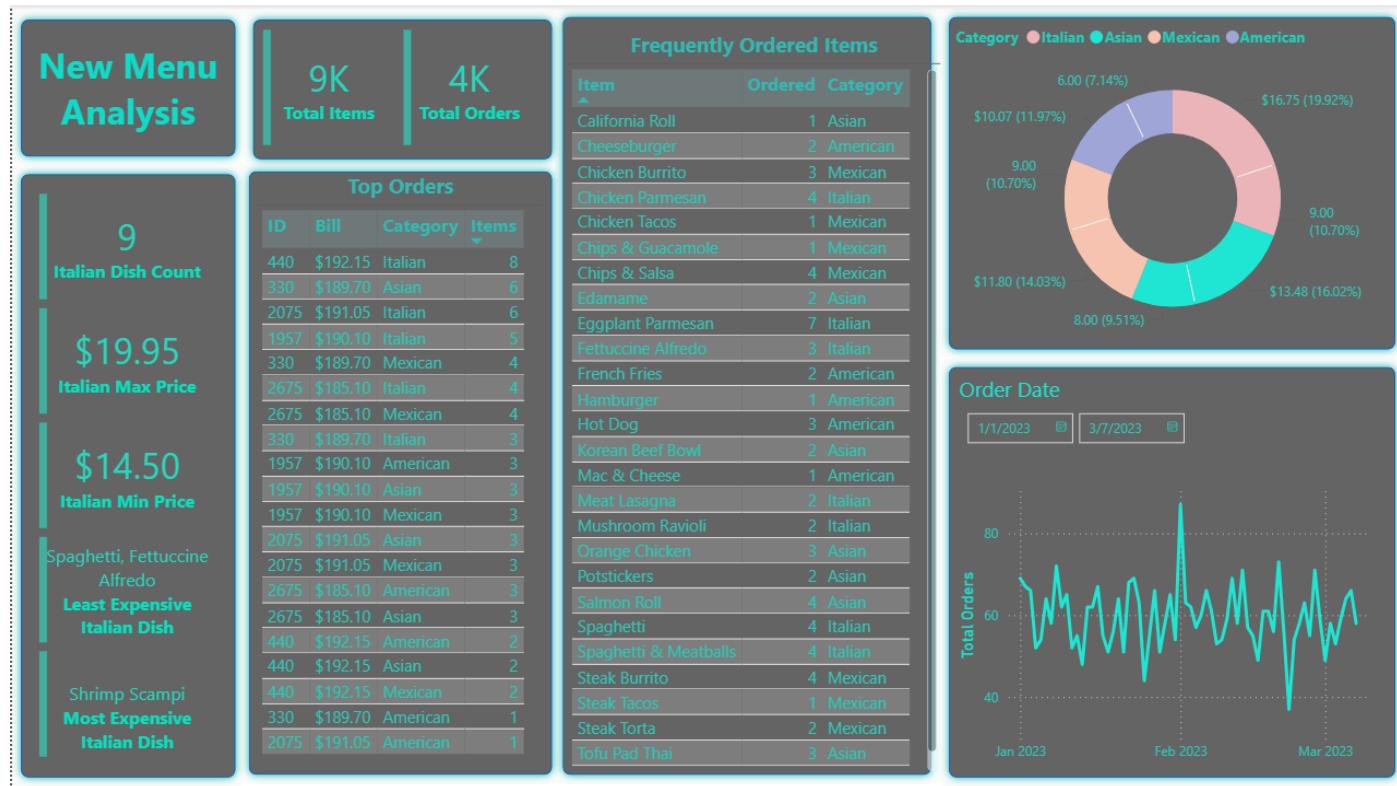


Restaurant Order Analysis

Data Analysis for the new menu using Power BI



Introduction

This data contains two tables: Menu Table and Order Table. The restaurant management wants to design the new menu. The task given was to analyse the orders to find out which dishes were frequently ordered and which ones were the least favourite among the customers.

