SUPPLY CHAIN MANAGMENT

By,
Group - 6

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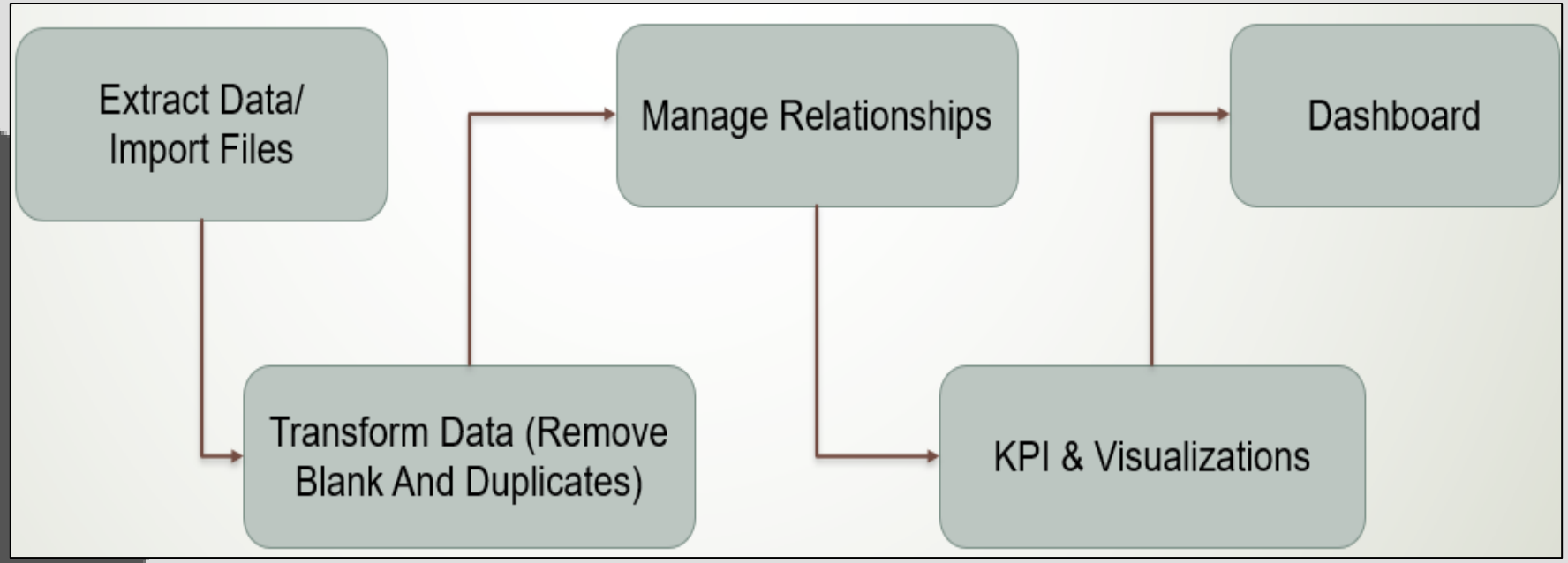
INTRODUCTION

Supply chain management is the process of turning raw materials into finished goods and delivering them to customers. The goal of SCM is to improve efficiency, quality, productivity, and customer satisfaction.



PROJECT OVERVIEW

Data Preparation and Integration:

Tools Used: Excel, SQL, Tableau, PowerBI

- Cleaned and structured raw data from Excel source.
- *Normalized data across tables:* Customer, Calendar, Store, Sales, Product, Inventory Adjusted, & Point of Sale data
- Used SQL queries to integrate data and create meaningful relationships using primary and foreign keys.
- Resolved issues like column names with spaces and large dataset optimization.
- ***Tableau:*** Designed dynamic dashboards for sales, inventory, & performance KPIs.

Integrated GeoJSON for spatial analysis (state-wise).

Created TreeMaps, bar charts, and trend lines, ToolTip Charts for visual insights.

- ***Power BI:*** Developed comprehensive reports for stakeholder review.

Leveraged DAX for advanced calculations like QTD sales, profit margin, and inventory turnover.

Created slicers for interactive filtering by region, and time period.

