PROJECT REPORT

Prepared by
ILIYAS AHMED KHALEEL AHMED
kiliyasahmed@gmail.com

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www.github.com/illu67

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Dear Sir/Madam,

Topic: Leveraging MySQL and Power BI for Data-Driven Insights in Shawarma Business

I recently dove into the world of data analysis and decided to embark on a project focused on an Ahmed shawarma shop's performance over the past year. To make sense of the shop's data, I created a comprehensive dashboard using Power BI, connecting it to my MySQL server, where all the information was stored.

The dashboard covers key aspects of the shawarma shop's business, shedding light on its financial health and customer trends. I calculated the total revenue, average order value, and total shawarmas sold. To understand customer behaviour, I analyzed total orders, and average shawarmas per order, and revealed daily and monthly trends in order volumes.

Diving deeper, I examined the sales distribution across different shawarma categories. This included identifying the percentage of total sales for each category, the total shawarmas sold by category, and the percentage of sales attributed to each category. For a closer look at product performance, I highlighted the top and bottom 5 shawarmas based on income, quantity sold, and total orders.

The data, initially sourced from SQL, underwent a thorough cleaning process in Power BI to ensure accuracy in the visualizations. Through this project, I not only honed my data analysis skills but also gained valuable insights into the shawarma shop's business dynamics. The visualized data not only tells a compelling story about the shop's past year but also equips stakeholders with actionable information for future decision-making. Overall, this project has been a hands-on and practical learning experience in translating raw data into meaningful insights using the powerful tools of SQL and Power BI

Regards,

ILIYAS AHMED KHALEEL AHMED
Data Analyst

github.com/illu67 India kiliyasahmed@gmail.com

Shop’s report Documentation

KPI’s Requrimets

- Total Revenue.
- Average Order value.
- Total Shawarma sold.
- Total Orders.
- Average Sharwama per Order.

Charts Requrimets

- Daily Trends for Total Orders.
- Monthly Trends for Total Orders.
- Percentage of Sales By shawarma Category.
- Percentage of Sales By Shawarma Size.
- Total Shawarma Sold by Shawarma Category.
- Top 5 Best Sellers By Revenue, Total Quantity and Total Orders.
- Bottom 5 Worst Sellers By Revenue, Total Quantity and Total Orders.

Solutions for KPI’s requirements

analyzed the key indicators for our pizza sales data to gain insights into our business performance. Specifically, we want to calculate the following metrics

- **Total Revenue:**
  The Sum of the total price of all shawarma orders.
- **Average Order value:**
  The Average Amount spent per order is calculated by Dividing the total revenue by the total number of orders.
- **Total Shawarma sold:**
  The Sum of the Quantities of all shawarma sold.
- **Total Orders:**
  Total Number of orders placed.
- **Average Sharwama per Order:**
  The Average Number of shawarma sold per order is calculated by Dividing the total number of shawarma sold by the total number of orders.

Solutions for Charts requirements

visualized the aspects of our shawarma sales data to gain insights and understand key trends. We have identified the following requirements for creating charts,

- **Daily Trends for Total Orders:**

Created a bar chart that displays the daily trend of total orders over a specific period. This chart will help us identify any patterns or fluctuations in order volumes daily.

- **Monthly Trends for Total Orders:**

Created a line chart that illustrates the hourly trend of total orders throughout the day. This chart will allow us to identify peak hours or periods of high-order activity.

- **Percentage of Sales By shawarma Category:**

Created a pie chart that shows the distribution of sales across different Shawarma categories This chart will provide insights into the popularity of various Shawarma categories and their contribution to overall sales.

- **Percentage of Sales By Shawarma Size:**

Generate a pie chart that represents the percentage of sales attributed to different Shawarma sizes. This chart will help us understand customer preferences for Shawarma sizes and their impact on sales.

- **Total Shawarma Sold by Shawarma Category:**

Created a funnel chart that presents the total number of shawarma sold for each shawarma category. This chart will allow us to compare the sales performance of different shawarma categories.

- **Top 5 Best Sellers By Revenue, Total Quantity and Total Orders:**

Created a bar chart highlighting the top 5 best-selling pizzas based on the Revenue, Total Quantity, and Total Orders. This chart will help us identify the most popular pizza options.

