

I. Project Overview & Data Sources

- **Goal:** Provide the new CEO with a clear, data-driven understanding of Bright Coffee Shop's performance, identifying key revenue drivers, trends, and opportunities for improvement.
- **Data Sources:**
 - **Daily Sales Data:** (Most important) Transaction details: Date, Time, Location, Product, Quantity, Price, Discounts, Payment Method.
 - **Product Master Data:** Product ID, Product Name, Category (Coffee, Pastry, Sandwich, etc.), Cost.
 - **Location Data:** Location ID, Location Name, Address, City, State, Square Footage, Seating Capacity.
 - **Customer Data (Optional):** If available (loyalty programs, online orders): Customer ID, Demographics (age, gender, location), Purchase History.
 - **Marketing Data (Optional):** Campaign details, spend, reach, and impact on sales.
- **Tools:**
 - **Data Storage/Processing:** Microsoft SQL Server (primary), Databricks (for complex transformations/modeling), Google BigQuery (for scalability if data volume is very high). MySQL Workbench (for initial data exploration/small tasks).
 - **Data Visualization:** Power BI (primary for interactive dashboards), Tableau (for advanced visualizations), Microsoft Excel (for quick summaries), Google Sheets (for collaboration/sharing).
 - **Presentation/Reporting:** Microsoft PowerPoint (main presentation), Canva (for visually appealing slides/infographics), Miro (for collaborative brainstorming/strategy sessions).

II. Data Analysis Plan (Using the Tools)

1. **Data Extraction & Cleaning (SQL Server/Databricks/BigQuery):**
 - **SQL Server:** Extract data from the operational database. Clean data (handle missing values, correct inconsistencies).
 - **Databricks (if needed):** For more complex cleaning or transformations (e.g., combining data from multiple sources, creating calculated fields). Use Spark SQL for large datasets.
 - **BigQuery (if needed):** If the data volume is extremely large, use BigQuery for faster processing and scalability.
2. **Key Metrics Calculation (SQL/Databricks/BigQuery):**
 - **Total Revenue:** Sum of (Quantity * Price) for each transaction.
 - **Revenue by Product:** Total revenue generated by each product.
 - **Revenue by Location:** Total revenue generated by each location.
 - **Revenue by Time:** Revenue broken down by hour, day of week, month, season.
 - **Average Transaction Value (ATV):** Total Revenue / Number of Transactions.

- **Customer Count (if customer data available):** Number of unique customers.
 - **Profit Margin (if cost data available):** $(\text{Revenue} - \text{Cost}) / \text{Revenue}$.
 - **Top Performing Products:** Identify the products with the highest revenue.
 - **Peak Hours/Days:** Determine the busiest times for each location.
 - **Sales Trends:** Analyse sales over time to identify growth, seasonality, or decline.
3. **Data Visualization (Power BI/Tableau/Excel/Google Sheets):**
- **Power BI (Main Dashboard):**
 - **Executive Summary:** Key KPIs (Total Revenue, Profit Margin, ATV) with trend lines.
 - **Revenue by Product:** Bar chart or tree map showing revenue contribution of each product. Drill-down capability to see sales by location/time.
 - **Revenue by Location:** Map visualization showing revenue by location. Bar chart comparing location performance.
 - **Sales Trends:** Line chart showing revenue over time (monthly, quarterly).
 - **Peak Hours:** Heatmap showing sales by hour of the day and day of the week.
 - **Product Mix:** Pie chart showing the percentage of revenue from each product category.
 - **Tableau (Advanced Visualizations):**
 - **Customer Segmentation (if data available):** Visualize customer segments based on purchase behaviour.
 - **Correlation Analysis:** Explore relationships between variables (e.g., marketing spends and sales).
 - **Excel/Google Sheets:**
 - **Detailed Sales Reports:** Provide raw data tables for specific products or locations.
 - **Quick Summaries:** Create simple charts for specific questions.