Pizza sales analysis

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HELLO

I am kedarnath jani.In this Pizza Sales Analysis Project is about studying the sales data of a pizza store to find useful insights. In this project, MySQL is used to store and manage the data, while Power BI is used to create clear and interactive dashboards.

The goal of this project is to understand:

- How sales change over days, months, and years.
- Which pizzas sell the most and which sell the least.
- How different pizza categories and sizes perform.
- Key numbers like total revenue, number of orders, and average order value.

By using SQL queries to handle the data and Power BI to show it in a simple way, this project turns raw data into meaningful information. This helps in making better business decisions and understanding customer preferences.

Creating database

```sql
CREATE DATABASE pizza_sale_analysis_DB;
use pizza_sale_analysis_DB;
select * from pizza_sales;

SET SQL_SAFE_UPDATES = 0;
```

My sql queries:-Data cleaning

```sql
## --data cleaning---
UPDATE pizza_sales
SET order_date = STR_TO_DATE(order_date, '%d-%m-%Y');
ALTER TABLE pizza_sales
    MODIFY COLUMN pizza_id INT NOT NULL,
    MODIFY COLUMN order_id INT NOT NULL,
    MODIFY COLUMN pizza_name_id VARCHAR(50) NOT NULL,
    MODIFY COLUMN quantity TINYINT NOT NULL,
    MODIFY COLUMN order_date DATE NOT NULL,
    MODIFY COLUMN order_time TIME NOT NULL,
    MODIFY COLUMN unit_price FLOAT NOT NULL,
    MODIFY COLUMN total_price FLOAT NOT NULL,
    MODIFY COLUMN pizza_size VARCHAR(50) NOT NULL,
    MODIFY COLUMN pizza_category VARCHAR(50) NOT NULL,
    MODIFY COLUMN pizza_ingredients VARCHAR(200) NOT NULL,
    MODIFY COLUMN pizza_name VARCHAR(50) NOT NULL;
```

Total number of pizza sold:-

```sql
##--Exploratory Data Analysis---


##--Total number of Pizzas Sold----
SELECT SUM(quantity) AS Total_pizza_sold FROM pizza_sales;
```

Total_pizza_sold
49574

Total revenue:-

```sql
##--  Total Revenue---
SELECT SUM(total_price) AS Total_Revenue FROM pizza_sales;
```

Total_Revenue
817860.0508384705

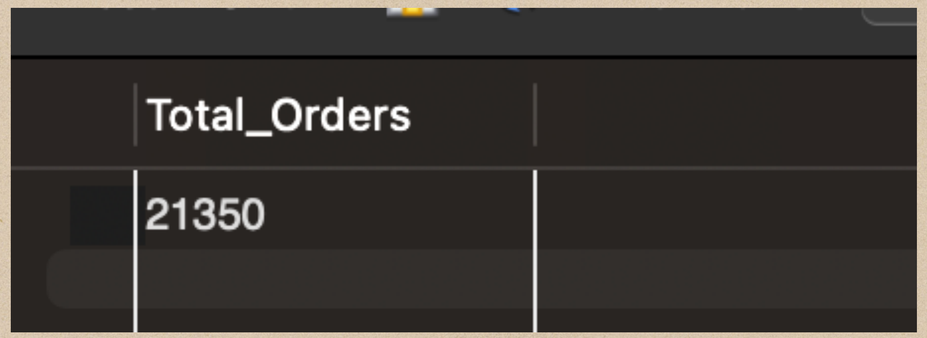
Average order value:-

```sql
##--Average Order Value---
SELECT (SUM(total_price) / COUNT(DISTINCT order_id)) AS Avg_order_Value FROM pizza_sales;
```

Avg_order_Value
38.30726233435459

Total numbers of Orders:-

```sql
##--Total numbers of Orders---
SELECT COUNT(DISTINCT order_id) AS Total_Orders FROM pizza_sales;
```



Total_Orders
21350

Average Pizzas Per Order:-

```sql
##--Average Pizzas Per Order---
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;
```

Avg_Pizzas_per_order
2.32

Daily Trend for Total Orders:-

```sql
##---Daily Trend for Total Orders---
SELECT
    DAYNAME(order_date) AS order_day,
    COUNT(DISTINCT order_id) AS total_orders
FROM pizza_sales
GROUP BY DAYNAME(order_date)
LIMIT 0, 1000;
```

order_day	total_orders
Friday	3538
Monday	2794
Saturday	3158
Sunday	2624
Thursday	3239
Tuesday	2973
Wednesday	3024