Data Source: <https://app.mavenanalytics.io/datasets>

Objectives

OBJECTIVE 1: EXPLORE THE ITEMS TABLE

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

Used Power Query Editor to load and view the data.

- What are the least and most expensive items on the menu?

Applying the ascending order sorting on price column to view the least and most expensive items on the menu.

menu_item_id	item_name	category	price
113	Edamame	Asian	5

menu_item_id	item_name	category	price
130	Shrimp Scampi	Italian	19.95

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

Write DAX function to calculate how many Italian dishes are on the menu.

The screenshot shows the Power BI DAX editor interface. On the left, there are two tabs: 'Structure' and 'Formatting'. In the 'Structure' tab, under 'Name', the value 'Italian Dishes' is entered. Under 'Home table', the value 'Menu' is selected from a dropdown. In the 'Formatting' tab, the 'Format' dropdown is set to 'Whole number', and the decimal separator is a comma (,). Below the tabs, the DAX code for the measure is displayed:

```

1 Italian Dishes = CALCULATE(
2     COUNTROWS(Menu),
3     Menu[category] = "Italian"
4 )

```

Italian Dishes = 9

Name Most Expensive Ita...	Format General
Home table Menu	\$ % , .00
Structure	
<div style="border: 1px solid #ccc; padding: 5px; display: flex; align-items: center;"> X ✓ <pre>1 Most Expensive Italian Dishes = CALCULATE(2 MAX(Menu[price]), 3 Menu[category] = "Italian" 4)</pre> </div>	
Formatting	

Name Least Expensive Ita...	Format General
Home table Menu	\$ % , .00
Structure	
<div style="border: 1px solid #ccc; padding: 5px; display: flex; align-items: center;"> X ✓ <pre>1 Least Expensive Italian Dishes = CALCULATE(2 MIN(Menu[price]), 3 Menu[category] = "Italian" 4)</pre> </div>	
Formatting	

```

1 Most Expensive Italian Dish =
2 VAR MaxPrice = [Italian Max Price]
3 VAR MaxDishes =
4 CALCUTATE(
5     VALUES('Menu'[item_name]),
6     'Menu'[category] = "Italian",
7     'Menu'[price] = MaxPrice
8 )
9 RETURN
10 CONCATENATEX(MaxDishes, 'Menu'[item_name], ", ")

```

```

1 Least Expensive Italian Dish =
2 VAR MinPrice = [Italian Min Price]
3 VAR MinDishes =
4     CALCULATETABLE(
5         VALUES('Menu'[item_name]),
6         'Menu'[category] = "Italian",
7         'Menu'[price] = MinPrice
8     )
9 RETURN
10 CONCATENATEX(MinDishes, 'Menu'[item_name], ", ")

```

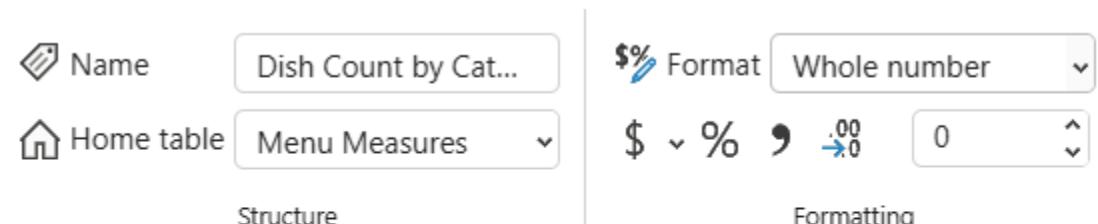
Fettuccine Alfredo, Spaghetti

Least Expensive Italian Dish

Shrimp Scampi

Most Expensive Italian Dish

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



The screenshot shows the Power BI ribbon. The 'Name' dropdown is set to 'Dish Count by Cat...', which corresponds to the measure defined in the DAX code above. The 'Measures' dropdown is also set to 'Dish Count by Cat...'. The 'Formatting' tab is currently selected, showing options for currency (\$), percentage (%), and other number formats.

