



UNIFIED MENTOR

YOUR SKILL, SUCCESS & JOURNEY

PROJECT REPORT

2025

Prepared for :

UNIFIED MENTOR

Prepared by :

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<https://www.unifiedmentor.com/>

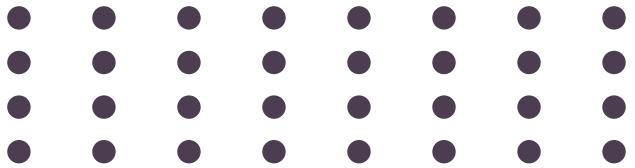
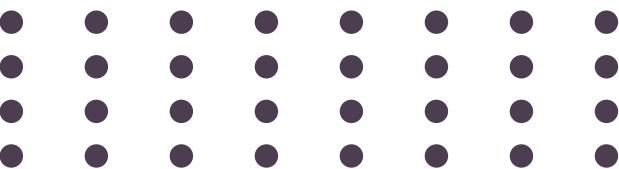
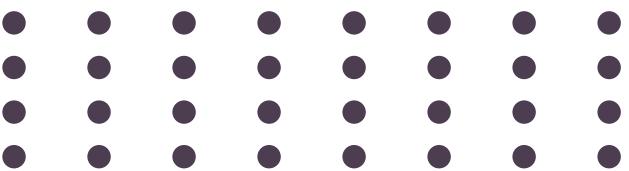


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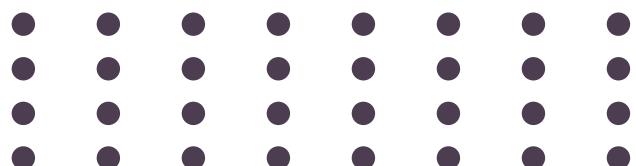
ACKNOWLEDGEMENT

I would like to express my heartfelt gratitude to Unified Mentor for providing me with the opportunity to intern with their esteemed organization. This internship has been an invaluable learning experience, allowing me to enhance my skills, gain practical exposure, and deepen my understanding of real-world data analytics applications.

I extend my sincere thanks to my mentors and colleagues at Unified Mentor for their continuous guidance, support, and encouragement throughout this journey. Their expertise and insights have been instrumental in shaping my analytical and problem-solving skills. I am especially grateful for the collaborative environment that fostered learning, innovation, and professional growth.

Additionally, I would like to thank my academic institution, faculty members, and my family for their unwavering support and motivation during this internship. Their encouragement has been crucial in making this experience both enriching and rewarding.

This internship has been a significant milestone in my career, and I look forward to applying the knowledge and skills gained to future endeavors.



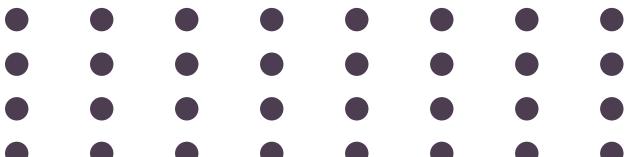


INTRODUCTION

In today's data-driven world, businesses rely on analytics to make informed decisions, optimize operations, and enhance customer satisfaction. This project focuses on analyzing sales data from three different domains—coffee sales, laptop price trends, and Supermart sales—to identify key insights that drive business success.

The coffee industry experiences dynamic sales patterns influenced by factors such as seasonality, pricing, and consumer preferences. Understanding these trends can help businesses improve marketing strategies and inventory management. Similarly, the laptop market is shaped by various elements, including brand reputation, specifications, and evolving technological advancements. Analyzing laptop prices provides valuable insights into market trends and customer purchasing behavior. Lastly, Supermart sales data offers a comprehensive view of consumer shopping habits, product demand, and revenue trends, enabling retailers to enhance their sales strategies and operational efficiency.

By leveraging data analytics techniques, this project aims to extract meaningful insights from these diverse datasets. The findings will assist businesses in optimizing pricing, demand forecasting, and customer engagement strategies, ultimately driving growth and profitability across different sectors.





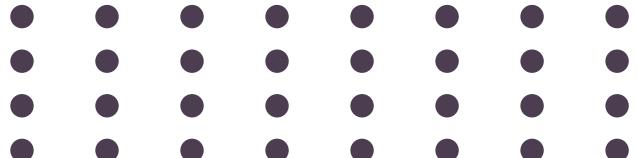
EXECUTIVE SUMMARY

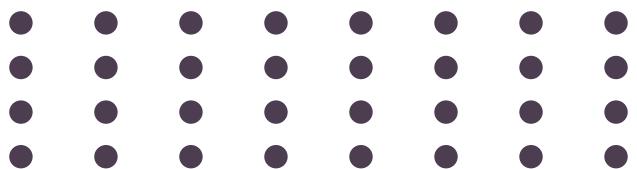
This project report presents a comprehensive analysis of sales data across three different domains: coffee sales, laptop price trends, and Supermart sales. The primary objective is to leverage data analytics techniques to extract meaningful insights that can help businesses optimize pricing strategies, improve demand forecasting, and enhance customer satisfaction.

This report presents an in-depth analysis of sales data for three distinct product categories—coffee, supermart goods, and laptops—to identify key trends, customer preferences, and factors influencing sales performance. The objective is to provide actionable insights that can enhance business strategies, improve inventory management, and optimize pricing models.

This sales analysis provides critical insights into customer behavior, product performance, and market trends. By leveraging these findings, businesses can improve decision-making, enhance customer satisfaction, and drive revenue growth across all three product categories.

This analysis provides valuable insights into the sales performance of coffee, supermart products, and laptops. By leveraging data-driven strategies, businesses can optimize their pricing, marketing, and inventory management to maximize profitability and customer satisfaction.



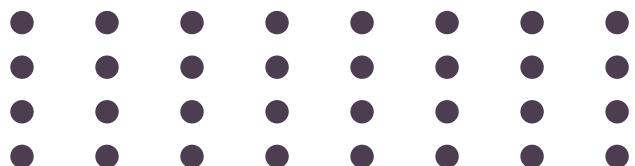


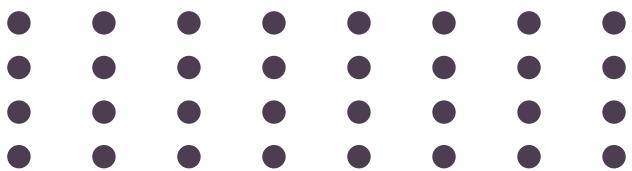
ABOUT THE COMPANY

Unified Mentor is a dynamic organization dedicated to providing high-quality training, mentorship, and consulting services in the field of technology and data analytics. With a mission to bridge the gap between theoretical knowledge and practical industry applications, Unified Mentor equips individuals with the necessary skills to excel in domains such as data science, machine learning, artificial intelligence, and business analytics.

The organization focuses on hands-on learning, industry-relevant projects, and expert guidance to help professionals and students stay ahead in the rapidly evolving tech landscape. Through structured training programs, real-world case studies, and personalized mentorship, Unified Mentor empowers aspiring data analysts, engineers, and IT professionals to enhance their career prospects and succeed in their respective fields.

At Unified Mentor, we focus on delivering career-focused courses that help you gain practical skills and land real jobs quickly. Learn the skills employers are looking for and accelerate your career growth today





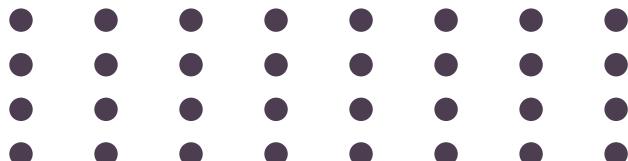
ABOUT THE PROJECT

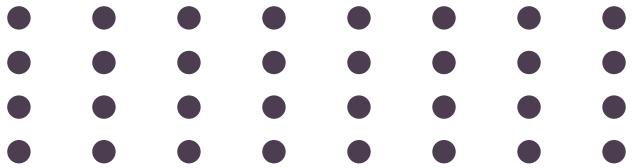
This project focuses on analyzing sales data from three distinct domains—coffee sales, laptop price analysis, and Supermart sales analysis—to derive meaningful insights that can help businesses optimize strategies and improve decision-making. By leveraging data analytics techniques, we aim to uncover key trends, patterns, and influencing factors across these sectors.

In the coffee sales analysis, we examine factors such as seasonal demand, pricing impact, and consumer preferences. This analysis helps businesses understand peak sales periods, optimize inventory management, and enhance marketing strategies to maximize revenue.

For the laptop price analysis, we explore how various factors, including brand reputation, hardware specifications (such as processor type, RAM, and storage), and market demand, influence laptop pricing. Understanding these trends helps manufacturers and retailers set competitive prices while also assisting consumers in making informed purchasing decisions.

The Supermart sales analysis focuses on consumer purchasing behavior, revenue trends, and product demand within a retail environment. By analyzing transaction data, we identify high-performing products, seasonal shopping trends, and factors driving sales fluctuations. These insights enable supermarkets to refine inventory management, promotional strategies, and overall business operations.



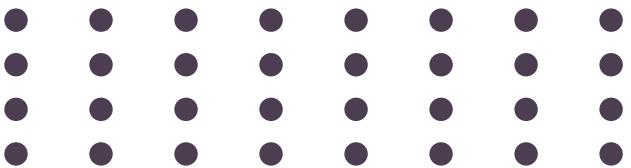


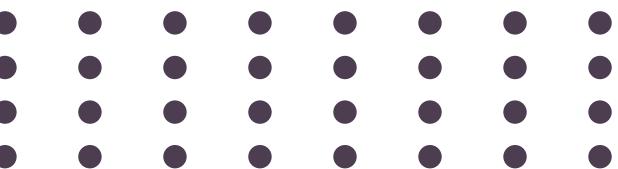
OBJECTIVES

In Coffee sales analysis the key metrics are essential to understanding sales trends, customer preferences and business performance. One of the most critical metrics is Total Sales Revenue, which measures the total earning from coffee sales over a specific period. An Average Sales per Store provides insights into the performance of individual locations, helping to identify high-performing and underperforming stores. Customer Retention Rate is another vital metric, as it indicates how many customers return for repeat purchases, a crucial factor for sustaining growth in the competitive coffee market. Seasonal Sales Trends provide insights into fluctuations in demand, allowing businesses to adjust their inventory and marketing strategies accordingly.

For a Supermart Sales Analysis , key metrics should focus on overall store performance, product sales trend, and customer purchasing behavior. Total Revenue and Sales Volume are fundamental metrics that provide an overview of the business's financial health. Category-wise Sales Performance helps in identifying the best-selling product categories, such as groceries, electronics, or household items, allowing for better stock management. Inventory Turnover Rate measures how quickly stock is sold and replaced, ensuring optimal inventory management.

When analyzing laptop prices, we focus on price trends, market demand, and competitive positioning. Additional metrics include Feature-based Price Variation, which examines how specifications such as RAM, processor type, and display quality impact pricing. Seasonal Pricing Trends track how laptop prices fluctuate during different times of the year, such as back-to-school or holiday sales. Discount Impact on Sales measures how price reductions influence purchasing decisions. Lastly, Market Share by Price Segment analyzes how different price ranges (budget, mid-range, and premium laptops) perform in terms of sales volume. These metrics help businesses and consumers make informed pricing and purchasing decisions.





By tracking and analyzing these key metrics, businesses can gain valuable insights into sales performance, optimize pricing strategies, and enhance customer satisfaction across different industries.

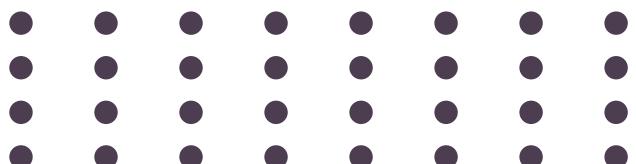
The sales performance of coffee, supermart products, and laptops by identifying key trends, customer preferences, and revenue drivers.

- Coffee Sales: Assess seasonal trends, brand preferences, and the impact of promotions on consumer demand.
- Supermart Sales: Analyze product demand, customer buying patterns, and the effectiveness of discounts and loyalty programs.
- Laptop Sales: Examine sales trends across price segments, the influence of seasonal events, and factors affecting consumer purchasing decisions.

This analysis provides data-driven insights to optimize pricing, inventory management, and marketing strategies for improved business performance.

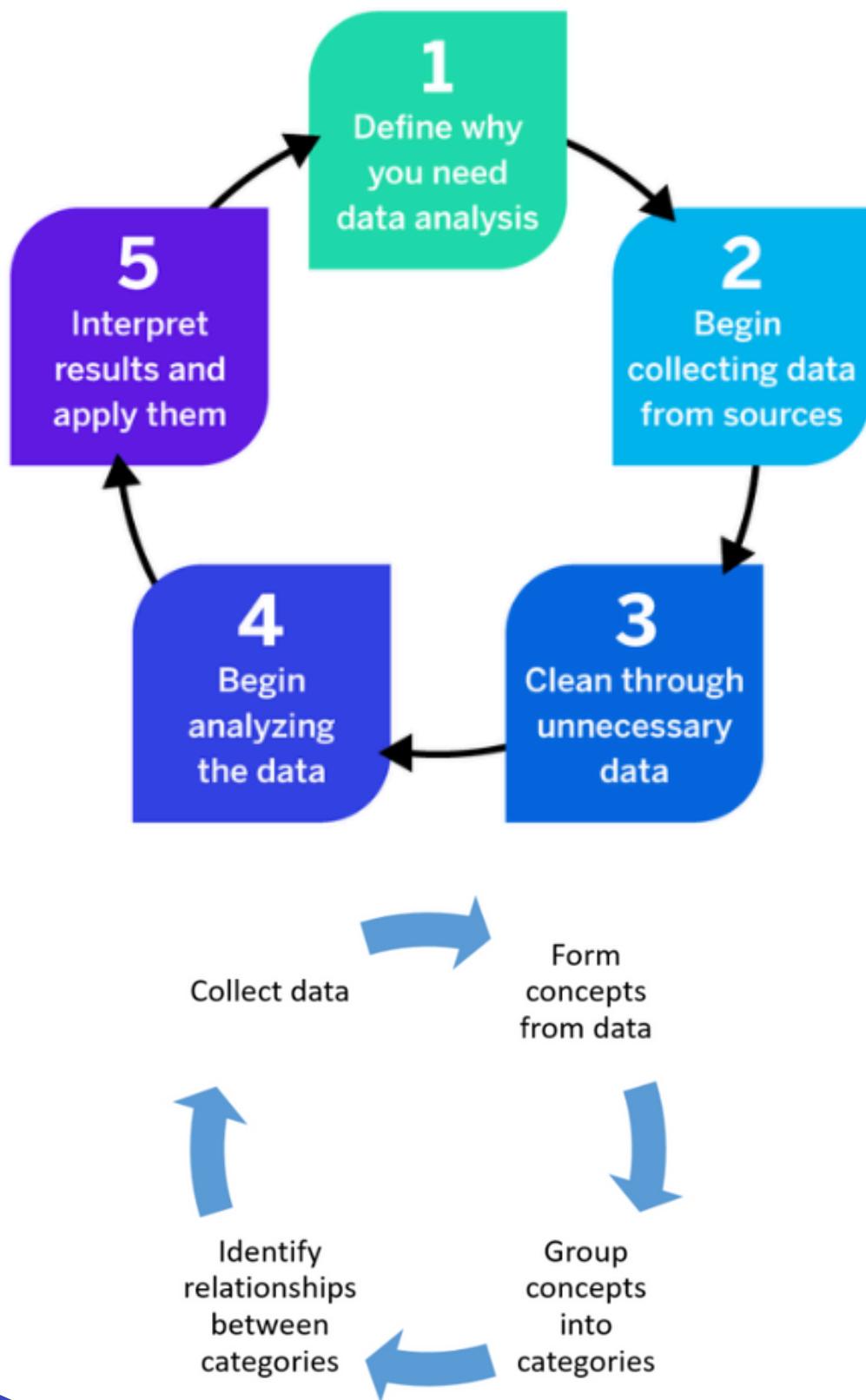
>> This project aims to analyze sales data from three different domains—coffee sales, laptop price trends, and Supermart sales—to uncover valuable insights that can enhance business decision-making, pricing strategies, and operational efficiency.

>> By integrating insights from these diverse domains, this project offers a comprehensive understanding of market trends and consumer behavior, ultimately helping businesses enhance their strategic planning and operational efficiency.



METHODOLOGY

This project followed the following steps to accomplish the desired objectives and deliverables. Each step has been explained in detail in the following section.



CASE DIAGRAM

What is Case Diagram?

