In-Class Exercise: Building Financial Visualizations in Tableau

Objective

By the end of this exercise, you will:

- Import financial stock data into Tableau.
- Create basic visualizations (line chart and bar chart).
- Build and customize a **stock returns heatmap**.
- Add interactive filters to explore stock performance across different companies and time periods.

🧩 Part 1: Data Import and Setup

Task:

1. Open Tableau and start a new workbook.
2. Connect to the provided dataset:
    - Download and use the sample stock CSV files (e.g., apple.csv, ibm1.csv, facebook.csv, microsoft.csv, tsla.csv). Use Union.
3. Check:
    - Ensure that the **Date** field is recognized as a **date**.
    - **Close price** is recognized as a **measure**.

Checkpoint: Are all your data types correctly assigned? If not, fix them!

📈 Part 2: Basic Visualizations

A. Line Chart of Closing Prices

- Drag **Date** to Columns.
- Drag **Close** to Rows.
- Color the line by **Company** name (Stock name).
- Add a filter for **Stock Name** so users can select specific stocks.

👉 *Question to discuss after*:
What trend differences do you observe between different companies?

B. Bar Chart of Average Closing Price

- Drag **Stock Name** to Columns.
- Drag **Average Close Price** to Rows.
- Customize: Sort stocks by **highest average price**. (how to show the top 2)

👉 *Question to discuss after*:
Which company had the highest average close price?

🔥 **Part 3: Create a Stock Returns Heatmap**

Goal: Visualize the **percentage daily change** of stock prices across time.

Steps:

1. Create a **Calculated Field**:
    - Name it: Daily Return %
    - Formula:

(SUM [Close] - LOOKUP(SUM([Close]), -1)) / LOOKUP(SUM([Close]), -1) * 100

2. Create the Heatmap:
    - Drag **Date** to Columns.
    - Drag **Stock Name** to Rows.
    - Drag your new Daily Return % field to **Color** on the Marks card.
    - Change the Marks type to **Square**.
3. Customize:
    - Adjust the color gradient:
        - Red for negative returns.
        - Green for positive returns.
    - Add a filter for **Date Range**.

👉 *Question to discuss after*:
What periods show the most volatility? Which stocks seem most sensitive to market movements?

🧩 Part 4: Add Interactivity

Task:

- Add a **Quick Filter** for Stock Name so you can focus on one stock at a time.
- Add a **Date Range Slider**.

🚀 Bonus Challenge (If time allows)

- Create a **Dashboard** combining:
    - Line Chart
    - Bar Chart
    - Heatmap
- Add **interactivity** so selecting a company updates all three visuals.

👉 *Question to discuss after*:
How does combining visuals help you gain better insights?

🧠 Wrap-Up Reflection

Before you leave:

- What was the most challenging part of today's Tableau work?
- What feature of Tableau do you think will be most useful in your project?

🔥 Extra Part

1. create MA10 and MA50.

2. Discuss the results