6/26/2023

PIZZA SALES ANALYSIS USING MICROSOFT EXCEL AND MICROSOFT SQL SERVER

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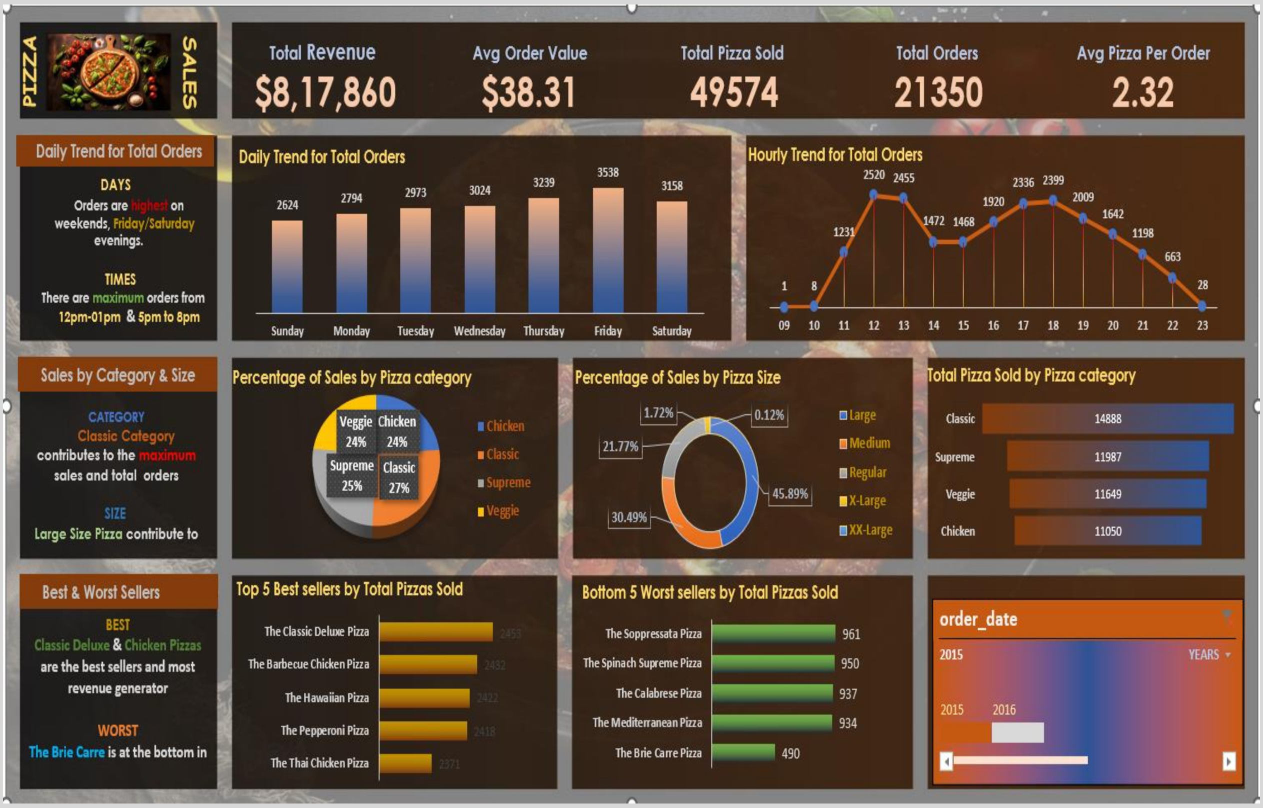
PROBLEM STATEMENT

- We want to find some insights for Pizza Sales Data for 2015. Creating an interactive Pizza Sales Dashboard to provide actionable insights and improve decision making for a Pizza Company. The company's management recognizes the need to leverage data-driven strategies to optimise sales performance and enhance customer satisfaction, Goal is top develop a user friendly and visually appealing pizza sales dashboard. By leveraging data visualization techniques, the dashboard will enable stakeholders to track sales performance, identify popular pizza flavours and toppings, analyse customer preferences and identify opportunities for growth and improvement over the time for sales.

- My objective is to verify the accuracy and integrity of the pizza sales dashboard that I have made for the Pizza Company using SQL queries. It is crucial to ensure that the data is reliable and trustworthy to support informed decision making and analysis. However, there are concerns regarding potential data inconsistencies, errors, or discrepancies within the data base that may impact the validity of the sales data. I will import the pizza sales dataset in Microsoft SQL Server and verify if the values are correct or not so that the user should only get the correct insights.



PIZZA SALES

Total Revenue $8,17,860

Avg Order Value $38.31

Total Pizza Sold 49574

Total Orders 21350

Avg Pizza Per Order 2.32

Daily Trend for Total Orders

DAYS
Orders are highest on weekends, Friday/Saturday evenings.