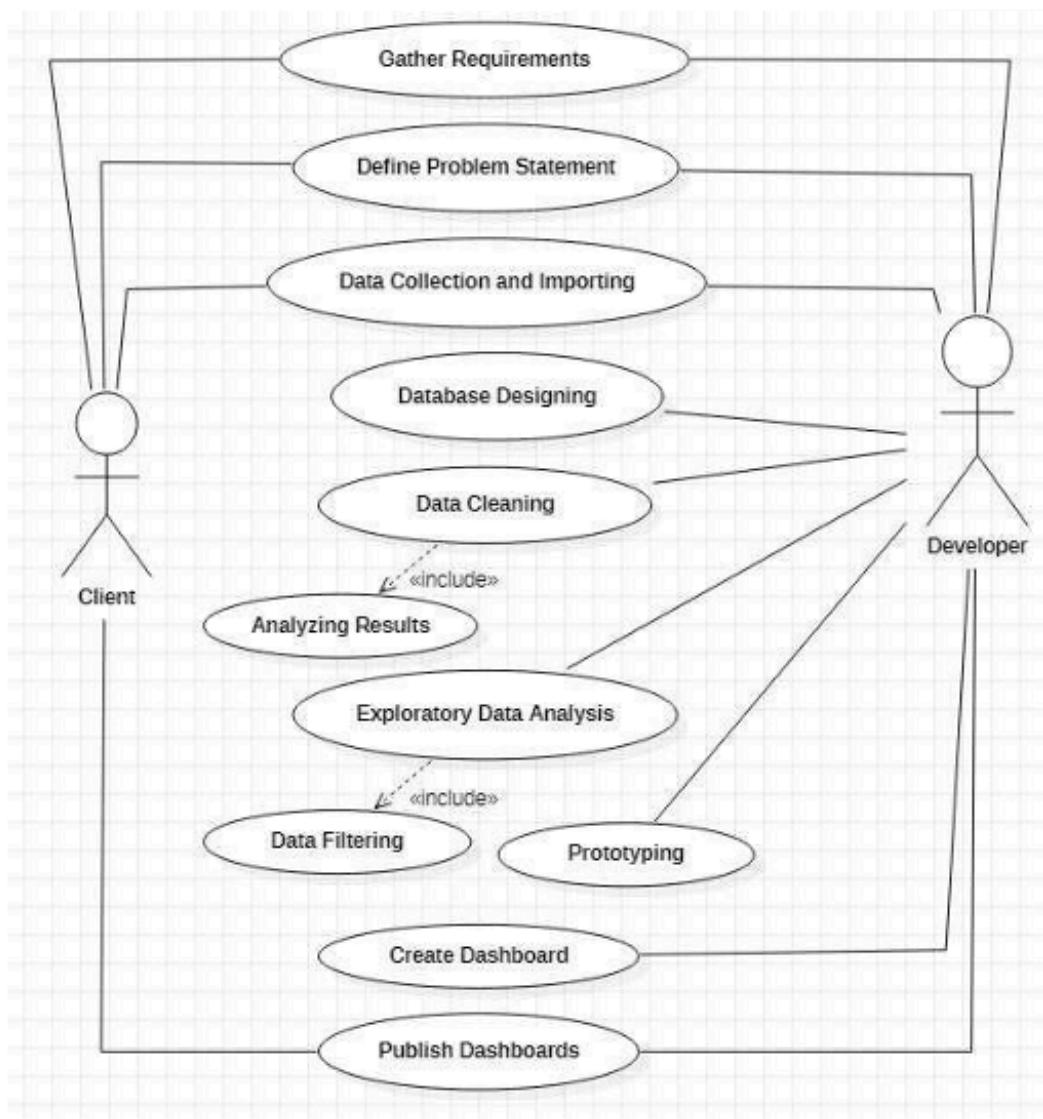
A case diagram in data analysis is interpreted as a visual representation of different scenarios or cases within a dataset. It helps analysts understand relationships, dependencies, and variations in data by organizing information into structured models. Case diagrams are particularly useful in decision-making, business analytics, and system design, where different conditions and their impacts need to be analyzed.

One of the closest related concepts to a case diagram is the Use Case Diagram, commonly used in software engineering and business process modeling. A Use Case Diagram illustrates how different entities (such as users or systems) interact with a process, making it useful for understanding workflows and business logic. In data analysis, a case diagram can represent different data scenarios and their interactions, which can help in predicting trends, identifying anomalies, and optimizing processes.

In exploratory data analysis (EDA), case diagrams can assist in segmenting the dataset based on various attributes. For example, if analyzing customer behavior, a case diagram might categorize customers based on purchase patterns, demographics, or engagement levels. By structuring data into meaningful cases, analysts can derive insights into trends and correlations, which can further guide decision-making.

Case diagrams can also be helpful in machine learning and statistical analysis. For instance, when building predictive models, an analyst might use a case diagram to map out different data scenarios and their expected outcomes. This visualization helps in feature selection, identifying biases, and ensuring that data-driven decisions are based on well-defined patterns.

In conclusion, while "case diagram" is not a standard term in data analytics, it can be interpreted as a tool to visually represent different data scenarios and relationships. Whether used in EDA, business analytics, or machine learning, such diagrams can enhance understanding, improve communication, and lead to more data-driven insights.



Above figure shows the use case of the project. There are two main actors in the same: The Client and Developer. The developer will first gather requirements and define the problem statement then collecting the required data and importing it. Then the developer will design databases so as to identify various constraints and relations in the data. Next step is to clean the data to remove irregular values, blank values etc. Next, exploratory data analysis is conducted to filter the data according to the requirements of the project. Then a prototype of the dashboards is created using PowerBI and tableau to get a clear view of the visualizations to be developed. Finally, dashboard is developed and analyzed to publish the results to the client.

TOOLS USED

Excel – Excel is a powerful spreadsheet application developed by Microsoft, widely used for organizing, analyzing, and visualizing data. It provides users with tools to perform complex calculations, create charts and graphs, and manage large datasets efficiently. Excel is an essential tool for cleaning and preparing data, providing a range of features to ensure datasets are accurate, consistent, and ready for analysis. It allows users to identify and remove duplicates, correct formatting issues, handle missing values, and standardize data using built-in functions like TRIM, CLEAN, and TEXT.

Power BI – Power BI is a business intelligence and data visualization tool developed by Microsoft that enables users to connect, transform, and analyze data from various sources. It provides an intuitive interface for creating interactive reports and dashboards, making it easier to uncover insights and share them across teams or organizations. With features such as drag-and-drop functionality, real-time updates, and a wide range of visualizations, Power BI empowers users to explore data meaningfully. It integrates seamlessly with other Microsoft products and supports advanced analytics through AI and machine learning models, catering to both technical and non-technical users for data-driven decision-making.

Tableau – Tableau is a leading data visualization and business intelligence tool designed to help users analyze, visualize, and share insights from data. Known for its intuitive drag-and-drop interface, Tableau enables users to create interactive dashboards and reports without requiring extensive technical expertise. It supports integration with a wide variety of data sources, including spreadsheets, databases, and cloud services, making it versatile for handling diverse datasets. Tableau's advanced visualization capabilities, such as dynamic charts, heatmaps, and geographic maps, allow users to identify patterns and trends effectively. Its focus on simplicity and powerful analytics makes Tableau a popular choice for organizations seeking data-driven decision-making.

Tableau is a powerful tool for data analysis, enabling users to explore, interpret, and communicate insights effectively through interactive visualizations. It allows analysts to connect to various data sources, transform raw data, and create dynamic dashboards that reveal trends, correlations, and outliers. With features like drag-and-drop functionality, advanced filtering, and real-time data integration, Tableau simplifies complex data analysis processes. Its ability to handle large datasets and perform calculations on-the-fly makes it ideal for uncovering actionable insights. By translating data into visually compelling charts and graphs, Tableau helps organizations make informed, data-driven decisions efficiently.

SQL - As part of the data analysis process in this project, I utilized SQL extensively for data extraction, transformation, and analysis. SQL was used to retrieve relevant datasets from the database by writing queries that filtered, aggregated, and joined multiple tables to derive meaningful insights. By leveraging SQL's powerful querying capabilities, I was able to efficiently access large datasets and extract only the necessary information required for further analysis.

In the data preprocessing phase, SQL was instrumental in cleaning and transforming raw data to ensure consistency and accuracy. Common tasks included handling missing values, removing duplicates, standardizing data formats, and creating new calculated fields. These steps were crucial in preparing the dataset for detailed exploratory analysis.

For exploratory data analysis (EDA), I used SQL functions to generate summary statistics, identify trends, and detect anomalies within the dataset. Aggregation functions like SUM(), AVG(), COUNT(), and GROUP BY helped analyze key metrics, while joins and subqueries enabled deeper insights by combining data from multiple sources.

Finally, SQL played a role in integrating the processed data with visualization tools and other analytical techniques. The refined dataset was exported or connected to tools such as Python, R, or BI platforms for further analysis and reporting. This structured approach using SQL ensured a smooth and efficient data analysis workflow, leading to accurate insights that informed decision-making in the project.

Python - In this project, Python played a crucial role in the data analysis process, from data preprocessing to advanced analytics and visualization. Python's powerful libraries, such as Pandas, NumPy, and Matplotlib, were utilized to efficiently manipulate and analyze data, enabling a structured and insightful workflow.

During the initial data processing phase, I used Pandas to load and clean the dataset. Tasks such as handling missing values, removing duplicates, standardizing formats, and transforming categorical variables were performed to ensure data consistency. Additionally, NumPy was employed for numerical computations and array-based operations, enhancing the efficiency of data transformations.

For exploratory data analysis (EDA), I leveraged Python's capabilities to generate summary statistics, identify patterns, and detect anomalies. Functions like `describe()`, correlation matrices, and visualization techniques using Matplotlib and Seaborn provided deeper insights into data distributions, relationships, and trends. These steps helped in identifying key factors and guiding further analysis.

Furthermore, Python was instrumental in performing advanced analytics, such as statistical modeling and machine learning. Libraries like Scikit-learn facilitated predictive modeling, while Statsmodels was used for statistical tests and hypothesis validation. Finally, Python was used for data visualization and reporting, where Seaborn and Plotly were employed to create interactive and insightful visual representations of the findings.

IMPLEMENTATION

1. Gathering Requirement

2. Data Cleaning

3. Data Filtering

4. Designing Database

5. Prototyping in Tableau

6. Prototyping in Python

1 . *Gathering Requirements and Defining Problem Statement -*

This is the first step wherein the requirements are collected from the clients to understand the deliverables and goals to be achieved after which a problem statement is defined which has to be adhered to while development of the project.

2. *Data Cleaning -*

Data cleaning, also known as data cleansing, is the process of identifying and correcting errors, inconsistencies, and inaccuracies in datasets to ensure the data is accurate, reliable, and ready for analysis. This process involves tasks such as removing duplicates, handling missing values, correcting formatting issues, and standardizing data entries. It is a critical step in data analysis as clean data improves the quality of insights and prevents misleading results. By addressing anomalies and inconsistencies, data cleaning enhances data integrity, making it easier to draw meaningful conclusions and enabling better decision-making across various applications and industries.

3. *Data Filtering -*

Data filtering is the process of selecting and isolating specific subsets of data based on defined criteria, allowing users to focus on the most relevant information for analysis. This technique is essential for managing large datasets, as it helps eliminate unnecessary or irrelevant data, making the analysis more efficient and targeted. Filters can be applied to numerical, categorical, or textual data to identify patterns, trends, or outliers that meet certain conditions. Whether through simple tools like spreadsheets or advanced software, data filtering enhances decision-making by ensuring that only pertinent data is used, improving the overall accuracy and relevance of insights.

4. *Designing Database -*

Designing a database involves creating a structured plan for organizing, storing, and managing data in a way that ensures efficiency, scalability, and ease of access. The process begins with understanding the data requirements and identifying the relationships between different data entities. This includes defining tables, fields, and the types of data they will hold, as well as establishing primary and foreign keys to maintain data integrity and support relational connections. A well-designed database also incorporates normalization techniques to reduce redundancy and enhance performance.

5. Prototyping in Tableau -

Prototyping in Tableau refers to the process of quickly creating a preliminary version of a dashboard or data visualization to explore and validate design concepts or data insights before finalizing the project. During prototyping, users can experiment with different visualizations, layouts, and interactivity features to determine which best meet the needs of stakeholders or users. This iterative approach helps identify potential issues, gather feedback, and refine the design efficiently. Since Tableau allows for rapid creation of interactive dashboards through its drag-and-drop interface, prototyping enables users to quickly test hypotheses, gain insights, and make data-driven decisions without committing to a full, finalized report.

Tableau also played a crucial role in reporting and decision-making, as the visualizations helped communicate complex data findings in a clear and engaging manner. By leveraging dashboard storytelling features, the insights were structured into a compelling narrative that supported strategic decision-making. Overall, Tableau significantly improved the efficiency of the data analysis process by enabling quick, insightful visualizations and fostering data-driven decision-making within the project.

User-Friendly Interface: Tableau's intuitive drag-and-drop functionality makes it easy for both technical and non-technical users to create interactive dashboards and reports without extensive coding knowledge.

Powerful Data Connectivity: It supports a wide range of data sources, including spreadsheets, databases, cloud services, and web-based data, allowing seamless integration and analysis from multiple platforms.

Real-Time Data Analysis: Tableau can connect to live data sources, providing real-time updates and insights, which is critical for timely decision-making in dynamic business environments.

Advanced Visualizations: Tableau offers a broad set of visualization types such as heatmaps, geographical maps, scatter plots, and bar charts, enabling users to present data in compelling and easy-to-understand formats.

Interactive Dashboards: Users can create interactive dashboards with filters, drill-downs, and dynamic elements that allow stakeholders to explore data at various levels of detail.

6. Prototyping in Python -

Prototyping in Python refers to the process of quickly developing a working model or proof-of-concept for an application, algorithm, or system. Python's simplicity, flexibility, and extensive libraries make it an ideal language for prototyping in various domains, including data science, web development, and machine learning.

In a typical prototyping workflow, Python is used to develop an initial version of a model, system, or application with minimal effort. Libraries such as Pandas and NumPy facilitate data manipulation, while Matplotlib and Seaborn enable quick visualization of results. For machine learning and AI-based prototyping, frameworks like Scikit-learn, TensorFlow, and PyTorch allow rapid experimentation with different models and techniques.

Python's ability to integrate with databases, APIs, and visualization tools further enhances the prototyping process, enabling seamless data flow and interaction between different components. Additionally, frameworks like Flask and Streamlit can be used to create simple interactive prototypes of web applications or dashboards without requiring extensive backend development.



PROJECT - 1

COFFEE SALES ANALYSIS

1. TOTAL SALES -

This image provides a concise summary of key business metrics, including Total Sales.

Each metric is displayed in a well-structured format, with bold headers indicating the category and corresponding numerical values below. The use of shorthand notations such as "M" for million and "K" for thousand ensures that large numbers are presented in a compact and easily digestible manner.



The total sales recorded amount to 38K. However, a significant downward trend is observed in the accompanying sales graph. The sales initially start at approximately 10K but show a consistent decline over time, eventually nearing zero. This pattern indicates a potential loss in revenue and requires further investigation to determine the underlying causes.

One possible explanation for the decline could be a reduction in customer demand. Market trends, seasonal fluctuations, or shifts in consumer behavior might be affecting sales performance. Additionally, competition from other businesses offering similar products or services at better prices or quality could be impacting the company's market share.

Another factor to consider is internal inefficiencies. Operational challenges such as supply chain disruptions, inventory shortages, or poor marketing strategies could be contributing to the decline in sales.

If the business is failing to meet customer expectations or lacks effective promotional efforts, this could lead to a gradual loss of customers.

To address this issue, a detailed analysis of sales data is necessary, including segmentation by time periods, customer demographics, and product categories.

Identifying key trends and patterns can help pinpoint specific areas that require improvement. Implementing strategic marketing campaigns, optimizing pricing, and enhancing product offerings may help reverse the declining trend.

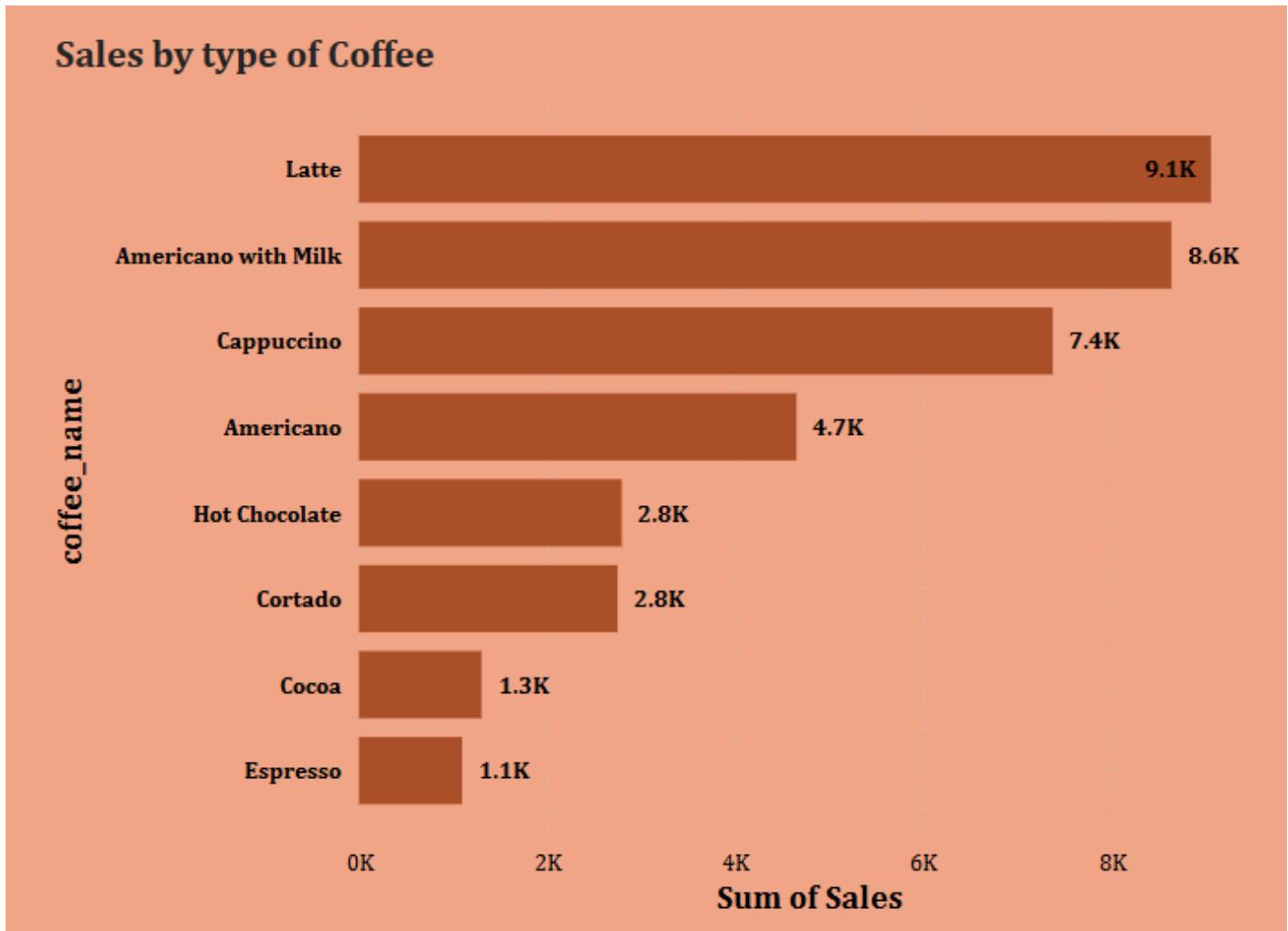
The sales trend depicted in the graph shows a steady decline from an initial value close to 10K to almost zero, despite the total sales amounting to 38K.

