Project Report: Coffee Shop Sales Dashboard

# 📌 Project Title

Coffee Shop Sales Dashboard Using SQL and Power BI

# 👤 Author

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Tools Used: MySQL, Power BI, CSV, Excel  
Date: [Add Date]

# 📝 Executive Summary

This project involves analyzing the sales data of a coffee shop chain to uncover business insights that can drive strategic decisions. Using MySQL for data transformation and Power BI for interactive visualizations, the project tracks trends in revenue, customer behavior, store performance, and product popularity.  
  
The primary goal is to build a user-friendly dashboard that summarizes key performance metrics in a visually intuitive manner, aiding business stakeholders in identifying trends, outliers, and opportunities for growth.

# 🎯 Objectives

- To clean and transform raw transaction data using SQL.  
- To perform time-based and category-based analysis on sales.  
- To build a comprehensive, visually engaging Power BI dashboard.  
- To provide insights into customer purchasing patterns and store performance.  
- To identify actionable opportunities through sales trends and outlier detection.

# 🧾 Dataset Description

Source: Coffee Shop Sales.csv  
Size: [Add row count, e.g., ~5000 rows]  
Fields Include:  
- transaction\_id  
- transaction\_date, transaction\_time  
- store\_location, product\_category, product\_type  
- unit\_price, transaction\_qty

# 🔍 Methodology

## 1. Data Cleaning & Transformation (Using SQL)

- Converted string-formatted date and time fields into standard SQL DATE and TIME formats.  
- Standardized column names and data types.  
- Calculated new KPIs like total sales (unit\_price × quantity).  
- Performed aggregation by month, day, product, store, and day of week.

## 2. Data Analysis Objectives

- Calculate total revenue, quantity sold, and number of orders by month  
- Compare sales on weekdays vs weekends  
- Rank top product categories and stores by sales  
- Track daily performance and classify days as:  
 - Above Average  
 - Below Average  
 - Average

## 3. Visualization in Power BI

- Created an interactive dashboard with slicers and filters  
- Visualized:  
 - Monthly trends  
 - Product and store-wise comparisons  
 - Weekend vs weekday performance  
 - Daily sales trend line with KPI cards  
 - MoM growth rates

# 📊 Dashboard Features

- KPI Cards: Total Sales, Orders, Quantity  
- Line Chart: Daily sales trend  
- Bar Charts:  
 - Sales by Store  
 - Top Product Categories & Types  
- Pie Chart: Weekday vs Weekend revenue  
- Table: MoM comparison of revenue and orders

# 📈 Key Insights

- May saw the highest total revenue among all available months.  
- Store A (or relevant store) consistently outperformed others.  
- Beverages and Coffee were the top-performing categories.  
- Weekend sales contributed over 35% of monthly revenue.  
- 18th May was identified as the single highest sales day.

# 🧠 Business Recommendations

- Focus marketing efforts on high-performing days and categories.  
- Run loyalty campaigns on weekends to capitalize on traffic.  
- Monitor underperforming stores and low-margin products.  
- Consider product bundling strategies for top-selling items.

# 📦 Tools & Technologies Used

Tool | Purpose  
------------|------------------------------  
MySQL | Data cleaning, transformation, aggregation  
Power BI | Dashboard development, data storytelling  
Excel/CSV | Raw data input

# 🚧 Limitations & Future Work

- Data lacks customer-level info (no segmentation possible)  
- Time series data could be further enriched with forecasting  
- Could integrate with Python for automation or alerting  
  
Planned Enhancements:  
- Host the dashboard online (Power BI Service or Streamlit)  
- Include drill-down functionality for deeper exploration  
- Automate data refresh and scheduled email reports

# 📎 Appendix

Files Used:  
- Coffee Shop Sales.csv – Raw dataset  
- Coffee Shop Sales\_sq.sql – SQL script for preprocessing and analysis  
- dash.pbix – Final dashboard file  
- README.md – GitHub documentation  
- dashboard-preview.png – Screenshot of final dashboard

# 📝 References

- Power BI Official Docs: https://learn.microsoft.com/en-us/power-bi/  
- MySQL Official Docs: https://dev.mysql.com/doc/  
- Business Intelligence Dashboard Design Best Practices