- **Least 5 Worst Sellers By Revenue, Total Quantity and Total Orders:**

Create a bar chart showcasing the bottom 5 worst-selling pizzas based on the Revenue, Total Quantity Total Orders. This chart will enable us to identify underperforming or less popular pizza options.

Shawarma sales SQL queries

Initially, I acquired raw data and established a database. Subsequently, I imported the data into SQL, executing queries for each Key Performance Indicator (KPI) and chart requirement specified. The goal was to obtain the output of every individual statement related to the mentioned KPIs and charts using SQL statements.

- Total Revenue:

```
SELECT SUM(total_price) AS 'Total Revenue'From shawarma_sale;
```

.Reviewing the total revenue output can assist in identifying any errors that may have occurred during the data visualization process.

- Average Order value:

```
SELECT SUM(total_price) / COUNT(distinct order_id) AS 'Average value' From shawarma_sale;
```

.Reviewing the Avg. order value output can assist in identifying any errors that may have occurred during the data visualization process.

- Total Shawarma sold:

```
SELECT SUM(quantity) AS 'Quantity Sold' FROM shawarma_sale;
```

.Reviewing the Total shawarma sold output can assist in identifying any errors that may have occurred during the data visualization process.

- Total Orders:

SELECT COUNT(DISTINCT order_id) AS 'Total Orders' FROM shawarma_sale;

📝.Reviewing the output of the Total order can assist in identifying any errors that may have occurred during the data visualization process.

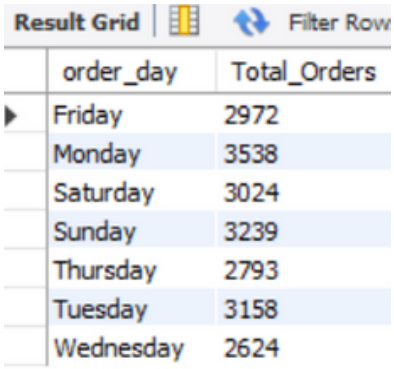
- Average Sharwama per Order:

SELECT SUM(quantity) / COUNT(distinct order_id) AS 'Average value'From shawarma_sale;

📝.Reviewing the Avg. shawarma per order output can assist in identifying any errors that may have occurred during the data visualization process.

- Daily Trends for Total Orders:

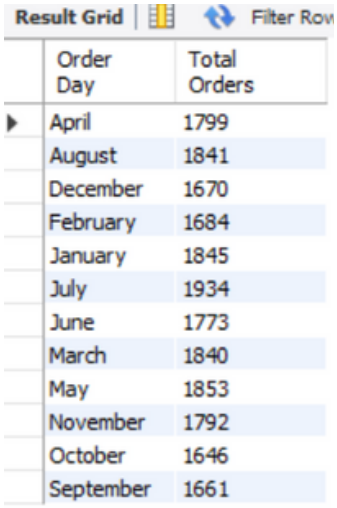
SELECT Dayname(order_date) AS ‘order day’,
COUNT(distinct order_id) AS ‘Total Orders’
FROM shawarma_sale GROUP BY Dayname(order_date);



📝.Reviewing the Daily Trends for total orders output can assist in identifying any errors that may have occurred during the data visualization process.

- Monthly Trends for Total Orders:

```
SELECT MONTHNAME(order_date) AS 'Order Day',
COUNT(distinct order_id) AS 'Total Orders'
FROM shawarma_sale GROUP BY MONTHNAME(order_date) ORDER
BY 'Order Day'DESC;
```

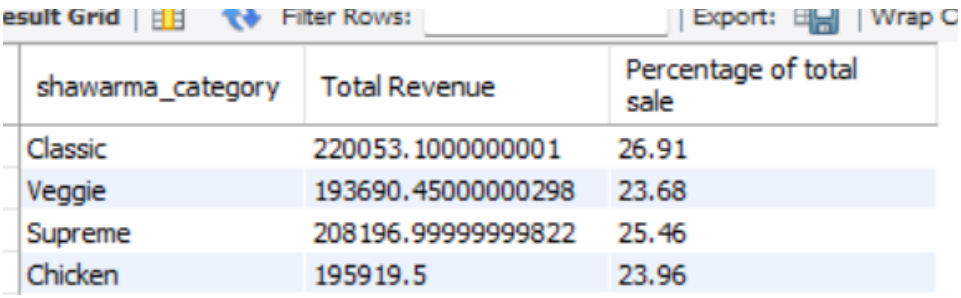


Order Day	Total Orders
April	1799
August	1841
December	1670
February	1684
January	1845
July	1934
June	1773
March	1840
May	1853
November	1792
October	1646
September	1661

📝.Reviewing the Monthly Trends for total orders output can assist in identifying any errors that may have occurred during the data visualization process.