This downward trajectory suggests multiple underlying issues, such as declining customer interest, ineffective marketing strategies, or increasing competition.

A sharp fall in sales could indicate a product lifecycle nearing its end, poor customer retention, or an external market shift affecting demand. Additionally, operational inefficiencies like supply chain disruptions, inadequate inventory management, or pricing misalignment with market expectations could be contributing factors. Analyzing historical sales data, market conditions, and customer behavior is crucial to identifying the root cause.

Overall, while the total sales figure of 38K provides an overview, the downward trajectory is a concern. It is crucial to take proactive measures to understand the factors behind this decline and implement corrective strategies to ensure business growth and sustainability.

2. SALES BY COFFEE NAME -



The "Sales by Coffee Name" visualization in the Coffee Sales Analysis project provides a clear and structured view of how different coffee types contribute to overall sales. This chart ranks coffee products based on total sales, enabling stakeholders to quickly identify the best-selling and least-performing items. The use of a brown color scheme on a peach background maintains aesthetic consistency while ensuring readability.

The chart presents the sales performance of eight coffee types, ranging from high-demand products like Latte and Americano with Milk (9K each) to lower-selling options like Cocoa and Espresso (1K each). The structured arrangement of bars allows for easy comparison, helping businesses understand which coffee varieties generate the most revenue.

Top-Selling Coffees:

Latte (9K) and Americano with Milk (9K) lead in sales, suggesting strong customer preference for these milky and smooth coffee varieties. Their high sales could be attributed to their popularity across different customer demographics, including casual coffee drinkers and those seeking a mild yet rich flavor.

Cappuccino (7K) follows closely, further confirming that milk-based coffees dominate customer preferences.

Mid-Range Sales Performers :

Americano (5K) holds a moderate position, indicating a stable demand, likely from customers who prefer strong, black coffee without milk.

Hot Chocolate (3K) and Cortado (3K) contribute moderately to total sales, suggesting they appeal to a niche customer base.

Least-Selling Coffees :

Cocoa (1K) and Espresso (1K) have the lowest sales figures, which could indicate that they are either less popular, priced higher, or not actively promoted. Espresso's low ranking may suggest a customer preference for larger, milk-based drinks over concentrated coffee shots.

Business Insights & Implications :

Menu Optimization: Given the dominance of milk-based drinks, businesses might consider expanding their latte and cappuccino variations (e.g., flavored lattes, plant-based milk options) to further increase sales.

Marketing & Promotions: The lower sales of Cocoa and Espresso indicate a need for targeted promotions or bundling strategies to improve their demand. For example, offering discounts on Espresso or combining it with pastries might attract more customers.

Customer Behavior Analysis: The preference for lattes and cappuccinos suggests that a large portion of customers may prefer creamy, balanced flavors over strong, black coffee. Businesses could use this insight to design loyalty programs or customize promotions around high-selling items.

Inventory & Supply Chain Management: Higher sales of milk-based coffees mean that businesses need to ensure consistent availability of fresh milk, syrups, and related ingredients, reducing the risk of stock shortages that could impact sales.

The "Sales by Coffee Name" visualization is a valuable tool for understanding customer preferences and optimizing product offerings. The dominance of lattes, Americanos, and cappuccinos highlights the importance of milk-based coffee in driving revenue, while the lower sales of cocoa and espresso suggest potential areas for growth through targeted promotions or strategic menu adjustments. By continuously monitoring sales trends and aligning marketing efforts accordingly, businesses can enhance customer satisfaction and maximize profitability.

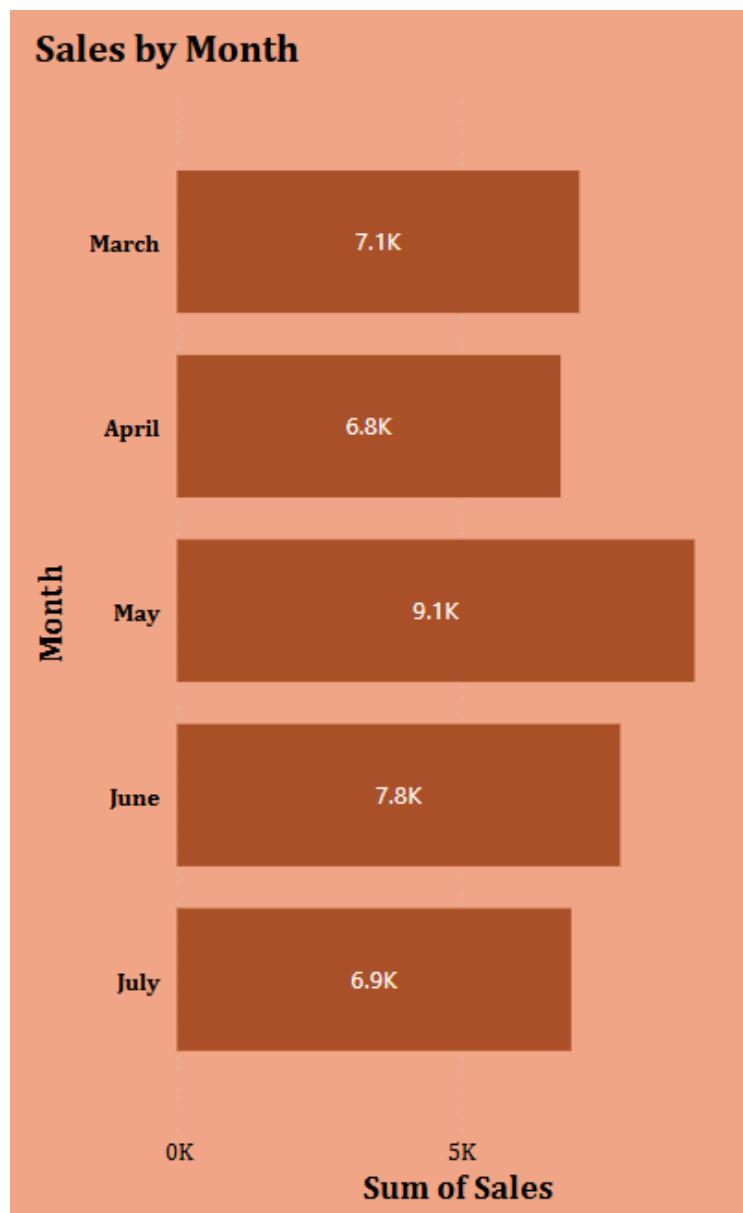
3. SALES BY MONTHS -

The Sales by Month visualization provides an insightful breakdown of total sales across five months: March, April, May, June, and July.

This horizontal bar chart effectively highlights monthly sales trends, helping businesses understand seasonal fluctuations and identify peak-performing months.

The use of consistent brown-colored bars on a peach background ensures clarity while maintaining the dashboard's aesthetic consistency.

Months sales are moderate in March (7.1K), June (7.8K), and July (6.9K). The chart uses a horizontal bar format with labels indicating exact values.



Monthly Sales Performance Overview -

The data reveals variations in monthly sales, with May recording the highest sales (9.1K), while April shows the lowest (6.8K). Understanding these trends can help businesses optimize operations, inventory, and marketing strategies.

Lowest Sales Month:

April (6.8K) had the lowest recorded sales, which could be due to factors like seasonal changes, holidays, or fewer marketing promotions during that period.

Business Insights & Implications -

Seasonal Sales Strategy: The significant peak in May's sales (9.1K) suggests that businesses should focus on seasonal promotions or marketing campaigns around this time to maximize revenue. The drop in April and July sales indicates potential periods where businesses might need to boost promotions or introduce special offers to maintain sales momentum.

Inventory & Supply Chain Optimization: Higher sales in May might indicate increased customer traffic, requiring businesses to stock up on raw materials such as coffee beans, milk, syrups, and cups to avoid shortages. Similarly, lower sales in April might suggest a time for inventory control to minimize waste.

Customer Behavior Analysis: The sales dip in April and July may suggest a shift in consumer purchasing habits, possibly due to weather changes, vacations, or academic calendars affecting foot traffic in coffee shops.

Marketing & Promotions: Businesses can use these insights to plan their advertising spend, focusing more on boosting sales during April and July, while capitalizing on the natural demand surge in May through targeted campaigns.

Potential Enhancements for Better Insights -

Comparing Yearly Trends: Adding data from previous years could help determine whether May consistently experiences a sales peak or if it was a one-time occurrence.

Breaking Down Monthly Sales by Coffee Type: Analyzing which coffee types contributed the most to the peak in May would help in designing seasonal product promotions.

Customer Demographics & Buying Patterns: Studying whether sales fluctuations are linked to specific customer demographics, such as office workers, students, or tourists, can help in personalizing marketing efforts.

Breaking Down Monthly Sales by Coffee Type: Analyzing which coffee types contributed the most to the peak in May would help in designing seasonal product promotions.

Customer Demographics & Buying Patterns: Studying whether sales fluctuations are linked to specific customer demographics, such as office workers, students, or tourists, can help in personalizing marketing efforts.

The Sales by Month visualization provides a crucial perspective on sales trends, with May standing out as the best-performing month (9.1K) and April recording the lowest sales (6.8K).

These insights can help businesses optimize marketing efforts, manage inventory efficiently, and introduce seasonal promotions to maintain steady revenue.

By further analyzing sales drivers and customer behavior, businesses can refine their strategies to maximize profitability and sustain year-round growth.

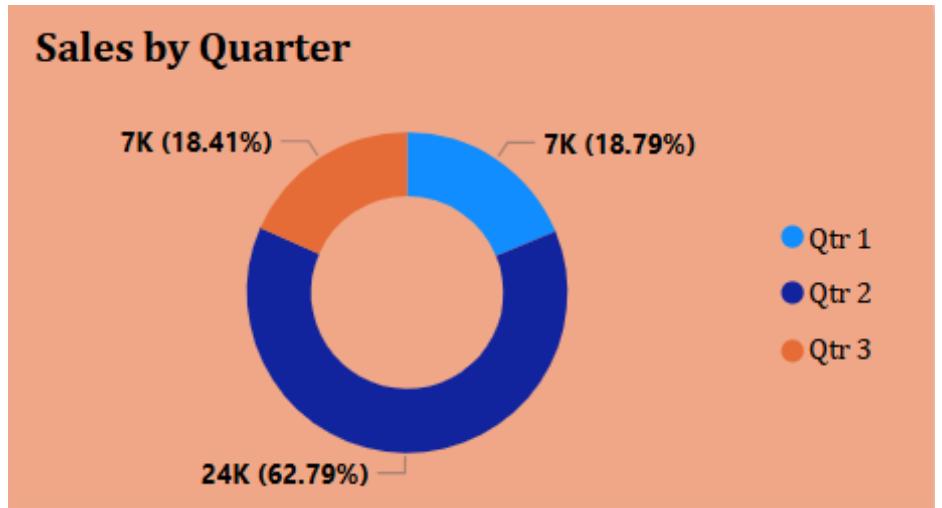
The Sales by Month analysis in the coffee sales project highlights fluctuations in revenue over five months, with May recording the highest sales at 9.1K, while April had the lowest at 6.8K.

This trend suggests a possible seasonal surge in May, potentially driven by promotions, increased foot traffic, or weather-related factors influencing coffee consumption. June (7.8K), March (7.1K), and July (6.9K) show relatively stable sales, indicating consistent demand.

The data suggests that businesses should focus on boosting promotions during slower months like April and July, while capitalizing on the natural sales peak in May through targeted campaigns, product bundling, or loyalty programs to sustain revenue growth.

4. SALES BY QUARTER -

The sales analysis for the coffee business, based on the provided quarterly distribution, reveals that the highest sales were recorded in Quarter 2, contributing 24K units, which accounts for approximately 62.79% of total sales.



Quarter 1 and Quarter 3 had identical sales figures of 7K each, representing 18.79% and 18.41% of total sales, respectively. These quarters show relatively lower sales, indicating potential periods of decreased demand or market fluctuations.

The noticeable dominance of Quarter 2 in sales performance could imply a strong preference for coffee during this period, possibly influenced by colder weather, holiday seasons, or marketing campaigns.

On the other hand, the lower sales in the first and third quarters highlight an opportunity to explore strategies such as discounts, new product offerings, or targeted advertising to boost sales during these periods.

Understanding consumer behavior and external factors affecting sales across quarters will be crucial in optimizing revenue and enhancing overall business performance.

Sales Distribution and Dominance -

Quarter 2 (Qtr 2) emerges as the strongest sales period, contributing 24K units, which accounts for 62.79% of total sales. The deep blue segment in the chart highlights its dominance.

This indicates a peak season for coffee consumption, likely influenced by external factors such as weather conditions, promotional activities, or consumer preferences.

Quarter 1 (Qtr 1) and Quarter 3 (Qtr 3) both record 7K units, making up 18.79% and 18.41% of the total sales, respectively.

Their near-identical contribution suggests consistent but lower demand in these quarters compared to Quarter 2. The color-coded representation (light blue for Q1 and brownish-orange for Q3) distinctly separates their contributions.

Insights -

Seasonal Impact: The substantial sales spike in Q2 could be attributed to factors such as colder months, special promotions, or increased demand due to events and holidays.

Market Opportunity: Since Q1 and Q3 have lower sales, marketing strategies like seasonal discounts, loyalty programs, or introducing limited-time flavors could help boost sales in these periods.

Consumer Behavior Trends: Understanding the reason behind Q2's high sales (e.g., festival season, work trends, or holidays) can help replicate similar strategies in other quarters.

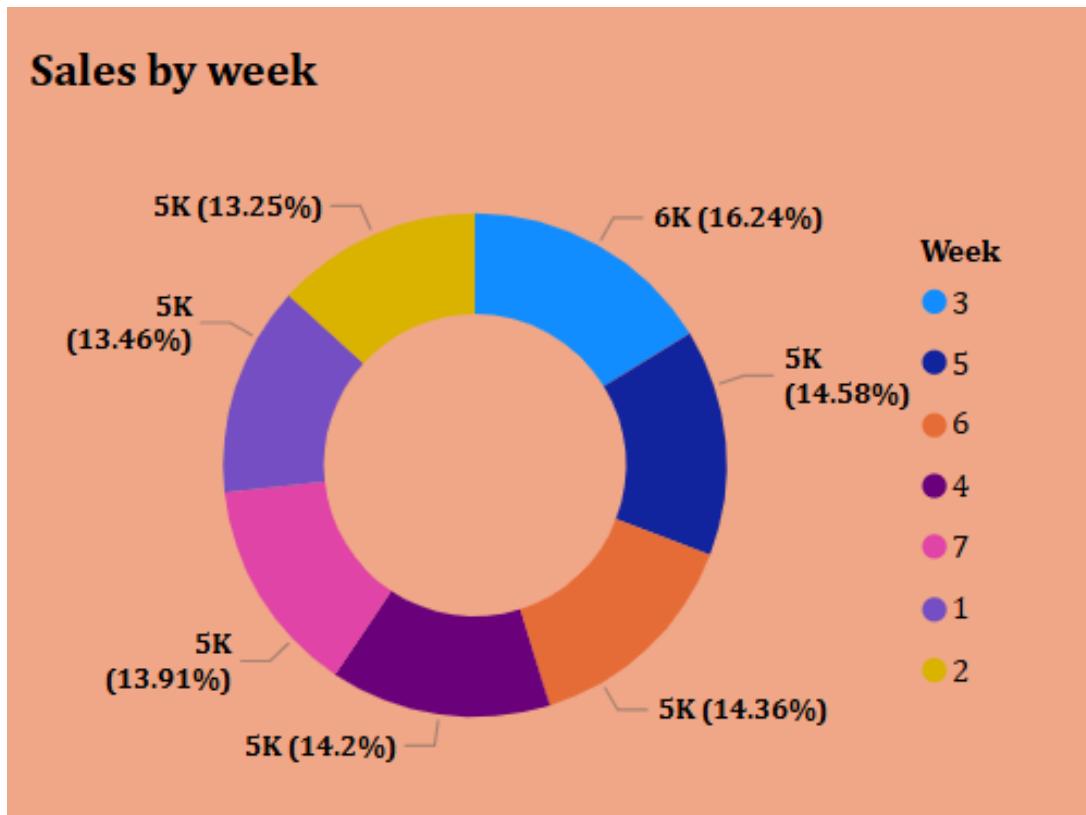
Business Recommendations -

Capitalize on Q2 Demand: Strengthen inventory, promotional activities, and targeted marketing campaigns to maximize sales during this period.

