CAPSTONE PROJECT

SALES DASHBOARD

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OUTLINE

- **Problem Statement**

- **Proposed System/Solution**

- **System Development Approach**

- **Result**

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- **Future Scope**

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PROBLEM STATEMENT

This project provides a comprehensive guide for creating a sales dashboard to visualize the annual profits of product categories such as clothing, furniture, and electronics. The procedure includes steps for data collection, preparation, and integration, followed by dashboard design using business intelligence tools like Power BI. Key aspects covered include data cleaning, visualization creation, customization, and testing. This project emphasizes the importance of regular updates and maintenance to ensure the dashboard's accuracy and relevance. By following these guidelines, businesses can develop an effective tool for monitoring sales performance and supporting strategic decision-making.

PROPOSED SOLUTION

CHAPTER 1:

- **Introduction to Data Analytics**

- Data analytics is the process of examining data sets to draw conclusions about the information they contain. This process involves the application of statistical analysis, algorithms, and other data processing techniques to uncover patterns, correlations, trends, and insights that can inform decision-making. Data analytics is a critical component of modern business strategy, enabling organizations to make data-driven decisions that enhance operational efficiency, drive innovation, and improve customer experiences.

- **Tools Used in Data Analytics**

- Several tools are commonly used in data analytics to facilitate the analysis, visualization, and interpretation of data. These tools range from simple spreadsheet applications to advanced software platforms and programming languages. Here are some of the key tools:

- **Microsoft Excel:** Widely used for its accessibility and ease of use, Excel offers basic data analysis functions, including pivot tables, charts, and simple statistical functions.

PROPOSED SOLUTION

- **SQL (Structured Query Language):** SQL is essential for querying and managing data in relational databases. It allows users to extract, manipulate, and analyze large datasets efficiently.

- **Tableau:** A leading data visualization tool that helps in creating interactive and shareable dashboards. Tableau allows users to connect to various data sources, perform analytics, and visualize data in a user-friendly interface.

- **Power BI:** Developed by Microsoft, Power BI is a business analytics tool that provides interactive visualizations and business intelligence capabilities with an interface simple enough for end users to create their own reports and dashboards.

- **SAS (Statistical Analysis System):** A software suite developed by SAS Institute for advanced analytics, multivariate analysis, business intelligence, and data management. SAS is known for its robust data handling capabilities and extensive statistical procedures.

PROPOSED SOLUTION

CHAPTER 2:

- **Introduction to Power BI**

- Power BI is a powerful business analytic tool developed by Microsoft that enables users to visualize data and share insights across their organization. It connects to a wide range of data sources, simplifies data preparation, and drives ad-hoc analysis. With interactive dashboards and rich visualizations, Power BI provides a comprehensive view of key business metrics in real-time.

- **Power BI Tools for Building a Sales Analysis Dashboard :** To build a comprehensive sales analysis dashboard for a company dealing in clothing, electronics, and furniture, we will leverage several key features and tools within Power BI

- **1. Data Connection and Integration**

PROPOSED SOLUTION

- Power BI allows users to connect to various data sources, such as Excel spreadsheets, SQL databases, cloud services (like Azure), and online services (such as Google Analytics or Salesforce). For our sales dashboard, we would import sales data, client information, and budget details from these sources to create a unified data set.

- **2. Data Transformation with Power Query**

- Merging and Appending Data: Combine multiple tables and files into a single data model.

- Filtering and Cleaning Data: Remove unnecessary columns, filter rows, and handle missing values.

- Data Shaping: Apply transformations such as pivoting and unpivoting columns to reshape data as needed.

- **3. Data Modeling**

- Defining Relationships: Establish relationships between tables (e.g., linking sales data with product information and client demographics).

PROPOSED SOLUTION

- Calculated Columns and Measures: Create calculated columns and measures using DAX (Data Analysis Expressions) to derive new insights, such as total sales, average sales per client, and year-over-year growth.

- **4. Visualization Tools**

- Charts and Graphs: Utilize bar charts, line charts, pie charts, and area charts to visualize sales trends over time, distribution across products, and sales performance by region or salesperson.

- Tables and Matrices: Display detailed sales figures and comparisons in an organized tabular format.

- Slicers and Filters: Implement slicers and filters to allow users to dynamically interact with the dashboard by filtering data based on categories such as product type (clothing, electronics, furniture), sales region, or time period.

- Maps: Use geographic data to create map visualizations that show sales distribution across different locations.

5. Interactive Dashboards

PROPOSED SOLUTION

- Drill-Down and Drill-Through: Enable drill-down and drill-through features to allow users to explore data at various levels of detail, from high-level summaries to detailed transactions.

- Real-Time Data: Set up real-time data streaming to update dashboards with live data feeds, ensuring that the sales team has the latest information at their fingertips.

- Custom Visuals: Incorporate custom visuals from the Power BI marketplace to enhance the dashboard's functionality and appearance.

- **6. Performance Comparison**

- To evaluate sales performance against budgeted targets:

- KPI Visuals: Use Key Performance Indicator (KPI) visuals to compare actual sales with budgeted targets, displaying variances and performance trends.