TIMES
There are maximum orders from 12pm-01pm & 5pm to 8pm

Sales by Category & Size

CATEGORY
Classic Category contributes to the maximum sales and total orders

SIZE
Large Size Pizza contribute to

Best & Worst Sellers

BEST
Classic Deluxe & Chicken Pizzas are the best sellers and most revenue generator

WORST
The Brie Carre is at the bottom in

PIZZA SALES DASHBOARD

STEPS APPLIED:

1. Problem Statement
2. Data Cleaning
3. Data Preprocessing
4. Data Manipulation
5. Data Analysis

KPI (Key Performance Indicator)

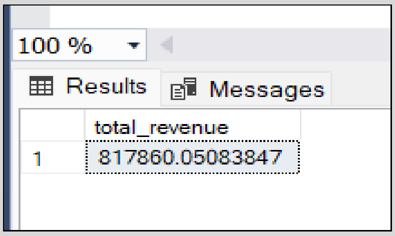
We need to analyse key indicators for our pizza sales data to gain insights into our business performance. Specially, we want to calculate the following metrices.

1. Total Revenue: Sum of total price of all pizza orders

Query:

```
Select SUM(total_price) AS total_revenue from pizza_sales
```

Output:



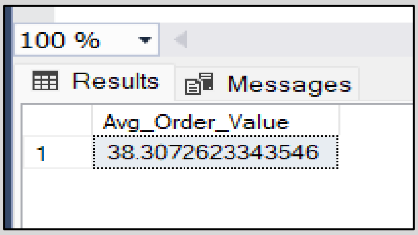
	total_revenue
1	817860.05083847

2. Average Order Value: The average amount spent per order, calculated by dividing the total revenue by the total number of orders.

Query:

```
Select SUM(total_price)/COUNT(Distinct order_id) AS  Avg_Order_Value
from pizza_sales
```

Output:



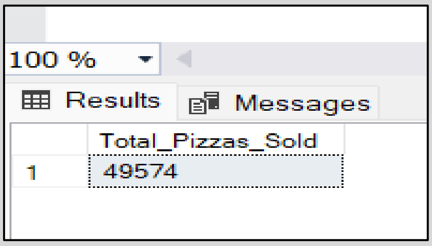
	Avg_Order_Value
1	38.3072623343546

3. Total Pizzas Sold: The sum of all the quantities of all pizzas sold.

Query:

```
Select SUM(quantity) AS Total_Pizzas_Sold from pizza_sales
```

Output:



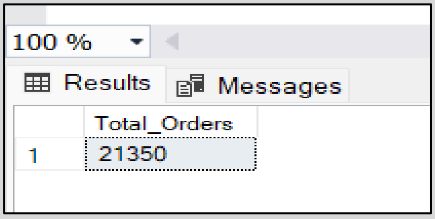
```
   Total_Pizzas_Sold
1  49574
```

4. Total Orders: The total number of orders placed.

Query:

```
Select COUNT(Distinct order_id) AS Total_Orders from pizza_sales
```

Output:



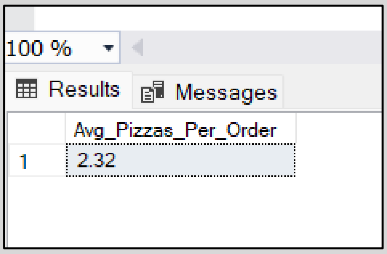
```
   Total_Orders
1  21350
```

5. Average Pizzas Per Order: The average number of pizzas sold per order, calculated by dividing the total number of pizzas sold by the total number of orders.

Query:

```
Select CAST(CAST(SUM(quantity) AS DECIMAL (10,2))/
CAST(COUNT(Distinct order_id) AS DECIMAL (10,2)) AS DECIMAL (10,2))
AS Avg_Pizzas_Per_Order from pizza_sales
```

Output:



```
   Avg_Pizzas_Per_Order
1  2.32
```

CHARTS REQUIREMENTS

We would like to visualize the various aspects of our pizza sales data to gain insights and understand key trends . We have identified the following requirements for creating charts.

1. Daily Trend for Total Orders: Create a bar chart that displays the daily trend

of total orders over a specific time period. This chart will help us identify any patterns or fluctuations in order volumes on a daily basis.