Boost Sales in Q1 & Q3: Introduce new flavors, discounts, and campaigns to improve performance in these underperforming quarters.

Data-Driven Strategy: Further analysis of customer preferences, seasonal factors, and purchasing patterns can provide deeper insights into optimizing coffee sales across all quarters.

5. SALES BY WEEK -



The graph represents the sum of money distributed over different weeks, visualized using a circular donut chart. Each segment corresponds to a week, color-coded for differentiation.

The chart also includes percentage values and monetary amounts for each week, giving insights into the financial distribution over the given period

The chart reveals that most weeks have relatively consistent sums of money, with values ranging from 5,000 to 6,000 units.

The highest recorded sum is 6,000 units, representing 16.24% of the total distribution.

The remaining weeks generally contribute around 13% to 14%, indicating a fairly balanced but slightly uneven allocation.

Weekly Distribution Analysis -

Week 3 (Blue): The highest sum of 6,000 units, accounting for 16.24% of the total, making it the peak week for financial activity.

Weeks 5, 6, and 4 (Dark Blue, Orange, and Purple): Each of these weeks shows approximately 5,000 units, contributing between 13.91% and 14.36%. This indicates a relatively stable financial distribution across these weeks.

Weeks 7 and 1 (Pink and Dark Purple): Both weeks also display sums of around 5,000 units, with similar percentages, further emphasizing the consistent distribution pattern.

Week 2 (Yellow): With 5,000 units and 13.25%, this week shows the lowest contribution among the 5,000-unit weeks, but the difference is marginal.

The financial distribution across most weeks is relatively uniform, with only Week 3 standing out significantly due to its larger sum of 6,000 units. The rest of the weeks exhibit a narrow percentage range, suggesting that the financial distribution policy was relatively steady, with only one exception.

The use of color-coding effectively distinguishes between the weeks, making the chart easy to interpret. The circular donut format also provides a clear visual comparison of the percentages. However, the graph does suffer from minor label inconsistencies, with some percentages being cut off (e.g., "5K (14....)"), reducing its readability.

The graph suggests that financial distribution follows a stable trend with slight fluctuations. The 6,000-unit week might indicate a special event or an increased financial requirement. However, since the remaining weeks remain consistent, it reflects an overall controlled financial management pattern.

The financial data suggests efficient and predictable budgeting practices, except for the outlier week. The consistent 5,000-unit distribution indicates a regular allocation strategy. The higher week may reflect either a planned event, increased expenses, or an exceptional financial requirement.

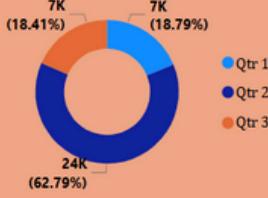
6. DASHBOARD -

COFFEE SALES ANALYSIS

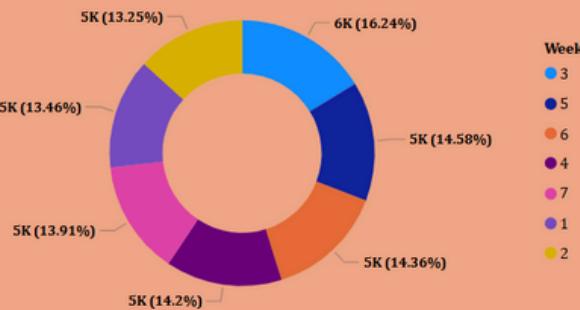
38K

Total Sales

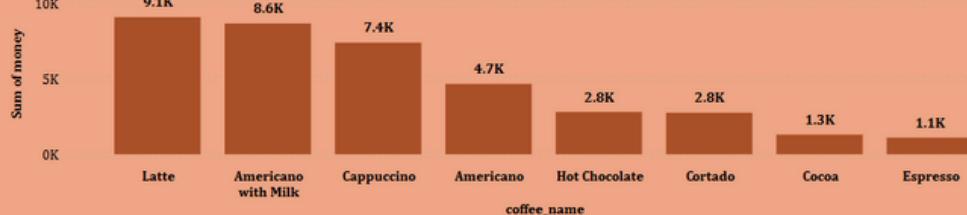
Sales by Quarter



Sales by week



Sales by type of Coffee



Sales by Month



This coffee sales dashboard provides a comprehensive view of sales trends across different time periods, coffee types, and cash types. The dashboard incorporates weekly, monthly, and quarterly sales data, helping in identifying peak periods, best-selling coffee varieties, and overall revenue distribution. Below is a deep analysis of the key sections in this dashboard.

At the top left, the dashboard highlights total sales of 38K, indicating the overall revenue performance. This metric serves as a quick glance at the business's financial health. However, to gain deeper insights, breaking it down by time periods and coffee types is necessary.

Sales by Coffee Type -

The bar chart representing sales by coffee type showcases which coffee varieties drive the most revenue.

Latte and Americano with Milk are the best-selling items, both generating 9K sales each. Their popularity may be due to a balanced flavor, high demand, or frequent promotions.

Cappuccino follows with 7K sales, indicating that it also holds a strong customer base.

Sales by Month -

Sales performance is broken down by month, revealing seasonal trends.

May recorded the highest sales (9.1K), indicating a peak demand period. This could be due to seasonal promotions, increased customer footfall, or holiday events.

June (7.8K) and March (7.1K) followed closely, suggesting that sales remain relatively high during these months.

April (6.8K) and July (6.9K) recorded the lowest sales within this period, which could indicate a need for targeted marketing campaigns in these months.

These trends emphasize that May should be capitalized on with high stock availability and marketing efforts, while April and July could benefit from special offers or loyalty programs.

Weekly Sales Trends -

The donut chart illustrating weekly sales distribution shows that revenue is fairly consistent across the weeks, with slight variations.

Week 3 recorded the highest sales (16.24%), possibly due to a marketing push, special discounts, or external factors influencing demand.

Other weeks saw similar sales percentages ranging between 13% and 14.5%, indicating relatively stable performance.

Steady sales across weeks suggest a loyal customer base, but to maximize revenue, targeted campaigns could be implemented during slower weeks.

Quarterly Sales Distribution -

Breaking sales down by quarters provides insight into broader business trends.

Q2 dominates with 62.79% of total sales (24K), showing significantly higher revenue compared to other quarters. This suggests a strong seasonal pattern where demand surges during this period.

Q1 and Q3 contributed 18.79% (7K) and 18.41% (7K). This trend suggests that the business should focus on Q1 and Q3 by launching promotions, seasonal offers, or bundling options to boost sales in off-peak periods.

Although the cash type filter is available, no specific breakdown is shown in this dashboard. However, analyzing payment preferences could offer further insights into customer purchasing behavior. If digital payments are dominant, integrating cashback offers, discounts for online transactions, or loyalty points could further drive sales.

Final Insights and Recommendations -

This dashboard effectively highlights key sales trends, peak demand periods, and best selling products. Below are some strategic takeaways.

Capitalize on Q2 (Peak Sales Period): Since Q2 contributes the most revenue, ensuring sufficient stock, promotional events, and high customer engagement is crucial.

Boost Sales in Low-Performing Months (April & July): Implementing discounts, seasonal promotions, or limited-time offers can help increase revenue.

Promote Low-Selling Coffee Types: Products like Espresso and Cocoa need special marketing efforts, such as bundling them with bestsellers or introducing new variations.

Leverage Weekly Trends: Since sales are relatively stable weekly, targeted campaigns can help maintain customer engagement during slower weeks.

Enhance Payment Methods: If digital transactions dominate, offering exclusive online deals and cashback promotions could encourage higher spending.

Overall, this coffee sales dashboard provides valuable business intelligence for strategic decision-making and revenue optimization.

The coffee sales dashboard provides a comprehensive analysis of sales trends across different time periods, coffee types, and revenue distribution. With total sales reaching 38K, the data reveals that Latte and Americano with Milk are the top-selling coffee types, each contributing 9K in sales, while Espresso and Cocoa lag behind with only 1K sales. May recorded the highest monthly sales (9.1K), while April and July saw the lowest, indicating potential for targeted promotions in those months. Quarterly analysis highlights Q2 as the strongest sales period, accounting for 62.79% of total revenue, while Q1 and Q3 contribute significantly less.



PROJECT - 2

SUPERMART GROCERY SALES

1.TOTAL PROFIT -

This image shows Profit Card. It is a crucial visual component in a Supermart Grocery Sales Analysis, providing a snapshot of the store's financial health. Let's break down the detailed analysis of this card:



Understanding the Profit Card -

The card in the image displays "4M Profit", which indicates that the grocery store has achieved a total profit of 4 million (currency unspecified, but likely in dollars).

The background is purple, while the text is in bold black, ensuring visibility and emphasis.

Significance of Profit in Supermart Sales Analysis -

- Profit is one of the key performance metrics in retail grocery sales.
- A high profit suggests:
- Efficient pricing strategies.
- Cost-effective inventory management.
- High customer demand for products.
- A low or negative profit could indicate:
- High operational costs.
- Ineffective pricing or discounts.
- Excessive wastage or shrinkage in perishable goods.

2.TOTAL SALES -

Sales performance is one of the most crucial metrics in a supermarket's grocery sales report, reflecting the store's revenue generation and market demand. The \$15 million sales KPI card serves as a high-level indicator of the total revenue earned.



indicator of the total revenue earned over a specific period (monthly, quarterly, or annually). While this number is impressive, analyzing it in depth provides valuable insights into the factors influencing sales, such as product categories, customer preferences, seasonal trends, and pricing strategies. Understanding the driving forces behind sales figures is essential for evaluating business performance and making data-driven decisions.

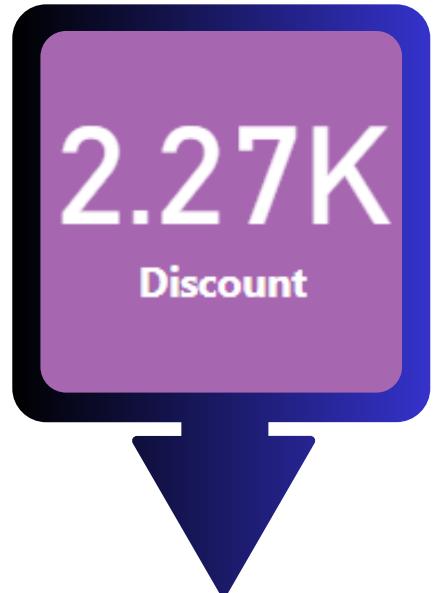
The \$15 million sales figure is the result of multiple contributing factors, including product demand, customer footfall, and promotional activities. A detailed breakdown of sales across different departments (e.g., fresh produce, dairy, packaged foods, beverages, and household essentials) can reveal which categories drive the highest revenue. If a significant portion of sales comes from high-margin products, it suggests strong profitability. However, if low-margin essentials dominate, the profit margins may be thin despite high revenue. Additionally, understanding the split between online and offline sales can help assess the effectiveness of e-commerce channels and digital marketing strategies.

Seasonality also plays a crucial role in grocery sales. Sales tend to spike during holiday seasons, major shopping festivals, and promotional events like Black Friday or back-to-school sales. For instance, increased demand for beverages and snacks in summer, or festive products during the holiday season, contributes to higher sales. The \$15 million sales figure should be analyzed in comparison to previous periods to determine whether the store is experiencing growth, stagnation, or a decline. Year-over-year and month-over-month comparisons help in understanding sales trends and setting realistic future revenue targets.

Another critical factor is the role of customer behavior and loyalty in achieving such sales figures. Supermarkets that leverage loyalty programs, personalized promotions, and discounts often experience repeat purchases, boosting sales.

3.DISCOUNT -

Discounts play a vital role in a supermarket's pricing strategy, influencing customer purchasing behavior and overall revenue. The \$2.27K discount KPI card represents the total amount of discounts given over a specific period, such as a day, week or month. While discounts attract customers and boost sales volume, they also reduce profit margins if not strategically managed. A thorough analysis of this KPI helps in understanding its impact on total revenue, profitability, and customer retention. It is crucial to assess whether the applied discounts are leading to increased sales or if they are cutting too deeply into potential profits.



One way to analyze this \$2.27K discount figure is by breaking it down into different categories, such as promotional discounts, loyalty program discounts, and bulk purchase discounts. Promotional discounts, such as "Buy One Get One Free" (BOGO) or percentage-based discounts, help drive traffic and clear out slow-moving inventory. Loyalty program discounts are typically aimed at rewarding frequent shoppers and encouraging repeat purchases. Bulk purchase discounts, often applied to wholesale or large-quantity buyers, help increase transaction values. Understanding which type of discount contributes most to the total can provide insights into customer behavior and the effectiveness of various promotional campaigns.

Seasonality is another critical factor in discount analysis. Discounts tend to spike during peak shopping seasons like Black Friday, Christmas, Thanksgiving, or back-to-school sales. During these periods, supermarkets offer aggressive price cuts to maximize foot traffic and boost sales volume.

However, excessive discounts outside of peak seasons might indicate that certain products are not selling as expected, leading to markdowns to clear out inventory. By comparing the \$2.27K discount value across different timeframes, businesses can identify trends and optimize their discounting strategy to balance customer attraction with profitability.

Another key aspect of discount analysis is its effect on profit margins and overall revenue. While discounts increase sales volume, they can also reduce profit per item sold.

For instance, if a store applies excessive discounts without a proportional increase in sales volume, the overall revenue might remain stagnant or even decline.

Analyzing the discount-to-sales ratio helps determine whether discounts are helping drive significant revenue growth or simply cutting into profit margins. Ideally, discounts should be structured in a way that increases the average transaction value while maintaining a healthy profit margin.

From a strategic perspective, discounting should be data-driven, leveraging customer purchase history, market demand, and competitor pricing to offer targeted discounts.

Supermarkets can optimize their discount strategy by using AI-driven pricing models, A/B testing different promotions, and tracking customer responses.

In conclusion, the \$2.27K discount KPI card is an important metric that reflects the supermarket's pricing strategy and promotional effectiveness. A well-balanced discount strategy can help drive customer loyalty, increase sales, and maintain competitive pricing without significantly hurting profit margins.

4. PROFIT BY REGION -

The Profit by Region graph provides crucial insights into the profitability of different geographical areas in the supermarket grocery sales report.

The data reveals that the West region generated the highest profit at 1.19M, followed closely by the East region with 1.07M. The Central and South regions contributed 0.86M and 0.62M, respectively, while the North region showed no recorded profit (0.00M).



This regional breakdown allows businesses to evaluate their financial performance across locations, optimize operations, and develop strategic interventions to boost profitability.

The West and East regions are the most profitable, indicating a strong customer base, effective pricing strategies, and possibly better supply chain management in these areas. Several factors could contribute to this success, including higher population density, greater purchasing power, or better product availability. Businesses should investigate the driving forces behind these strong performances and apply similar strategies to lower-performing regions to enhance overall profitability.

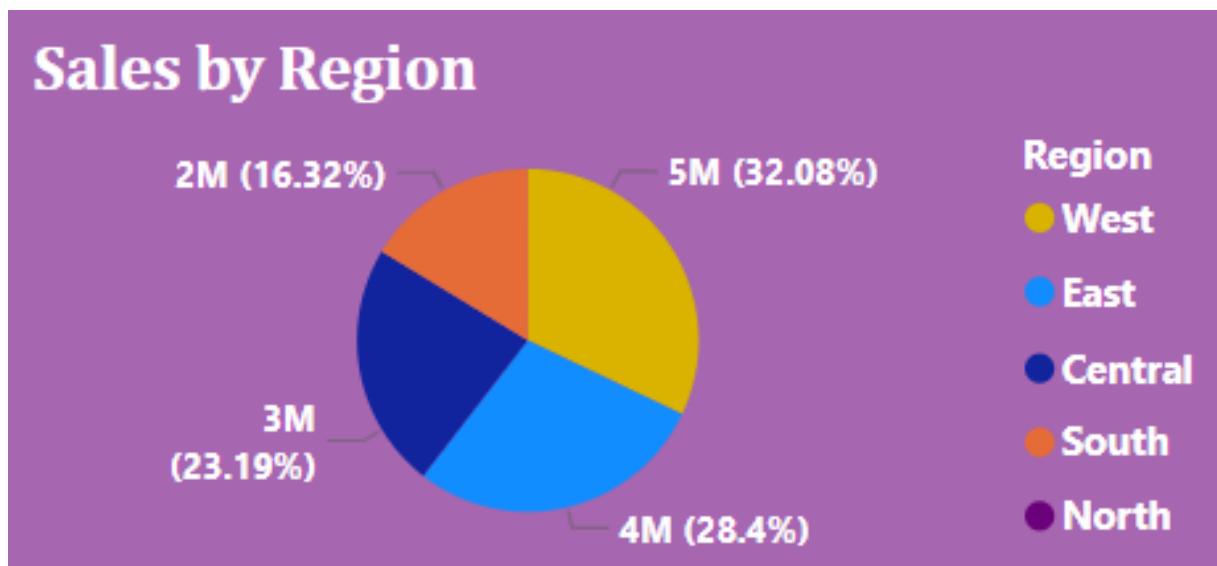
On the other hand, the Central and South regions report moderate profits, suggesting room for growth. The 0.86M profit in the Central region indicates a fairly stable market, but there may be issues like higher operational costs or lower demand for high-margin products. The South region's 0.62M profit is relatively lower, possibly due to weaker market penetration, higher competition, or economic constraints affecting consumer spending.

