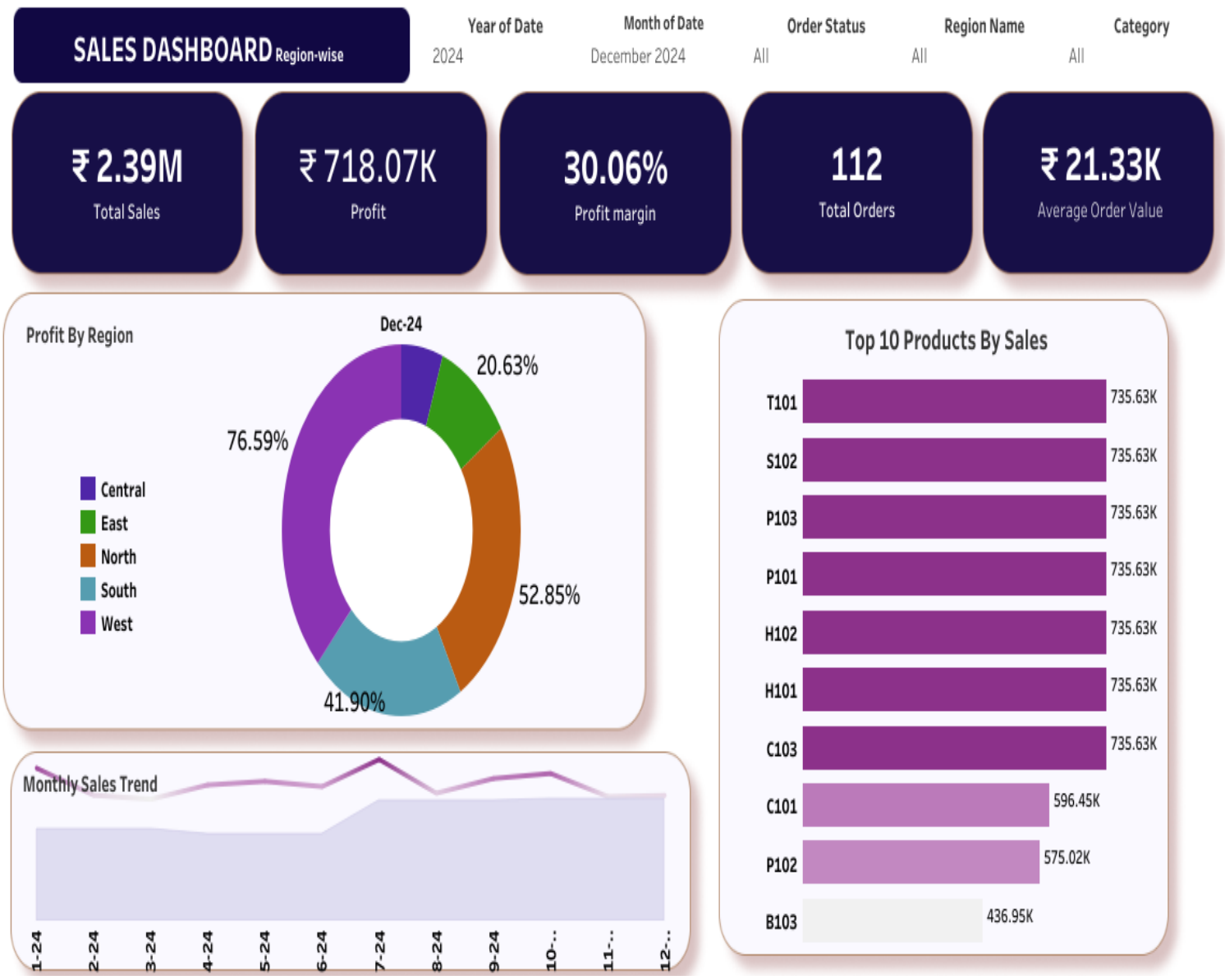
Simple Region wise Sales Dashboard

Link: https://public.tableau.com/app/profile/thanu.d.l/viz/SimpleRegionwiseSalesDashboard/salesdashbaord



Project Overview

This project involves collecting, cleaning, verifying, analyzing sales data, storing it in a database, and visualizing insights using a Tableau dashboard. The goal was to provide clear, interactive insights for business decision-making.

Step-by-Step Process

Step 1: Data Analysis

Objective: Understand the structure and quality of the raw data. **Actions Taken:** - Imported the raw sales datasets (Excel/CSV) into Python using pandas. - Explored the data using methods like .head(), .info(), and .describe() to identify columns, data types, missing values, and anomalies. - Checked for duplicate entries and invalid or negative values in numeric columns like Quantity and Sales.

Outcome: Identified data inconsistencies and missing/incorrect values that needed cleaning before further analysis.

Step 2: Data Cleaning and Verification (Python)

Objective: Ensure data is accurate, consistent, and ready for database storage. **Actions Taken:** - Removed duplicates and irrelevant columns. - Split combined columns (e.g., SKU-P101|Laptop|500) into separate fields: Product ID, Product Name, and Price. - Converted date columns to proper datetime format and ensured numeric fields were correctly typed. - Verified that all negative or inconsistent entries were corrected or removed.

Tools: Python (pandas, numpy)

Outcome: A clean and verified dataset ready for database insertion.

Step 3: Loading Data into MySQL

Objective: Store clean data in a structured database for easy querying. **Actions Taken:** - Connected Python to MySQL using mysql-connector or SQLAlchemy. - Created database tables with proper schema (columns, data types). - Inserted cleaned data into MySQL tables. - Ran SQL queries to verify the accuracy of inserted data.

Outcome: A structured database enabling efficient retrieval and analysis.

Step 4: Data Analysis with SQL

Objective: Extract actionable insights from the dataset. **Actions Taken:** - Wrote SQL queries to calculate key metrics: sales, profit, quantity, and customer distribution. - Grouped data by categories like Region, Product Category, and Quarter for deeper insights. - Aggregated results to identify trends, top-selling products, and profitable regions.

Outcome: Quantitative insights ready for visualization.

Step 5: Data Visualization with Tableau

Objective: Create an interactive dashboard for stakeholders. **Actions Taken:** - Connected Tableau to MySQL database using ODBC connector. - Designed a clean, interactive sales dashboard including: - Region-wise sales performance - Product category comparisons - Quarterly and monthly trends - Applied filters, color coding, and charts to make the dashboard user-friendly.

Outcome: A functional dashboard that allows quick exploration of sales metrics and trends.

Conclusion

- Successfully cleaned, verified, and structured raw sales data.
- Extracted key insights through SQL and visualized them in Tableau.
- Demonstrated end-to-end data analytics capability, from raw data to actionable business insights.

Benefits

- Improved data accuracy and reliability for business decision-making.
- Provides a clear view of sales trends, helping identify profitable regions and products.
- Enables interactive exploration through the Tableau dashboard, saving time for managers.
- Strengthened skills in Python, SQL, and Tableau, showcasing full-stack data analytics capability.