



RESTAURANT ORDER ANALYSIS

USING SQL & TABLEAU



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Project Brief



Background

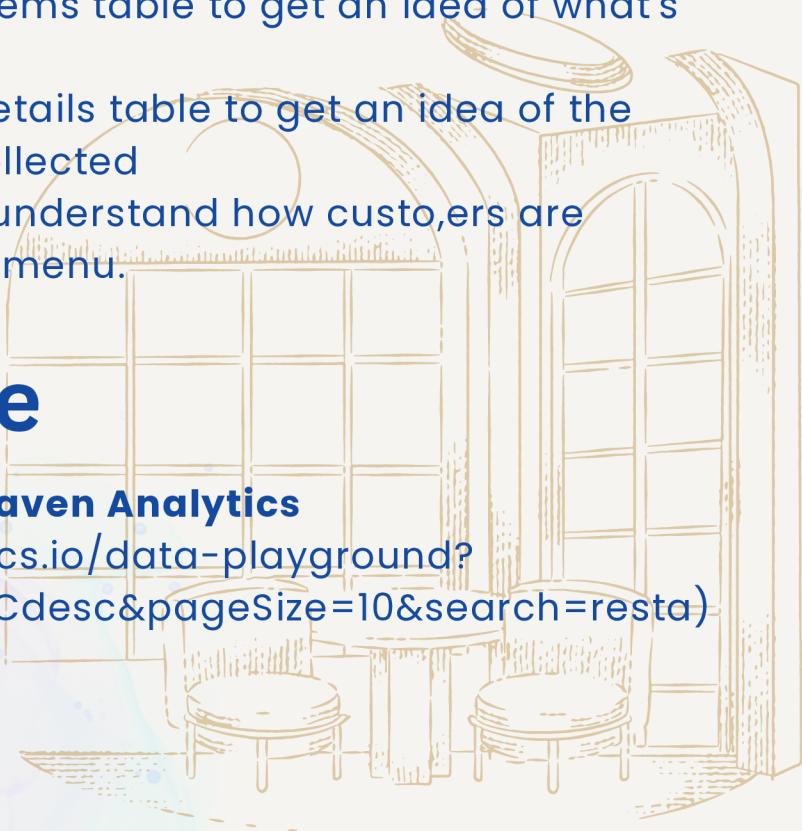
The **Taste of the World Cafe** debuted a new menu at the start of the year. So, The Data analyst've been asked to dig into the customer data to see which menu items are doing well/not well and what the top customers seem to like best.

Role

Data Analyst for the Taste of the World Cafe

Objectives

- Explore the menu items table to get an idea of what's on the new menu
- Explore the order details table to get an idea of the data that's been collected
- Use both tables to understand how customers are reacting to the new menu.



Data Source

Data Playground at Maven Analytics
[https://mavenanalytics.io/data-playground?
order=date_added%2Cdesc&pageSize=10&search=resta](https://mavenanalytics.io/data-playground?order=date_added%2Cdesc&pageSize=10&search=resta))

EXPLORE THE ITEMS TABLE

Objective 1

To better understand the items table by finding the number of rows in the table, the least and most expensive items, and the item prices within each category.

1. View the menu_items table and write a query to find the number of items on the menu

```
select * from menu_items mi ;
```

	menu_item_id	item_name	category	price
1	101	Hamburger	American	12.95
2	102	Cheeseburger	American	13.95
3	103	Hot Dog	American	9
4	104	Veggie Burger	American	10.5
5	105	Mac & Cheese	American	7
6	106	French Fries	American	7
7	107	Orange Chicken	Asian	16.5
8	108	Tofu Pad Thai	Asian	14.5
9	109	Korean Beef Bowl	Asian	17.95
10	110	Pork Ramen	Asian	17.95
11	111	California Roll	Asian	11.95
12	112	Salmon Roll	Asian	14.95
13	113	Edamame	Asian	5
14	114	Potstickers	Asian	9
15	115	Chicken Tacos	Mexican	11.95