- Conditional Formatting: Apply conditional formatting to highlight key insights, such as under performing products or regions.

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PROPOSED SOLUTION

CHAPTER 3: "PROCEDURE"

- Open Power BI Desktop.

- Import Data:

- Click on 'Get Data' and select your data source (Excel, SQL Server, etc.).

- Clean and Transform Data:

- Use Power Query Editor to clean and transform the data.

- Create Visualizations:

- Use the 'Visualizations' pane to add charts:

- Bar Chart: Add a bar chart for profit by product category

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- Line Chart: Add a line chart for monthly profit trends.

  - Add Filters:

- Use visuals to add filters for product category and date.

  - Format the Dashboard:

- Customize colors, fonts, and layout for clarity.

  - Publish:

- Publish the dashboard to Power BI Service

SYSTEM APPROACH

Order ID	Amount	Profit	Quantity	Category	Sub-Categ	PaymentMode
B-25681	1096	658	7	Electronics	Electronic	COD
B-26055	5729	64	14	Furniture	Chairs	EMI
B-25955	2927	146	8	Furniture	Bookcases	EMI
B-26093	2847	712	8	Electronics	Printers	Credit Card
B-25602	2617	1151	4	Electronics	Phones	Credit Card
B-25881	2244	247	4	Clothing	Trousers	Credit Card
B-25696	275	-275	4	Clothing	Saree	COD
B-25687	387	-213	5	Clothing	Saree	UPI
B-25643	50	-44	2	Clothing	Hankerchie	UPI
B-25851	135	-54	5	Clothing	Kurti	COD
B-25703	231	-190	9	Clothing	Hankerchie	COD
B-25887	2125	-234	6	Electronics	Printers	EMI
B-25923	3873	-891	6	Electronics	Phones	Credit Card
B-25756	729	-492	5	Furniture	Bookcases	UPI
B-25761	2188	1050	5	Furniture	Bookcases	Credit Card
B-25655	6	-3	1	Clothing	Hankerchie	UPI
B-25786	1854	433	5	Furniture	Bookcases	Credit Card
B-26095	6	1	1	Clothing	Kurti	UPI
B-25853	2093	721	5	Furniture	Chairs	Credit Card
B-25735	7	-1	2	Clothing	Skirt	UPI
B-25910	1622	-624	5	Furniture	Tables	Credit Card
B-25950	1622	95	5	Electronics	Printers	Credit Card
B-25744	373	254	6	Electronics	Printers	UPI
B-25845	82	-33	4	Clothing	Kurti	COD
B-26001	8	2	2	Clothing	Skirt	UPI

SYSTEM APPROACH

Order ID	Amount	Profit	Quantity	Category	Sub-Category	PaymentMode
B-26061	642	180	5	Clothing	Saree	COD
B-25890	465	207	9	Clothing	Saree	COD
B-25855	1027	441	8	Clothing	Saree	COD
B-25656	1389	680	7	Clothing	Saree	COD
B-25703	231	-190	9	Clothing	Hankerchief	COD
B-25714	11	-5	2	Clothing	Hankerchief	COD
B-25667	11	-2	4	Clothing	Hankerchief	COD
B-25735	12	-2	3	Clothing	Hankerchief	COD
B-25693	76	-72	9	Clothing	Hankerchief	COD
B-25656	24	-1	2	Clothing	Hankerchief	COD
B-25850	93	-1	2	Clothing	Hankerchief	COD
B-25821	17	0	1	Clothing	Hankerchief	COD
B-25603	12	1	2	Clothing	Hankerchief	COD
B-25850	24	1	4	Clothing	Hankerchief	COD
B-25852	24	1	2	Clothing	Hankerchief	COD
B-25996	31	2	2	Clothing	Hankerchief	COD
B-25656	6	3	1	Clothing	Hankerchief	COD
B-25940	13	3	2	Clothing	Hankerchief	COD
B-25881	37	3	3	Clothing	Hankerchief	COD
B-26016	202	4	4	Clothing	Hankerchief	COD
B-26067	53	2	4	Clothing	Hankerchief	COD
B-25973	398	111	8	Clothing	Hankerchief	COD
B-26064	61	3	4	Clothing	Hankerchief	COD
B-26089	27	4	1	Clothing	Hankerchief	COD
B-25751	32	7	3	Clothing	Hankerchief	COD
B-25608	257	23	5	Clothing	Hankerchief	COD
B-26026	255	76	9	Clothing	Hankerchief	COD

