SQL Guided Project on

Restaurant Order Analysis

Maven Analytics

Project Summary

This project involves analysing and querying a restaurant's **menu items** and **order details** to extract insights, such as identifying popular items, pricing trends, and customer order behaviour. Two main tables, menu_items and order_details, are used to address a series of business-related questions through SQL queries.

Objectives

- Analyse the total number of items on the menu and identify the least and most expensive items.
- Examine Italian dishes on the menu and determine their price range.
- Group dishes by category to count them and calculate the average price for each category.
- Investigate order details to find the date range, number of items ordered, and identify orders with the most items.
- Combine menu_items and order_details to analyse the least and most ordered items and find the highest spend orders.

Sai Raam V

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

```
1 •  SELECT COUNT(DISTINCT item_name) AS Total_Items FROM menu_items;
```

Total_Items
32

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

Least Expensive Items

```
1   SELECT item_name, price FROM menu_items
2   ORDER BY price
3   LIMIT 3;
```

item_name	price
Edamame	5.00
French Fries	7.00
Mac & Cheese	7.00

Most Expensive Items

```
1   SELECT item_name, price FROM menu_items
2   ORDER BY price DESC
3   LIMIT 3;
```

item_name	price
Shrimp Scampi	19.95
Korean Beef Bowl	17.95
Pork Ramen	17.95

3) How many Italian dishes are on the menu?

```
1 •  SELECT COUNT(DISTINCT item_name) AS Total_Items, Category FROM menu_items
2    WHERE category='Italian';
```

Total_Items	Category
9	Italian

4) What are the least and most expensive Italian dishes on the menu?

Least Expensive Italian Dishes

```
1 •  SELECT item_name, category, price FROM menu_items
2    WHERE category='Italian'
3    ORDER BY price
4    LIMIT 3;
```

item_name	category	price
Spaghetti	Italian	14.50
Fettuccine Alfredo	Italian	14.50
Cheese Lasagna	Italian	15.50

Most Expensive Italian Dishes

```sql
SELECT item_name, category, price FROM menu_items
WHERE category='Italian'
ORDER BY price DESC
LIMIT 3;
```

item_name	category	price
Shrimp Scampi	Italian	19.95
Spaghetti & Meatb…	Italian	17.95
Meat Lasagna	Italian	17.95

5) How many dishes are in each category? What is the average dish price within each category?

```sql
SELECT COUNT(DISTINCT item_name) AS Total_Items, category, ROUND(AVG(price), 2) AS AVG_Price FROM menu_items
GROUP BY category;
```

Total_Items	category	AVG_Price
6	American	10.07
8	Asian	13.48
9	Italian	16.75
9	Mexican	11.80

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

```sql
SELECT MIN(order_date) AS Earliest_Date, MAX(order_date) AS Latest_Date FROM order_details;
```

Earliest_Date	Latest_Date
2023-01-01	2023-03-31

7) How many orders were made within this date range?

```sql
SELECT COUNT(order_id) AS Total_Orders
FROM order_details
WHERE order_date BETWEEN
    (SELECT MIN(order_date) FROM order_details)
    AND
    (SELECT MAX(order_date) FROM order_details);
```

Total_Orders
12234

8) How many items were ordered within this date range?

```sql
SELECT COUNT(item_id) AS Total_Orders
FROM order_details
WHERE order_date BETWEEN
    (SELECT MIN(order_date) FROM order_details)
    AND
    (SELECT MAX(order_date) FROM order_details);
```

Total_Orders
12097

9) Which orders had the most number of items?

```sql
SELECT order_id, COUNT(item_id) AS item_count
FROM order_details
GROUP BY order_id
ORDER BY item_count DESC
LIMIT 3;
```

order_id	item_count
330	14
440	14
443	14

10) How many orders had more than 12 items?

```sql
SELECT COUNT(order_id) AS Total_Orders
FROM (
    SELECT order_id
    FROM order_details
    GROUP BY order_id
    HAVING COUNT(item_id) > 12
) AS subquery;
```