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

```
select  
    item_name,  
    price  
from menu_items mi  
order by price desc limit 1;
```

```
select  
    item_name,  
    price  
from menu_items mi  
order by price asc limit 1;
```

	item_name	price
1	Shrimp Scampi	19.95

	item_name	price
1	Edamame	5

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

```
④ select count(*) as total_italian_menu  
      from menu_items mi  
     where category = 'Italian';
```

⑤ 123 total_italian_menu ▾
9

```
⑥ select *  
      from menu_items mi  
     where category = 'Italian'  
   order by price desc limit 1;
```

④ 123 menu_item_id ▾	A-Z item_name ▾	A-Z category ▾	123 price ▾
130	Shrimp Scampi	Italian	19.95

```
⑦ select *  
      from menu_items mi  
     where category = 'Italian'  
   order by price asc limit 1;
```

④ 123 menu_item_id ▾	A-Z item_name ▾	A-Z category ▾	123 price ▾
124	Spaghetti	Italian	14.5

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

```
⑧ select  
        mi.category,  
      count(mi.item_name) as total_dishes,  
      avg(mi.price) as avg_price  
    from menu_items mi  
  group by 1  
order by 2 desc;
```

⑨ A-Z category ▾	123 total_dishes ▾	123 avg_price ▾
Mexican	9	11.8
Italian	9	16.75
Asian	8	13.475
American	6	10.066666666667

EXPLORE THE ORDERS TABLE

Objective 2

To better understand the orders table by finding the date range, the number of items within each order, and the orders with the highest number of items.

1. View the order_details table. What is the date range of the table?

```
select * from orders_details od ;
```

	orders_details_id	order_id	rder_date	order_time	item_id
1	1	1	2023-01-01	11:38:36	109
2		2	2023-01-01	11:57:40	108
3		3	2023-01-01	11:57:40	124
4		4	2023-01-01	11:57:40	117
5		5	2023-01-01	11:57:40	129
6		6	2023-01-01	11:57:40	106
7		7	2023-01-01	12:12:28	117
8		8	2023-01-01	12:12:28	119
9		9	2023-01-01	12:16:31	117
10		10	2023-01-01	12:21:30	117
11		11	2023-01-01	12:29:36	101
12		12	2023-01-01	12:29:36	114
13		13	2023-01-01	12:50:37	123
14		14	2023-01-01	12:51:37	123
15		15	2023-01-01	12:52:01	108

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

```
select min(rder_date), max(rder_date) from orders_details od ;
```

min max
2023-01-01 2023-03-31

```
select count(distinct order_id) from orders_details od;
```

count
5,370

3. Which orders had the most number of items?

```
select order_id , count(item_id) as total_items  
from orders_details od  
group by 1  
order by 2 desc limit 7;
```

123 order_id	123 total_items
4,305	14
1,957	14
2,675	14
3,473	14
440	14
443	14
330	14

4. How many orders had more than 12 items?

```
select count(*) as total_orders  
from (  
    select order_id , count(item_id) as total_items  
    from orders_details od  
    group by 1  
    having count(item_id) > 12  
    order by 2 desc  
)
```

123 total_orders
20

ANALYZE CUSTOMER BEHAVIOR

Objective 3

to combine the items and orders tables, find the least and most ordered categories, and dive into the details of the highest spend orders.

1. Combine the menu_items and order_details tables into a single table

```
select *
from menu_items mi
join orders_details od on od.item_id = mi.menu_item_id;
```

