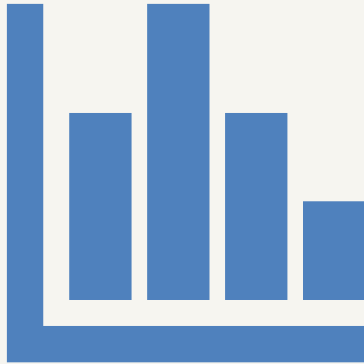# Power Bi Data Analysis - Retail

RHIVES TECHNOLOGIES INTERNSHIP -WEEK 2

AGENDA

- Introduction
- Objective
- Business Problem
- Dataset Overview
- Basic Visualizations
- Advanced Visualizations
- Interactive sales Dashboard
- Sales Overview Dashboard
- Conclusion

Introduction

- This project focuses on analyzing retail sales performance using Microsoft Power BI.

- Multiple dashboards were developed to understand sales trends, customer behavior, and profitability patterns.

- The analysis helps identify strong and weak business areas to support data-driven decision-making.

- Visual insights enable better understanding of sales distribution across regions, categories, and customer segments.

Objective

To build interactive and insightful Power BI dashboards for retail sales analysis.

To identify top-performing regions, categories, and customer segments.

To understand monthly sales and profit trends for better forecasting.

To support strategic decision-making using data-driven insights.

Business Problem

- Lack of clear understanding of sales distribution across regions and categories.

- Difficulty in identifying which customer segments generate the most revenue and profit.

- No visibility into monthly performance trends for planning and forecasting.

- Inability to quickly filter and analyze data to gain actionable insights.

- Need for a centralized dashboard to simplify business performance analysis.

Dataset Overview

- The dataset includes retail sales transactions across multiple regions and categories.
- Key fields include:
  - Order ID, Order Date
  - Customer ID, Customer Segment
  - Category, Sub-Category
  - Sales, Profit, Quantity
  - State, Region, Ship Mode
- The data covers all necessary metrics required for sales and profitability analysis.
- Cleaning and transformation were performed before dashboard creation.

	A	B
	Person	Region
	Anna Andrea	West
	Chuck Magee	East
	Kelly William	Central
	Cassandra Br	South

Returned	Order ID
Yes	CA-2017-153822
Yes	CA-2017-129707
Yes	CA-2014-152345
Yes	CA-2015-156440
Yes	US-2017-155999
Yes	CA-2014-157924
Yes	CA-2017-131807
Yes	CA-2016-124527
Yes	CA-2017-135692
Yes	CA-2014-123225
Yes	CA-2017-145772
Yes	US-2014-105137
Yes	CA-2017-101805
Yes	CA-2016-111682
Yes	CA-2017-131492

Row ID	Order ID	Order Date	Ship Date	Ship Mode	Customer ID	Customer Na	Segment	Country	City	State
1	CA-2016-152156	08-11-2016	11-11-2016	Second Class	CG-12520	Claire Gute	Consumer	United States	Henderson	Kentucky
2	CA-2016-152156	08-11-2016	11-11-2016	Second Class	CG-12520	Claire Gute	Consumer	United States	Henderson	Kentucky
3	CA-2016-138688	12-06-2016	16-06-2016	Second Class	DV-13045	Darrin Van H	Corporate	United States	Los Angeles	California
4	US-2015-108966	11-10-2015	18-10-2015	Standard Cla	SO-20335	Sean O'Donn	Consumer	United States	Fort Lauderd	Florida
5	US-2015-108966	11-10-2015	18-10-2015	Standard Cla	SO-20335	Sean O'Donn	Consumer	United States	Fort Lauderd	Florida
6	CA-2014-115812	09-06-2014	14-06-2014	Standard Cla	BH-11710	Brosina Hoffi	Consumer	United States	Los Angeles	California
7	CA-2014-115812	09-06-2014	14-06-2014	Standard Cla	BH-11710	Brosina Hoffi	Consumer	United States	Los Angeles	California
8	CA-2014-115812	09-06-2014	14-06-2014	Standard Cla	BH-11710	Brosina Hoffi	Consumer	United States	Los Angeles	California
9	CA-2014-115812	09-06-2014	14-06-2014	Standard Cla	BH-11710	Brosina Hoffi	Consumer	United States	Los Angeles	California
10	CA-2014-115812	09-06-2014	14-06-2014	Standard Cla	BH-11710	Brosina Hoffi	Consumer	United States	Los Angeles	California
11	CA-2014-115812	09-06-2014	14-06-2014	Standard Cla	BH-11710	Brosina Hoffi	Consumer	United States	Los Angeles	California
12	CA-2014-115812	09-06-2014	14-06-2014	Standard Cla	BH-11710	Brosina Hoffi	Consumer	United States	Los Angeles	California
13	CA-2017-114412	15-04-2017	20-04-2017	Standard Cla	AA-10480	Andrew Allen	Consumer	United States	Concord	North Carolin
14	CA-2016-161389	05-12-2016	10-12-2016	Standard Cla	IM-15070	Irene Maddoy	Consumer	United States	Seattle	Washington
15	US-2015-118983	22-11-2015	26-11-2015	Standard Cla	HP-14815	Harold Pawla	Home Office	United States	Fort Worth	Texas
16	US-2015-118983	22-11-2015	26-11-2015	Standard Cla	HP-14815	Harold Pawla	Home Office	United States	Fort Worth	Texas
17	CA-2014-105893	11-11-2014	18-11-2014	Standard Cla	PK-19075	Pete Kriz	Consumer	United States	Madison	Wisconsin
18	CA-2014-167164	13-05-2014	15-05-2014	Second Class	AG-10270	Alejandro Gr	Consumer	United States	West Jordan	Utah
19	CA-2014-143336	27-08-2014	01-09-2014	Second Class	ZD-21925	Zuschuss Dor	Consumer	United States	San Francisc	California

