A Report on

Data Analytics Internship

Submitted to

DG VAISHNAV COLLEGE

Submitted in partial fulfilment of

The requirements for the Degree of

Bachelor of Science in

Data Science

Submitted by

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Internship Organization

MAC INFORMATION SYSTEMS

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Internship Duration: **1/6/25 to 20/6/25**

Department of DATA SCIENCE

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Academic Session: 2025–2026

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20/06/2025

INTERNSHIP COMPLETION CERTIFICATE

To Whomsoever It May Concern

This is to certify that **Sundara Vadivel. G,** has successfully completed an internship at **MAC Information Systems**, Anna Nagar, Chennai, from **30/05/2025** to **20/06/2025**. As part of the internship, he worked on the project titled: **"Swiggy Sales Report"** – Data Collection and Dashboard Creation in Power BI, under the domain of **Data Analytics.**

Throughout the internship period, he showed good commitment and an eagerness to learn. The project was handled responsibly and completed with diligence and technical understanding.

We wish him all the best in his future academic and professional pursuits.

Authorized Signatory

Internship Coordinator / Manager

ACKNOWLEDGEMENT

I WOULD LIKE TO EXPRESS MY GRATITUDE TO MY MENTOR AND THE TEAM AT MAC INFORMATION SYSTEMS FOR GUIDING ME THROUGH MY DATA ANALYTICS INTERNSHIP. I ALSO THANK MY COLLEGE AND FACULTY FOR THEIR CONSTANT MOTIVATION AND SUPPORT.I WOULD LIKE TO THANK ALL MY COLLEAGUES WHO WORKED ALONG WITH ME IN THIS INTERNSHIP.

I AM GRATEFUL TO THE FACULTY MEMBERS OF MY COLLEGE, ESPECIALLY MY DEPARTMENT FOR EQUIPPING ME WITH THE ACADEMIC FOUNDATION AND TECHNICAL KNOWLEDGE REQUIRED TO UNDERTAKE THIS PROJECT.

THIS INTERNSHIP HAS BEEN A VITAL STEP IN BRIDGING THE GAP BETWEEN ACADEMIC KNOWLEDGE AND INDUSTRY PRACTICES, AND I DEEPLY APPRECIATE THE OPPORTUNITY AND EXPERIENCES GAINED DURING THIS PERIOD.

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INTRODUCTION

WHAT IS DATA ANALYTICS ?

Data analytics is a process of "**converting raw data into actionable insights**". It includes a range of tools, technologies, and processes used to find trends and solve problems by using data. Data analytics can shape business processes, improve decision-making, and foster business growth.

Key Components:

1. Data Collection – Gathering data from different sources such as databases, files, APIs, or user input.
2. Data Cleaning – Removing errors, handling missing values, and correcting inconsistencies to ensure data quality.
3. Data Analysis – Applying statistical methods, mathematical models, and tools like Excel, SQL, Python, Power BI, etc., to extract patterns and trends.
4. Data Visualization – Presenting findings through charts, graphs, and dashboards to make the information easy to understand.
5. Decision-Making – Using the insights gained to make data-driven decisions that improve business performance or solve problems.

Applications:

- Business: Identifying customer behaviour, sales trends, and improving marketing strategies.
- Healthcare: Predicting disease outbreaks or patient outcomes.
- Finance: Detecting fraud, managing risk, and portfolio optimization.

WHAT WAS MY INTERNSHIP ABOUT?

INTERNSHIP TITLE: DATA ANALYST

COMPANY: MAC INFORMATION SYSTEM

INTERN DESCRIPTION:

I was responsible for working with business datasets and applying analytical techniques to extract insights and present data visually. The internship focused on practical skills like cleaning data, performing analysis and building dashboards.

PROJECT

PROJECT NAME: SALES DASHBOARD (SWIGGY)

ROLE: PROJECT HEAD

- Cleaned raw data using Excel functions **(IF, VLOOKUP, ISBLANK, etc.).**
- Performed data analysis such as trend identification and summary statistics.
- Created interactive dashboards in **Power BI to visualize KPIs.**
- Used **Power Query** for data transformation.
- Built calculated columns and measures using **DAX**.
- Presented insights to mentors and received feedback.