AFTER
CLEANING
THE DATA

SYSTEM APPROACH

| Order ID	Amount	Profit	Quantity	Category	Sub-Category	PaymentMode
B-26003	128	47	4	Clothing	Hankerchief	COD
B-26073	122	11	4	Clothing	Hankerchief	COD
B-25855	90	17	3	Clothing	Hankerchief	COD
B-25896	103	36	2	Clothing	Hankerchief	COD
B-25711	100	-58	4	Clothing	Hankerchief	COD
B-25838	81	19	7	Clothing	Hankerchief	COD
B-25854	76	19	3	Clothing	Hankerchief	COD
B-25838	70	26	5	Clothing	Hankerchief	COD
B-25751	65	-4	6	Clothing	Hankerchief	COD
B-25861	62	6	5	Clothing	Hankerchief	COD
B-25798	61	-50	4	Clothing	Hankerchief	COD
B-25781	60	-49	8	Clothing	Hankerchief	COD
B-25956	59	10	2	Clothing	Hankerchief	COD
B-25930	58	17	2	Clothing	Hankerchief	COD
B-25743	56	0	4	Clothing	Hankerchief	COD
B-25935	150	32	3	Clothing	Hankerchief	COD
B-25947	290	35	6	Clothing	Hankerchief	COD
B-25638	154	39	3	Clothing	Hankerchief	COD
B-26099	207	37	4	Clothing	Hankerchief	COD
B-26093	49	5	4	Clothing	Hankerchief	COD
B-25997	48	15	1	Clothing	Hankerchief	COD
B-26050	284	44	6	Clothing	Hankerchief	COD
B-26087	46	13	3	Clothing	Hankerchief	COD
B-25852	45	12	4	Clothing	Hankerchief	COD
B-25953	44	2	3	Clothing	Hankerchief	COD
B-25952	44	14	3	Clothing	Hankerchief	COD
B-25999	222	74	5	Clothing	Hankerchief	COD
B-25843	255	74	5	Clothing	Hankerchief	COD