The North region stands out as a major concern, reporting 0.00M in profit. This could indicate a net loss, operational inefficiencies, or extremely low sales volume in this area. Possible reasons for poor performance in the North may include weak demand, poor distribution networks, high operational costs, or pricing challenges. Conducting a deeper investigation through customer feedback, competitor analysis, and operational assessments will be crucial in identifying the root causes. Businesses may need to introduce aggressive marketing strategies, optimize logistics, or reconsider their product mix to improve performance in this region.

To enhance profitability across all regions, supermarkets should consider customized strategies for each region. For high-performing regions (West & East), businesses can focus on expanding product offerings, premium pricing strategies, and loyalty programs to maintain and increase profitability. For moderate-performing regions (Central & South), strategies such as localized promotions, pricing adjustments, and targeted advertising could help drive sales. Meanwhile, for the struggling North region, businesses should focus on revamping marketing efforts, improving supply chain efficiencies, and possibly reassessing store locations to improve financial performance.

The Profit by Region graph serves as an essential tool for identifying financial strengths and weaknesses across different regions. While the West and East regions are thriving, the Central and South regions require targeted improvements, and the North region demands urgent intervention. By leveraging these insights, supermarkets can develop data-driven strategies to enhance profitability, improve operational efficiency, and ensure long-term business growth.

5.SALES BY REGION -



The Sales by Region pie chart provides a comprehensive breakdown of total sales across different geographical areas, enabling businesses to assess their market performance. The data shows that the West region leads with 5M in sales (32.08%), followed by the East region with 4M (28.4%).

The Central region contributes 3M (23.19%), while the South and North regions report the lowest sales, with 2M (16.32%) combined. These regional insights help businesses make informed decisions on inventory management, marketing efforts, and expansion strategies.

The West region, with 5M in sales, emerges as the top-performing area. This could be due to a larger customer base, strong brand presence, efficient distribution networks, and high consumer demand. Supermarkets should capitalize on this success by introducing premium product offerings, customer loyalty programs, and high-margin items to maximize revenue further. Similarly, the East region, generating 4M in sales, shows strong market potential. Businesses should analyze customer behavior in these areas to identify trends and preferences, ensuring they continue to meet consumer needs effectively.

The Central region contributes 3M in sales, representing 23.19% of the total sales volume. While this is a stable performance, it lags behind the West and East. The region may have a competitive retail landscape, pricing constraints, or lower purchasing power among consumers. To improve sales in this region, supermarkets can implement localized promotional campaigns, targeted advertisements, and special discounts to attract more customers. Additionally, conducting market research can help identify popular product categories and unmet customer demands in this area.

The South and North regions account for only 2M in sales, representing the lowest contributions. These numbers suggest limited market penetration, low foot traffic, or weaker brand recognition in these areas. There could also be challenges related to supply chain inefficiencies, customer preferences, or store accessibility. Businesses should investigate these potential issues and introduce corrective measures such as enhancing product visibility, optimizing pricing strategies, or increasing local advertising efforts to improve sales in these regions.

To ensure balanced growth across all regions, supermarkets must adopt region-specific strategies. For the high-performing West and East regions, strategies like introducing premium product lines, increasing digital marketing investments, and expanding home delivery services could further boost sales. In the moderate-performing Central region, businesses should analyze consumer preferences and adjust inventory to align with local demand. For the underperforming South and North regions, supermarkets should focus on brand awareness campaigns, competitive pricing, and customer engagement activities to drive more foot traffic and sales.

Understanding regional sales distribution is crucial for efficient inventory allocation, revenue forecasting, and business expansion planning. Supermarkets should focus on strengthening their market presence in high-performing regions while implementing targeted improvements in moderate and low-performing areas. Additionally, integrating data-driven insights from loyalty programs, foot traffic analysis, and consumer feedback can help refine business strategies. Regular monitoring of regional sales trends and adapting to changing consumer demands will ensure sustainable business growth.

The South and North regions struggle with low sales, possibly due to supply chain inefficiencies, weaker demand, or lack of brand awareness. Businesses should focus on aggressive marketing, better pricing strategies, and store accessibility improvements to drive sales.

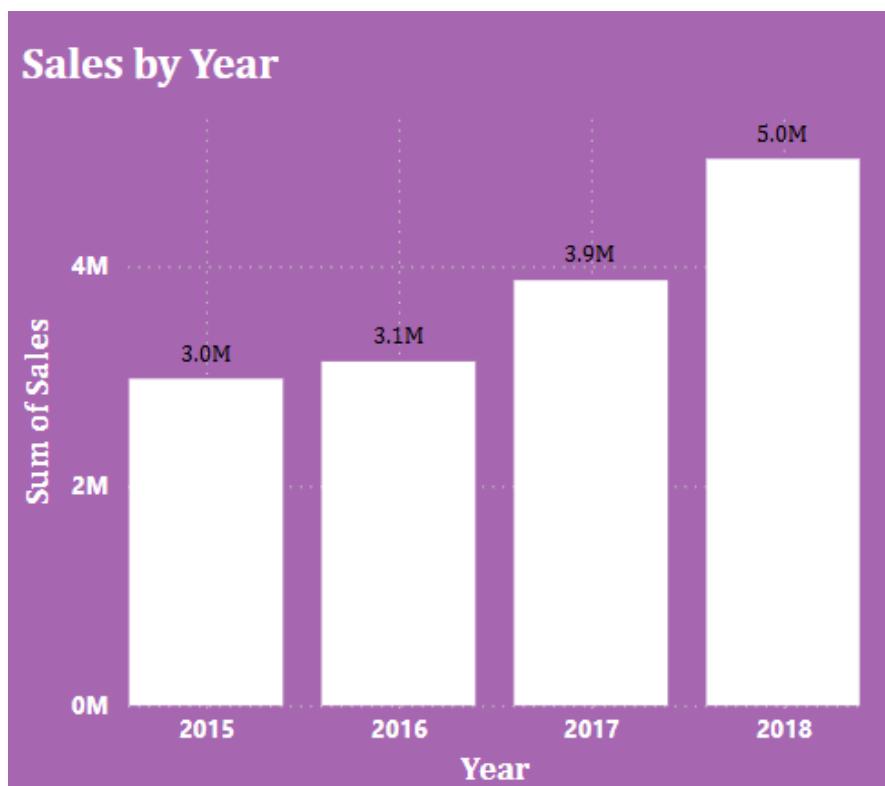
The Sales by Region analysis highlights the varying performance of different geographical areas in a supermarket's sales distribution. While the West and East regions are driving the majority of sales, there is potential for growth in the Central region, and significant improvement is needed in the South and North. By leveraging region-specific marketing strategies, optimizing product assortments, and improving supply chain efficiencies, businesses can enhance sales performance and profitability across all regions.

The Sales by Region chart shows that the West region leads with 5M in sales (32.08%), followed by the East (4M, 28.4%) and Central (3M, 23.19%). The South and North regions contribute the least (2M, 16.32%), indicating lower market penetration or demand.

The West and East regions show strong performance, likely due to higher foot traffic, strong brand presence, and effective distribution. Supermarkets should focus on premium product offerings and customer loyalty programs to maximize revenue.

The Central region performs moderately, suggesting room for improvement. Implementing localized promotions, pricing adjustments, and targeted marketing could help boost sales.

6.SALES BY YEAR -



The Sales by Year chart provides insights into the annual performance of the supermarket, highlighting sales trends over the years 2015 to 2018. The data indicates a consistent increase in sales each year, showcasing steady business growth. In 2015, sales were approximately 2.5M, followed by a slight increase in 2016.

The growth rate picked up in 2017, reaching around 3.5M, and peaked in 2018 with over 4.5M in sales. This positive trend suggests improved business strategies, higher customer engagement, and possibly an expansion of product offerings or store locations.

The sales figures for 2015 and 2016 indicate a stable yet modest growth rate. This period could be characterized by market penetration efforts, initial brand establishment, or operational optimizations.

While the growth is not exponential, maintaining a steady rise suggests a loyal customer base and effective sales strategies. To accelerate growth during this period, businesses may have relied on marketing campaigns, discounts, and seasonal promotions.

In 2017, there was a notable jump in sales, suggesting an improvement in business performance. Several factors could have contributed to this, including expanding the product line, improving customer experience, introducing digital sales channels, or refining supply chain efficiency. A rise in consumer demand, coupled with effective marketing, may have played a key role in this boost. This year likely marked a shift toward data-driven decision-making, optimizing inventory, and personalizing offers based on consumer behavior.

The highest recorded sales were in 2018, surpassing 4.5M, marking the most successful year in this period. This growth could be attributed to brand recognition, increased store visits, competitive pricing strategies, and possibly expansion into new locations or online platforms. The supermarket's ability to adapt to market trends, customer preferences, and technology-driven solutions likely fueled this remarkable performance. If this trend continues, the business could consider investing in loyalty programs, expanding into new regions, and strengthening supplier relationships to sustain growth.

Several factors may have influenced this upward trajectory:

- Customer Retention & Acquisition – Growing customer trust and attracting new buyers through marketing and discounts.
- Product Expansion – Introducing diverse product categories to meet varying consumer needs.
- Operational Efficiency – Enhancing logistics, stock management, and reducing supply chain delays.
- Digital Transformation – Leveraging online sales, mobile apps, and data analytics to optimize business decisions.

To maintain this positive trend, the supermarket should focus on:

- Enhancing Customer Engagement through personalized promotions and loyalty rewards.
- Expanding E-commerce Channels for online shopping convenience.
- Diversifying Product Offerings to cater to different customer segments.
- Data-Driven Decision-Making using sales trends and consumer preferences to drive business strategies.

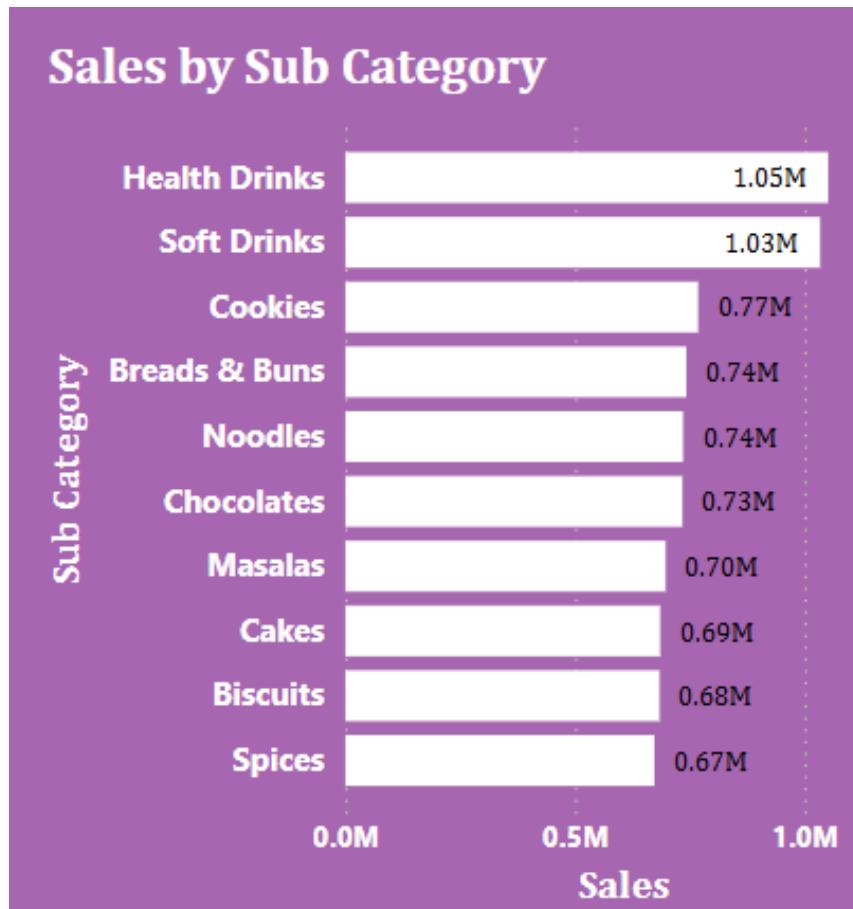
The Sales by Year analysis reflects consistent revenue growth, showcasing successful business strategies. The sharp increase in 2017 and 2018 indicates a strong market position and evolving consumer demand. To ensure continued success, businesses should capitalize on digital advancements, supply chain efficiencies, and targeted marketing.

The Sales by Year chart demonstrates a consistent upward trend from 2015 to 2018, reflecting steady business growth. Sales started at around 2.5M in 2015, saw gradual growth in 2016, and then experienced a significant jump in 2017 and 2018, surpassing 4.5M in the final year.

The modest growth in 2015 and 2016 suggests early business development, market penetration, or stable customer retention. The sharp rise in 2017 indicates improved strategies, possibly through product expansion, better promotions, or enhanced operational efficiency.

By 2018, sales peaked, which could be attributed to higher demand, brand recognition, digital sales integration, and optimized supply chain management. These factors played a crucial role in driving higher revenues.

7. SALES BY SUB CATEGORY -



The sales distribution across various subcategories in a grocery store, highlighting the performance of different product segments. The categories analyzed include beverages, baked goods, spices, and other grocery staples.

The data showcases the sum of sales for each subcategory, with a maximum scale reaching up to one million (1M).

From the chart, Health Drinks and Soft Drinks emerge as the top-performing subcategories, contributing the highest sales figures. This suggests a strong consumer preference for beverages, possibly due to increasing health consciousness or regular consumption habits. The dominance of these categories indicates that investing in beverages could be a profitable strategy for the grocery store.

Cookies, Breads & Buns, and Noodles follow closely behind in sales. These items are essential grocery staples and are likely favored for their convenience and versatility.

Mid-tier subcategories include Chocolates, Masalas (spices mix), and Cakes, all of which maintain steady sales. Chocolates and cakes could be associated with indulgence and occasional treats, while masalas indicate the importance of spices in everyday cooking. This suggests that while these items may not be daily necessities, they still hold a significant place in consumer purchases.

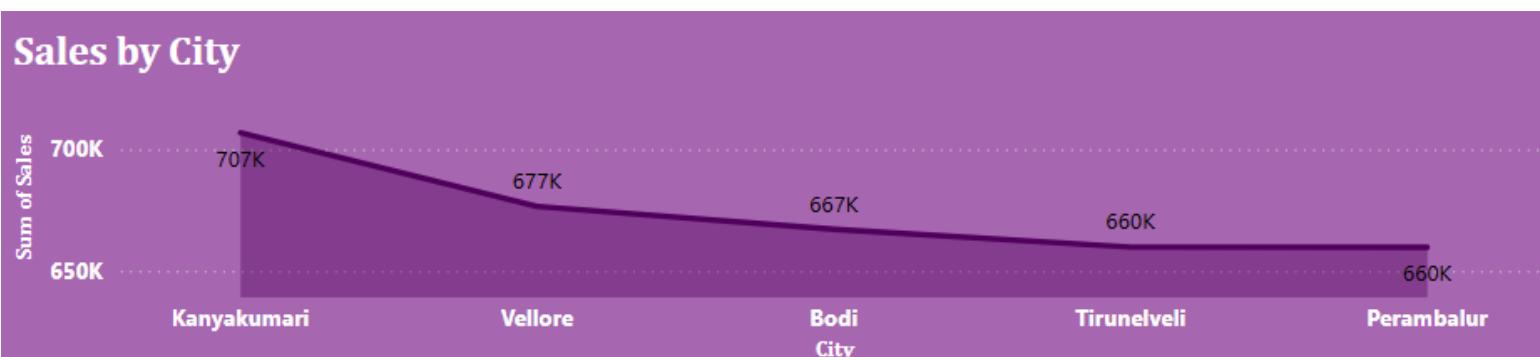
Lower on the sales chart are Biscuits and Spices, indicating a comparatively lesser demand. While biscuits are similar to cookies, their lower ranking suggests that consumers may prefer cookies over traditional biscuits. Spices, although essential for cooking, have a lower purchase frequency, possibly due to their long shelf life and infrequent need for replenishment.

In conclusion, the grocery sales report highlights that beverages and quick-consumption food items dominate sales, while indulgence products and spices maintain moderate demand. Understanding these trends can help store owners optimize their inventory, focusing on high-performing categories while strategizing ways to boost lower-performing ones.

Sales by Subcategory Analysis provides insights into which product subcategories are performing well and which need improvement. Key points include:

- Top-Performing Subcategories – Identify the subcategories driving the highest revenue.
- Low-Performing Subcategories – Highlight subcategories with declining or stagnant sales.
- Trends & Seasonality – Examine patterns over time to spot seasonal demand.
- Profitability – Assess whether high sales also translate into high profits.