KEY ACHIEVEMENTS:

- Successfully built a **sales dashboard** that showed **regional performance, profit trends, and sales category-wise breakdown.**

- Identified that more than 80% of high-profit sales occurred in 3 key regions, helping with strategic decisions.

- **Category-Wise Sales Insight**:
  Through detailed category-wise analysis, I discovered that the "Technology" category had the highest profit margin, while "Office Supplies" had high sales but lower profitability, guiding future discount and pricing strategies.

- **Built an Interactive Sales Trend Tracker:**
  Created a monthly sales and profit trend line chart that allowed users to filter by region or product category, helping stakeholders monitor performance over time and identify seasonal trends.

TOOLS USED

EXCEL

Purpose:

Excel was used extensively during the initial stages of data analysis. It helped with data preprocessing , cleaning, and preliminary exploration.

Key Functions and Features Used:

- Data Cleaning: Removed duplicates, handled missing values using IF, ISBLANK, and IFERROR.
- Data Transformation: Used VLOOKUP, TEXT, LEFT, RIGHT, LEN, and DATE functions to standardize and manipulate data formats.
- Pivot Tables: Summarized large datasets to identify trends and patterns quickly.
- Charts: Created basic bar charts and pie charts for preliminary visualization.

Why Excel?

Excel offers a user-friendly interface and flexible formulas, making it ideal for quick exploration and manipulation of data before importing it into a visualization tool.

POWERBI

Purpose:

Power BI was used to create dynamic dashboards and perform in-depth data analysis. It allowed me to transform raw data into meaningful business insights using interactive visualizations.

Key Features and Functions Used:

- **Power Query:** For advanced data transformation (merging, filtering, and shaping data).
- **DAX (Data Analysis Expressions):** Created calculated columns and measures like Profit Margin, Total Sales, and Monthly Trends.
- **Visualizations:** Used a variety of charts such as bar graphs, pie charts, line charts, maps, and KPI cards.
- **Slicers & Filters:** Enabled interactivity, allowing users to filter data by category, region, and time.
- **Relationships & Model View:** Created relationships between multiple tables for accurate data modeling.

Why Power BI?

Power BI is ideal for presenting insights in a visually appealing and interactive way. It handles large datasets efficiently and supports advanced business intelligence techniques.

DATASET DESCRIPTION

SOURCE OF DATASET:

The dataset was provided as part of the internship project. It is a **real-world sample business dataset,** commonly used for sales and performance analysis in retail and e-commerce contexts.

Dataset Overview:

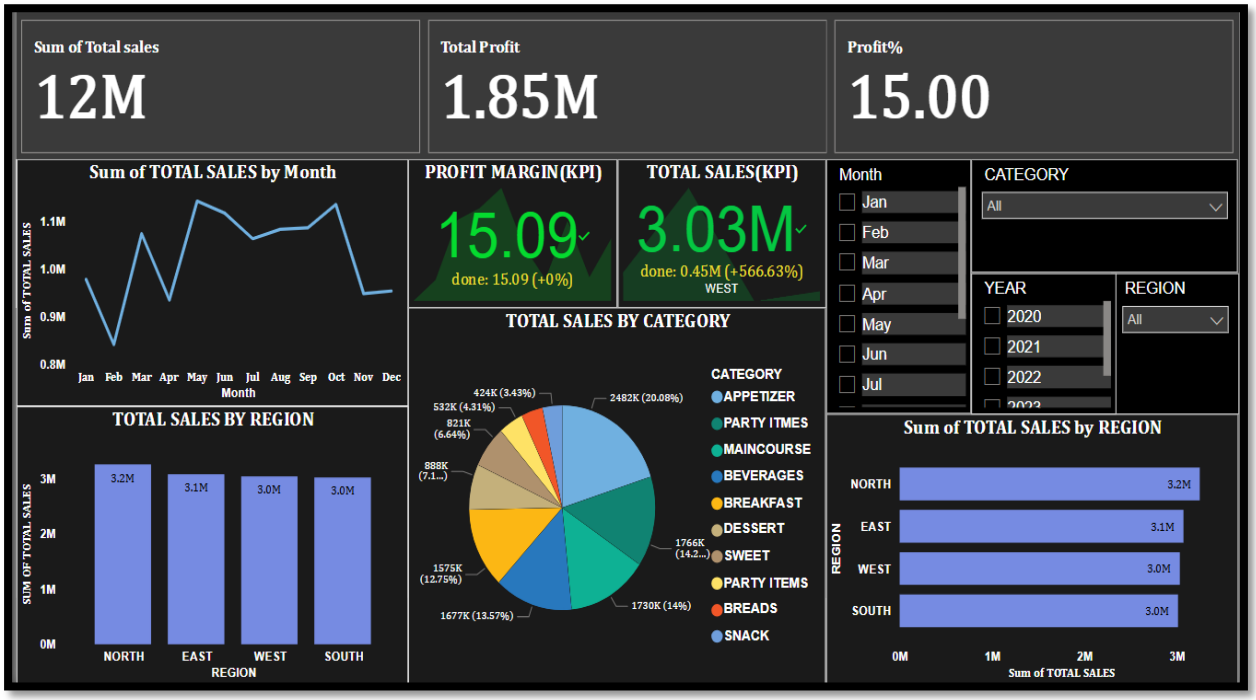
- Total Records (Rows): **2001**
- Total Columns (Features): **13**
- File Format: .**xls**