Monthly Trend for Orders:-

```sql
##---Monthly Trend for Orders---
SELECT
    MONTHNAME(order_date) AS Month_Name,
    COUNT(DISTINCT order_id) AS Total_Orders
FROM pizza_sales
GROUP BY MONTHNAME(order_date)
LIMIT 0, 1000;
```

Month_Name	Total_Orders
April	1799
August	1841
December	1680
February	1685
January	1845
July	1935
June	1773
March	1840
May	1853
November	1792
October	1646
September	1661

% of Sales by Pizza Category:-

```sql
##--% of Sales by Pizza Category---
SELECT pizza_category, CAST(SUM(total_price) AS DECIMAL(10,2)) as total_revenue,
CAST(SUM(total_price) * 100 / (SELECT SUM(total_price) from pizza_sales) AS DECIMAL(10,2)) AS PCT
FROM pizza_sales
GROUP BY pizza_category;
```

pizza_category	total_revenue	PCT
Classic	220053.10	26.91
Veggie	193690.45	23.68
Supreme	208197.00	25.46
Chicken	195919.50	23.96

% of Sales by Pizza Size

```sql
##--% of Sales by Pizza Size--
SELECT pizza_size, CAST(SUM(total_price) AS DECIMAL(10,2)) as total_revenue,
CAST(SUM(total_price) * 100 / (SELECT SUM(total_price) from pizza_sales) AS DECIMAL(10,2)) AS PCT
FROM pizza_sales
GROUP BY pizza_size
ORDER BY pizza_size;
```

pizza_size	total_revenue	PCT
L	375318.70	45.89
M	249382.25	30.49
S	178076.50	21.77
XL	14076.00	1.72
XXL	1006.60	0.12

Total Pizza's Sold by Pizza Category

```sql
##--Total Pizzas Sold by Pizza Category--
SELECT pizza_category, SUM(quantity) as Total_Quantity_Sold
FROM pizza_sales
WHERE MONTH(order_date) = 2
GROUP BY pizza_category
ORDER BY Total_Quantity_Sold DESC;
```

pizza_category	Total_Quantity_Sold
Classic	1178
Supreme	964
Veggie	944
Chicken	875

Top 5 Pizzas by Revenue

```sql
##--Top 5 Pizzas by Revenue--
SELECT
    pizza_name,
    SUM(total_price) AS Total_Revenue
FROM pizza_sales
GROUP BY pizza_name
ORDER BY Total_Revenue DESC
LIMIT 5;
```

pizza_name	Total_Revenue
The Thai Chicken Pizza	43434.25
The Barbecue Chicken Pizza	42768
The California Chicken Pizza	41409.5
The Classic Deluxe Pizza	38180.5
The Spicy Italian Pizza	34831.25

Bottom 5 Pizzas by Revenue

```sql
##-- Bottom 5 Pizzas by Revenue--
SELECT
    pizza_name,
    SUM(total_price) AS Total_Revenue
FROM pizza_sales
GROUP BY pizza_name
ORDER BY Total_Revenue ASC
LIMIT 5;
```

pizza_name	Total_Revenue
The Brie Carre Pizza	11588.499813079834
The Green Garden Pizza	13955.75
The Spinach Supreme Pizza	15277.75
The Mediterranean Pizza	15360.5
The Spinach Pesto Pizza	15596

Top 5 Pizzas by Quantity

```sql
#--Top 5 Pizzas by Quantity--
SELECT
    pizza_name,
    SUM(quantity) AS Total_Pizza_Sold
FROM pizza_sales
GROUP BY pizza_name
ORDER BY Total_Pizza_Sold DESC
LIMIT 5;
```

pizza_name	Total_Pizza_Sold
The Classic Deluxe Pizza	2453
The Barbecue Chicken Pizza	2432
The Hawaiian Pizza	2422
The Pepperoni Pizza	2418
The Thai Chicken Pizza	2371

Bottom 5 Pizzas by Quantity

```sql
#--Bottom 5 Pizzas by Quantity--
SELECT
    pizza_name,
    SUM(quantity) AS Total_Pizza_Sold
FROM pizza_sales
GROUP BY pizza_name
ORDER BY Total_Pizza_Sold ASC
LIMIT 5;
```

pizza_name	Total_Pizza_Sold
The Brie Carre Pizza	490
The Mediterranean Pizza	934
The Calabrese Pizza	937
The Spinach Supreme Pizza	950
The Soppressata Pizza	961