	menu_item_id	item_name	category	price	orders_details_id	order_id	rder_date	order_time	item_id
1	102	Korean Beef Bowl	Asian	17.95	1	1	2023-01-01	11:38:36	109
2	108	Tofu Pad Thai	Asian	14.5	2	2	2023-01-01	11:57:40	108
3	124	Spaghetti	Italian	14.5	3	2	2023-01-01	11:57:40	124
4	117	Chicken Burrito	Mexican	12.95	4	2	2023-01-01	11:57:40	117
5	129	Mushroom Ravioli	Italian	15.5	5	2	2023-01-01	11:57:40	129
6	106	French Fries	American	7	6	2	2023-01-01	11:57:40	106
7	117	Chicken Burrito	Mexican	12.95	7	3	2023-01-01	12:12:28	117
8	119	Chicken Torta	Mexican	11.95	8	3	2023-01-01	12:12:28	119
9	117	Chicken Burrito	Mexican	12.95	9	4	2023-01-01	12:16:31	117
10	117	Chicken Burrito	Mexican	12.95	10	5	2023-01-01	12:21:30	117
11	101	Hamburger	American	12.95	11	6	2023-01-01	12:29:36	101
12	114	Potstickers	Asian	9	12	6	2023-01-01	12:29:36	114
13	123	Chips & Guacamole	Mexican	9	13	7	2023-01-01	12:50:37	123
14	123	Chips & Guacamole	Mexican	9	14	8	2023-01-01	12:51:37	123
15	108	Tofu Pad Thai	Asian	14.5	15	9	2023-01-01	12:52:01	108

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

```
select mi.item_name, mi.category, count(od.item_id) as frequency
from menu_items mi
right join orders_details od on od.item_id = mi.menu_item_id
group by 1,2
order by 3 desc;
```

	item_name	category	frequency
1	Hamburger	American	622
2	Edamame	Asian	620
3	Korean Beef Bowl	Asian	588
4	Cheeseburger	American	583
5	French Fries	American	571
6	Tofu Pad Thai	Asian	562
7	Steak Torta	Mexican	489
8	Spaghetti & Meatballs	Italian	470
9	Mac & Cheese	American	463
10	Chips & Salsa	Mexican	461
11	Orange Chicken	Asian	456
12	Chicken Burrito	Mexican	455
13	Eggplant Parmesan	Italian	420
14	Chicken Torta	Mexican	379
15	Spaghetti	Italian	367

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

```
select od.order_id, sum(mi.price) as total_spend
from menu_items mi
right join orders_details od on od.item_id = mi.menu_item_id
group by 1
having sum(mi.price) notnull
order by 2 desc limit 5;
```

	123 order_id	123 total_spend
1	440	192.15
2	2,075	191.05
3	1,957	190.1
4	330	189.7
5	2,675	185.1

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

```
select category, count(od.item_id) as num_items
from menu_items mi
right join orders_details od on od.item_id = mi.menu_item_id
where od.order_id = 440
group by 1
order by 2 desc;
```

	A-Z category	123 num_items
1	Italian	8
2	American	2
3	Asian	2
4	Mexican	2

```
select category, mi.item_name, count(od.item_id) as num_items, avg(price)
from menu_items mi
right join orders_details od on od.item_id = mi.menu_item_id
where od.order_id = 440 and mi.category = 'Italian'
group by 1,2
order by 3 desc;
```

	A-Z category	A-Z item_name	123 num_items	123 avg
	Italian	Fettuccine Alfredo	2	14.5
	Italian	Spaghetti & Meatballs	2	17.95
	Italian	Chicken Parmesan	1	17.95
	Italian	Eggplant Parmesan	1	16.95
	Italian	Meat Lasagna	1	17.95
	Italian	Spaghetti	1	14.5