SYSTEM APPROACH

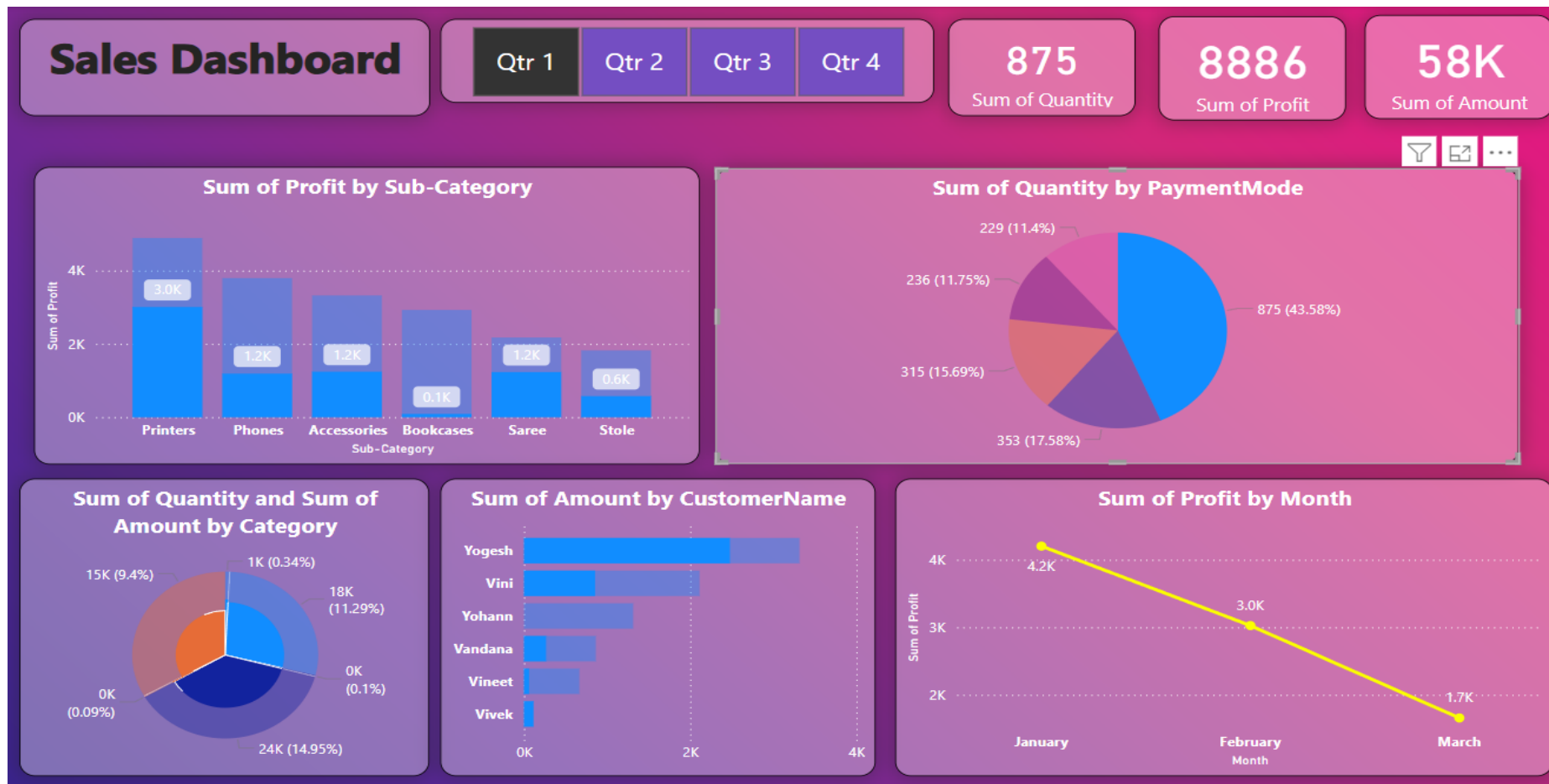Model view:
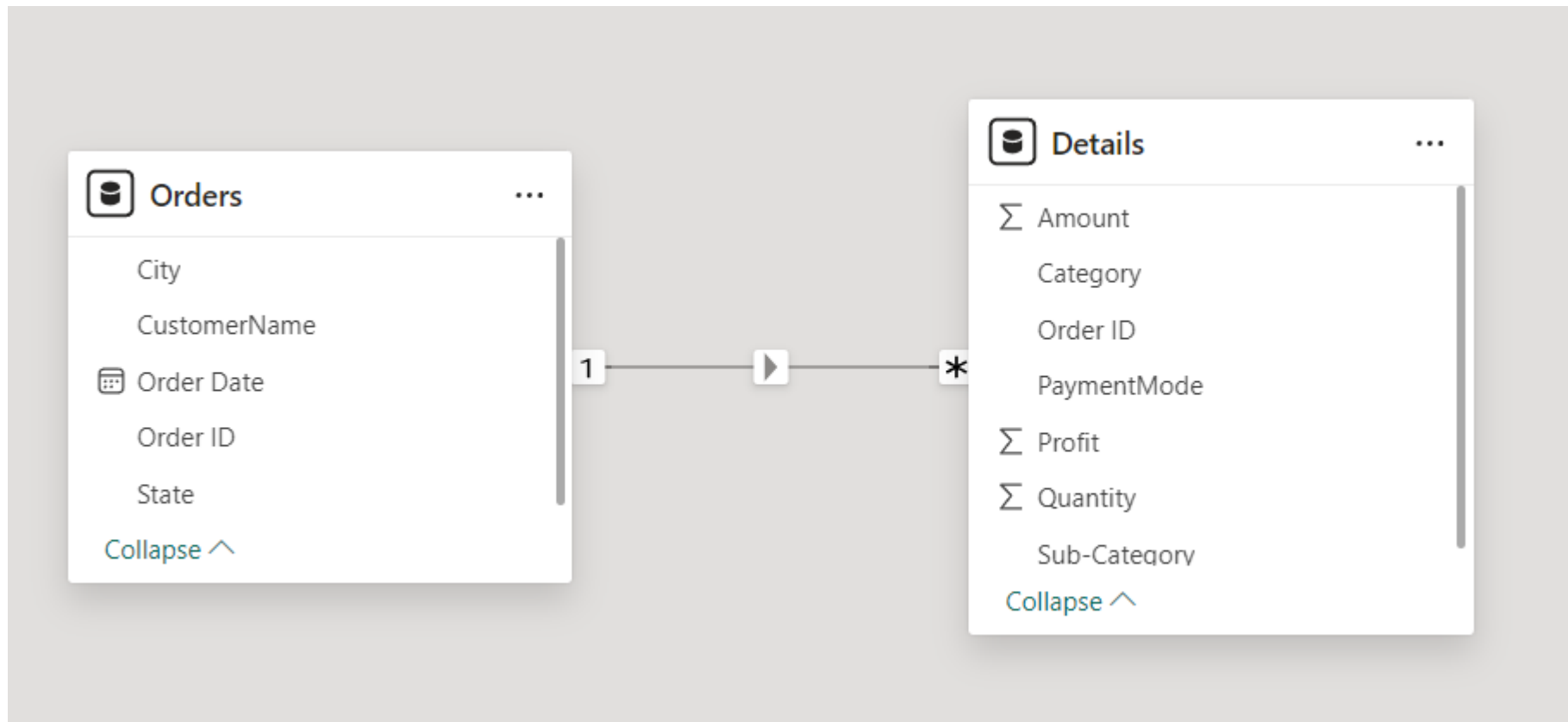
RESULT