COLUMN	DESCRIPTION
NAME	Name of the customer who placed the order
DATE	Date when the order was placed
PRODUCT NAME	Name of the food item ordered
CATEGORY	Food category (e.g., Breakfast, Snack)
QUANTITY	Number of units ordered
UNIT PRICE	Price per unit of the product
TOTAL SALES	Total revenue from the order (Quantity × Unit Price)
REGION	Geographic region of delivery (North, South, East, West)
SALES PERSON	Name of the salesperson who handled the transaction
PAYMENT METHOD	Method of payment used (e.g., UPI, Cash)
PROFIT	Net profit earned from the transaction
SALES PERFORMANCE	Classification of order performance (High, Low)IF SALES>10000,HIGH.
PROFIT MARGIN	Percentage of profit earned from the sale (calculated as Profit / Total Sales)

PROJECT WORKFLOW

1. **Data Collection**
   1.1. Identify and collect data from Excel / Database
2. **Data Cleaning**
   2.1. Remove duplicates
   2.2. Handle missing values
   2.3. Format date and text columns properly
3. **Data Transformation**
   3.1. Create calculated fields
   3.2. Categorize data
   3.3. Use formulas (Excel) and DAX (Power BI)
4. **Data Analysis**
   4.1. Use PivotTables and Charts
   4.2. Perform trend, sales, and performance analysis
5. **Data Visualization**
   5.1.6.1 Build Power BI dashboard
   5.2.6.2 Use slicers, KPIs, filters, and cards
6. **Insight Generation**
   6.1.7.1 Extract meaningful insights
   6.2.7.2 Translate data into business recommendations
7. **Report & Presentation**
   7.1. Summarize findings
   7.2. Present to mentors

DASHBOARD & SCREENSHORTS



FINAL DASHBOARD DESCRIPTION:

THE POWER BI DASHBOARD PROVIDES A COMPREHENSIVE OVERVIEW OF THE COMPANY'S SALES AND PROFIT PERFORMANCE ACROSS VARIOUS DIMENSIONS. IT INCLUDES KEY PERFORMANCE INDICATORS (KPIS), TREND ANALYSIS, REGIONAL AND CATEGORY-BASED BREAKDOWNS, AND INTERACTIVE FILTERS FOR DYNAMIC ANALYSIS.

KPI TILES:

1. TOTAL SALES:

DISPLAYS 12M AS THE OVERALL REVENUE GENERATED. THIS KPI HIGHLIGHTS THE CUMULATIVE SALES PERFORMANCE.