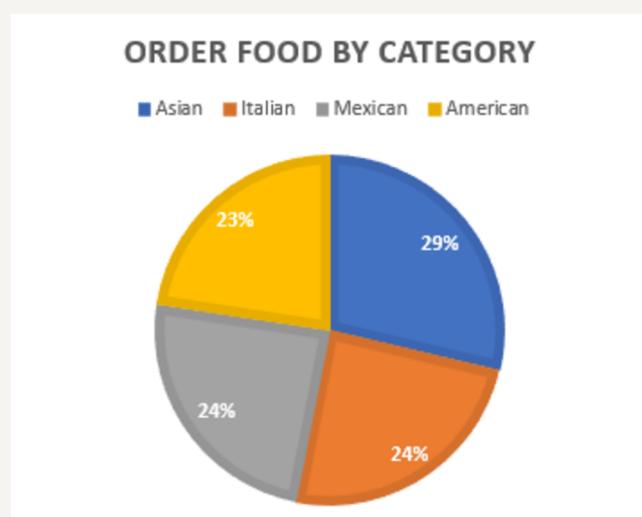
5. View the details of the top 5 highest spend orders

```
select od.order_id ,category, count(od.item_id) as num_items
from menu_items mi
right join orders_details od on od.item_id = mi.menu_item_id
where od.order_id in (440,2075,1957,330,2675)
group by 1,2
order by 3 desc;
```

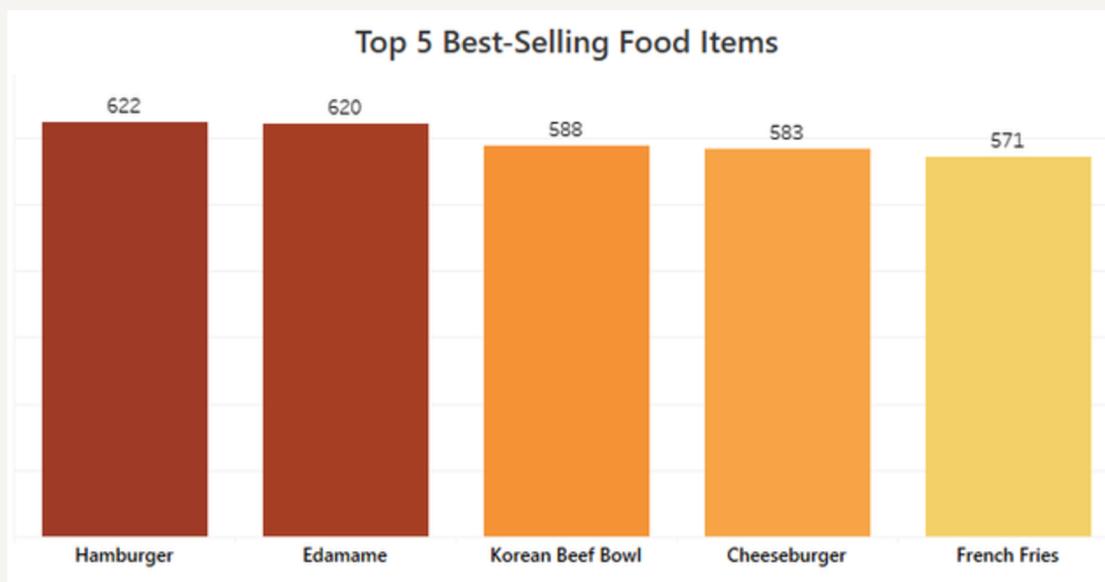
	123 order_id	A-Z category	123 num_items
1	440	Italian	8
2	2,075	Italian	6
3	330	Asian	6
4	1,957	Italian	5
5	2,675	Mexican	4
6	330	Mexican	4
7	2,675	Italian	4
8	2,075	Mexican	3
9	2,675	American	3
10	1,957	Asian	3
11	1,957	American	3
12	1,957	Mexican	3
13	2,675	Asian	3
14	2,075	Asian	3
15	330	Italian	3
16	440	Asian	2
17	440	American	2
18	440	Mexican	2
19	330	American	1
20	2,075	American	1

