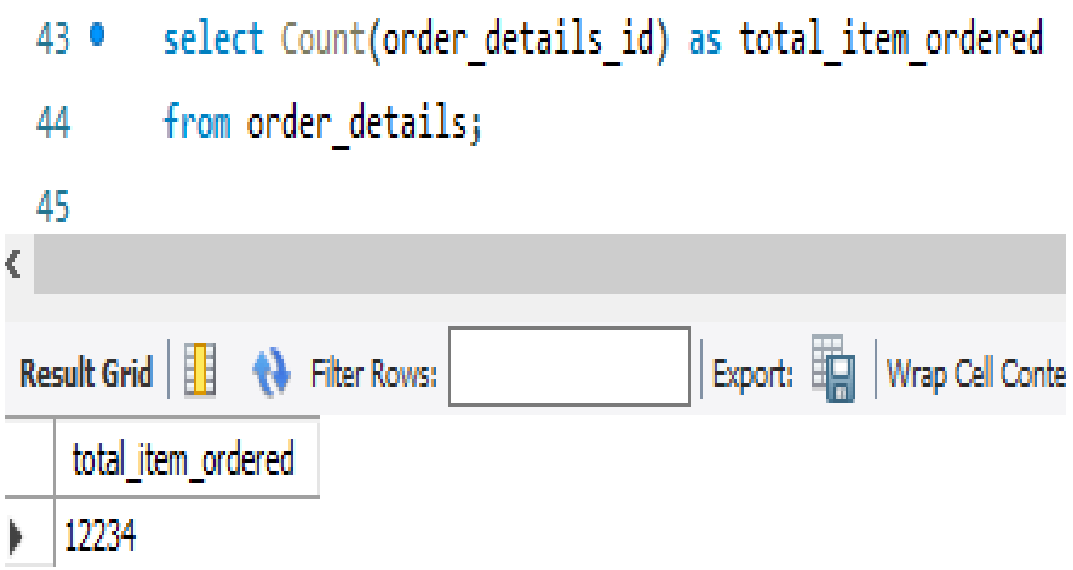
```
30 •    select min(order_date),
31      max(order_date)
32      from order_details;
33
34
35
```

Result Grid | Filter Rows: | Expor

	min(order_date)	max(order_date)
▶	2023-01-01	2023-03-31

6. How many orders were made within this date range? How many items were ordered within this date range?





7. Which orders had the most number of items?

```
40 •    select
41      order_id
42      from
43          (select order_id,count(item_id) as item_per_order
44          from order_details
45          group by order_id
46          order by item_per_order desc
47          limit 1) as subq
48
49
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

order_id
330

8. How many orders had more than 12 items?

```
50  With cte as(
51      select order_id
52          from order_details
53          group by order_id
54          having count(item_id) > 12)
55
56  select count(order_id) as totalOrders_morethan12
57  from cte;
58
59
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

totalOrders_morethan12
20

9. Combine the **menu_items** and **order_details** tables into a single table.

```
65
66 •    select * from menu_items
67      join order_details on
68      menu_items.menu_item_id = order_details.item_id;
69
70
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

menu_item_id	item_name	category	price	order_details_id	order_id	order_date	order_time	item_id
109	Korean Beef Bowl	Asian	17.95	1	1	2023-01-01	11:38:36	109
108	Tofu Pad Thai	Asian	14.50	2	2	2023-01-01	11:57:40	108
124	Spaghetti	Italian	14.50	3	2	2023-01-01	11:57:40	124
117	Chicken Burrito	Mexican	12.95	4	2	2023-01-01	11:57:40	117
129	Mushroom Ravioli	Italian	15.50	5	2	2023-01-01	11:57:40	129
106	French Fries	American	7.00	6	2	2023-01-01	11:57:40	106
117	Chicken Burrito	Mexican	12.95	7	3	2023-01-01	12:12:28	117
119	Chicken Torta	Mexican	11.95	8	3	2023-01-01	12:12:28	119
117	Chicken Burrito	Mexican	12.95	9	4	2023-01-01	12:16:31	117
117	Chicken Burrito	Mexican	12.95	10	5	2023-01-01	12:21:30	117
101	Hamburger	American	12.95	11	6	2023-01-01	12:29:36	101

10. What were the least and most ordered items? What categories were they in?

```sql
with cte as(
    select m.item_name, m.category,
    count(*) as num_orders from
    menu_items m
    join order_details d
    on m.menu_item_id = d.item_id
    group by m.item_name,m.category
)
(select item_name,category
from cte
order by num_orders desc limit 1)
union
(select item_name,category
from cte
order by num_orders limit 1);
```

Result Grid | Filter Rows: | Export: | Wrap Cell

item_name	category
Hamburger	American
Chicken Tacos	Mexican

11. What were the top 5 orders that spent the most money?

```
84
85 •  select d.order_id, sum(price) as amount_spent from menu_items m
86    join order_details d on
87    m.menu_item_id = d.item_id
88    group by d.order_id
89    order by amount_spent desc
90    limit 5;
91
92
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

order_id	amount_spent
440	192.15
2075	191.05
1957	190.10
330	189.70
2675	185.10

12. View the details of the highest spend order. Which specific items were purchased?

```
85 •  select m.category,count(m.item_name) from menu_items m
86    join order_details d
87    on m.menu_item_id = d.item_id
88    where d.order_id = (
89        select d.order_id from menu_items m
90        join order_details d on
91        m.menu_item_id = d.item_id
92        group by d.order_id
93        order by sum(price) desc
94        limit 1)
95    group by m.category;
96
97
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

category	count(m.item_name)
Mexican	2
American	2
Italian	8
Asian	2

13. View the details of the top 5 highest spend orders.

```sql
with cte as(
    select m.category,d.order_id,count(*) as cnt from menu_items m
    join order_details d
    on m.menu_item_id = d.item_id
    where d.order_id in (440,2075,1957,330,2675)
    group by m.category,d.order_id)
select category, order_id , cnt ,row_number() over (partition by category order by cnt desc) as rnk
from cte;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

category	order_id	cnt	rnk
American	1957	3	1
American	2675	3	2
American	440	2	3
American	330	1	4
American	2075	1	5
Asian	330	6	1
Asian	1957	3	2
Asian	2075	3	3