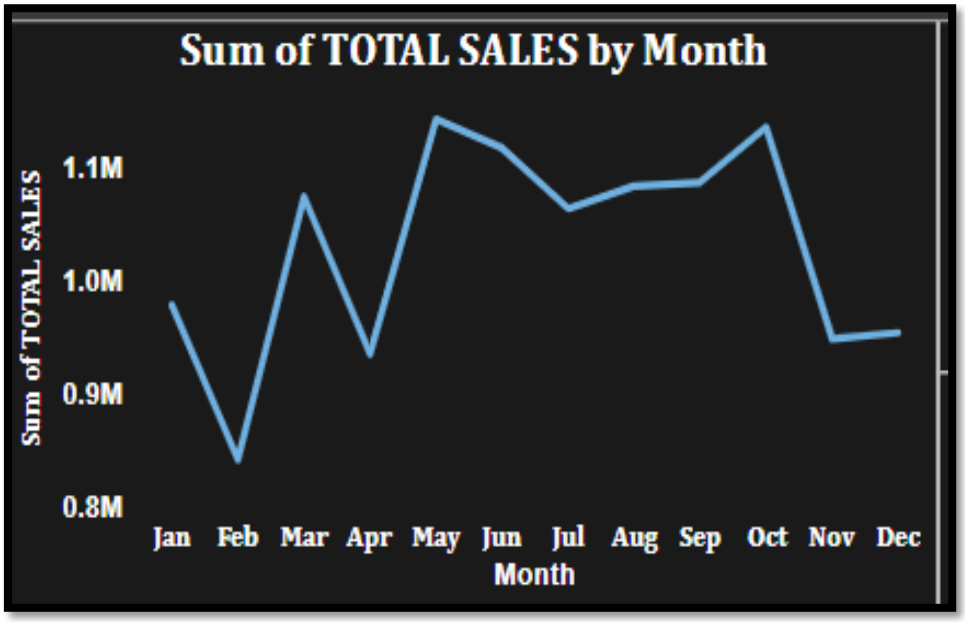
2. TOTAL PROFIT:

SHOWS A TOTAL PROFIT OF 1.85M, OFFERING INSIGHT INTO THE BUSINESS'S PROFITABILITY.

3. PROFIT %:

DISPLAYS THE PROFIT MARGIN PERCENTAGE (15.00%), INDICATING THE EFFICIENCY OF CONVERTING REVENUE INTO PROFIT.

VISUALIZATIONS:

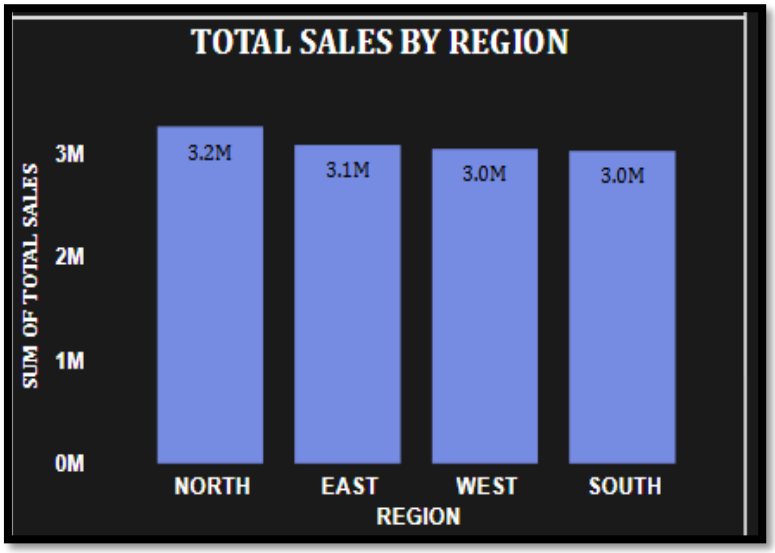


1.LINE CHART

1. **LINE CHART** – TOTAL SALES BY MONTH

   - DEPICTS THE MONTHLY TREND OF SALES ACROSS THE SELECTED TIME FRAME.

   - HELPS IDENTIFY SEASONAL PATTERNS OR SALES PEAKS AND DIPS.