INSIGHT

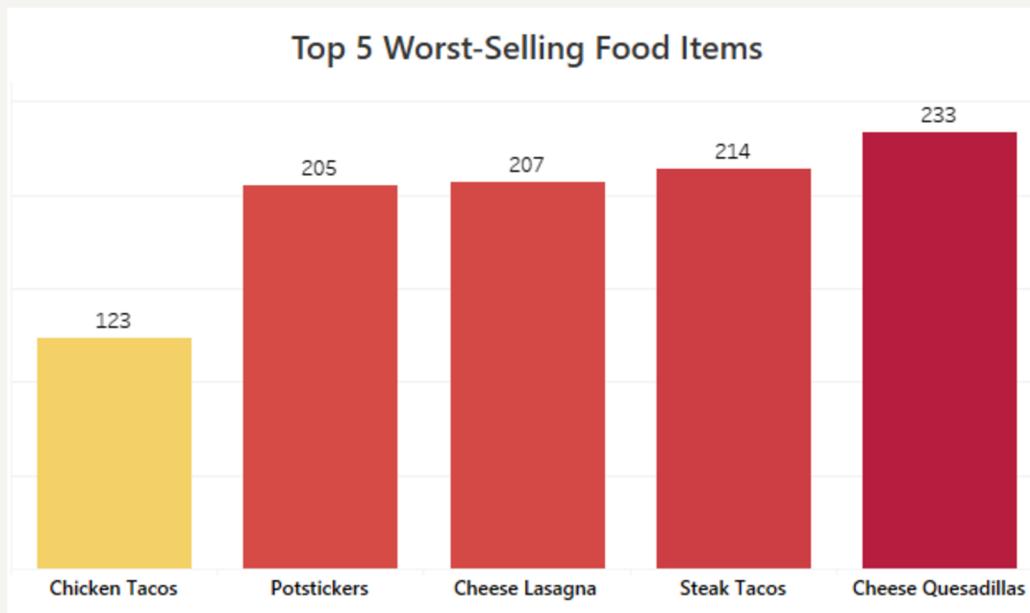
- The most favored food by customers in this restaurant is **Asian category**, with around **3,470 orders**. The Italian, Mexican, and American categories have similar order counts, around ~2,700+.



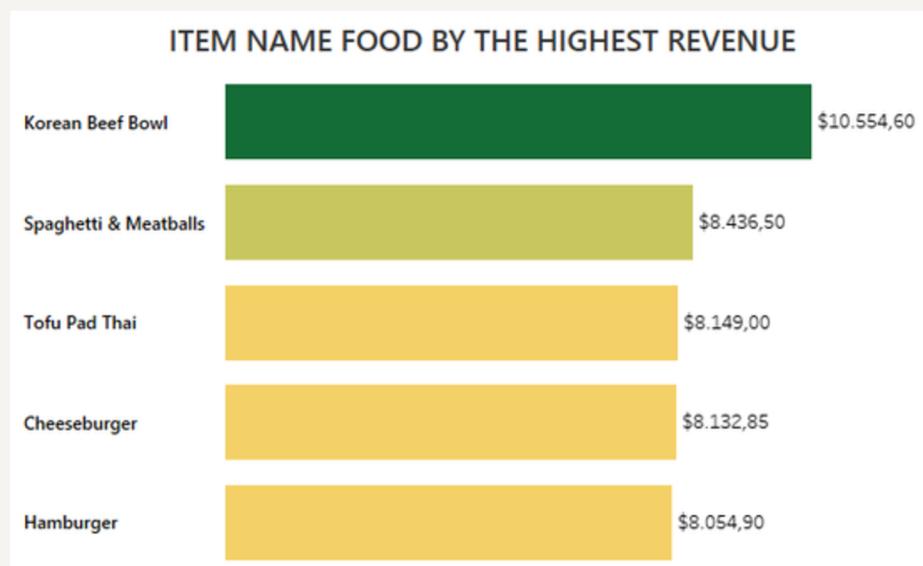
- The Top 5 Best-Selling** food items in this restaurant are **Hamburger** (American), Edamame (Asian), Korean Beef Bowl (Asian), Cheeseburger (American), and French Fries (American).