Top 5 Pizzas by Total Orders

```sql
#--Top 5 Pizzas by Total Orders--
SELECT
    pizza_name,
    COUNT(DISTINCT order_id) AS Total_Orders
FROM pizza_sales
GROUP BY pizza_name
ORDER BY Total_Orders DESC
LIMIT 5;
```

pizza_name	Total_Orders
The Classic Deluxe Pizza	2329
The Hawaiian Pizza	2280
The Pepperoni Pizza	2278
The Barbecue Chicken Pizza	2273
The Thai Chicken Pizza	2225

Bottom 5 Pizzas by Total Orders

```sql
##--Borrom 5 Pizzas by Total Orders--
SELECT
    pizza_name,
    COUNT(DISTINCT order_id) AS Total_Orders
FROM pizza_sales
GROUP BY pizza_name
ORDER BY Total_Orders ASC
LIMIT 5;
```

pizza_name	Total_Orders
The Brie Carre Pizza	480
The Mediterranean Pizza	912
The Calabrese Pizza	918
The Spinach Supreme Pizza	918
The Chicken Pesto Pizza	938

Top 5 order pizas

```sql
##---Top 5 order pizas--
SELECT
    pizza_name,
    COUNT(DISTINCT order_id) AS Total_Orders
FROM pizza_sales
WHERE pizza_category = 'Classic'
GROUP BY pizza_name
ORDER BY Total_Orders ASC
LIMIT 5;
```

pizza_name	Total_Orders
The Pepperoni, Mushroom, and Peppers Pizza	1316
The Greek Pizza	1361
The Italian Capocollo Pizza	1380
The Napolitana Pizza	1421
The Big Meat Pizza	1811

Top 5 orders from bottom

```sql
##--top 5 orders from bottom--
SELECT
    pizza_name,
    COUNT(DISTINCT order_id) AS Total_Orders
FROM pizza_sales
WHERE pizza_category = 'Classic'
GROUP BY pizza_name
ORDER BY Total_Orders DESC
LIMIT 5;
```

pizza_name	Total_Orders
The Classic Deluxe Pizza	2329
The Hawaiian Pizza	2280
The Pepperoni Pizza	2278
The Big Meat Pizza	1811
The Napolitana Pizza	1421

PIZZA SALES REPORT

JAN/15-DEC/15

pizza_category: All

01-01-2015 — 31-12-2015

HOME

Best/Worst sellers

BUSIEST DAYS & TIMES

DAYS

Orders are highest on weekends,

Friday/Saturday Evenings.

Monthly

There are maximum orders from month of

july and january

SALES PERFORMANCE

CATEGORY

Classic category contributes to maximum

sales & total orders.

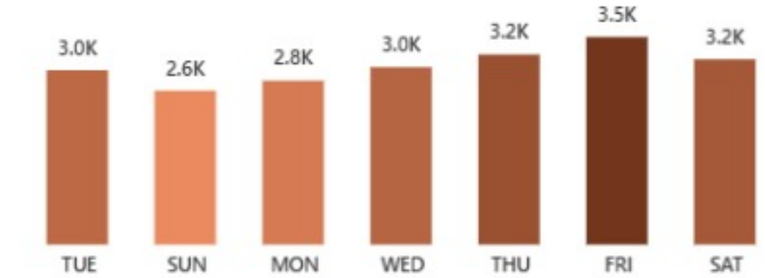
size

Large size pizza contributes to maximum

sales.

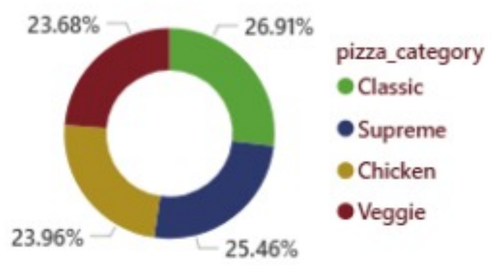
817.86K	38.31	49574	21350	2.32
Total Revenue	Avg order value	Total pizz sold	Total Orders	Avg pizzas per order