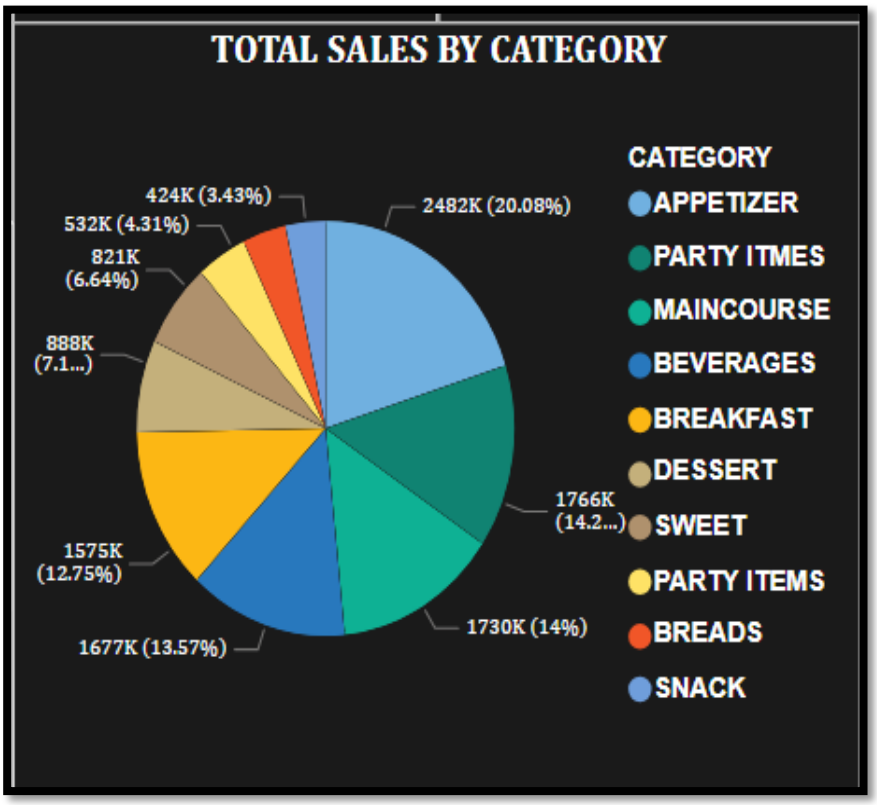


2. BAR CHART

2. BAR CHART – TOTAL SALES BY REGION

- COMPARES TOTAL SALES ACROSS NORTH, EAST, WEST, AND SOUTH REGIONS.

- USEFUL FOR REGIONAL PERFORMANCE COMPARISON AND MARKET ANALYSIS.



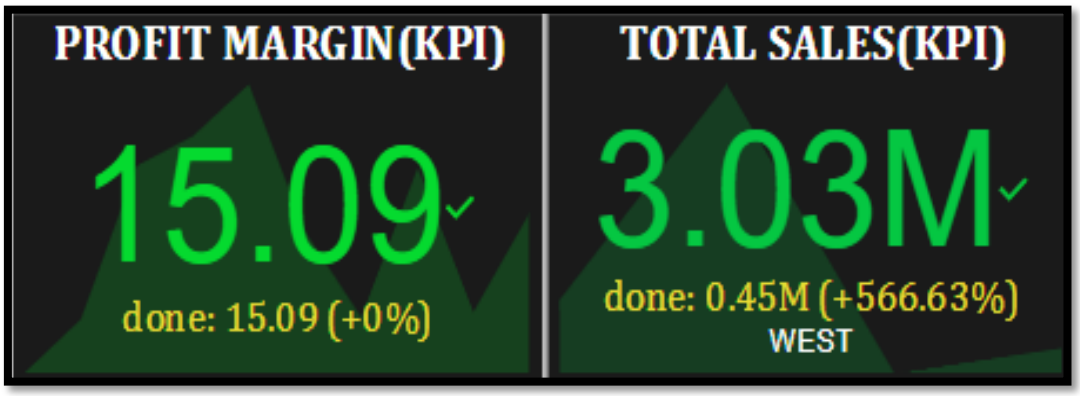
3. Pie Chart

3. Pie Chart – Total Sales by Category

•Shows the distribution of total sales across different product categories

(e.g., Appetizer, Beverages, Breakfast, Sweet, etc.).