DASHBOARD:
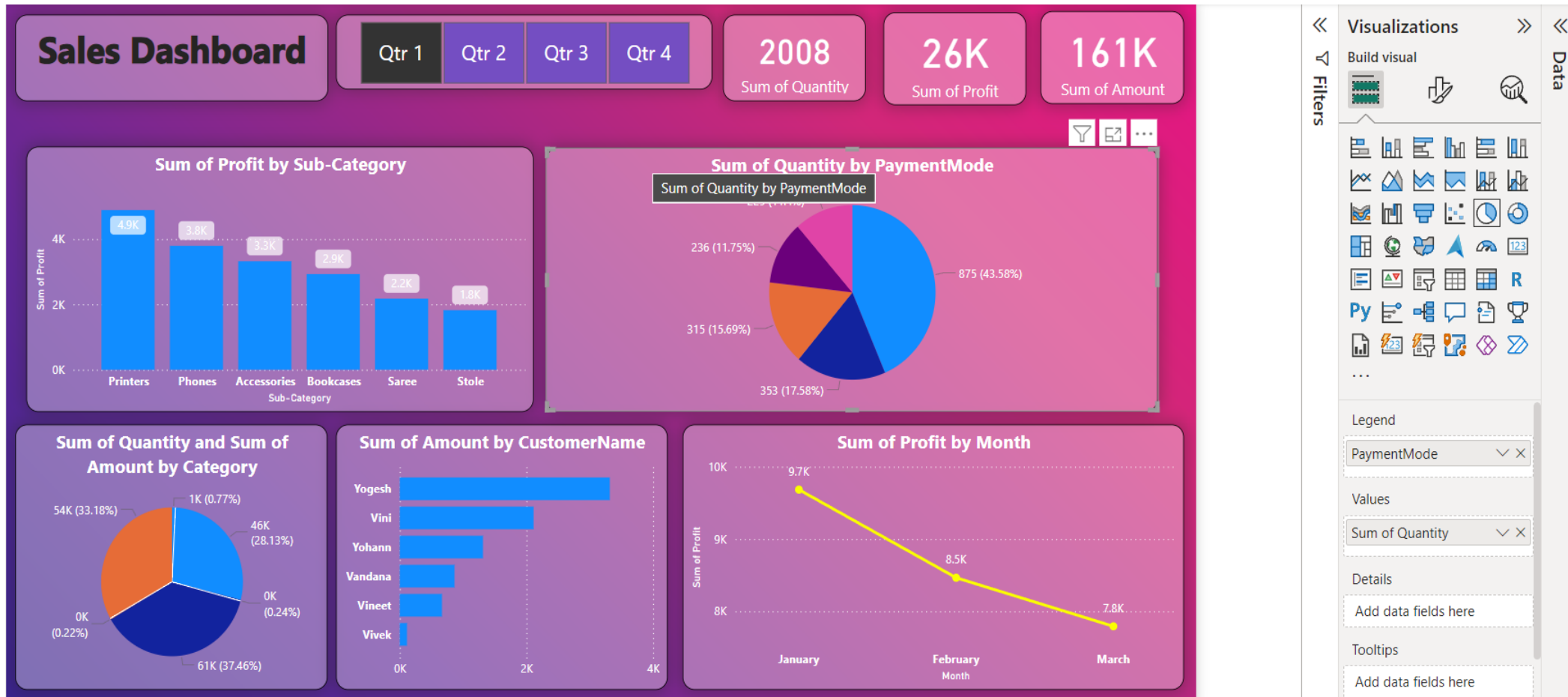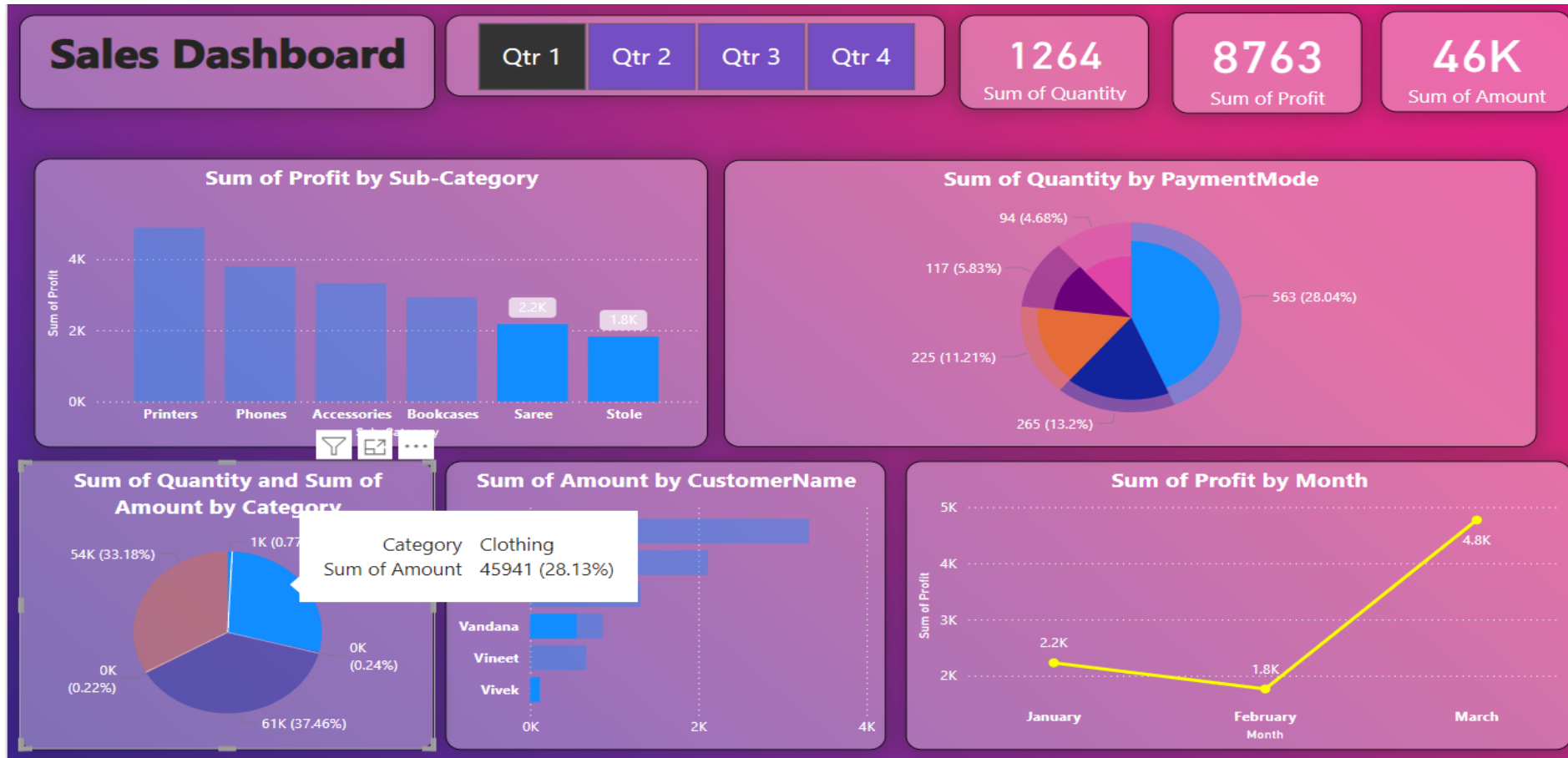
RESULT