Daily trend for Total orders

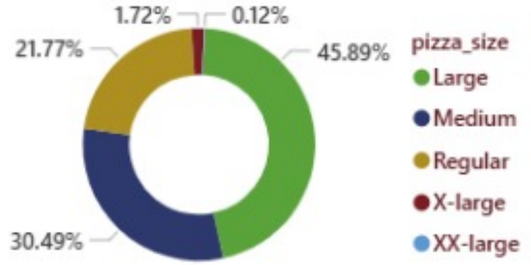


Monthly Trend for Total Orders

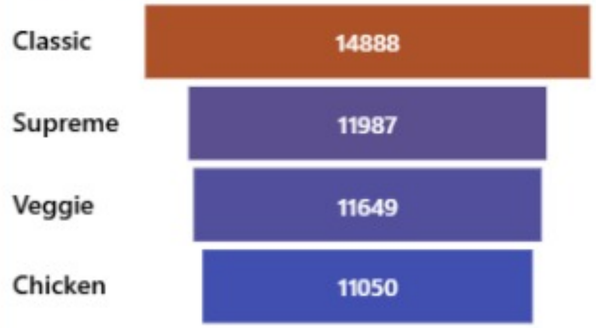
% of Sales by Pizza Category



% of Sales by Pizza Size



Total pizzas sold by pizza category



PIZZA SALES REPORT

JAN/15-DEC/15

pizza_category: All

01-01-2015 — 31-12-2015

HOME

Best/Worst sellers

BEST SELLERS

REVENUE

The Thai Chicken Pizza Contributes to maximum Revenue.

QUANTITY

The Classic Deluxe Pizza Contributes to maximum Total Quantities.

WORST SELLERS

REVENUE

The Brie Carre minimum Revenue

QUANTITY

The Brie Carre Pizza Contributes to minimum Total Quantities.

817.86K	38.31	49574	21350	2.32
Total Revenue	Avg order value	Total pizz sold	Total Orders	Avg pizzas per order

Total 5 pizza by revenue

Total Revenue 34.83K 43.43K

Total 5 pizza by Quantity

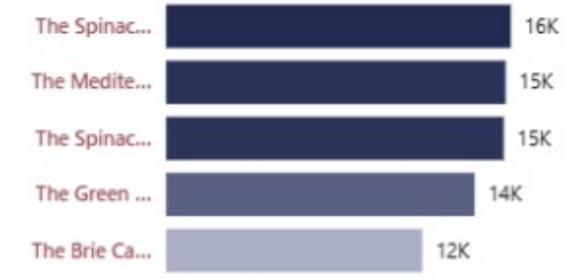
Total Revenue 30.16K 43.43K

Top 5 pizza by total Orders

Total Orders 2.23K 2.33K

Bottom 5 pizza by revenue

Total Revenue 11.59K 15.60K



Bottom 5 pizza by Quantity

Total Revenue 11.59K 16.43K

Bottom 5 pizza by total Orders

Total Orders 480 938

Problem Statement:-

We need to analyze key indicator for our pizza sales data to gain insights into our business performance. Specifically we want to calculate the following metrics:

1. **Total Revenue:** The sum of the total price of pizza with quantity.
2. **Total Orders:** The total number of order placed.
3. **Pizza Sold:** The sum of the quantities of pizzas sold.
4. **Average Pizza Per Order:** The average number of pizza sold per order, Calculate by dividing the total number of pizza sold by total order placed.
5. **Average Order Value:** The average amount per order, Calculate the total revenue by total number of orders.

Problem Statement:-

Charts Requirement

We would like to visualize various aspect of our pizzas sales data to gain insights and understand key trends. We have identified the following requirements to create charts:-

- **Total Orders By Weekday:** Create a column charts that show daily trends of total orders over weekdays. This chart will help us to identify any pattern or fluctuation in order volume on a daily basis.
- **Total Orders By Month:** Create an area chart that illustrate total orders by month wise. This charts allows to knowing that which month has highest sale and which month has orders value less according to the whole year.
- **Pizza Sold By Category:** Create a funnel chart to show pizza sold according to category. By this chart we can compare the sales performance of different pizza categories.

- **Total Revenue By Category:** Create a donut chart that shows distribution of sales across different pizza categories. this chart provide insights into popularity of different pizza categories and their contribution to overall sales.
- **Total Revenue By Size:** Create a donut chart that represent the percentage of sales attributes to different pizza size. This will understand customer performance for pizza sizes and its impact on sales.
- **Top 5 best seller by Revenue, Quantity and Total Orders:** Create a bar chart highlighting the top 5 best selling pizza based on the Revenue, Total Quantity, and Total Orders. This will help us to identify the most popular pizzas by option.
- **Bottom 5 worst seller by Revenue, Quantity and Total Orders:** Create a bar chart highlighting the bottom 5 worst selling pizzas based on Revenue, Total Quantity and total Orders. This will help us to identify underperforming or less popular pizza options.


Thank you