•Helps understand which category contributes the most to total sales.



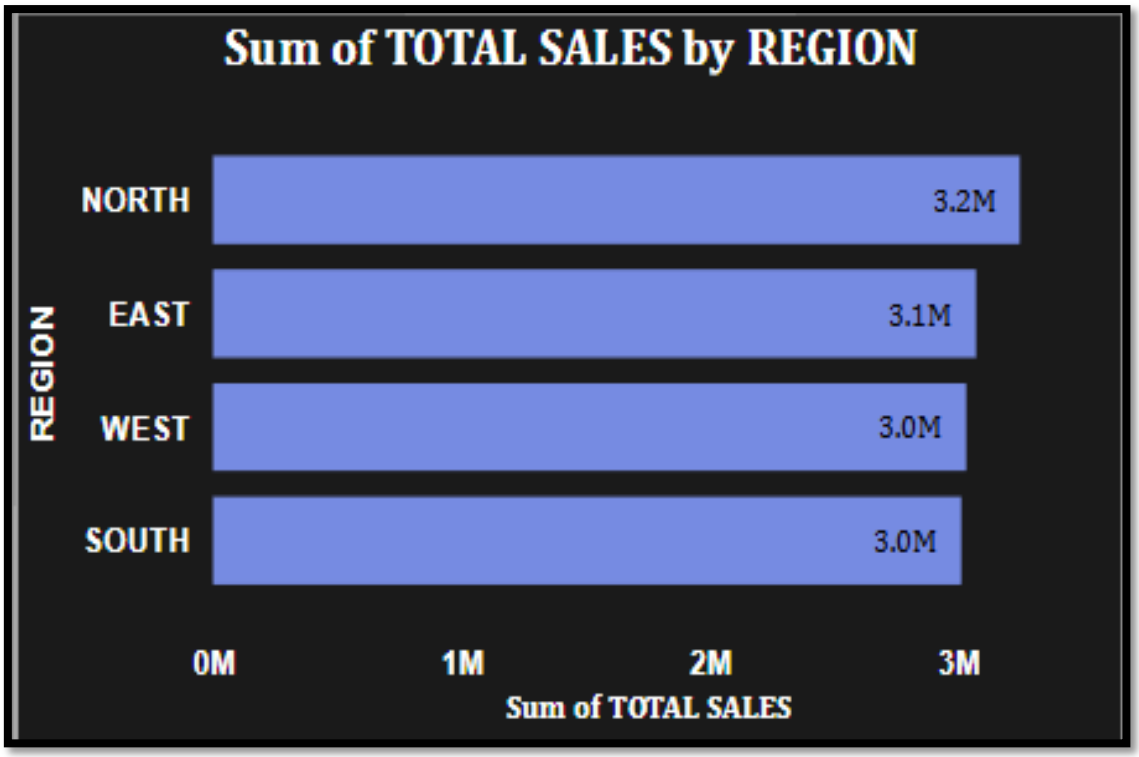
4. KPI TILES

4. KPI TILES

- **PROFIT MARGIN:** SHOWS CURRENT MARGIN WITH COMPARISON TO PREVIOUS VALUE.

- **TOTAL SALES (KPI):** INDICATES CURRENT SALES WITH DELTA PERCENTAGE VS. PREVIOUS.