8. SALES BY CITY -



The sales analysis by city provides a clear picture of revenue distribution among the top five cities. From the graph, Kanyakumari leads in total sales, followed by Vellore, Bodi, Tirunelveli, and Perambalur. The sales trend shows a gradual decline from Kanyakumari to Perambalur, indicating that certain cities contribute more significantly to overall business performance.

Kanyakumari tops the list with sales slightly above 700K, highlighting it as the most lucrative market. Factors such as a strong customer base, high demand, or a well-established distribution network may be contributing to this success. Businesses should capitalize on this momentum by maintaining stock availability and implementing targeted marketing strategies.

Vellore follows closely with sales of approximately 677K. Though slightly lower than Kanyakumari, it remains a key market. The small drop in sales suggests that Vellore still holds strong purchasing power. Companies may explore promotional offers or customer engagement activities to sustain and potentially boost sales in this region.

Bodi stands at third place with sales of around 667K. The difference between Vellore and Bodi is minimal, indicating comparable market demand. However, a slight decline in sales might suggest the need for localized marketing efforts to drive further growth. Understanding customer preferences in Bodi can help in curating effective sales strategies.

Tirunelveli records sales of approximately 660K, showing a continued downward trend. While still a strong market, its performance suggests potential challenges such as competition, shifting consumer trends, or demand saturation. Businesses should analyze market conditions to identify improvement opportunities, such as introducing new product lines or enhancing customer service.

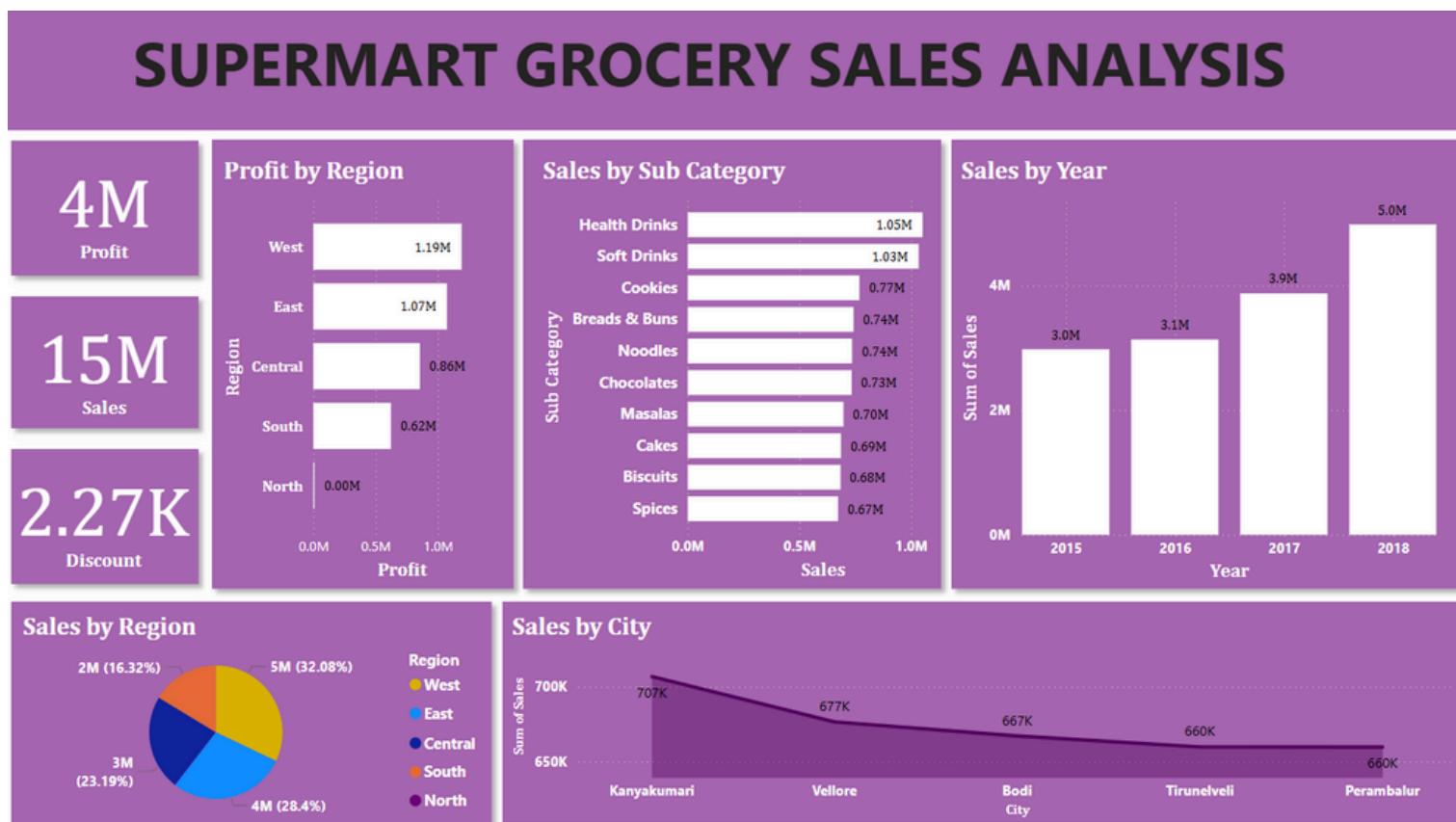
Perambalur is at the lowest end with sales of about 650K. Though it remains within a competitive range, its position suggests a need for intervention. Businesses may consider increasing promotional activities, optimizing pricing strategies, or expanding their reach within the region to enhance sales.

Overall, the trend in sales by city indicates that while some markets perform exceptionally well, others may require strategic efforts to sustain or boost revenue. Businesses should conduct in-depth market research to identify factors influencing sales trends and tailor their strategies accordingly. Continuous monitoring and adaptation will ensure long-term growth and profitability in these key cities.

The sales analysis by city shows Kanyakumari leading with the highest sales above 700K, followed by Vellore (677K), Bodi (667K), Tirunelveli (660K), and Perambalur (650K). The trend indicates a gradual decline in sales from Kanyakumari to Perambalur.

Kanyakumari's strong performance suggests high demand and market potential, while Vellore remains a key market with room for growth. Bodi and Tirunelveli show similar sales figures, indicating stable demand but potential for improvement. Perambalur, with the lowest sales, may need targeted marketing and promotional efforts.

9. DashBoard -



The Supermart Grocery Sales Analysis Dashboard provides a comprehensive view of sales, profit, and performance across different regions, cities, subcategories, and years. Below is a detailed analysis of the key insights:

1. Overall Performance:

- Total Profit: 4M
- Total Sales: 15M
- Total Discount Given: 2.27K

2. Sales & Profit by Region :

- Highest Profit Region: West (1.19M)
- Lowest Profit Region: North (0M)
- Highest Sales Contribution: West (5M, 32.08%)
- Lowest Sales Contribution: North (0M)

The West and East regions drive the most profits and sales, while the North region shows no recorded sales or profit, signaling a potential market gap or lack of expansion in that area.

3. Sales by Subcategory :

- Top-Selling Subcategories:
 - Health Drinks
 - Soft Drinks
 - Cookies
 - Breads & Buns
- Lower-Selling Subcategories:
 - Spices
 - Biscuits
 - Cakes

Health and beverage-related products dominate sales, suggesting a strong demand in this segment. Lower-performing categories might need promotions or strategic changes.

4. Sales Trend Over Years :

- Sales show a steady increase from 2015 to 2018, indicating consistent growth.
- The highest sales are recorded in 2018, surpassing 4M.
- This growth suggests expanding customer demand and possibly improved business strategies.

5. Sales by City :

- Top City: Kanyakumari (~700K sales)
- Lowest of the Top 5 Cities: Perambalur (~650K sales)
- The decline in sales from Kanyakumari to Perambalur suggests varied demand across cities. Targeted marketing in lower-performing cities could boost revenue.

6. Business Recommendations :

- Expand in the North Region, as it shows zero profit and sales potential.
- Strengthen low-selling subcategories with better promotions and visibility.
- Focus on growing cities like Perambalur by introducing localized offers.
- Maintain momentum in top-performing regions and subcategories to sustain revenue growth.
- This analysis highlights strong business areas while identifying opportunities for improvement, ensuring continued growth and profitability.

The Supermart Grocery Sales Analysis Dashboard highlights key business performance metrics, including 15M in total sales, 4M in profit, and 2.27K in discounts. Sales have shown consistent growth from 2015 to 2018, with the highest revenue recorded in 2018. Regionally, the West (5M) and East (4M) contribute the most sales, while the North region shows zero sales and profit, indicating potential expansion opportunities.

Among product subcategories, Health Drinks, Soft Drinks, and Cookies lead in sales, while Spices, Biscuits, and Cakes underperform, suggesting a need for targeted promotions. City-wise, Kanyakumari tops with the highest sales (~700K), followed by Vellore, Bodi, Tirunelveli, and Perambalur. The gradual decline in city-wise sales suggests varying consumer demand, requiring city-specific marketing strategies.

To sustain growth, expanding into the North region, boosting sales in lower-performing cities, and promoting weaker subcategories are key strategies. Strengthening high-performing regions and products while addressing gaps in underperforming areas will ensure continued business success.



PROJECT - 3

LAPTOP PRICE ANALYSIS

1. TOTAL SALES -

A KPI card showing "1M Sales" in a Laptop Price Sales Analysis Dashboard serves as a high-level indicator of total laptop sales. However, a more detailed analysis can provide deeper insights into sales trend, price influences and key drivers. Below is a structured detailed analysis report based on this KPI.



The Total Sales KPI card, showing 1 million (1M) laptop sales, serves as a crucial performance metric in understanding market demand and sales distribution. This KPI provides a high-level overview of how laptops are performing in the market, indicating strong consumer interest.

However, to gain deeper insights, analyzing sales trends across different price segments, customer preferences, and regional performance is essential.

Sales trends over time provide additional insights into purchasing patterns. Seasonal peaks, such as back-to-school sales, Black Friday, and holiday discounts, often drive higher sales. If sales are growing year over year, it suggests a strong market demand, whereas declining sales may indicate increased competition or changing consumer preferences.

Additionally, monitoring the impact of promotional campaigns can help assess whether discounts and marketing strategies are effectively boosting sales.

Brand-wise analysis plays a vital role in understanding consumer loyalty and preferences. Certain brands may dominate specific price categories, such as gaming laptops, ultrabooks, or business laptops.

If a particular brand consistently leads in sales, it may indicate strong brand trust, superior product quality, or effective marketing strategies.

Identifying top-selling models also helps manufacturers and retailers focus on high-demand products.

Regional performance is another crucial aspect of sales analysis. Sales data across different countries or cities can reveal market-specific trends, such as higher demand for budget laptops in developing regions versus increased interest in high-performance devices in tech-driven economies.

Businesses can use this data to tailor their marketing and distribution strategies to meet regional demands effectively.

Finally, customer demographics and purchasing behavior provide insights into who is buying these laptops and why. Students may prioritize affordability and battery life, while professionals may seek performance and reliability.

Gaming laptops, on the other hand, cater to a niche audience that values high-end GPUs and refresh rates. Understanding these preferences helps businesses develop targeted advertising strategies and improve product design.

In conclusion, while the 1M total sales KPI provides a strong market performance indicator, a deeper analysis of pricing, sales trends, brand performance, regional demand, and customer behavior is essential for making strategic business decisions. By leveraging these insights, companies can optimize their product offerings, enhance customer engagement, and drive future sales growth.

2. TOTAL WEIGHT -

The Total Weight KPI card, showing a value of 2497 (likely in kilograms or pounds), provides an aggregate measure of the total weight of all laptops sold.



While weight may not be a primary metric in financial analysis, it can offer insights into market trends, consumer preferences, and logistics planning. Analyzing this data alongside sales numbers and laptop categories can help businesses make informed decisions.

One key aspect of weight analysis is understanding its correlation with different price segments. Budget laptops, which are generally bulkier and made with cost-effective materials, may contribute significantly to the total weight. In contrast, premium ultrabooks, which are lightweight but expensive, may represent a lower percentage of total weight while still generating high revenue.

Analyzing how different weight categories contribute to overall sales can help identify consumer preferences for portability versus affordability.

Logistics and supply chain management is another important area where total weight plays a role. Higher total weight means higher shipping costs, especially for international deliveries. Retailers and manufacturers can use this data to optimize transportation strategies, reduce shipping expenses, and enhance supply chain efficiency. If total weight is increasing over time despite fewer units being sold, it may indicate a shift towards heavier, high-performance laptops such as gaming machines or workstation laptops.

From a customer preference perspective, analyzing total weight can reveal shifts in demand for lightweight versus heavier laptops. If a growing number of sales come from lightweight models, it may indicate that consumers prioritize portability and convenience, especially in segments like business professionals and students.

From a customer preference perspective, analyzing total weight can reveal shifts in demand for lightweight versus heavier laptops. If a growing number of sales come from lightweight models, it may indicate that consumers prioritize portability and convenience, especially in segments like business professionals and students. Conversely, if heavier models dominate, it could signal increasing interest in gaming laptops, high-performance machines, or durable, rugged laptops designed for specialized industries.

The impact of weight on pricing and features is another critical factor to consider. Lighter laptops often come with premium materials (e.g., aluminum chassis, carbon fiber) and advanced engineering for compact designs, which increases costs. Heavier laptops, particularly those with large batteries and powerful components, may appeal to gamers or professionals needing high computing power.

Understanding these trends helps manufacturers fine-tune product offerings to meet market demands.

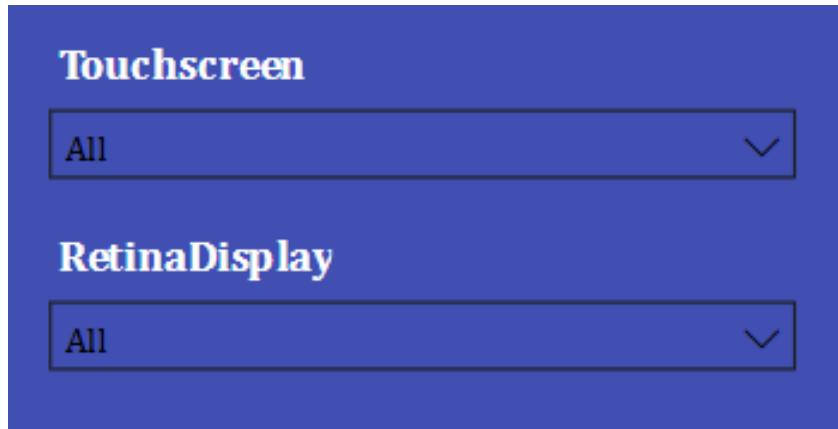
Regional analysis of total weight distribution can also provide meaningful insights. In regions where students and travelers drive demand, lighter models may dominate sales, while in gaming-heavy markets, heavier devices may be more common. Retailers can use this data to optimize inventory management, ensuring they stock the right balance of laptop types to cater to local consumer preferences.

In conclusion, while the Total Weight KPI of 2497 may not directly impact revenue, it provides valuable insights into sales trends, logistics, customer preferences, and pricing strategies.

Businesses can leverage this data to optimize their product lineup, improve supply chain efficiency, and tailor marketing strategies to meet evolving consumer needs. Understanding the relationship between weight, price, and performance is key to staying competitive in the laptop market.

3. FILTERS -

Filters in a dashboard for a laptop sales analysis play a crucial role in providing granular insights into different aspects of sales performance.



The two filters shown in the image—Touchscreen and Retina Display—allow users to refine the data based on the presence or absence of these features in laptops. The dropdown options for both filters include “Yes” and “No,” along with “All” for an overall view.

The Touchscreen filter enables analysis of sales trends based on whether a laptop has a touchscreen feature. With the increasing popularity of 2-in-1 laptops and hybrid devices, touchscreen capability is an important deciding factor for consumers. Analysts can assess:

- The demand for touchscreen laptops compared to non-touchscreen models.
- The price range in which touchscreen laptops are being sold.
- Customer preferences across different brands and specifications.
- Regional trends to identify areas where touchscreen laptops are more or less popular.

The Retina Display filter helps in understanding the impact of high-resolution screens on sales performance. A Retina Display (a term primarily used by Apple) or any high-PPI display improves visual clarity, making it a premium feature. Analyzing sales data based on this filter can reveal:

Whether laptops with high-resolution displays sell better than those with standard screens.

- The influence of Retina Display on pricing and customer purchasing decisions.
- The target audience—whether students, professionals, or designers—are more inclined toward Retina-equipped devices.
- Trends among brands offering high-resolution displays and their market share.

Using these filters together, users can derive deeper insights into how display features impact purchasing behavior. For example:

- A spike in sales of touchscreen laptops might indicate growing adoption in education and creative fields.
- Higher sales of Retina Display models could suggest demand for premium laptops among professionals and gamers.
- If non-touchscreen, non-Retina laptops dominate sales, it might point to price-sensitive customers prioritizing affordability over display quality.

Businesses and analysts can use these insights to optimize their inventory, marketing strategies, and pricing structures.

If a trend shows a growing demand for touchscreen laptops, manufacturers can focus on launching more models with this feature.