- Percentage of Sales By shawarma Category:

```
SELECT shawarma_category,sum(total_price) AS 'Total Revenue',
ROUND(sum(total_price) * 100 / (SELECT SUM(total_price) from
shawarma_sale),2)
AS 'Percentage of total sale' FROM shawarma_sale
GROUP BY shawarma_category;
```

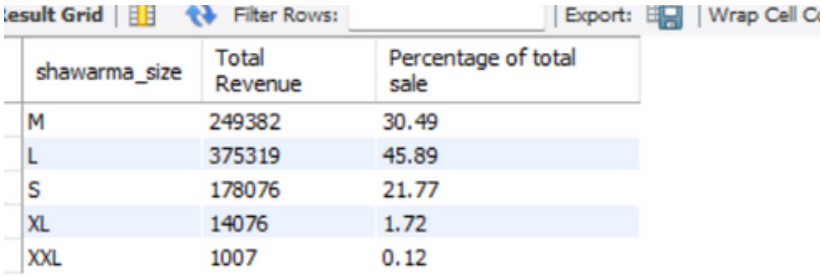


shawarma_category	Total Revenue	Percentage of total sale
Classic	220053.1000000001	26.91
Veggie	193690.45000000298	23.68
Supreme	208196.99999999822	25.46
Chicken	195919.5	23.96

📝.Reviewing the percentage of Sales By shawarma category output can assist in identifying any errors that may have occurred during the data visualization process.

- Percentage of Sales By shawarma Size:

```
SELECT shawarma_size,ROUND(SUM(total_price)) AS
'Total Revenue',
 ROUND(SUM(total_price) * 100 / NULLIF((SELECT SUM(total_price)
FROM shawarma_sale),0), 2) AS 'Percentage of total sale'
FROM shawarma_sale GROUP BY shawarma_size;
```

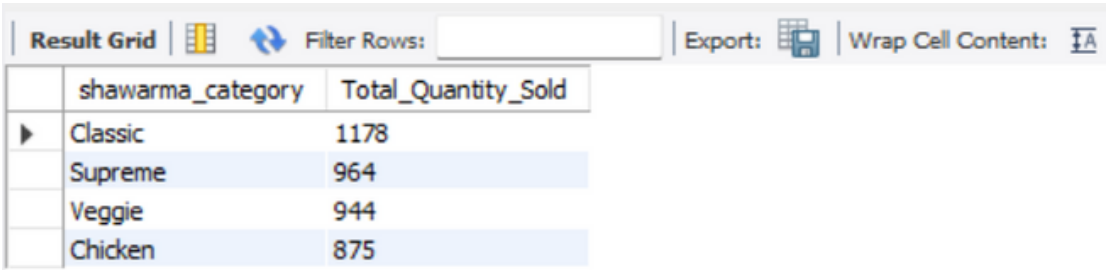


shawarma_size	Total Revenue	Percentage of total sale
M	249382	30.49
L	375319	45.89
S	178076	21.77
XL	14076	1.72
XXL	1007	0.12

📝.Reviewing the percentage of Sales By shawarma size output can assist in identifying any errors that may have occurred during the data visualization process.

- Total Shawarma Sold by Shawarma Category:

```
SELECT shawarma_category, SUM(quantity) as Total_Quantity_Sold
FROM shawarma_sale
WHERE MONTH(order_date) = 2
GROUP BY shawarma_category
ORDER BY Total_Quantity_Sold DESC
```



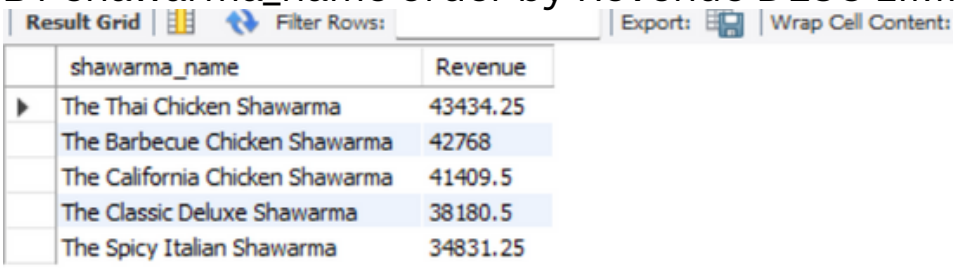
Result Grid | Filter Rows: | Export: | Wrap Cell Content:

shawarma_category	Total_Quantity_Sold
Classic	1178
Supreme	964
Veggie	944
Chicken	875