PROFIT BY SUB CATEGORY:
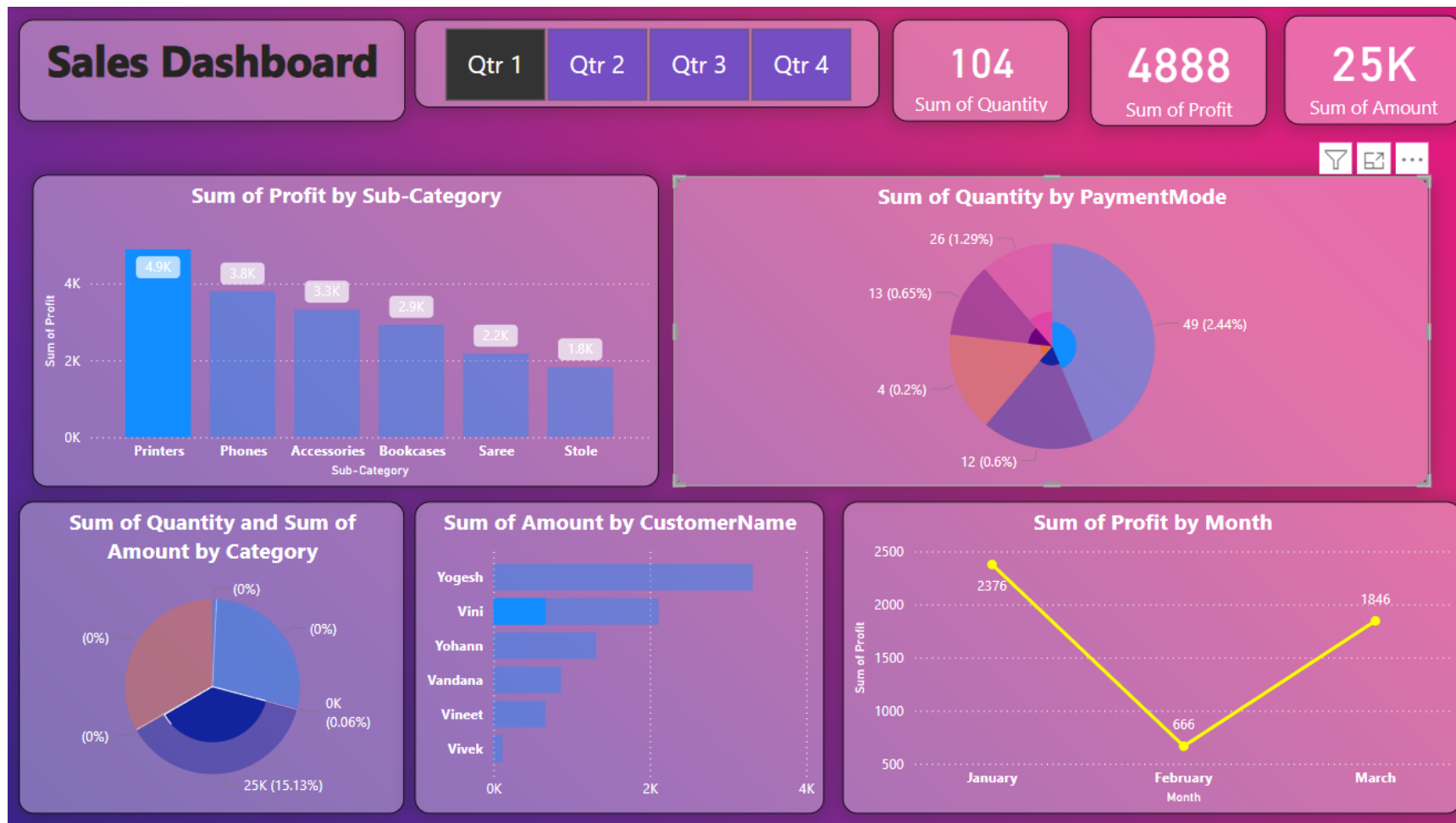