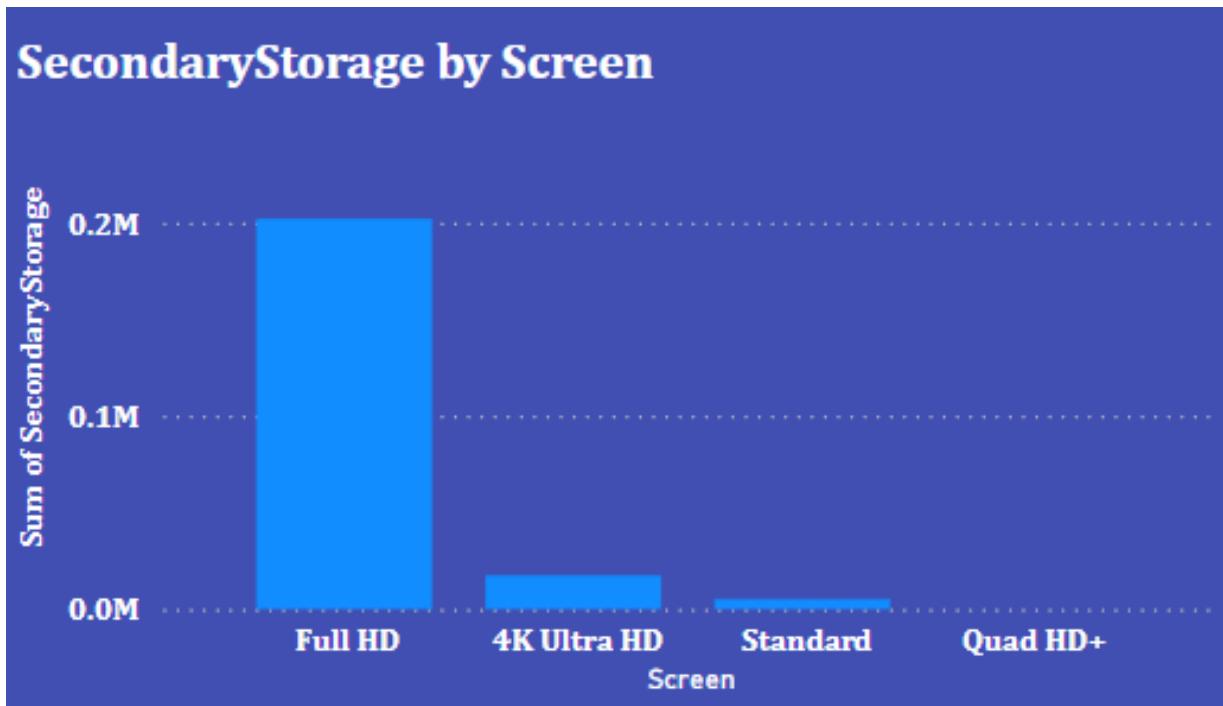
Similarly, brands may push high-resolution displays in their advertising if data suggests a strong preference for Retina screens.

Overall, these filters enable data-driven decision-making, allowing businesses to align product offerings with consumer demands and maximize profitability.

Additionally, by analyzing the filtered data over different time periods, businesses can identify seasonal trends and shifts in consumer behavior. For instance, an increase in touchscreen laptop sales during back-to-school seasons may indicate a preference among students, while a surge in Retina Display models could align with professionals upgrading their workstations.

These insights can help retailers adjust stock levels, optimize marketing campaigns, and introduce targeted discounts to maximize sales and customer satisfaction. By leveraging such filters effectively, businesses can enhance their competitive advantage in the dynamic laptop market.

4. SECONDARY STORAGE BY SCREEN -



The given bar chart, titled "Secondary Storage by Screen," provides an analytical view of how secondary storage is distributed across different screen types in laptops. The y-axis represents the sum of secondary storage, while the x-axis categorizes laptops based on their screen types: Full HD, 4K Ultra HD, Standard, and Quad HD+.

From the chart, it is evident that Full HD laptops account for the highest amount of secondary storage, followed by 4K Ultra HD, Standard, and Quad HD+. A deeper dive into the insights can help understand the reasons behind this distribution.

The Full HD category has the highest secondary storage, exceeding 0.2 million units, which suggests that laptops with Full HD screens are more commonly associated with higher secondary storage capacities. This dominance could be attributed to the fact that Full HD displays are widely available across various price segments, from budget laptops to high-end models.

Since many consumers prioritize storage for gaming, multimedia, and professional work, manufacturers may bundle larger HDDs or SSDs with Full HD laptops.

4K Ultra HD laptops hold the second-highest amount of secondary storage, but the total is significantly lower than Full HD. This may indicate that 4K laptops are fewer in number compared to Full HD models, as 4K resolution is typically found in premium or high-performance devices. These laptops often come with fast SSDs rather than large HDDs, which may explain the lower overall secondary storage. Additionally, the high cost of 4K screens means they are often targeted at specific professional users (e.g., video editors, designers), who might prioritize faster but smaller storage solutions rather than sheer capacity.

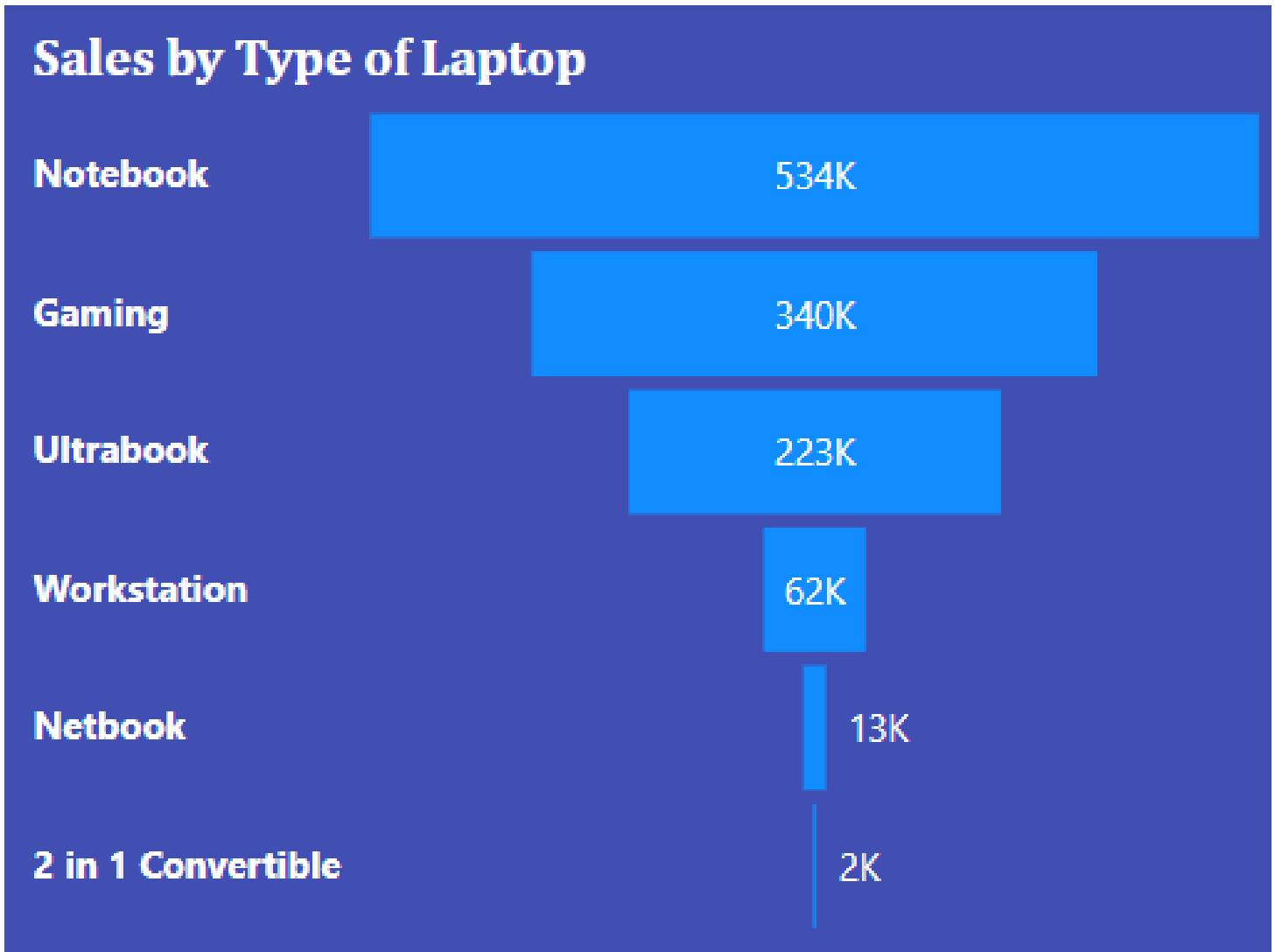
Laptops with Standard resolution screens have a very low sum of secondary storage, which suggests that these models are either entry-level or outdated. These laptops may typically include lower-capacity HDDs or SSDs, as they are often designed for basic computing needs like web browsing and office work. Since these users do not require extensive secondary storage, manufacturers may equip these devices with lower-cost storage solutions to keep prices competitive.

The Quad HD+ screen category shows an almost negligible amount of secondary storage, indicating that either very few laptops with this display type exist in the dataset or that they generally come with minimal secondary storage. This could be due to the fact that Quad HD+ screens are not as common in mainstream laptops, being more prevalent in specialized ultrabooks or high-end workstations where primary SSD storage is prioritized over secondary HDD storage.

Given the increasing adoption of cloud storage, external SSDs, and high-speed NVMe drives, the overall reliance on secondary storage might decrease in the future. However, for gaming, multimedia, and data-heavy applications, large secondary storage is still essential. Future studies could explore how secondary storage trends change over time as more laptops adopt hybrid storage solutions combining fast SSDs with large HDDs.

The "Secondary Storage by Screen" chart highlights a strong preference for higher secondary storage in Full HD laptops, with 4K Ultra HD, Standard, and Quad HD+ screens trailing behind. This trend is influenced by consumer demand, laptop pricing, and intended usage. As technology advances, the role of secondary storage may shift, with SSDs becoming the norm and HDDs being used primarily for bulk storage needs. Understanding these trends is crucial for both manufacturers and retailers looking to optimize their product offerings and stay ahead in the competitive laptop market.

5. SALES BY DIFFERENT TYPES OF LAPTOPS -



This "Sales by TypeName" funnel chart provides a clear visualization of laptop sales across different categories, helping to identify the most popular and least popular laptop types.

The Notebook category leads the sales chart with 558K units sold, indicating that traditional laptops remain the preferred choice among consumers, likely due to their versatility, affordability, and widespread use in both personal and professional settings.

The Gaming category follows with 355K units sold, reflecting the growing demand for high-performance laptops among gamers, content creators, and professionals requiring powerful hardware.

The gaming laptop market has expanded significantly due to advancements in GPU technology, better cooling solutions, and increased interest in esports and streaming. Their strong sales indicate that many consumers are willing to invest in high-end machines for entertainment and work-related tasks.

Ultrabooks, with 302K units sold, represent another significant portion of the market. These lightweight and high-performance laptops are favored by professionals and students who need a balance between portability and power. Their strong sales figures suggest that many users prioritize sleek designs, long battery life, and efficient performance, especially for business and travel purposes.

The 2-in-1 Convertible category accounts for 151K units, highlighting a niche yet growing market segment. These hybrid devices, which function as both laptops and tablets, cater to professionals, students, and creative users who value flexibility and touch functionality.

While they have not yet overtaken traditional notebooks or ultrabooks, their increasing adoption suggests a rising demand for multi-purpose devices.

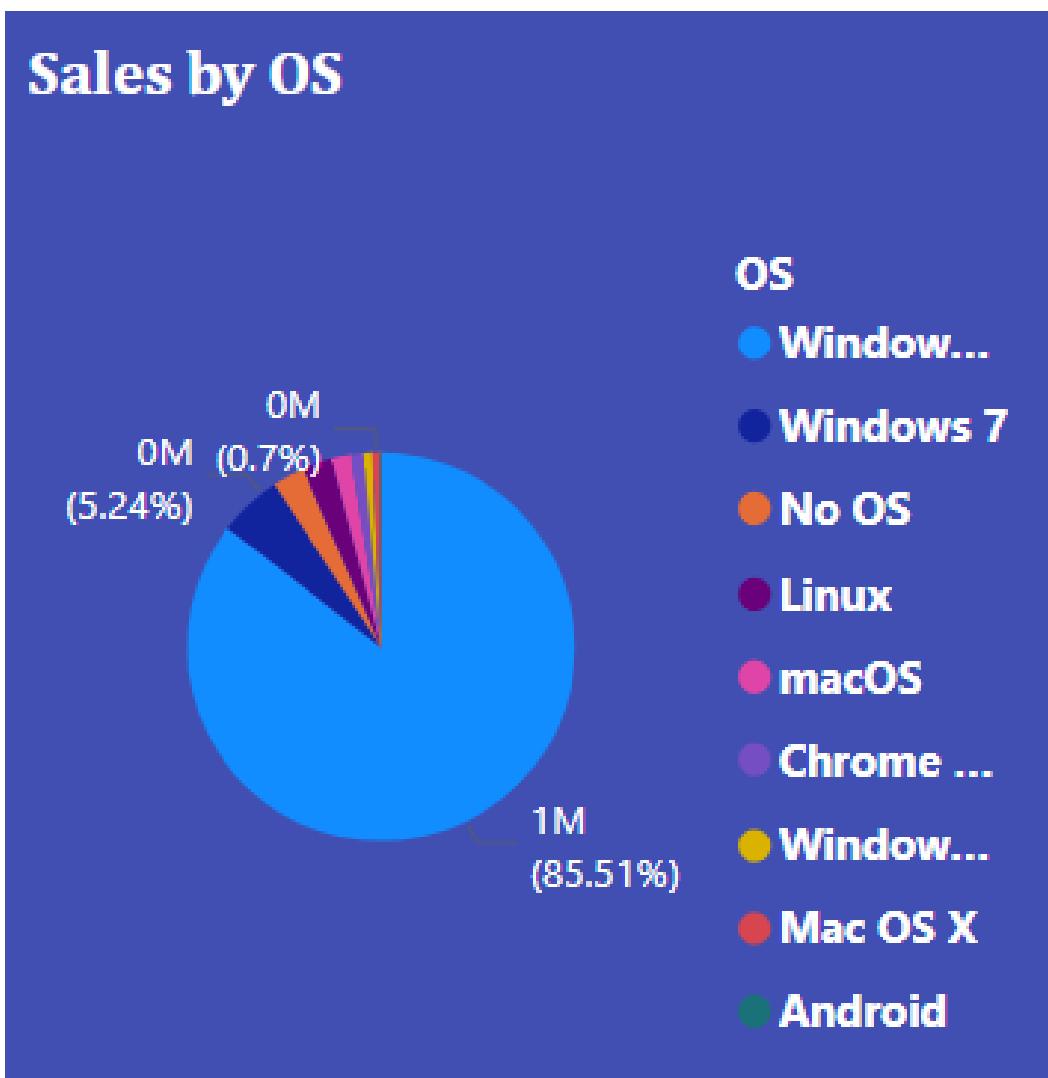
Workstations, which are designed for heavy computational workloads such as 3D modeling, data analysis, and software development, recorded 66K units in sales. Their lower numbers compared to mainstream categories indicate that they serve a specialized market, primarily catering to professionals in engineering, architecture, and content creation industries.

At the bottom of the chart, Netbooks have the lowest sales at 15K units, indicating their declining popularity. Once a budget-friendly alternative for basic computing, netbooks have largely been replaced by more powerful ultrabooks, tablets, and Chromebooks.

Their limited processing power and smaller screens no longer meet the evolving demands of modern users, which explains their minimal sales figures.

Overall, this sales analysis highlights the dominance of traditional Notebooks, Gaming laptops, and Ultrabooks, while specialized categories like 2-in-1 Convertibles and Workstations continue to cater to niche markets. The data suggests a strong consumer preference for performance, portability, and hybrid functionality, which can help manufacturers and retailers make informed decisions about product development, marketing strategies, and inventory management.

6. SALES BY OS -



This "Sales by OS" pie chart provides a clear representation of laptop sales distribution based on operating systems. The dominant segment in the chart is Windows, which accounts for a massive 85.51% of sales, indicating that Windows-based laptops remain the preferred choice for most consumers.

This dominance is likely due to Windows' widespread compatibility with various hardware, extensive software support, and familiarity among users in both personal and professional settings.

The second-largest category, contributing 5.24% of sales, represents Windows 7. Despite being an older operating system with official support discontinued by Microsoft, some users and businesses still rely on it, possibly due to compatibility requirements with legacy software or reluctance to upgrade. However, this share is significantly smaller compared to the latest Windows versions, reflecting the gradual shift toward modernized operating systems.

No OS and Linux hold small portions of the market, reflecting niche user preferences. Some laptops are sold without an OS, allowing users to install their preferred system, which may appeal to tech-savvy individuals or enterprise buyers who want a custom setup. Linux, known for its open-source flexibility and security, remains a choice for developers, programmers, and enterprise users, but its sales figures suggest limited mainstream adoption.

macOS and Chrome OS have minimal market shares, indicating that Apple and Chromebook sales are relatively lower compared to Windows-based devices. macOS is exclusive to Apple hardware, which, despite its strong brand loyalty, represents a smaller portion of overall laptop sales. Chromebooks, primarily used in education and budget-conscious segments, also hold a minor share, reflecting their limited adoption outside specific markets.

Other operating systems like Mac OS X and Android barely register in the sales data, indicating that older Apple devices running Mac OS X are being phased out. Android as a laptop OS is extremely rare, primarily found in niche devices or hybrid tablet-laptop models, which do not contribute significantly to overall sales.