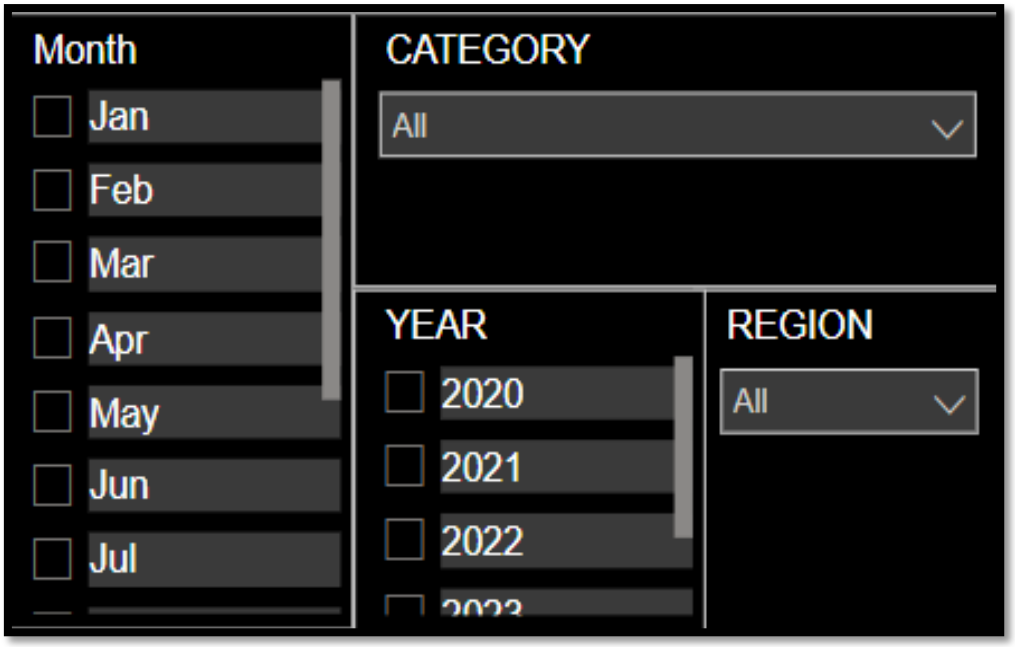
- **USED CONDITIONAL FORMATTING** FOR COLOUR GRADIENT



5.BAR CHART (DRILL DOWN)

5. **BAR CHART (DRILL DOWN)** – TOTAL SALES BY REGION (DRILL DOWN TO PRODUCTS)

- REINFORCES REGIONAL BREAKDOWN WITH CLEARER VISUALS FOR QUICK COMPARISON.
- INTERACTIVE WITH SLICERS (YEAR, MONTH, REGION) FOR DEEPER FILTERING.
- DRILL DOWN OPTION TO DRILL DOWN TO PRODUCTS FOR QUICK ANALYSIS OF PRODUCTS IN EACH REGIONS



SLICERS (INTERACTIVE FILTERS):

- MONTH, YEAR, AND REGION SLICERS ARE PROVIDED TO DYNAMICALLY FILTER AND ANALYSE DATA BASED ON TIME PERIOD OR GEOGRAPHICAL REGION.

- ALLOWS USERS TO CUSTOMIZE THE VIEW AND DRILL DOWN INTO SPECIFIC SEGMENTS.

INSIGHTS AND OBSERVATION

KEY INSIGHTS & OBSERVATIONS FROM THE FINAL DASHBOARD

1. STRONG TOTAL SALES VOLUME WITH SEASONAL TRENDS

- THE COMPANY RECORDED A TOTAL SALES VALUE OF **12 MILLION**, WHICH REFLECTS A **STRONG OVERALL PERFORMANCE**.

- THE **LINE CHART** DISPLAYING "**TOTAL SALES BY MONTH**" SHOWS NOTICEABLE SEASONAL FLUCTUATIONS. THERE ARE SPIKES DURING CERTAIN MONTHS, WHICH MAY CORRESPOND TO FESTIVAL PERIODS, PROMOTIONAL CAMPAIGNS, OR SEASONAL DEMAND.

- THIS TREND ANALYSIS HELPS THE BUSINESS PREDICT FUTURE DEMAND, ALIGN INVENTORY LEVELS, AND PLAN MARKETING EFFORTS ACCORDINGLY.

2. Consistent Profitability with Healthy Margin

- The **Total Profit** stands at **1.85 million**, with a **profit margin of 15%.**

- The KPI tiles indicate a slightly increasing profit margin (15.09%) compared to a previous benchmark, which suggests effective cost management or pricing strategy.

- This highlights the company's ability to sustain profitability while maintaining or increasing sales volume — a sign of operational efficiency.