KPI's

1. Product Wise Sales
2. State Wise Sales
3. Top 5 Store Wise Sales
4. Region Wise Sales
5. Purchase Method Wise Sales
6. Sales Growth % Diffr.
7. Sales Trend
8. QTD,YTD,MTD Total Sales
9. Inventory Value
10. Total Inventory [Stock Quantity]

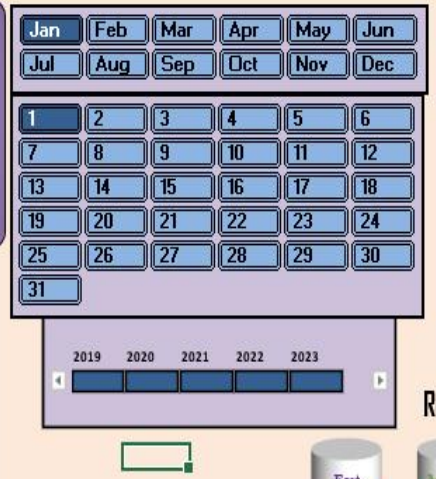
OTHER KPI's

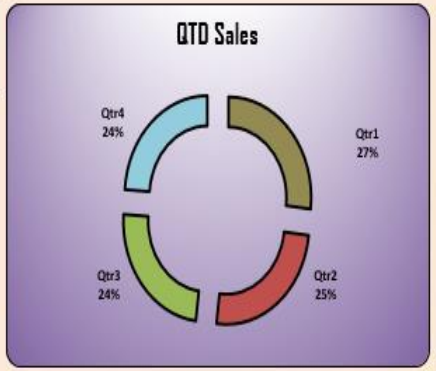
1. Profit Margin
2. Inventory Turnover
3. Average Order Value [AOV]
4. Regional Customer Insights
5. Customer Spend Per Region
6. Sales & Profit Performance