Overall, this analysis highlights the overwhelming dominance of Windows-based laptops in the market, with over 85% of sales. While other OS options cater to specific user segments, their adoption remains limited compared to the broad reach of Windows. This data can help manufacturers and retailers focus on the most in-demand operating systems when developing and marketing their products.

The limited adoption of Linux, macOS, and Chrome OS suggests that most consumers and businesses prefer operating systems with extensive software compatibility and ease of use. Linux, despite its advantages in security and customization, remains a niche choice primarily among developers, IT professionals, and tech enthusiasts.

Similarly, Chrome OS, which is lightweight and cloud-focused, appeals mainly to students and budget-conscious users but lacks the versatility required by professionals and gamers, restricting its market share.

The presence of "No OS" laptops in the sales data indicates a segment of buyers who prefer to install their own operating system.

This trend is common among tech-savvy users or enterprise customers who require specific configurations. However, its relatively small share suggests that most consumers prefer pre-installed OS options for convenience.

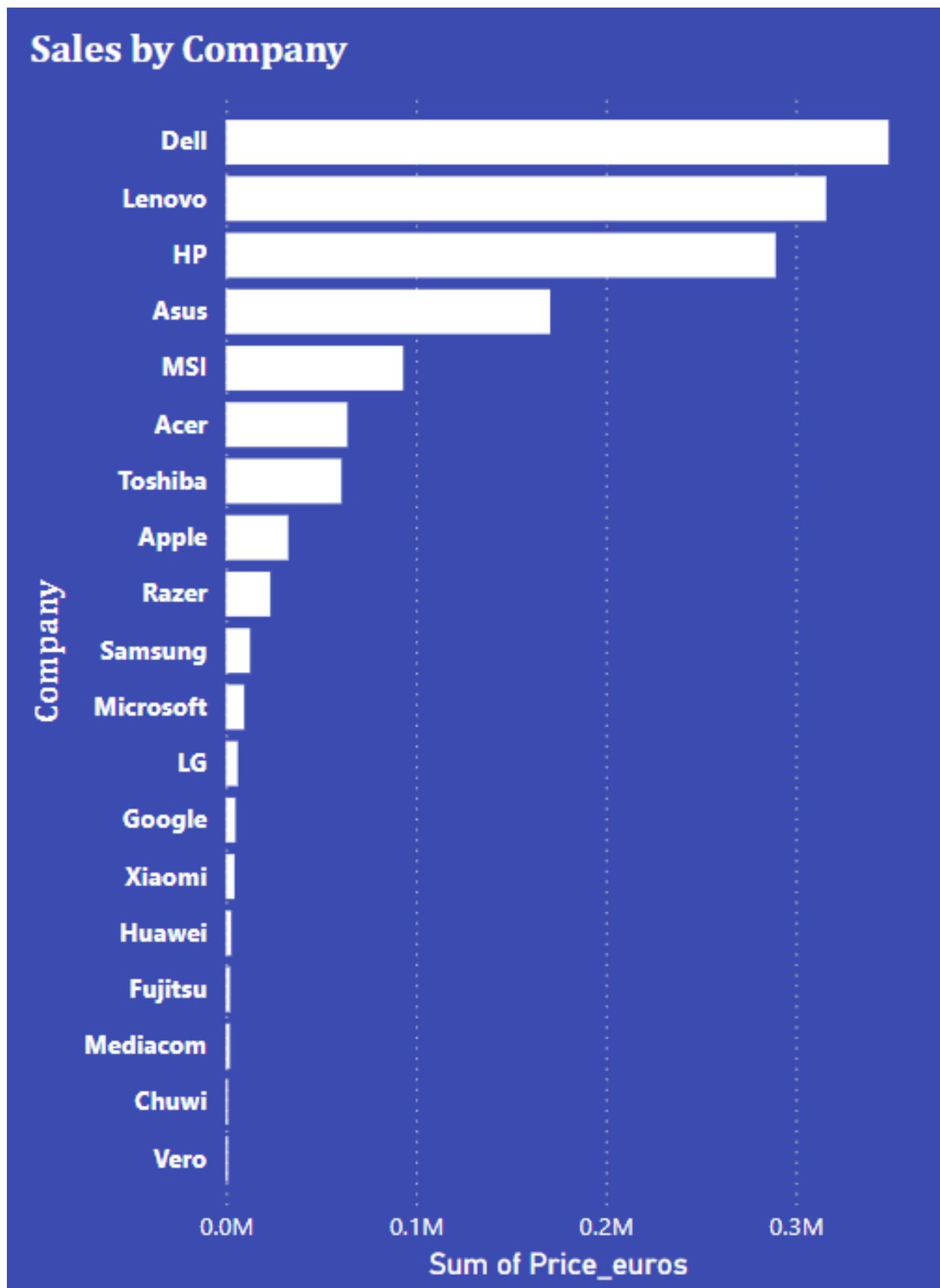
Apple's macOS continues to hold a minor share compared to Windows, despite the brand's reputation for premium design and high performance.

The limited sales can be attributed to Apple's higher pricing, which makes macOS devices less accessible to budget-conscious consumers.

Additionally, since macOS is exclusive to Apple hardware, it lacks the diverse range of manufacturers that contribute to Windows' dominance.

In conclusion, this analysis underscores the stronghold of Windows-based laptops, which dominate sales due to their widespread availability, affordability, and software compatibility. While alternative operating systems like Linux, macOS, and Chrome OS .

7. SALES BY COMPANY -



This "Sales by Company" bar chart provides valuable insights into the distribution of laptop sales across different brands. Dell leads the chart, showing the highest total sales value, indicating its strong market presence.

Dell's popularity can be attributed to its wide range of products, from budget-friendly models to high-performance business and gaming laptops. Their well-established reputation for durability and customer support also plays a crucial role in driving sales.

Lenovo follows closely behind Dell, securing the second position in total sales. Lenovo has built a strong foothold in both consumer and business segments with its ThinkPad and IdeaPad series.

The brand is known for offering reliable performance at competitive prices, making it a popular choice among professionals, students, and enterprises.

HP ranks third in the sales chart, reflecting its steady demand across various laptop categories. HP's diverse product lineup, including budget models, ultrabooks, and high-performance gaming laptops, allows it to cater to a broad customer base. The brand's strong retail presence and after-sales service further contribute to its high sales figures.

Following HP, Asus and MSI show significant sales, particularly due to their strong presence in the gaming and performance laptop segments. Asus is known for its ROG (Republic of Gamers) series, which appeals to gamers and content creators, while MSI specializes in high-end gaming and workstation laptops. The growing demand for gaming laptops and high-performance machines has contributed to their strong sales performance.

Acer and Toshiba also maintain a notable presence, with Acer focusing on budget-friendly and mid-range laptops, making it a preferred choice for cost-conscious buyers. Toshiba, though not as dominant as it once was, still retains a segment of loyal users, particularly in enterprise and business environments.

Surprisingly, Apple ranks lower on the chart, despite its reputation for premium laptops. While MacBooks are highly regarded for their build quality, ecosystem integration, and macOS experience, their higher price points may limit their market reach compared to more affordable Windows-based alternatives. However, Apple's strong brand loyalty ensures a consistent customer base.

Brands like Razer, Samsung, and Microsoft hold relatively smaller shares of the total sales. Razer primarily focuses on premium gaming laptops, which cater to a niche but dedicated audience. Samsung, while dominant in the smartphone industry, has a smaller presence in the laptop market, possibly due to limited model availability.

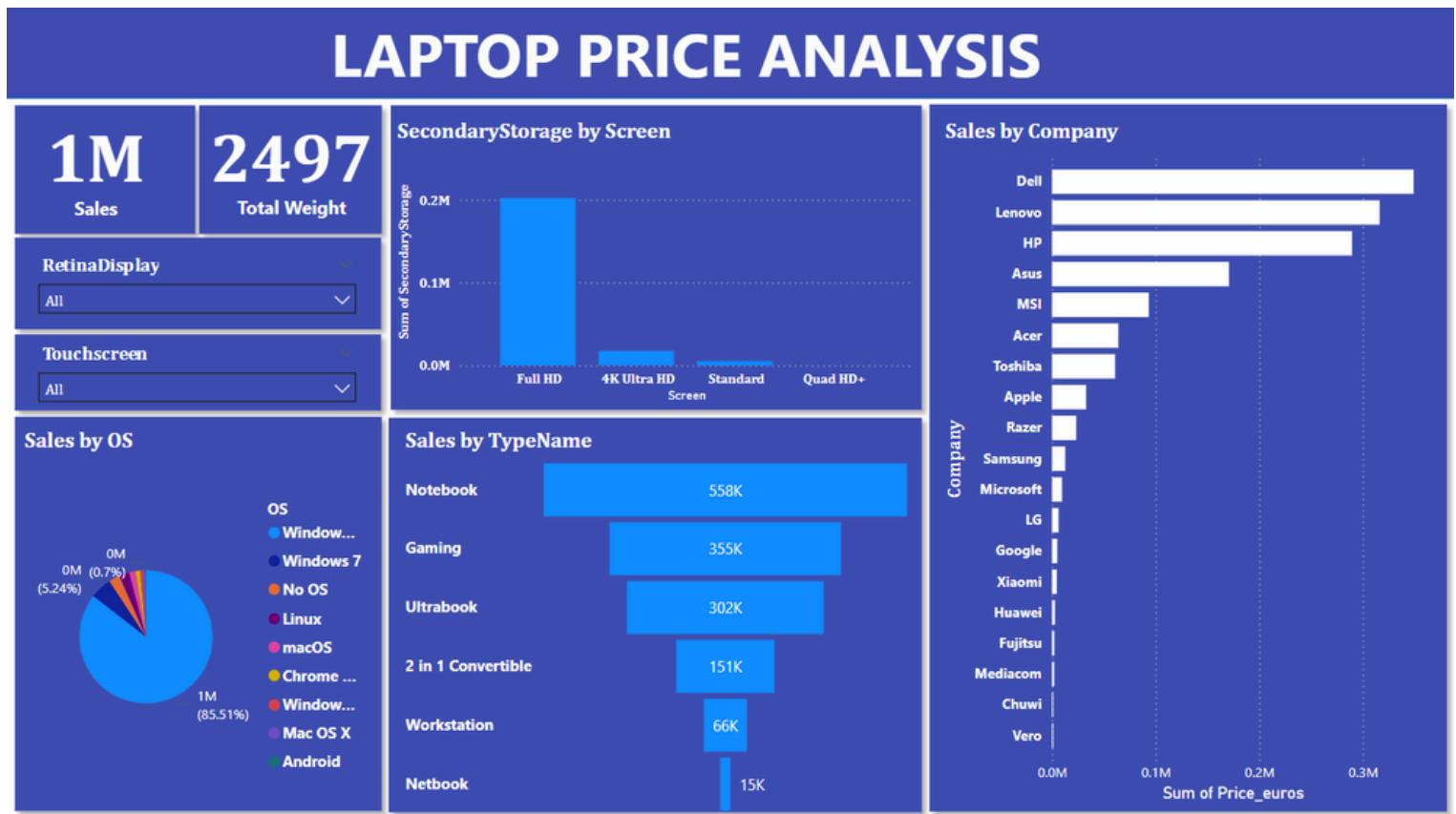
Microsoft's Surface lineup, known for its 2-in-1 laptops and premium designs, also appeals to a niche market but does not match the sales volume of larger manufacturers.

Towards the bottom of the chart, companies like LG, Google, Xiaomi, Huawei, Fujitsu, Mediacom, Chuwi, and Vero have minimal representation in laptop sales. These brands either focus on specific regional markets, niche segments, or have a smaller product lineup, limiting their overall sales. Some, like Google, primarily specialize in Chromebooks, while others, like Xiaomi and Huawei, focus more on mobile devices.

In conclusion, the chart highlights the dominance of well-established brands like Dell, Lenovo, and HP, which cater to a broad customer base with diverse product offerings. Gaming and performance-oriented brands like Asus and MSI continue to see strong demand, while premium brands like Apple and Razer serve niche markets.

Meanwhile, smaller and emerging brands struggle to capture significant market share, reinforcing the stronghold of industry leaders in the competitive laptop market.

8. DASHBOARD -



The Laptop Price Analysis dashboard provides an insightful overview of sales trends, company-wise distribution, operating system preferences, and laptop type sales. By analyzing various parameters such as company performance, OS adoption, and market trends, this report aims to highlight key factors influencing the laptop market.

Overall Sales Overview -

The total sales volume recorded in this analysis is 1 million units, indicating a significant market size. Additionally, the total weight of the laptops sold stands at 2,497 kg, which suggests a diverse range of models and configurations, from lightweight ultrabooks to heavier gaming and workstation laptops.

Sales by Type -

The Sales by TypeName chart provides a breakdown of laptop sales by category. Notebooks dominate the market with 558K units sold, accounting for the highest share. Notebooks remain popular due to their balance of performance, affordability, and portability.

The Gaming laptop segment follows with 355K units, reflecting the growing demand for high-performance machines for gaming, streaming, and content creation. The gaming industry's rapid expansion has led to increased adoption of powerful gaming laptops with high-refresh-rate displays and advanced GPUs.

Ultrabooks, known for their sleek design and lightweight build, have also secured a strong position with 302K sales. The demand for these high-end, premium devices indicates a market preference for portability and efficiency, particularly among professionals and students.

2-in-1 Convertibles account for 151K sales, showcasing an increasing interest in hybrid laptops with touchscreen capabilities and flexible form factors.

Workstations, which cater to professionals requiring powerful computing capabilities for design, engineering, and programming tasks, report 66K sales. Lastly, Netbooks have the lowest sales at 15K, likely due to the availability of more powerful alternatives at affordable prices.

Operating System Preferences -

The Sales by OS pie chart reveals that Windows OS dominates the market, accounting for a staggering 85.51% of total sales. This is expected, given that most laptop manufacturers ship their devices with Windows pre-installed due to its versatility and widespread compatibility with software and hardware.

Other operating systems, including Windows 7 (5.24%), still hold a small share, likely due to businesses and institutions that have not transitioned to newer versions. No OS laptops, making up 0.7% of sales, cater to users who prefer installing their own OS, such as Linux.

Linux, macOS, and Chrome OS collectively hold a minor portion of the market, indicating that while they have niche followings, they are not as widely adopted as Windows-based systems. Mac OS X, despite Apple's strong brand presence, is still a relatively small player in the overall laptop sales landscape.

Sales by Company –

The Sales by Company chart provides a breakdown of total sales revenue generated by different laptop brands. Dell leads the market, followed by Lenovo and HP, showcasing their dominance in the industry.

These brands offer a diverse range of products catering to different price segments, from budget-friendly laptops to high-end business and gaming machines.

Asus and MSI also have significant market shares, particularly in the gaming and performance-oriented laptop segments. Acer and Toshiba maintain their presence in the budget and mid-range market, while Apple lags behind in total sales, despite its premium pricing and brand loyalty.

Notably, brands like Razer, Samsung, Microsoft, LG, and Google occupy smaller market segments, likely due to their focus on niche markets, such as gaming, 2-in-1 premium laptops, or Chromebooks.

Brands like Xiaomi, Huawei, Fujitsu, Mediacom, Chuwi, and Vero have minimal representation, indicating that their presence in the global laptop market is limited.

Touchscreen and Retina Display Trends –

The availability of Touchscreen and Retina Display features is also an important aspect of this analysis. The growing preference for touchscreens, particularly in 2-in-1 Convertibles and high-end ultrabooks, highlights a shift towards more interactive computing experiences.

Retina displays, primarily associated with Apple's MacBooks, are a selling point for users who prioritize high-resolution visuals, color accuracy, and display quality. However, due to Apple's smaller market share, Retina displays remain a niche feature compared to standard high-resolution screens available on other premium laptops.

Primary Storage Preferences -

The choice of primary storage is another critical factor in laptop purchasing decisions. With the transition from HDDs to SSDs, most modern laptops now incorporate SSD storage for faster performance, improved reliability, and better energy efficiency.

The Sales by Primary Storage section highlights the growing dominance of SSD and hybrid storage solutions, with traditional HDDs gradually phasing out.

CPU and GPU Impact on Sales -

Processor and graphics performance significantly influence laptop sales. The CPU model and GPU brand selections in the dashboard allow users to filter and analyze which configurations are most popular. High-performance CPUs from Intel and AMD, combined with dedicated GPUs from NVIDIA and AMD, tend to be in higher demand for gaming, creative tasks, and professional workloads.

This Laptop Price Analysis report provides valuable insights into market trends, consumer preferences, and brand performance.

Windows-based laptops dominate the market, with Dell, Lenovo, and HP leading in sales. Notebooks remain the most preferred type, while gaming and ultrabook categories continue to grow. The transition to SSD storage, touchscreen interfaces, and high-resolution displays further reflects changing consumer demands.

As the laptop market evolves, factors like performance, design, price, and brand reputation will continue to shape purchasing decisions. Companies that innovate and adapt to emerging trends will maintain a competitive edge, while niche players will need to carve out specialized markets to stay relevant.

This analysis serves as a crucial reference for manufacturers, retailers, and consumers, offering a data-driven approach to understanding the dynamics of the laptop industry.

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LAPTOP PRICE ANALYSIS (DATA SET) -

<https://github.com/Paras-bakshi/Laptop-Price-Predictor>



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THANK YOU

April, 2025

YASH JOSHI