3. Regional Sales Distribution Reveals Growth Opportunities

- The **bar chart** on **regional sales** shows relatively equal contribution from **NORTH, EAST, WEST,** and **SOUTH** regions.

- However, **EAST** and **WEST** slightly outperform others, suggesting stronger market penetration in those areas.

- **SOUTH** lags slightly, representing an opportunity for targeted expansion, marketing, or retail presence to balance regional growth.

4. Product Categories Show Balanced Demand with Category Leaders

- The pie chart analysis reveals that categories like Party Items, Snacks, and Desserts contribute significantly to total sales.

- Categories such as Appetizer and Beverages also show competitive shares, which means the brand maintains a diverse product appeal across various customer preferences.

- This data can be used to prioritize inventory and promotions, focusing more on top-performing categories while improving the visibility of lower-performing ones.

5. Interactive Slicers Enable Flexible, Drill-Down Insights

- The dashboard includes dynamic filters (Month, Year, R egion), making it interactive for decision-makers to analyse specific time periods or zones.
- This feature allows users to zoom into low-performing months or regions, quickly identify trends, and act on anomalies or inconsistencies.
- The slicers also make the dashboard more user-friendly, turning it into a self-service analytics tool for both analysts and management.

LEARNING OUTCOMES

1. Mastered Excel for Data Cleaning and Transformation

- Learned how to handle real-world messy data using Excel tools such as IF, ISBLANK, pivot tables, data validation, and conditional formatting.

- Understood the importance of cleaning data before analysis and how it impacts the accuracy of results.

2. Gained Proficiency in Power BI for Interactive Dash boarding

- Developed visually appealing, dynamic dashboards using Power BI.

- Learned to use DAX functions, slicers, cards, and visuals like bar charts, pie charts, and line graphs effectively to communicate data-driven stories.

3. Understood the Complete Data Analysis Lifecycle

- Experienced the end-to-end project cycle: from data collection, cleaning, transformation, analysis, visualization, to insight generation and reporting.

- This gave a holistic view of how data projects are structured and executed in real-world scenarios.

4. Improved Data Interpretation and Insight Generation

- Learned how to go beyond numbers by generating actionable business insights from data.

- Understood how trends, variances, and patterns reflect customer behaviour and business performance.

5. Enhanced Decision-Making with KPIs and Metrics

- Understood the significance of KPIs like Total Sales, Profit, Profit Margin, etc.

- Learned to define, track, and present metrics that directly support business decisions.

6. Developed Analytical Thinking and Problem Solving

- Tackled problems such as missing data, outliers, and inconsistent values using analytical approaches.

- Gained experience in converting business questions into analytical tasks.

7. Learned Effective Data Visualization Techniques

- Learned how to design dashboards that are not only informative but also user-friendly and easy to interpret.

- Applied principles like minimalism, proper labeling, and chart selection based on data type.

8. Improved Presentation and Storytelling Skills

- Presented dashboards and findings in a structured manner, using visuals and summaries to narrate the business story.

- Learned to communicate complex information in a simple and impactful way.

9. Experienced Using Real-Time Filters and Slicers

- Understood how to integrate slicers for Month, Year, and Region to allow dynamic filtering.

- Learned to create dashboards that adapt to user input and allow interactive exploration of data.

10. Prepared for Industry-Level Reporting and Documentation

- Understood the importance of documenting workflows, observations, and outcomes.

- Practiced writing professional summaries, structured reports, and final presentations like those used in industry or client projects.

CONCLUSION

The Internship experience as a Data Analyst has been both enriching and insightful. Through the use of tools like Excel and Power BI, I was able to clean, analyse, and visualize complex datasets to derive actionable insights. The process enhanced my understanding of real-world data challenges and strengthened my technical skills in data manipulation, DAX calculations, and dashboard storytelling.

The final dashboard delivered clear, interactive visuals that supported data-driven decision-making for business objectives. This hands-on exposure has not only improved my analytical thinking but also deepened my interest in using data as a strategic asset.

Overall, this project marks a significant step in my journey towards becoming a proficient data professional, and I am confident that the experience gained will serve as a strong foundation for future academic and professional endeavours.