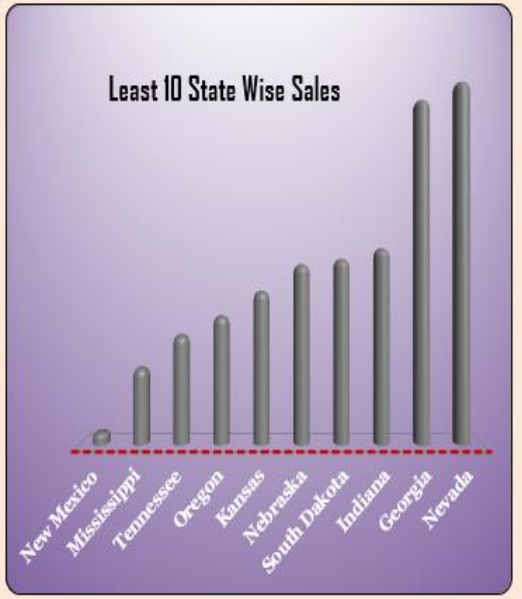
EXCEL

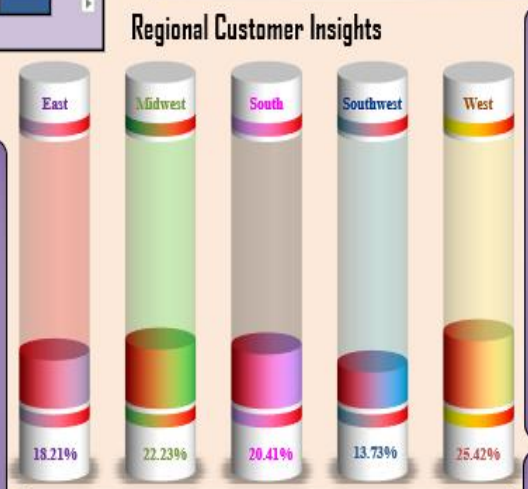
SUPPLY CHAIN MANAGEMENT DASHBOARD

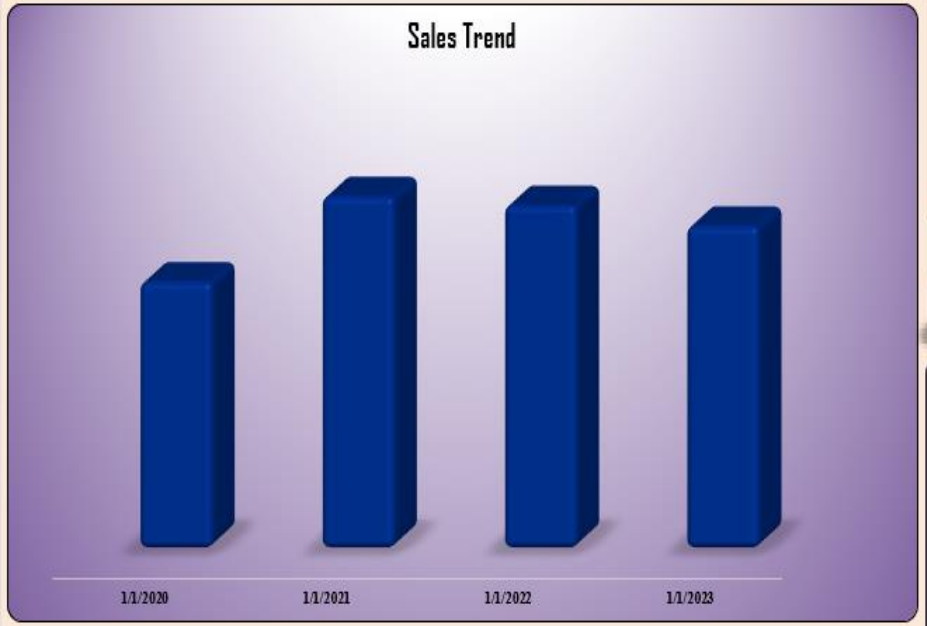
7 M	59.31 M	64.3 M	1905
INVENTORY VALUE	INVENTORY TURNOVER RATIO	PROFIT MARGIN	TOTAL INVENTORY

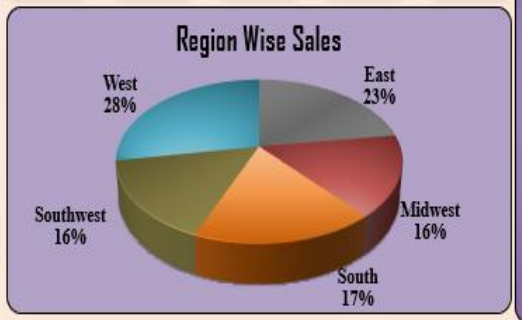










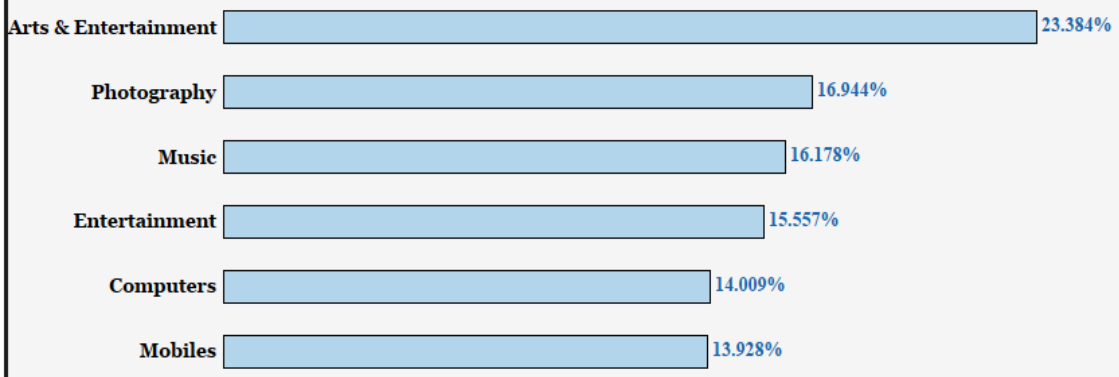


TABLEAU

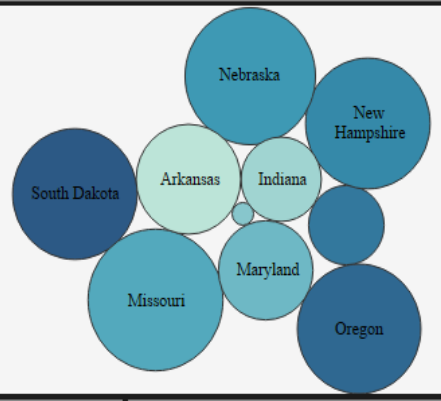
SUPPLY CHAIN DASHBOARD

TOTAL REVENUE	INVENTORY VALUATION	PROFITABILITY OVERVIEW	TOTAL STOCK QUANTITY
388.13M	466.91M	43.92	1,905

Sales By Product



Least State Wise Sales Insights



FILTERS

Store Region

- [x] (All)
- [x] East
- [x] Midwest
- [x] South
- [x] Southwest
- [x] West

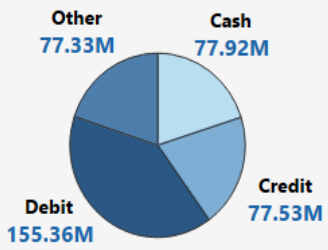
Month of Date

(All)