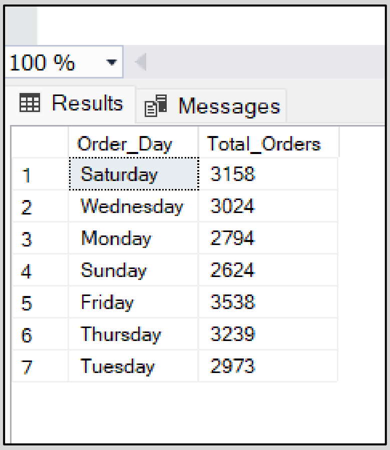
Query:

```
--Daily Trend
SELECT DATENAME(DW, order_date) AS Order_Day, COUNT(DISTINCT
order_id) AS Total_Orders from pizza_sales
GROUP BY DATENAME(DW, order_date)
```

DateName: It is an argument which is used to derive the date of the week.
DW: It retrieves a day of the week, Character strings (i.e. Monday, Sunday etc)

Insights: **Orders are highest on weekends, Friday/Saturday evenings**

Output:



	Order_Day	Total_Orders
1	Saturday	3158
2	Wednesday	3024
3	Monday	2794
4	Sunday	2624
5	Friday	3538
6	Thursday	3239
7	Tuesday	2973

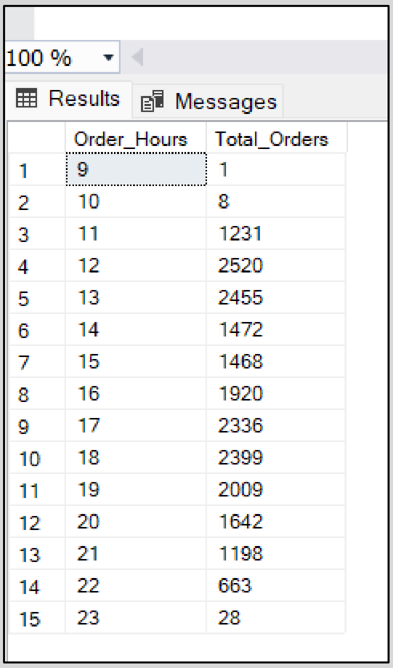
2. Hourly Trend for Total Orders: Creating a line chart that illustrates the hourly trend of total orders through out the day. This chart will allow us to identify peak hours or periods of high order activity.

Query:

```
--Hourly Trend
SELECT DATEPART(HOUR, order_time) AS Order_Hours, COUNT(DISTINCT
order_id) AS Total_Orders from pizza_sales
GROUP BY DATEPART(HOUR, order_time)
ORDER BY DATEPART(HOUR, order_time)
```

Insights: **There are maximum orders from 12pm-01pm & 5pm to 8pm**

Output:



	Order_Hours	Total_Orders
1	9	1
2	10	8
3	11	1231
4	12	2520
5	13	2455
6	14	1472
7	15	1468
8	16	1920
9	17	2336
10	18	2399
11	19	2009
12	20	1642
13	21	1198
14	22	663
15	23	28

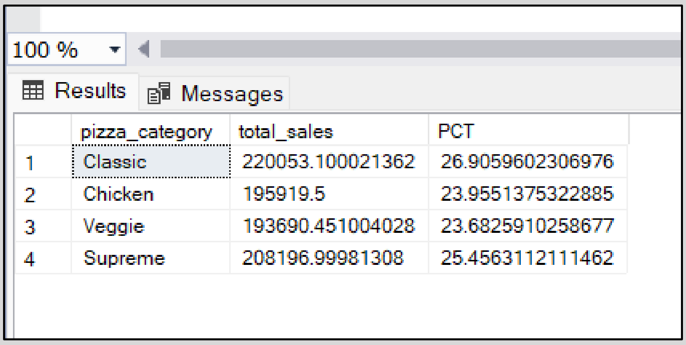
3. Percentage of Sales by Pizza Category: Creating a pie chart that shows the distribution of sales across different pizza categories, This chart will provide insights into the popularity of various pizza categories and their contribution to overall sales.

Query:

```
Select pizza_category, SUM(total_price) AS total_sales,
SUM(total_price)*100 / (SELECT sum(total_price) from pizza_sales) AS
PCT from pizza_sales GROUP BY pizza_category
```

Insights: Classic Category contributes to the maximum sales and total orders

Output:



	pizza_category	total_sales	PCT
1	Classic	220053.100021362	26.9059602306976
2	Chicken	195919.5	23.9551375322885
3	Veggie	193690.451004028	23.6825910258677
4	Supreme	208196.99981308	25.4563112111462

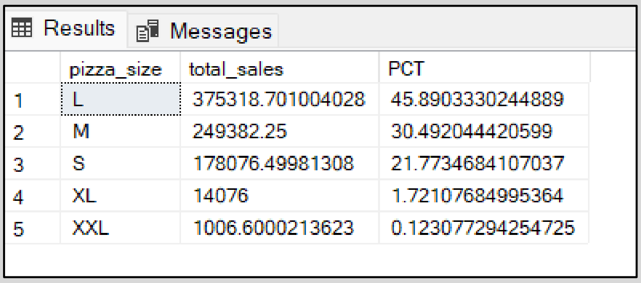
4. Percentage of Sales by Pizza Size: Generate a pie chart that represents the percentage of sales attributed to different pizza sizes. This chart will help us understand customer preferences of pizza sizes and their impact on sales.

