PROJECT OVERVIEW

Coffee Shop Sales Analysis

End-to-end SQL analysis of 149,000+ transactions across 3 store locations

MySQL | Window Functions | KPI Analysis | Time-Series | Data Cleaning

01 — PROJECT OVERVIEW

What Is This Project?

This project performs a complete end-to-end sales analysis for a multi-location coffee shop chain using MySQL. Starting from a raw transactional dataset, the work covers data cleaning, type correction, and a comprehensive suite of KPI queries designed to support real business decision-making.

02 — DATASET

About the Data

Total Records	149,000+ transactions
Locations	3 store branches
Time Period	Multiple months (2023)
Key Columns	transaction_id, transaction_date, transaction_time, transaction_qty, unit_price, product_category, product_type, store_location
Database	MySQL (coffee_shop_db)
Table Name	coffee_shop

03 — BUSINESS QUESTIONS

What We Set Out to Answer

- What are the total sales, orders, and quantity sold for each month?
- How does this month's performance compare to last month (MoM growth)?
- Which store location drives the most revenue?
- When are customers buying — what hour and day of week peaks the most?
- Which product categories and individual items generate the highest revenue?
- On which days is performance above or below the monthly average?

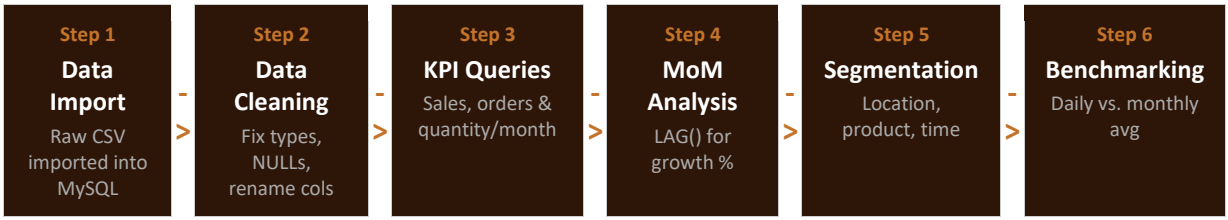
04 — DATA CLEANING

Cleaning Steps Performed

- **transaction_date** from VARCHAR to DATE using STR_TO_DATE()
- **transaction_time** from VARCHAR to TIME
- **transaction_id** column (contained BOM/encoding characters)
- Handled NULL values with conditional WHERE clauses during UPDATE operations
- Disabled safe update mode (SET sql_safe_updates = 0) for bulk cleaning

05 — METHODOLOGY

Analysis Pipeline



06 — ANALYSIS MODULES

What Was Built

#	Analysis Module	Description	SQL Techniques
01	**Monthly KPI Summary**	Total Sales, Orders & Quantity — formatted output for any selected month	**SUM(), COUNT(), CONCAT()**
02	**Month-on-Month Growth**	% change in sales, orders, and quantity vs. the previous month	**LAG(), OVER(), Window Function**
03	**Weekday vs. Weekend Sales**	Revenue segmentation to identify if weekdays or weekends drive more business	**DAYOFWEEK(), CASE WHEN**
04	**Sales by Store Location**	Ranked revenue comparison across all 3 branches for any given month	**GROUP BY, ORDER BY**
05	**Daily Sales vs. Avg Benchmark**	Tags each day as Above / Below / Average using a dynamic window AVG	**AVG() OVER(), Subquery, CASE**
06	**Sales by Hour & Day of Week**	Identifies peak hour (8 AM) and best-performing days using time functions	**HOUR(), DAYOFWEEK(), CASE WHEN**
07	**Product Category & Top 10**	Ranks all 9+ product categories; drills into top items within each	**GROUP BY, LIMIT, WHERE filter**

07 — KEY FINDINGS

What the Data Revealed

8 AM

Peak Sales Hour

The highest transaction volume and revenue consistently occurs at 8 AM, driven by the morning commute rush.

COFFEE

Top Product Category

Coffee is the #1 revenue-generating product category, ranking first in total sales across all months analyzed.

WEEKDAYS

Weekday Traffic Dominates

Weekday sales significantly outperform weekends, indicating the customer base is largely made up of daily commuters.

LOCATION GAP

Store Performance Gap

One store location consistently lags behind the other two — a clear opportunity for targeted operational improvement.

08 — TECHNICAL SKILLS

SQL Techniques Demonstrated

LAG() + OVER() — Window Function
STR_TO_DATE() — Data Cleaning
AVG() OVER() — Window Aggregation
CASE WHEN — Conditional Logic
HOUR() / MONTH() — Date & Time Functions
Subqueries — Nested Queries
ALTER TABLE — Schema Management
GROUP BY + ORDER BY — Aggregation & Sorting
DAYOFWEEK() — Time Segmentation
CONCAT() + ROUND() — Output Formatting

09 — HOW TO RUN

Running This Project

- Import your CSV dataset into MySQL as a table named coffee_shop
- Run the full script: Coffee_Sales_Analysis.sql
- Adjust the MONTH() filter value to explore different months (1 = Jan, 3 = Mar, etc.)
- Each analysis section is modular — sections can be run independently

Sakshi Sharma

Data Analyst | SQL | Python | Power BI | Excel