Power BI Coffee Sales Project

### Problem Statement

"To analyze the sales performance of different coffee products across various store locations, identify trends, and optimize inventory and marketing strategies to increase revenue and customer satisfaction."

**Implementation Steps**

1. **Import Data**: Load your dataset into Power BI.
2. **Data Transformation**: Use Power Query to clean and transform the data.
3. **Create Measures and Calculated Columns**: Define the necessary DAX measures and calculated columns.
4. **Build Visuals**: Create the recommended visualizations using Power BI's drag-and-drop interface.
5. **Design and Layout**: Arrange the visuals in a logical and aesthetically pleasing manner on the dashboard.

**Key Metrics to Track**

1. **Total Sales Revenue**: Sum of (transaction\_qty \* unit\_price)
2. **Number of Transactions**: Count of transaction\_id
3. **Average Transaction Value**: Average of (transaction\_qty \* unit\_price)
4. **Units Sold**: Sum of transaction\_qty
5. **Sales by Product Category**: Sum of (transaction\_qty \* unit\_price) grouped by product\_category
6. **Sales by Product Type**: Sum of (transaction\_qty \* unit\_price) grouped by product\_type
7. **Sales by Store Location**: Sum of (transaction\_qty \* unit\_price) grouped by store\_location
8. **Peak Sales Hours**: Transaction count or revenue by transaction\_time
9. **Sales Trends Over Time**: Sum of (transaction\_qty \* unit\_price) by transaction\_date

**Analysis Questions**

1. **Which products are the top sellers?**
   * By product\_category
   * By product\_type
   * By product\_detail
2. **Which store locations have the highest and lowest sales performance?**
   * By total sales revenue
   * By units sold
   * By number of transactions
3. **What are the peak sales hours and days?**
   * By transaction\_time
   * By transaction\_date (day of the week, month, seasonality)
4. **How does the average transaction value vary across different store locations?**
5. **What is the sales trend over different time periods (daily, weekly, monthly, quarterly, yearly)?**
6. **How does the sales performance of different product categories compare over time?**
7. **Are there any seasonal trends or patterns in coffee sales?**
8. **How do promotions or special events affect sales?**
   * If there are any special markers or flags in the data for promotions

**Suggested Dashboard Layout**

1. **Sales Overview**
   * Total Sales Revenue (KPI)
   * Number of Transactions (KPI)
   * Average Transaction Value (KPI)
   * Units Sold (KPI)
2. **Sales by Product**
   * Bar chart showing sales by product\_category
   * Bar chart showing sales by product\_type
   * Detailed table for sales by product\_detail
3. **Sales by Location**
   * Map visual showing sales by store\_location
   * Bar chart or heatmap showing sales performance by store\_id
4. **Time-based Analysis**
   * Line chart for sales trends over time (daily, weekly, monthly)
   * Heatmap or line chart for peak sales hours and days
5. **Customer Insights**
   * Pie chart showing distribution of sales by product\_category and product\_type
   * Analysis of average transaction value by store location

**Data Preparation Tips**

1. **Data Cleaning**: Ensure there are no missing or incorrect values in the dataset.
2. **Date and Time Formatting**: Convert transaction\_date and transaction\_time into appropriate datetime formats for analysis.
3. **Calculated Columns**:
   * Total\_Sales = transaction\_qty \* unit\_price
   * Day of Week, Month, Year extracted from transaction\_date

**Problem Statement**

KPI’s Requirement

# Total Sales Analysis

* Calculate the total sales for each respective month.
* Determine the month-on-month increase or decrease in sales.
* Calculate the difference in sales between the selected month and the previous month.

# Total order analysis

* Calculate the total number of order for each respective month
* Determine the month-on-month increase or decrease in number of orders.
* Calculate the difference in the number of orders between the selected month and the previous month.

# Total Quantity Sold Analysis:

* Calculate the total quantity sold for each respective month.
* Determine the month-on-month increase or decrease in quantity sold.
* Calculate the difference in the quantity sold between the selected month and the previous month.

Charts Requirements:

# Calendar Heat map:

* Implement a calendar heat map that dynamically adjust based on the selected month from slicer.
* Each day on the calendar will be color-coded to represent sales volume, with darker shades indicating higher sales.
* Implement tooltips to display detailed matrices(sales, orders, Quantity) when hovering over a specific day.

# Sales Analysis by Weekday and Weekends:

* Segment sales data into weekdays and weekends to analyze performance variations.
* Provide insight into whether sales patterns differ significantly between weekdays and weekends.

# Sales Analysis by Store Location:

* Visualize sales data by different store locations.
* Include month-over-month difference metrics based on the selected month in the slicer.
* Highlight MoM sales increase or decrease for each store location to identify trends.