Sales Dashboard

**Chapter 1: Introduction and Project Goal**

This project focuses on a retail sales data analysis mini-project, specifically creating a dashboard for a cycle shop. The primary business context is to help the cycle shop understand its historical sales performance, profitability drivers, seasonal trends, and preferred customer payment methods to inform strategic decisions regarding inventory management, marketing campaigns, and regional focus. The main goal of this project is to transform raw, potentially messy sales data, sourced from the

cycle\_shop\_sales\_dirty.csv file, into a clean, intuitive, and interactive single-page Power BI dashboard that delivers actionable insights. The project utilizes Power BI Desktop for data cleaning and visualization, employing Data Analysis Expressions (DAX) for calculating Key Performance Indicators (KPIs).

**Chapter 2: Data Preparation and Modeling**

The project began by loading the source file, cycle\_shop\_sales\_dirty.csv, into the Power Query Editor. The initial data preparation phase was crucial, addressing several data quality issues within the raw dataset. Key steps included removing duplicate rows across all columns to ensure data uniqueness. Next, data integrity was addressed by handling missing values in critical financial and identification columns like

Product\_Name, Payment\_Mode, and Total\_Amount, achieved by filtering out and removing rows containing blanks. All text-based columns, such as

Product\_Category and Payment\_Mode, were standardized by applying the **Trim** and **Clean** functions to remove unwanted extra spaces and hidden characters. Finally, data types were strictly enforced:

Date was set to Date type, Quantity to Whole Number, and all financial metrics (Unit\_Price, Total\_Amount, Profit) were correctly set to Decimal Number. A final cleanup involved filtering and deleting erroneous rows where

Profit was less than zero. The resulting cleaned dataset, assumed to be named

Sales\_data, was then loaded into the Power BI data model as a single, centralized table.

**Chapter 3: Calculated Metrics (KPIs)**

To derive meaningful business insights, four core KPI measures were created using DAX in the Data View. These measures form the foundation of the dashboard’s summary metrics.

**Total Sales** was calculated using the formula Total Sales = SUM(cycle\_shop\_sales\_dirty[Total\_Amount]), representing the entire revenue generated.

**Total Profit** was calculated as Total Profit = SUM(cycle\_shop\_sales\_dirty[Profit]), showing the gross income.

**Total Quantity Sold** was determined by Total Quantity = SUM(cycle\_shop\_sales\_dirty[Quantity]), counting all units sold. Lastly, the

**Average Bill Value** was calculated as Average Bill Value = AVERAGE(cycle\_shop\_sales\_dirty[Total\_Amount]), providing the average transaction size for the shop.

**Chapter 4: Dashboard Design and Layout**

The dashboard adheres to a professional design philosophy, utilizing a

**Grid Layout** with a focused visual hierarchy. The top section of the report is dedicated to four Card visuals, prominently displaying the calculated KPIs (

Total Sales, Total Profit, Total Quantity, and Average Bill Value), which serve as the high-level performance snapshot. A vertical

**Left Rail** is reserved exclusively for the three main slicers: Product Category, Payment Mode, and a Date Range filter, ensuring immediate and intuitive interactivity. The main body of the dashboard houses the charts: a

**Line Chart** for the Monthly Sales Trend occupies the top-left to show time-series data, while various Bar, Donut, and Map visuals are arranged below in a neat grid to detail breakdowns by category, payment type, geography, and top products. Consistency in formatting—using a light background, subtle borders, and consistent color themes—was applied to all visuals to ensure a clean and professional appearance.

**Chapter 5: Visual Insights and Analysis**

The dashboard delivers several key insights across different business areas. The

**Monthly Sales Trend (Line Chart)** reveals the business's seasonality, allowing the shop to forecast demand and manage inventory accordingly. The

**Sales by Product Category (Bar Chart)** clearly identifies the most revenue-contributing product segment, vital for strategic focus. The

**Top 5 Selling Products (Bar Chart)** provides granular detail, highlighting specific items that drive the highest sales revenue. The

**Sales by Payment Mode (Donut Chart)** gives critical insight into customer preference, showing the percentage split of sales across methods like Card, Cash, UPI, and Bank Transfer. Finally, the

**City-wise Sales (Map/Bar Chart)** identifies the top customer locations, which can guide targeted advertising and distribution strategies.