Structure	Formatting
<input type="button" value="X"/> <input checked="" type="button" value="✓"/>	\$% Format Whole number ▼ \$ % , .00 0 ^ ▼

```

1 Dish Count by Category =
2 COUNTROWS('Menu')

```

The screenshot shows the Power BI ribbon. The 'Home table' icon is selected in the 'Name' dropdown. In the 'Measures' dropdown, 'Menu Measures' is chosen. On the right, the 'Formatting' tab is active, showing currency settings with a separator of a comma and a decimal of two digits. Below the ribbon, a code editor displays the DAX formula for calculating average price by category.

```
1 Average Price by Category =
2 AVERAGE('Menu'[price])
```

Category	Dish Count	Average Price by Category
American	6	\$10.07
Asian	8	\$13.48
Italian	9	\$16.75
Mexican	9	\$11.80

OBJECTIVE 2: EXPLORE THE ORDERS TABLE

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

Added a order date slicer.



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

Order Date

1/1/2023 3/7/2023

Total Items

8986

Total Orders

3937

OBJECTIVE 3: ANALYZE CUSTOMER BEHAVIOR

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

category	item_name	Total Orders Per Item
American	Veggie Burger	167
Asian	Tofu Pad Thai	407
Mexican	Steak Torta	371
Mexican	Steak Tacos	166
Mexican	Steak Burrito	263
Italian	Spaghetti & Meatballs	334
Italian	Spaghetti	273
Italian	Shrimp Scampi	171

- What were the top 5 orders that spent the most money?

Top 5 Orders

order_id	Order Price
440	192
2075	191
1957	190
330	190
2675	185

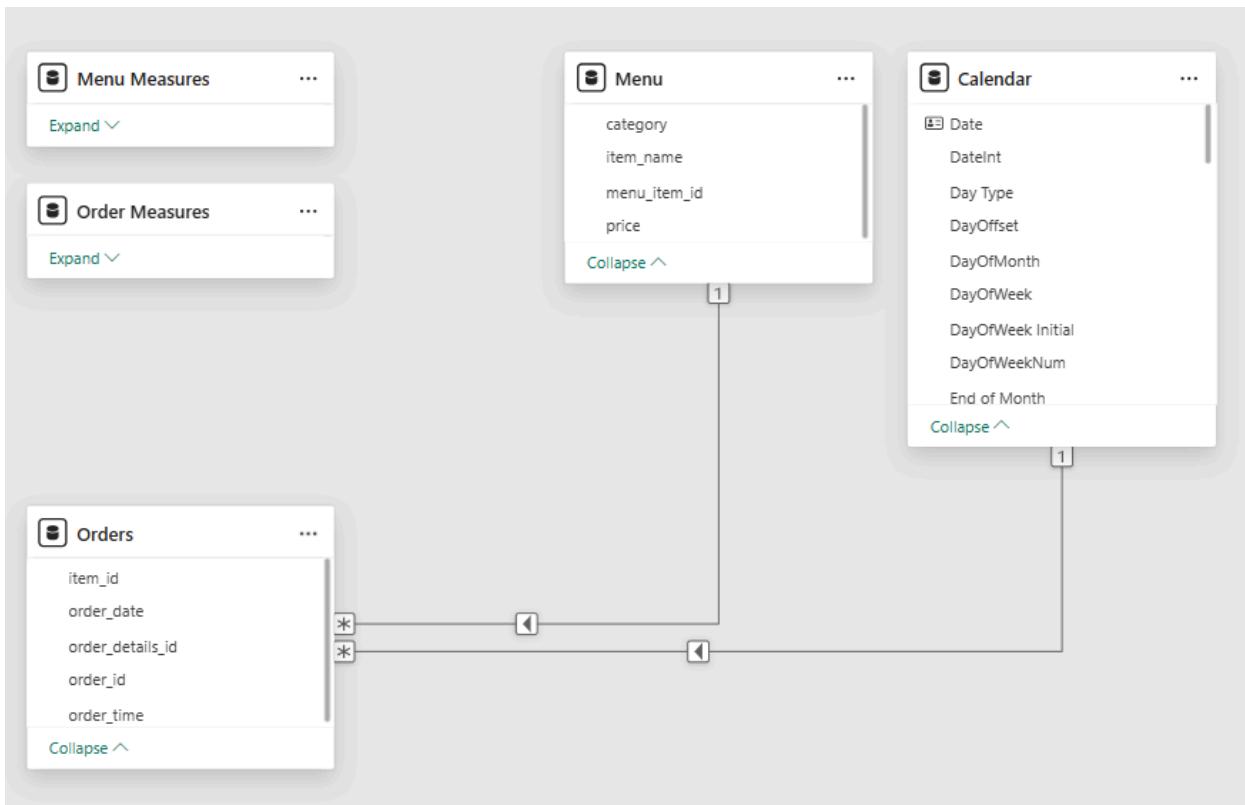
- View the details of the top 5 highest spend orders. What insights can you gather from the results?