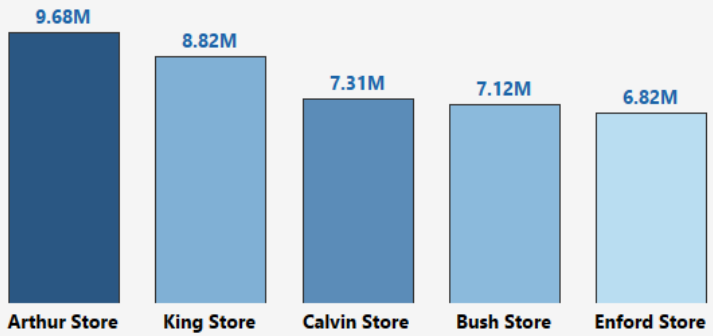
Year of Date

(All)

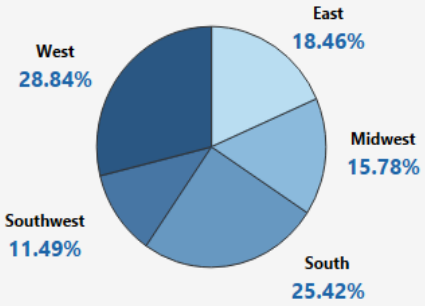
Sales By Purchase Method



Top 5 Performing Stores



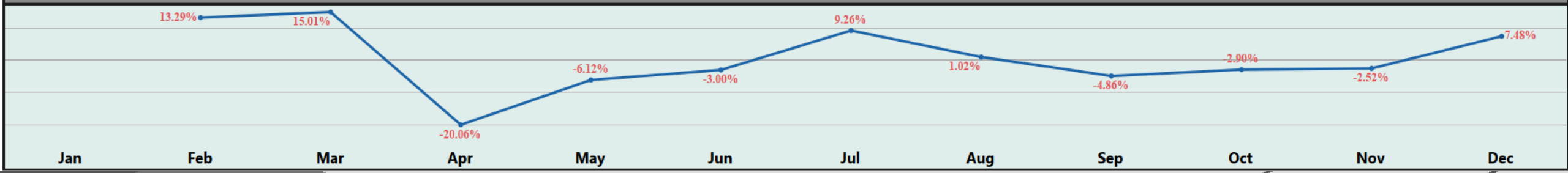
Regional Sales Performance



Quarterly Sales Progress

27.69%	Q1
23.92%	Q2
24.82%	Q3
23.56%	Q4

Sales Growth % Diffr.