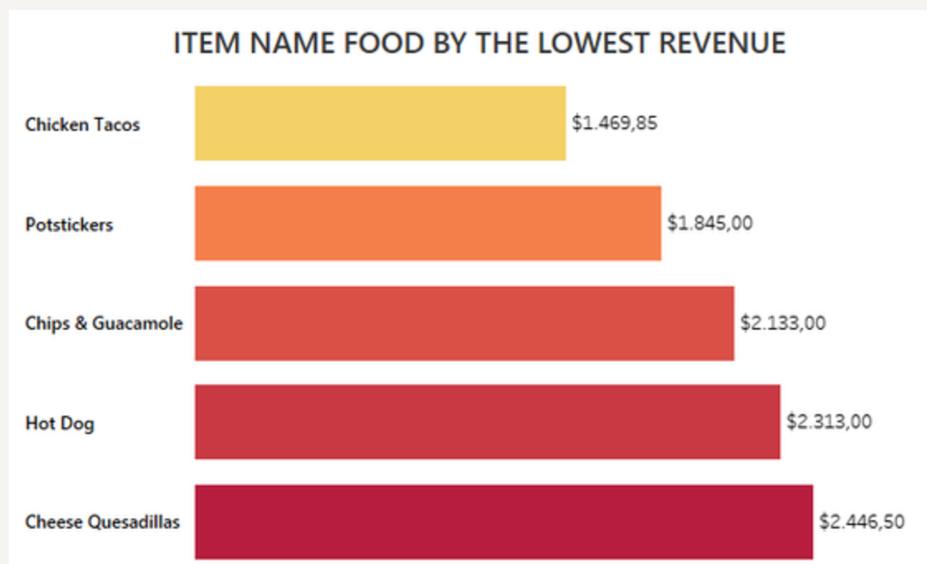
- **The Top 5 Worst-Selling** food items in this restaurant are **Chicken Tacos** (Mexican), Potstickers (Asian), Cheese Lasagna (Italian), Steak Tacos (Mexican), and Cheese Quesadillas (Mexican).



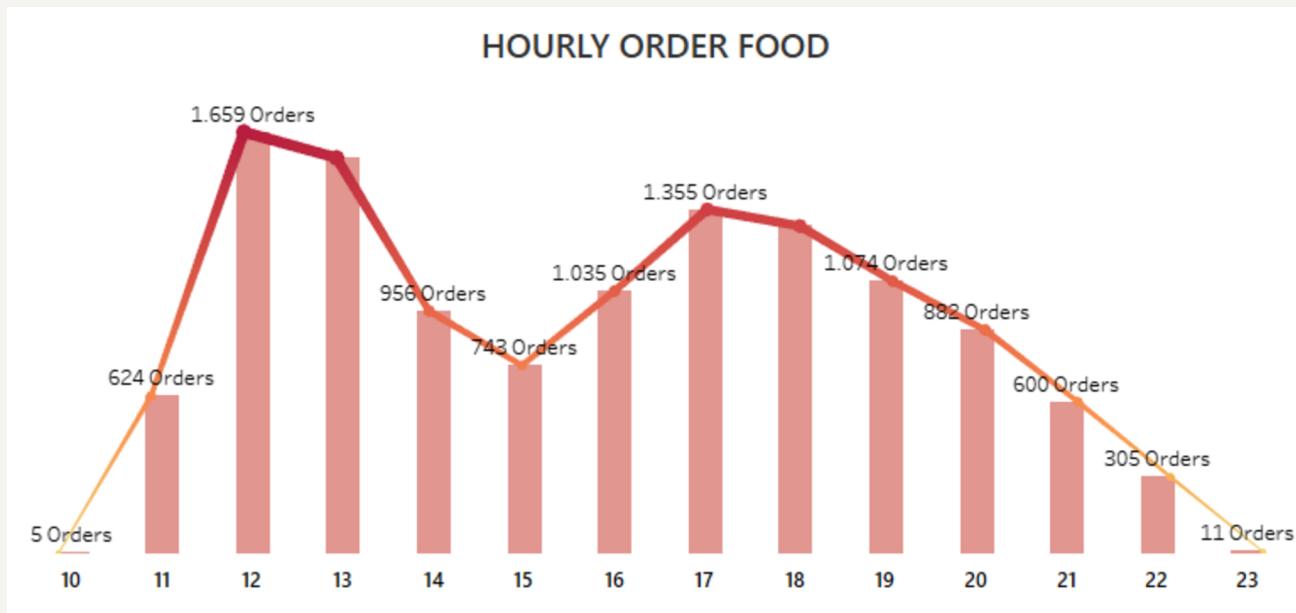
- The **highest revenue** is generated by the **Korean Beef Bowl (Asian)**, with a total of **\$10,554.60**. Other high-revenue items show only a slight difference in earnings.