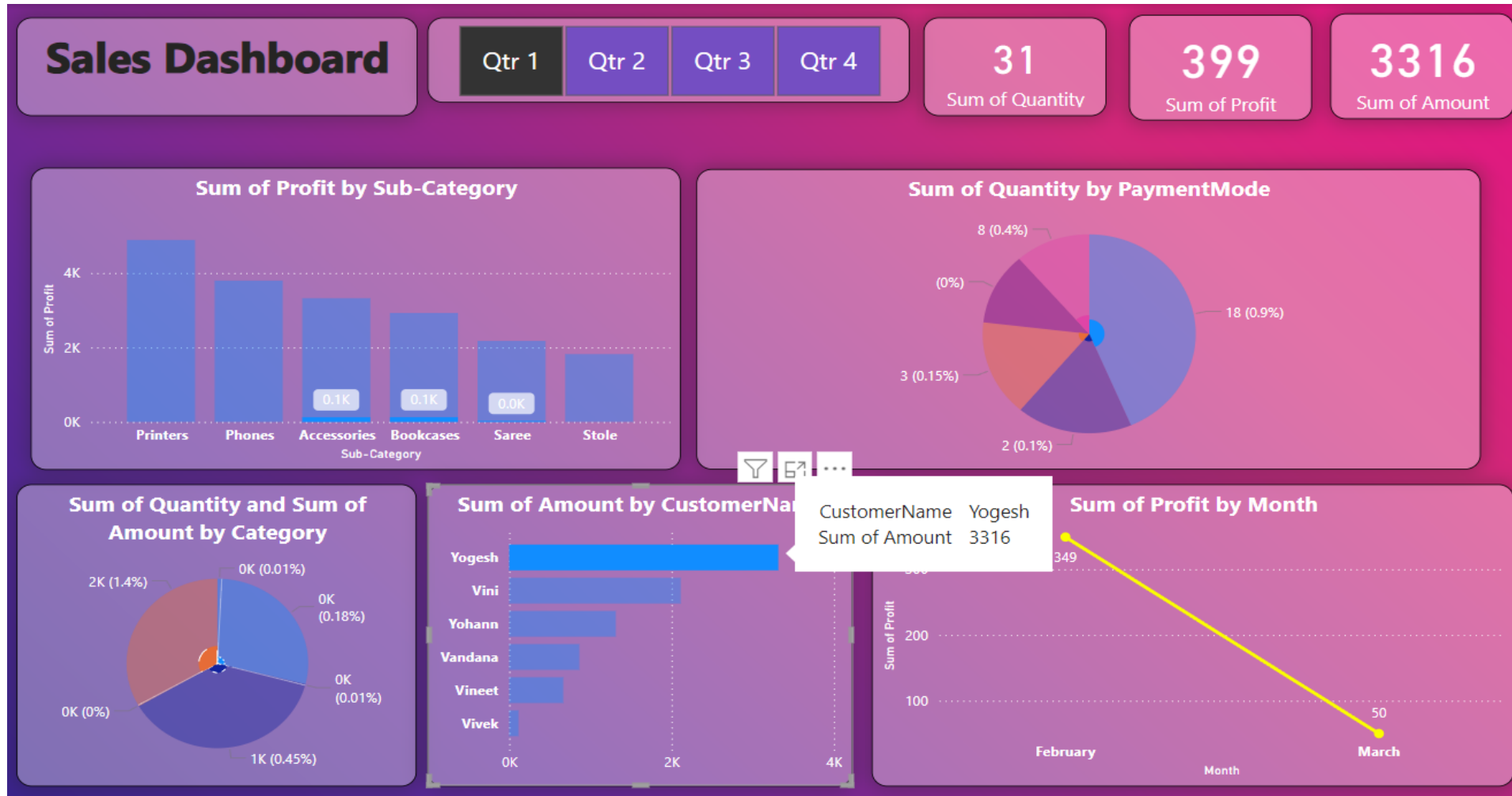
RESULT