Total_Orders
20

11) Combine the **menu_items** and **order_details** tables into a single table

```sql
SELECT * FROM
order_details od
LEFT JOIN menu_items mi
    ON od.item_id = mi.menu_item_id;
```

order_details_id	order_id	order_date	order_time	item_id	menu_item_id	item_name	category	price
1	1	2023-01-01	11:38:36	109	109	Korean Beef Bowl	Asian	17.95
2	2	2023-01-01	11:57:40	108	108	Tofu Pad Thai	Asian	14.50
3	2	2023-01-01	11:57:40	124	124	Spaghetti	Italian	14.50
4	2	2023-01-01	11:57:40	117	117	Chicken Burrito	Mexican	12.95
5	2	2023-01-01	11:57:40	129	129	Mushroom Ravioli	Italian	15.50
6	2	2023-01-01	11:57:40	106	106	French Fries	American	7.00

12) What were the least and most ordered items? What categories were they in?

Least Ordered Items

```sql
SELECT
    COUNT(od.order_details_id) AS num_purchases,
    mi.item_name,
    mi.category
FROM order_details od
LEFT JOIN menu_items mi
    ON od.item_id = mi.menu_item_id
GROUP BY item_name, category
ORDER BY num_purchases;
```

num_purchases	item_name	category
123	Chicken Tacos	Mexican
137	NULL	NULL
205	Potstickers	Asian
207	Cheese Lasagna	Italian
214	Steak Tacos	Mexican
233	Cheese Quesadillas	Mexican
237	Chips & Guacamole	Mexican
238	Veggie Burger	American
239	Shrimp Scampi	Italian

Most Ordered Items

```sql
SELECT
    COUNT(od.order_details_id) AS num_purchases,
    mi.item_name,
    mi.category
FROM order_details od
LEFT JOIN menu_items mi
    ON od.item_id = mi.menu_item_id
GROUP BY item_name, category
ORDER BY num_purchases DESC;
```

num_purchases	item_name	category
622	Hamburger	American
620	Edamame	Asian
588	Korean Beef Bowl	Asian
583	Cheeseburger	American
571	French Fries	American
562	Tofu Pad Thai	Asian
489	Steak Torta	Mexican
470	Spaghetti & Meatb…	Italian
463	Mac & Cheese	American
461	Chips & Salsa	Mexican

13) What were the top 5 orders that spent the most money?

```sql
SELECT
    od.order_id,
    SUM(mi.price) AS total_spend
FROM order_details od
LEFT JOIN menu_items mi
    ON od.item_id = mi.menu_item_id
GROUP BY order_id
ORDER BY total_spend DESC
LIMIT 5;
```

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

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

```sql
SELECT item_name, category, COUNT(item_id) AS num_purchases
FROM order_details od
LEFT JOIN menu_items mi
    ON od.item_id = mi.menu_item_id
WHERE order_id = 440
GROUP BY item_name, category;
```

item_name	category	num_purchases
Steak Tacos	Mexican	1
Hot Dog	American	1
Spaghetti	Italian	1
Spaghetti & Meatballs	Italian	2
Fettuccine Alfredo	Italian	2
Korean Beef Bowl	Asian	1
Meat Lasagna	Italian	1
Edamame	Asian	1
Chips & Salsa	Mexican	1
Chicken Parmesan	Italian	1
French Fries	American	1
Eggplant Parmesan	Italian	1

15) View the details of the top 5 highest spend orders

```sql
SELECT item_name, category, COUNT(item_id) AS num_purchases
FROM order_details od
LEFT JOIN menu_items mi
    ON od.item_id = mi.menu_item_id
WHERE order_id IN (440, 2075, 1957, 330, 2675)
GROUP BY item_name, category;
```

item_name	category	num_purchases
Orange Chicken	Asian	3
Hot Dog	American	3
Tofu Pad Thai	Asian	3
Spaghetti	Italian	4
Spaghetti & Meatballs	Italian	4
Korean Beef Bowl	Asian	2
Salmon Roll	Asian	4