📝.Reviewing the Total Shawarma Sold by Shawarma Category output can assist in identifying any errors that may have occurred during the data visualization process.

- Top 5 Best Sellers By Revenue, Total Quantity and Total Orders:

```
SELECT shawarma_name, sum(total_price) AS 'Revenue' FROM
shawarma_sale
GROUP BY shawarma_name order by Revenue DESC LIMIT 5;
```



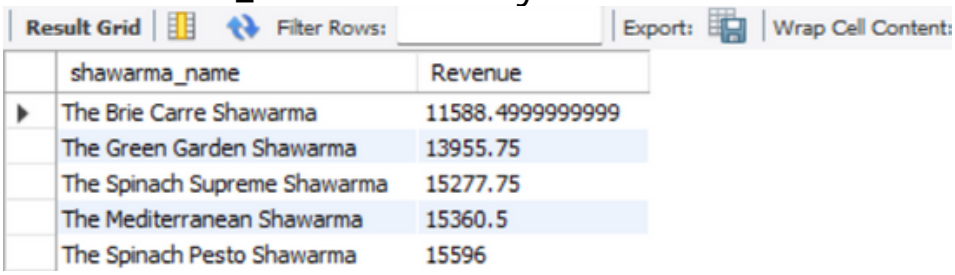
Result Grid | Filter Rows: | Export: | Wrap Cell Content:

shawarma_name	Revenue
The Thai Chicken Shawarma	43434.25
The Barbecue Chicken Shawarma	42768
The California Chicken Shawarma	41409.5
The Classic Deluxe Shawarma	38180.5
The Spicy Italian Shawarma	34831.25

📝.Reviewing the Top 5 Best Sellers By Revenue, Total Quantity and Total Order output can assist in identifying any errors that may have occurred during the data visualization process.

- Lowest 5 worst Sellers By Revenue, Total Quantity and Total Orders:

```
SELECT shawarma_name, sum(total_price) AS 'Revenue' FROM
shawarma_sale
GROUP BY shawarma_name order by Revenue ASC LIMIT 5;
```



Result Grid | Filter Rows: | Export: | Wrap Cell Content:

shawarma_name	Revenue
The Brie Carre Shawarma	11588.4999999999
The Green Garden Shawarma	13955.75
The Spinach Supreme Shawarma	15277.75
The Mediterranean Shawarma	15360.5
The Spinach Pesto Shawarma	15596

📝.Reviewing the Lowest 5 worst Sellers By Revenue, Total Quantity and Total Order output can assist in identifying any errors that may have occurred during the data visualization process.

NOTE:

If you want to apply the shawarma_category or shawarma_size filters to the above queries you can use the WHERE clause,
Follow some of the below examples

```
SELECT shawarma_name, COUNT(DISTINCT order_id) AS Total_Orders
FROM shawarma_sales WHERE shawarma_category = 'Classic'
GROUP BY shawarma_name ORDER BY Total_Orders ASC LIMIT 5;
```

SQL to Power BI

STEP 1:

- Go to MySQL Connector/ODBC and download the MySQL Connector/ODBC driver.
- Install the downloaded driver on your computer

STEP 2:

- After installing the MySQL Connector/ODBC driver, configure a System DSN (Data Source Name) using the Windows ODBC Data Source Administrator.
- Open the Windows ODBC Data Source Administrator (found in the Control Panel or by searching for "ODBC" in the Start menu).
- Go to the "System DSN" tab and click "Add."
- Choose the MySQL ODBC driver and configure the connection details (hostname, port, database, username, password, etc.).
- Test the connection to ensure it works correctly.

STEP 3:

- Launch Power BI Desktop.

STEP 4:

- In Power BI Desktop, go to the "Home" tab.
- Click "Get Data" and select "ODBC" from the list.