POWERBI

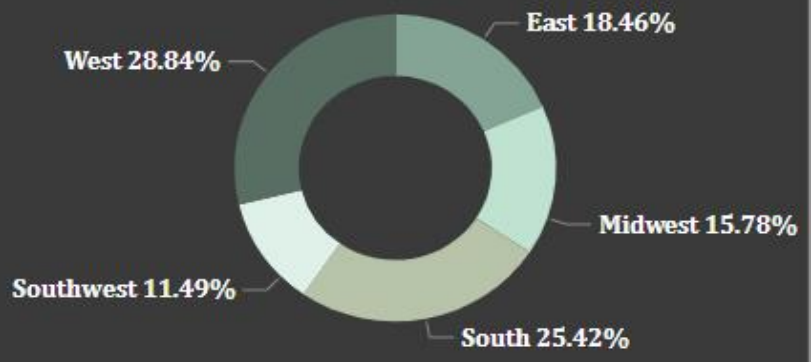
SUPPLY CHAIN MANAGEMENT DASHBOARD

! VISIT EXCELR

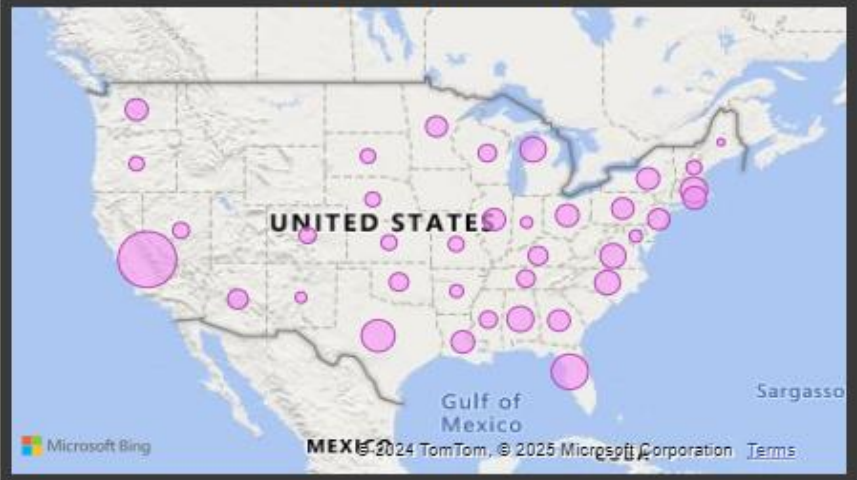
43.92	Total Revenue	Inventory TurnOver	Total Stock Quantity	Inventory Valuation
Profit_Margin	388.13M	3.71K	1.91K	414.66K

YEAR: All

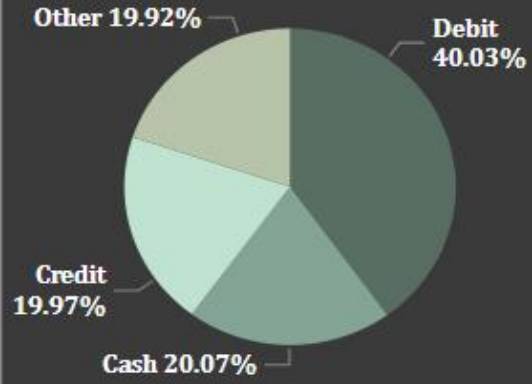
Store Region Wise Sales



State Wise Sales



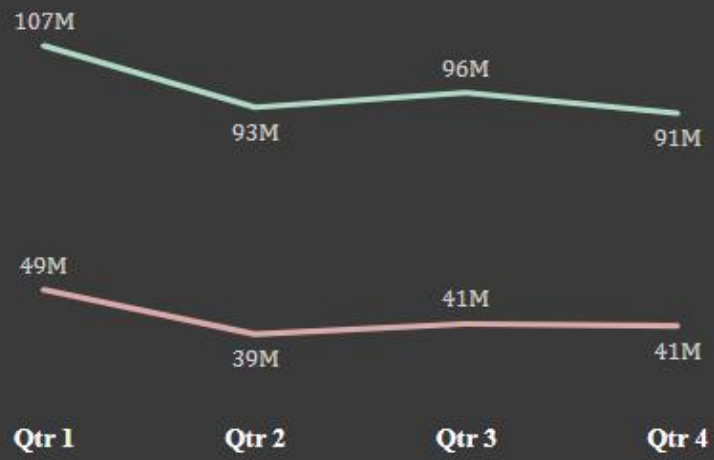
Purchase Method Wise Sales



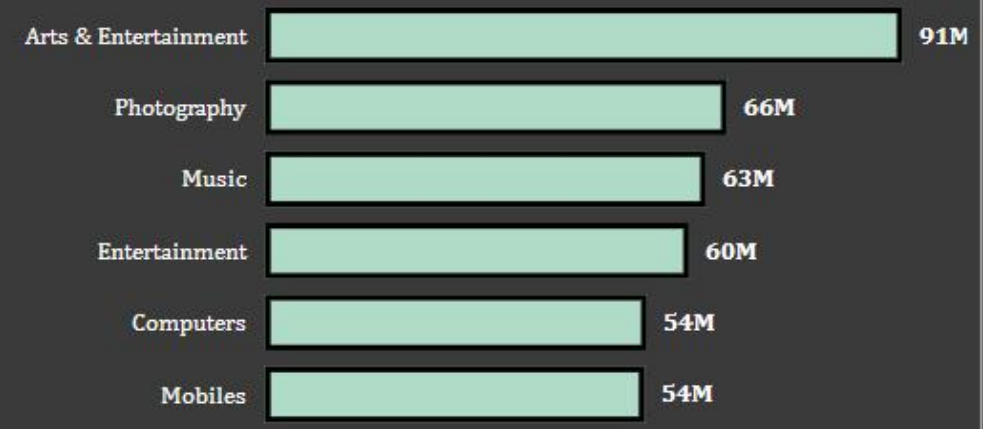
REGION: East, Midwest, South, Southwest, West