BY PAYMENT MODE:

RESULT

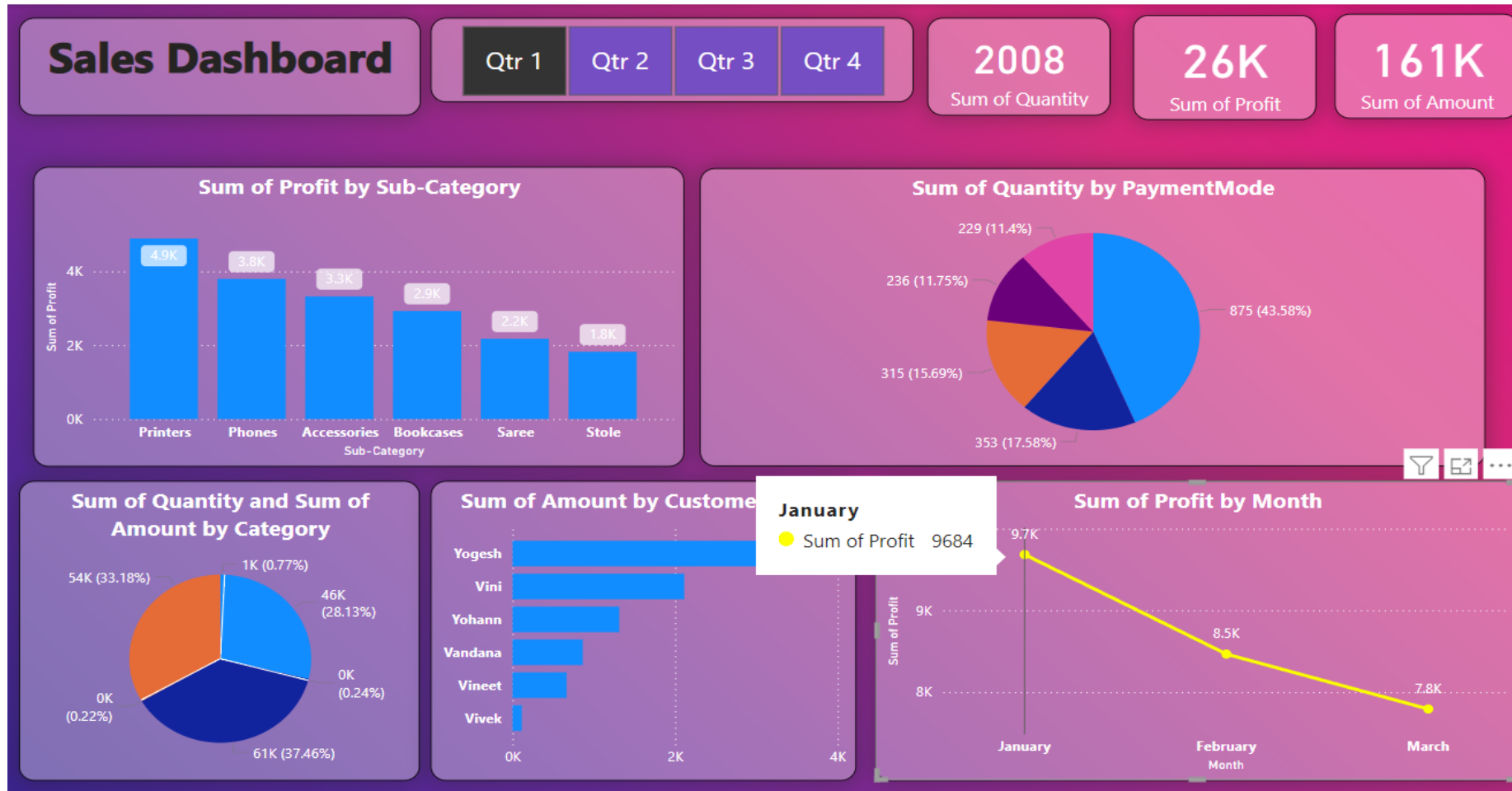SUM OF QUATITY AND SUM OF AMOUNT BY CATEGORY:

RESULT

SUM OF AMOUNT BY CUSTOMER NAME:

RESULT

SUM OF PROJECT BY MONTH:

CONCLUSION

- Creating a sales dashboard for visualizing profits of product categories like clothing, furniture, and electronics over a year involves collecting and cleaning data, choosing a BI tool, and designing the dashboard. This process ensures stakeholders can easily monitor profit trends and make data-driven decisions.

- Regular maintenance and updates keep the dashboard relevant and accurate, allowing for continuous improvement based on user feedback. A well-designed sales dashboard is a valuable asset, providing clear insights that support strategic planning and drive business growth.

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FUTURE SCOPE

DEVELOP PREDECTIVE ANALYTICS TO FORECASTE SALES TRENDS:

- Leverage machine learning algorithms and historical data to predict future sales performance,

- Enable businesses to proactively adjust strategies, optimize resources, and drive growth,

- Enhance the dashboard's capabilities to provide actionable insights and stay ahead in the competitive market.

REFERENCES

1. Power BI tools - https://www.youtube.com/watch?v=zSgmrWQa03s

2. Dashboard building and data analysis -

https://www.youtube.com/watch?v=wy6wEHIfJyg&list=PLMfXakCUhXsEUtk8c0zWr4whamGxLhAu0&index=5

3. Tableau tools - https://www.youtube.com/watch?v=NLCzpPRCc7U

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