STEP 5:

- In the "ODBC DSN" window, choose the DSN you created.
- Enter MySQL database credentials.
- Click "Connect.

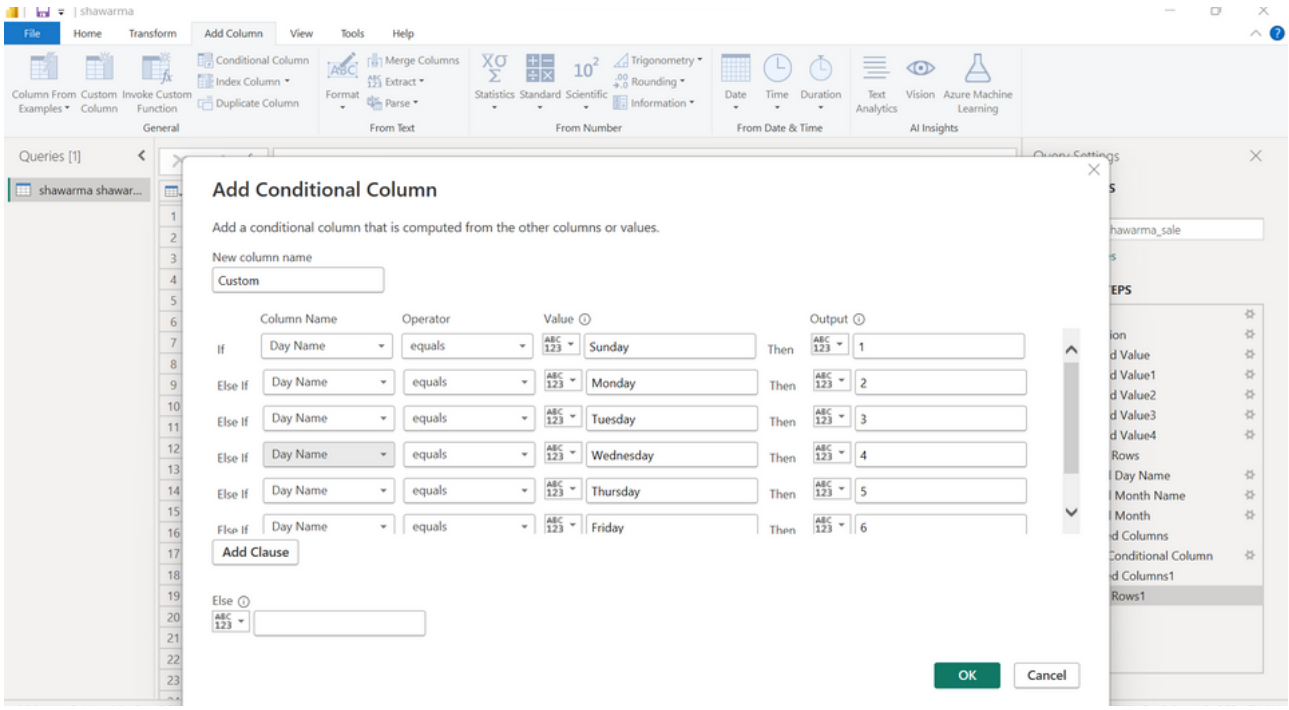
STEP 6:

- After connecting, use the Navigator window to select tables/views.
- Click "Load" to import data into Power BI.

Data Visualization On Power BI

DATA CLEANING:

In Power BI, after importing raw data, navigate to the 'Transform Data' section. Once the new window opens, select 'Add Column' and then choose 'Conditional Column.' In this section, input statements based on your data cleaning requirements. I made specific alterations to address my needs, tailoring the conditions to enhance data integrity. After finalizing these steps, close the window and apply the changes. The duration of this process may vary depending on the size and complexity of your dataset, taking a few seconds to complete. This approach streamlines data cleaning within Power BI, allowing for effective manipulation and enhancement of the imported information, ensuring that it aligns with your analytical objectives.