YEAR | QUARTER | MONTH

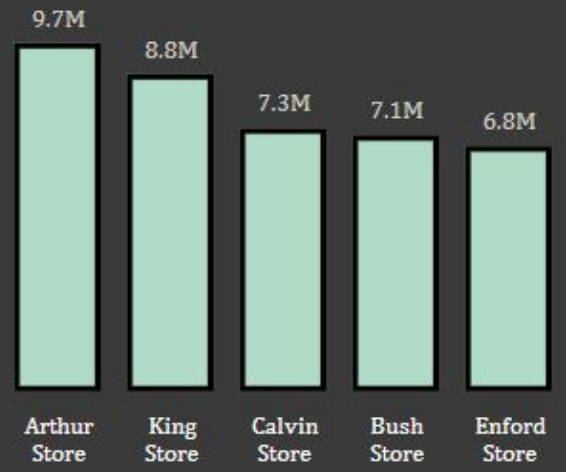
Sales & Profit Performance



Product Wise Sales



Top 5 Store Wise Sales



SQL QUERIES

```sql
-- KPIs
    -- 1. TOTAL INVENTORY
SELECT
    SUM(`Quantity on Hand`) AS TOTAL_INVENTORY
FROM f_inventory_adjusted;
    -- 2. TOTAL SALES
SELECT
    SUM(`Sales Amount`) AS TOTAL_SALES
FROM point_of_sale;
    -- 3. INVENTORY VALUE
SELECT
    ROUND(
    SUM((`Cost Amount`)*(`Sales Quantity`))*100
    , 2 ) AS INVENTORY_VALUE
FROM point_of_sale;
    -- 4. Average Order Value [AOV]
SELECT
    ROUND(SUM(`Sales Amount`) / COUNT(DISTINCT `Order Number`)
    , 2) AS Average_Order_Value
FROM point_of_sale;
```

SQL QUERIES

```sql
    -- 5. Inventory TurnOver
SELECT
    CONCAT(
        ROUND(
            (SUM(pos.`Cost Amount`) / AVG(i.`Quantity on Hand`)) / 1000000, 2)
            , ' M'
        ) AS Inventory_Turnover
FROM point_of_sale pos
JOIN
    f_inventory_adjusted i ON pos.`Product Key` = i.`Product Key`;
    -- 6. PROFIT MARGIN
SELECT
    ROUND(
    (SUM(`Sales Amount` - `Cost Amount`) / SUM(`Sales Amount`)) * 100
    ,2) AS PROFIT_MARGIN
FROM point_of_sale;
```

SQL QUERIES

```sql
    -- 7. Product Type Sales Share (%)
SELECT
    p.`Product Type`,
    ROUND(
        (SUM(pos.`Sales Amount`) /
        (SELECT SUM(`Sales Amount`) FROM point_of_sale)) * 100, 2
    ) AS Percentage_Contribution
FROM
    point_of_sale pos
JOIN
    product p ON pos.`Product Key` = p.`Product Key`
GROUP BY
    p.`Product Type`
ORDER BY
    Percentage_Contribution DESC;
```

```sql
    -- 8. Total Employess on each region
SELECT
    s.`Store Region`,
    SUM(s.`Number of Employees`) AS Total_Employees
FROM d_store s
GROUP BY
    s.`Store Region`
ORDER BY
    Total_Employees DESC;
```

KEY TAKEAWAYS

- Combined data from multiple sources into a clean, structured format for easy analysis.
- Focused on important metrics like Sales & profit Performance, customer-wise sales, and inventory efficiency to guide decisions.
- Used Tableau and Power BI to create easy-to-understand visuals that highlight key insights at a glance.
- Wrote efficient SQL queries to answer complex questions and handle large datasets smoothly.
- Helped improve sales, inventory, and regional performance by turning raw data into useful insights.

- Difficulties faced on ‘Daily_Sales_Trend” format issues.
- Inventory calculations.