Basic Visualizations

- Sales by Region to understand geographical performance.

- Profit by State to identify high- and low-performing states.

- Sales by Category for category-level insights.

- Monthly Sales Trend to analyze seasonality.

- Key insights highlight top-performing regions and product categories.
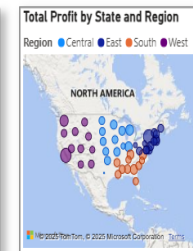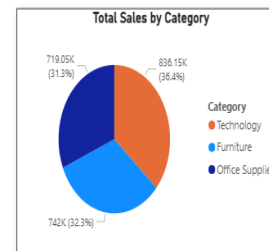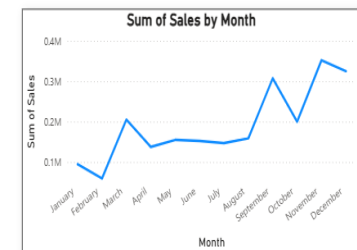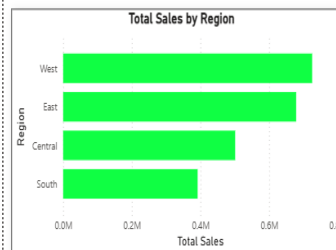
Advanced Visualizations

- Scatter Plot of Sales vs Profit for identifying profitability patterns.

- Bubble Chart for analyzing customer segments by sales and profit.

- Histogram to understand order quantity distribution.

- Customer statistics chart for region-wise customer profitability.

- Advanced visuals reveal deeper customer and product behavior patterns.
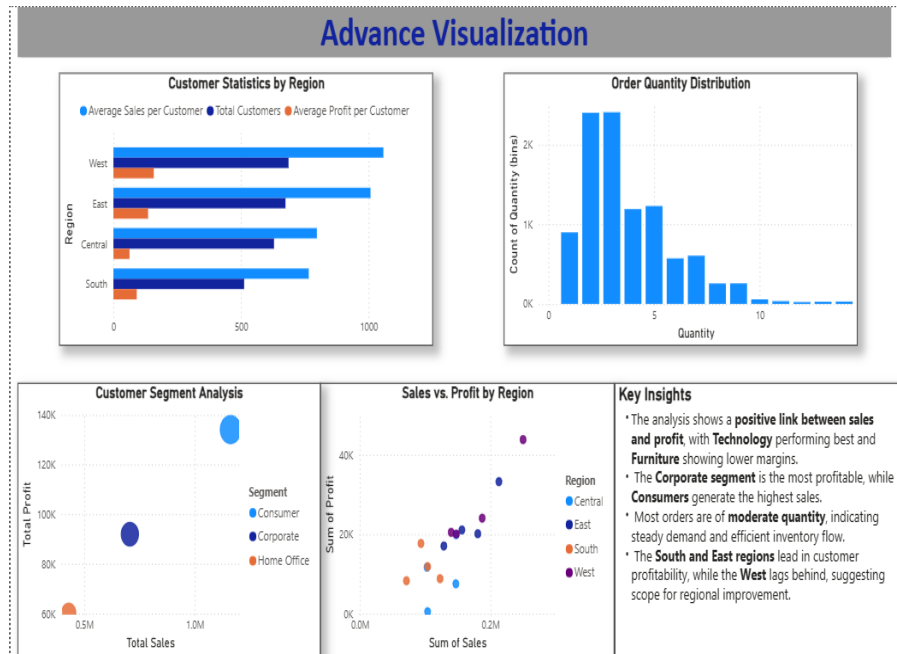
Interactive Sales Dashboard

- Combined key visuals into a single interactive dashboard.

- Enabled filtering by Region, Category, Segment, Sub-category, and Month.

- Displays real-time updates on Sales, Profit, and Orders.

- Helps users explore specific areas of interest dynamically.