Cleaning data with conditional statements

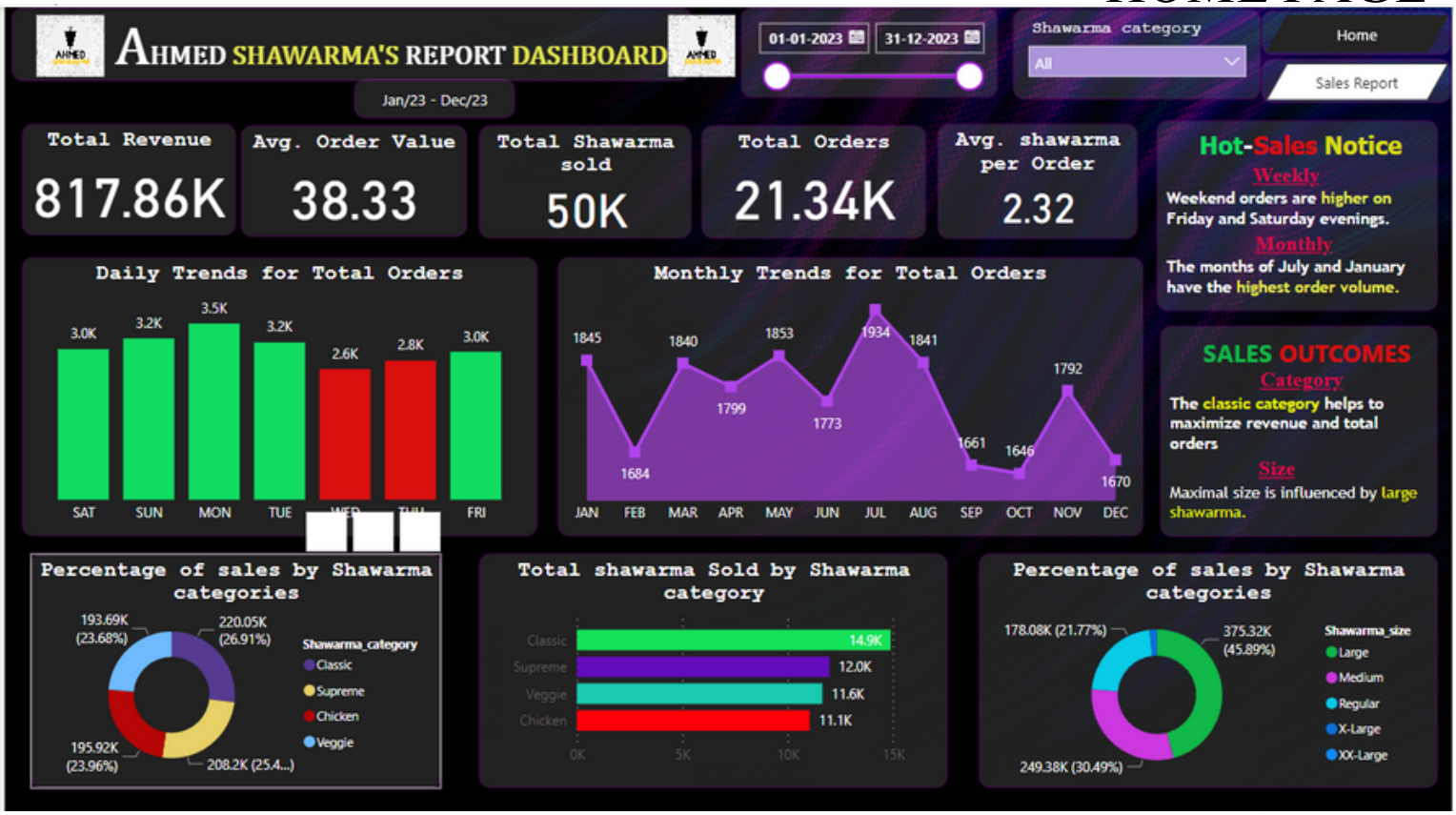
Design, Customize and interactive dashboard:

When you're designing data visualizations, it's crucial to pay close attention to design principles. Using colours, labels, and formatting strategically is key to making your visuals clear. The goal isn't just about making things look good; it's also about making it easy for people to understand the information.