Top 5 Orders

order_id	Order Price	category	Total Items
440	192.15	American	2
440	192.15	Asian	2
440	192.15	Italian	8
440	192.15	Mexican	2
2075	191.05	American	1
2075	191.05	Asian	3
2075	191.05	Italian	6
2075	191.05	Mexican	3
1957	190.10	American	3
1957	190.10	Asian	3
1957	190.10	Italian	5
1957	190.10	Mexican	3
330	189.70	American	1
330	189.70	Asian	6
330	189.70	Italian	3
330	189.70	Mexican	4
2675	185.10	American	3
2675	185.10	Asian	3
2675	185.10	Italian	4
2675	185.10	Mexican	4
Total	948.10		69

```
1 Total Order Price (Order Level) =  
2 CALCULATE(  
3     [Order Price],  
4     ALLEXCEPT(Orders, Orders[order_id])  
5 )
```

Data Model



Measures

Average Price by Category =

```
AVERAGE ('Menu' [price])
```

Dish Count by Category =

```
COUNTROWS ('Menu')
```

Italian Dish Count =

```
CALCULATE (
    COUNTROWS ('Menu'),
    'Menu' [category] = "Italian"
```

```
)-----  
Italian Max Price =  
  
CALCULATE(  
  
    MAX('Menu'[price]),  
  
    'Menu'[category] = "Italian"  
  
)-----  
Italian Min Price =  
  
CALCULATE(  
  
    MIN('Menu'[price]),  
  
    'Menu'[category] = "Italian"  
  
)-----  
Least Expensive Italian Dish =  
  
VAR MinPrice = [Italian Min Price]  
  
VAR MinDishes =  
  
    CALCULATETABLE(  
  
        VALUES('Menu'[item_name]),  
  
        'Menu'[category] = "Italian",  
  
        'Menu'[price] = MinPrice  
  
)  
  
RETURN  
  
CONCATENATEX(MinDishes, 'Menu'[item_name], ", ")
```

```

Most Expensive Italian Dish = 

VAR MaxPrice = [Italian Max Price]

VAR MaxDishes = 

CALCULATETABLE(
    VALUES('Menu'[item_name]),
    'Menu'[category] = "Italian",
    'Menu'[price] = MaxPrice
)

RETURN

CONCATENATEX(MaxDishes, 'Menu'[item_name], ", ")

```

```

Order Price = SUMX ( Orders, LOOKUPVALUE ( Menu[price], Menu[menu_item_id],
Orders[item_id] ) )

```

```

Total Items = 

COUNTROWS ('Orders')

```

```

Total Order Price = 

SUMX ( Orders, LOOKUPVALUE ( Menu[price], Menu[menu_item_id], Orders[item_id] ) )

```

```

Total Order Price (Order Level) = 

CALCULATE (
    [Order Price],

```

```
    ALLEXCEPT(Orders, Orders[order_id])  
)
```

```
Total Orders Per Item = COUNTROWS(Orders)
```

```
Total Orders =
```

```
DISTINCTCOUNT('Orders'[order_id])
```