Client Requirements Document (CRD): Data Analysis for "The Daily Grind" Coffee Shop

Prepared for: Data Analyst
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1. Executive Summary & Business Objective

The primary objective of this data analysis project is to leverage our historical sales data (`coffee.csv`) to uncover actionable insights that will directly impact profitability, customer satisfaction, and operational efficiency. We aim to move from intuition-based decisions to data-driven strategies for menu optimization, staffing, pricing, and marketing.

The analysis will be conducted using **SQL Server Management Studio (SSMS)** to query, aggregate, and analyze the dataset.

2. Data Source

- **File Name:** `coffee.csv`
- **Description:** Point-of-Sale (POS) transaction data from March 2024 to October 2024.
- **Key Fields:**
    - `hour_of_day`, `Time_of_Day` (Morning, Afternoon, Night)
    - `coffee_name` (Product)
    - `money` (Sale Price)
    - `cash_type` (Payment Method)
    - `Weekday`, `Month_name`, `Date`
    - `Time` (Note: This column appears to have formatting inconsistencies, e.g., values like `46:33.0`)

3. Key Business Questions & Analysis Requirements

Please structure your SQL analysis and subsequent report around the following key areas. For each, provide both summary statistics and, where relevant, visualizations (which can be generated from SSMS or an accompanying tool like Power BI/Excel).

A. Sales & Revenue Analysis

1. **Overall Performance:**
    - What is the total revenue generated over the entire period?
    - What is the total number of orders (transactions)?
    - What is the Average Order Value (AOV)?
2. **Trend Analysis:**
    - What are the **monthly revenue trends**? Is the business growing?
    - Which are the top 3 and bottom 3 months by revenue?
    - How does revenue vary by **day of the week**? Which days are the most and least profitable?
3. **Hourly & Time-of-Day Performance:**
    - What are the peak revenue hours of the day?
    - How does revenue break down across `Time_of_Day` (Morning, Afternoon, Night)?

B. Product Performance & Menu Optimization

1. **Best & Worst Sellers:**
    - Rank all coffee products by the **number of orders** and by **total revenue** generated.
    - What are the top 5 most popular products?
2. **Pricing Analysis:**
    - Is there a correlation between price (`money`) and popularity? Are customers favoring premium or budget options?
    - Calculate the total revenue contribution (%) of each product.

C. Customer Behavior & Peak Hours

1. **Busiest Times:**
    - Identify the busiest hours of the day based on the **volume of transactions** (not just revenue).
    - Are the busiest hours the same on weekdays (Mon-Fri) vs. weekends (Sat-Sun)?
2. **Weekday vs. Weekend Patterns:**
    - Compare the average number of daily transactions and revenue for weekends vs. weekdays.

D. Pricing & Payment Analysis

1. **Payment Methods:**
    - What percentage of transactions are made by `card`? (The data suggests all are card, but confirm this).
2. **Price Changes:**
    - I notice the `money` values change at certain points (e.g., Latte price changes from 38.7 to 37.72). Can you identify the exact dates when prices for key items (e.g., Latte, Americano, Cappuccino) were changed?

4. Specific SQL Queries & Deliverables

Please provide the results for the following specific queries:

1. **Query 1: Daily Revenue Trend** (A line chart showing revenue per day).
2. **Query 2: Top 5 Products by Revenue** (A bar chart).
3. **Query 3: Sales Distribution by Hour of the Day** (A line or bar chart showing transaction count per hour).
4. **Query 4: Weekday Revenue Comparison** (A bar chart showing average revenue for each weekday).
5. **Query 5: Monthly Sales Summary** (A table showing Total Revenue, Number of Orders, and AOV for each month).

5. Data Quality Notes & Assumptions

- **Time Column:** The `Time` column has anomalies (values exceeding 60 minutes). Please prioritize using `hour_of_day` for time-based analysis.
  The `Time_of_Day` column can be used for broader categorization.
- **Payment Method:** It appears all transactions are `card`. Please confirm if any `cash` transactions exist.
- **Price Consistency:** Assume that the `money` value for a given `coffee_name` on a given day is correct, even if it changes over time due to price adjustments.

6. Final Deliverables

The final output should include:

1. A **SQL Script (.sql file)** containing all the queries used for the analysis.