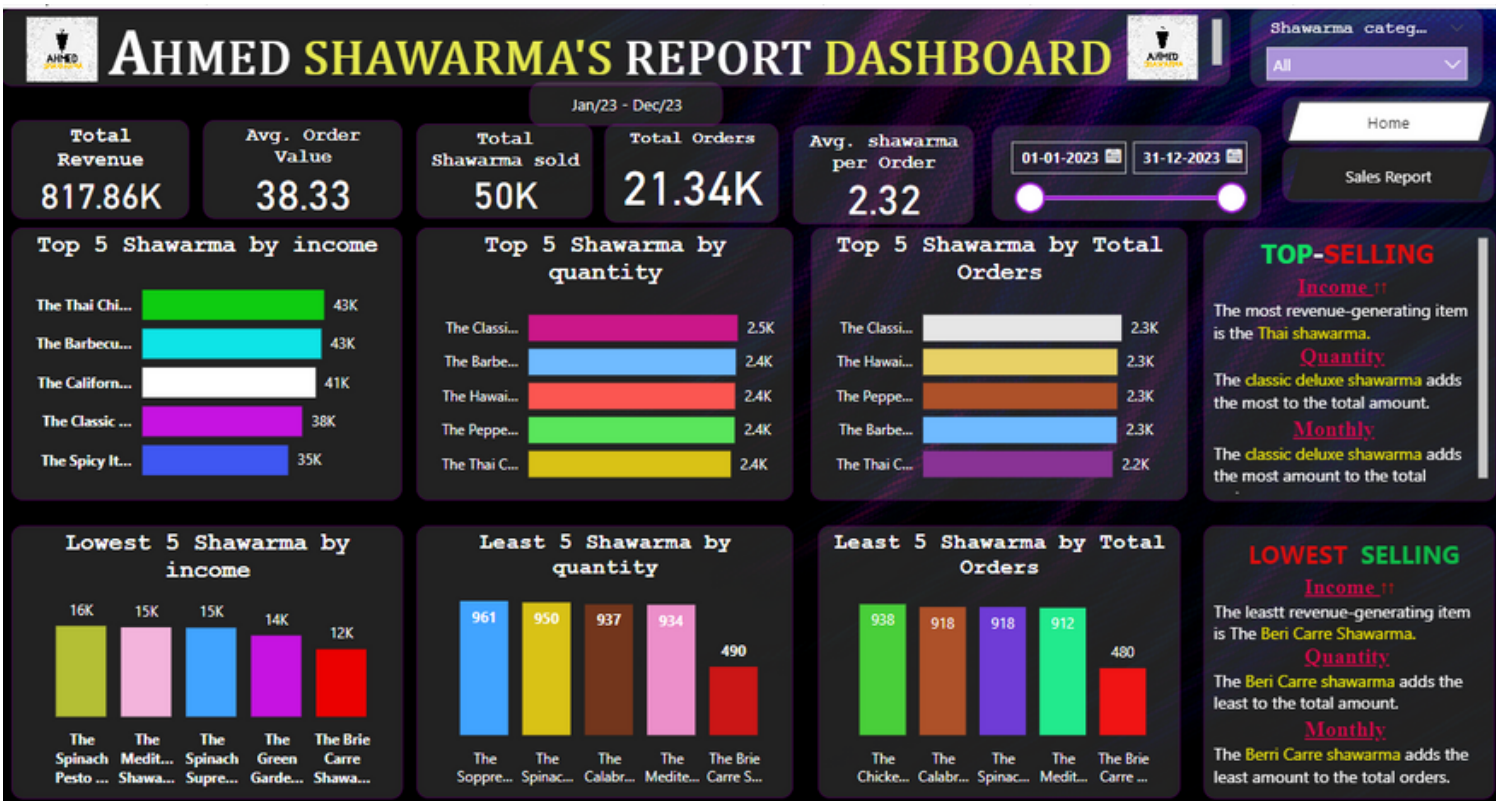
Additionally, if it makes sense for your data, consider creating interactive dashboards. These dashboards allow users to explore the data dynamically. This not only keeps people engaged but also lets them dive into the details of the information. Interactive dashboards give a fuller and more detailed understanding of the data, letting users interact with and analyze various aspects. This interactive exploration improves the overall experience of working with the data, turning it into a collaborative and insightful process. It helps users discover patterns, trends, and connections, leading to better-informed decision-making. So, combining careful design with interactive features ensures that your data visualizations not only convey information effectively but also capture interest and empower those interacting with the visualized data.

COMPLETE REPORT AVAILABLE WITH DATA VISUALIZATION

HOME PAGE



SALES BASIS PAGE



System & Software Requirments

PROCESSOR: RYZEN 5 5000 series

RAM : 8 GB DDR 4

Windows : 11

Tools : MySQL workbench
Microsoft Power BI

MS Office : Microsft Word
Microsoft Excel