Query:

```
Select pizza_size, SUM(total_price) AS total_sales,
SUM(total_price)*100 / (SELECT sum(total_price) from pizza_sales) AS
PCT from pizza_sales GROUP BY pizza_size
ORDER BY PCT DESC
```

Insights: **Large Size Pizza contribute to maximum sales**

Output:



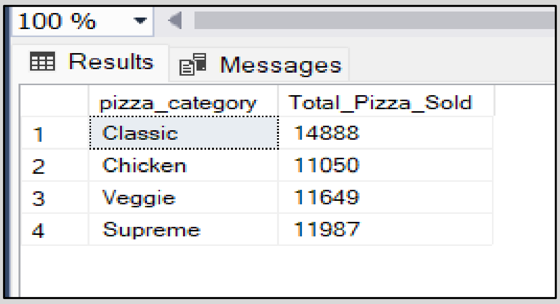
	pizza_size	total_sales	PCT
1	L	375318.701004028	45.8903330244889
2	M	249382.25	30.492044420599
3	S	178076.49981308	21.7734684107037
4	XL	14076	1.72107684995364
5	XXL	1006.6000213623	0.123077294254725

5. Total Pizza Sold by Pizza category: Creating a funnel chart that presents the total number of pizzas sold for each pizza category. This chart will allow us to compare the sales performance of different pizza category.

Query:

```
Select pizza_category ,  SUM(quantity) AS Total_Pizza_Sold from
pizza_sales GROUP BY pizza_category
```

Output:



	pizza_category	Total_Pizza_Sold
1	Classic	14888
2	Chicken	11050
3	Veggie	11649
4	Supreme	11987

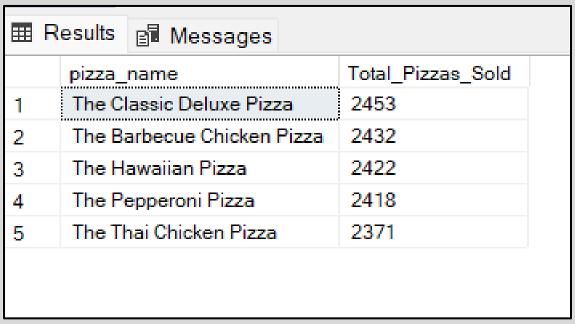
6. Top 5 Best Sellers by Total Pizzas Sold: Creating a bar chart highlighting the top 5 best selling pizzas based on the total number of pizzas sold. This chart will help us identify the most popular pizzas option.

Query:

```
Select TOP 5 pizza_name, sum(quantity) as Total_Pizzas_Sold from
pizza_sales GROUP BY pizza_name ORDER BY sum(quantity) DESC
```

Insights: Classic Deluxe & Chicken Pizzas are the best sellers and most revenue generator

Output:



	pizza_name	Total_Pizzas_Sold
1	The Classic Deluxe Pizza	2453
2	The Barbecue Chicken Pizza	2432
3	The Hawaiian Pizza	2422
4	The Pepperoni Pizza	2418
5	The Thai Chicken Pizza	2371

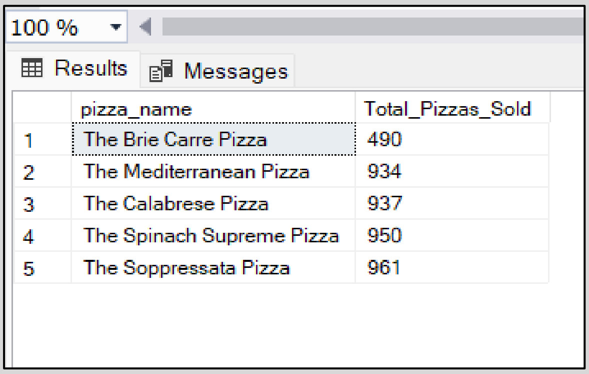
7. Bottom 5 Worst Sellers by Total Pizzas Sold: Creating a bar chart showcasing the bottom 5 worst selling pizzas based on the total number of pizzas sold. This chart will enable us to identify underperforming or less popular pizza options.

Query:

```
Select TOP 5 pizza_name, sum(quantity) as Total_Pizzas_Sold from
pizza_sales GROUP BY pizza_name ORDER BY sum(quantity) ASC
```

Insights: The Brie Carre Pizza is at the bottom in both orders & revenue

Output:



	pizza_name	Total_Pizzas_Sold
1	The Brie Carre Pizza	490
2	The Mediterranean Pizza	934
3	The Calabrese Pizza	937
4	The Spinach Supreme Pizza	950
5	The Soppressata Pizza	961

THANK YOU FOR READING THIS

Related Links
Dashboard and Pivot Tables: Excel.Pizza.xlsx
Dataset: pizza_sales.csv

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