- Provides quick insights into overall sales performance.
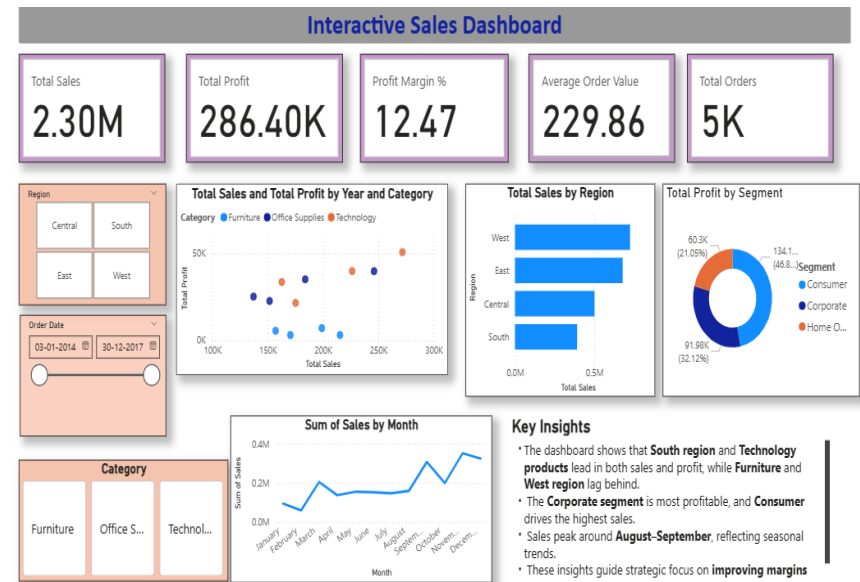
Sales Overview Dashboard

- Contains major KPIs: Total Sales, Total Profit, Total Orders, AOV, Margin %.

- Includes visuals like Sales by Segment, Sales by Category, Monthly Sales & Profit Trend.

- Shows summary of business health and performance efficiency.

- Helps management monitor high-level business metrics instantly.
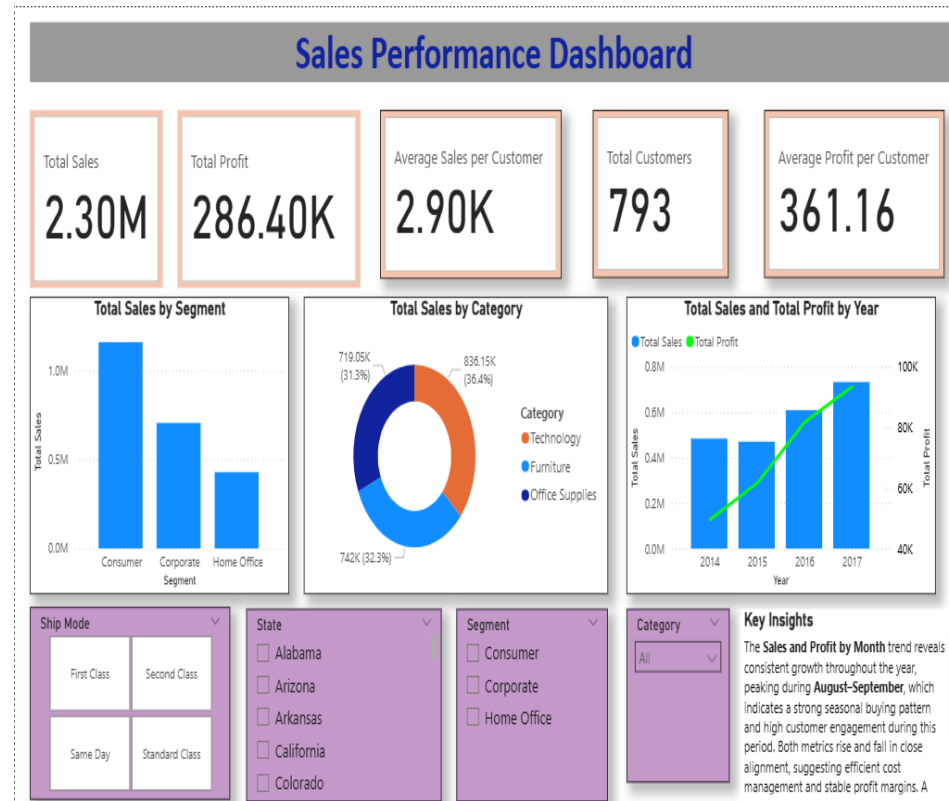
Conclusion

- Power BI dashboards provided a complete view of retail performance across regions, categories, and segments.

- Analysis showed strong seasonal trends, profitable customer segments, and high-performing product categories.

- Identified improvement areas such as low-profit categories and underperforming regions.

- These insights help businesses optimize planning, forecasting, marketing, and sales strategies.

- Overall, the project demonstrates the value of data-driven decision-making.

Thank You

Prepared by:

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