- The item with the **lowest revenue** is **Chicken Tacos**, generating **\$1,469.85**, which is also the least ordered by customers.



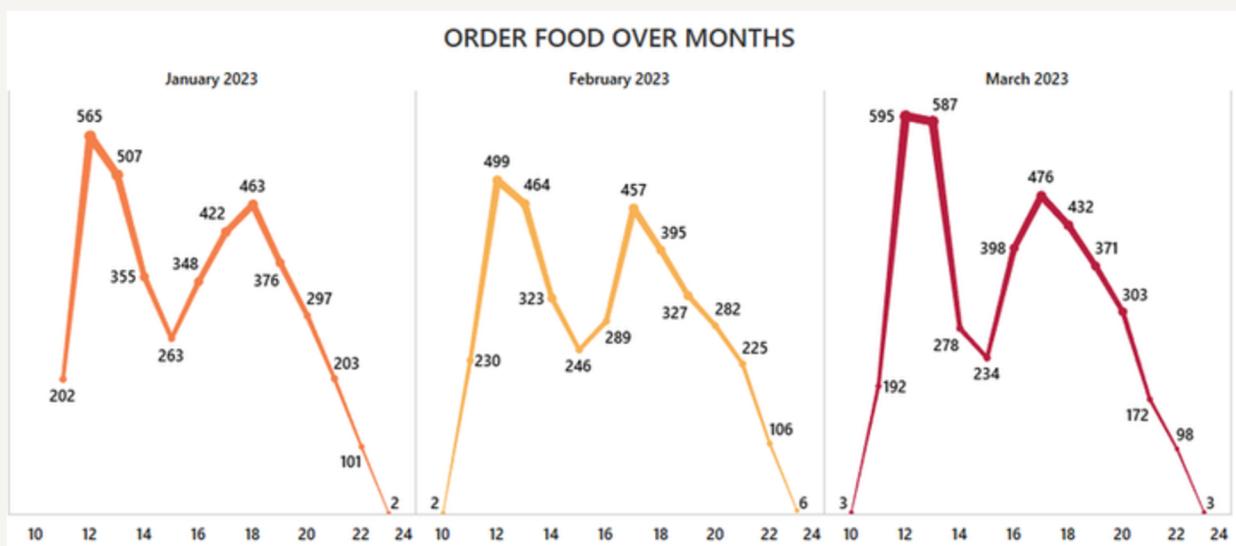
- Based on the **seasonality analysis**, consumer behavior can be observed. Customers at this restaurant particularly enjoy placing orders during **lunchtime**. As shown in the chart below, **the peak order time** occurs around **12 PM**. Additionally, the second peak happens around **5 PM**, just **before dinner**. However, customers are **less inclined** to order around **3 PM**.



- From a weekday perspective, customers at this restaurant prefer visiting on **Mondays and Fridays**, with peak times during **lunch at 12 PM** and just **before dinner at 5 PM**. However, the day with the highest customer turnout is **Wednesday**.



- When analyzing **orders by month**, the highest number of orders occurred in **January**, while the lowest were observed in **February**. Upon a more detailed examination by hour, peak times consistently occur **around 12 PM** during **lunch** and **5 PM just before dinner** throughout all months. When analyzing by weekdays, the peak days show some variation; however, **Mondays and weekends** are generally favored by customers.





- Here is the chart showing the order IDs with the highest total number of items purchased.