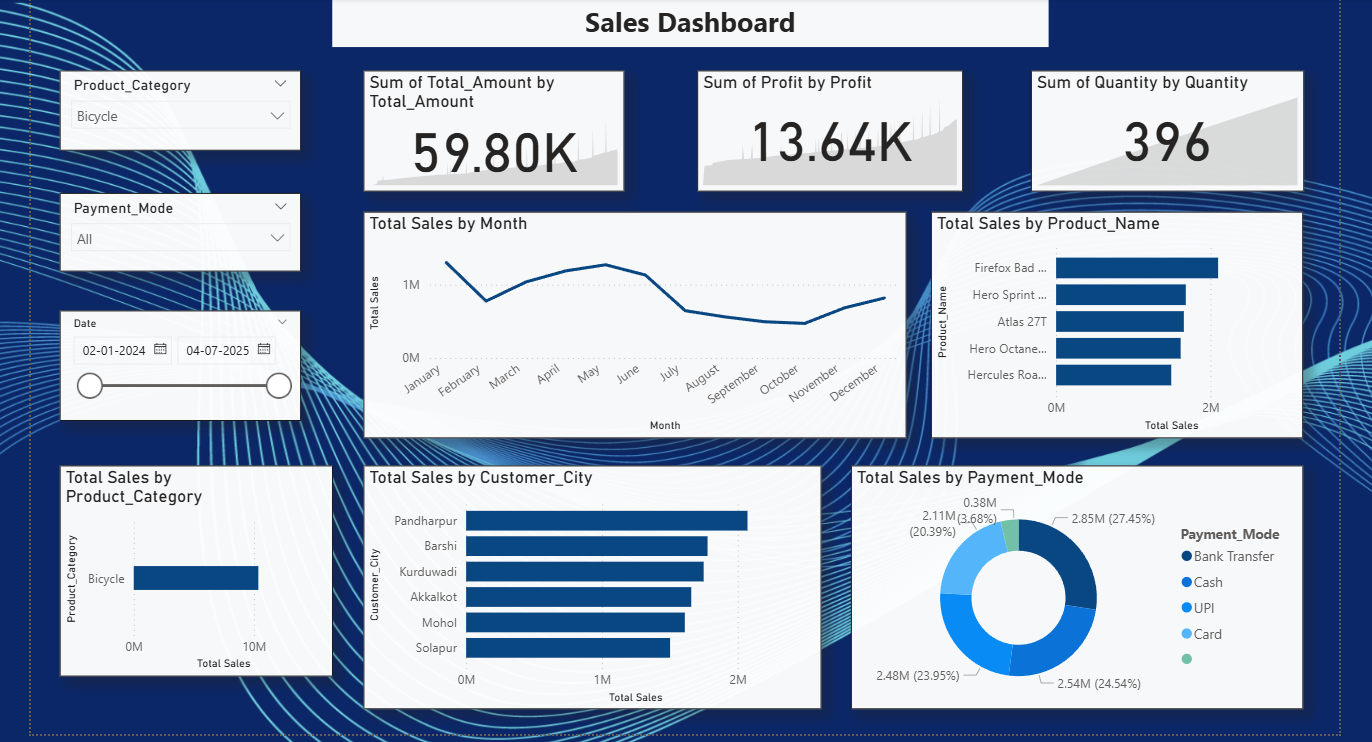
**Chapter 6: Conclusion and Future Scope**

In conclusion, the Cycle Shop Sales Dashboard successfully meets the project goal by converting raw data into a dynamic, highly functional report. It empowers stakeholders to quickly track performance against key metrics, understand sales trends, and diagnose areas of strength and weakness across products and regions. Based on the initial analysis, a key recommendation is to

**focus inventory and marketing efforts on the top-selling product category and top 5 products** to capitalize on proven demand. For future scope, the dashboard could be significantly enhanced by introducing a

**Profit Margin Percentage** measure for efficiency tracking and implementing advanced data modeling, such as incorporating a separate calendar dimension table for more complex time intelligence functions.

**Visual Representation:**

****