Case Study: Stock Price Analysis of IT Companies

Scenario (Summary):

As a data analyst at a financial services firm, you're tasked with analyzing stock performance data for major IT companies over a two-year period (2022-2023). This analysis will support the firm's investment strategy by identifying trends in stock price volatility, financial health (e.g., PE and PB ratios), and market capitalization. Your findings will help inform investment decisions, highlight undervalued stocks, and assess the performance of key IT players, using Microsoft Excel for detailed analysis and reporting.

Dataset Columns Explained

1. Date: The date when the stock price was recorded.

2. Company Name: The name of the IT company (e.g., Apple, Microsoft).

3. Ticker Symbol: The stock ticker symbol of the company.

4. Open Price: The price at which the stock opened at the start of the trading day.

5. High Price: The highest price reached during the trading day.

6. Low Price: The lowest price during the trading day.

7. Close Price: The price of stock at the end of the trading day.

8. Adjusted Close Price: The closing price adjusted for factors like dividends and splits.

9. Volume: The total number of shares traded during the day.

10. Market Capitalization: The total market value of the company’s outstanding shares.

11. PE Ratio: Price-to-Earnings ratio, showing how much investors are paying for each dollar of earnings.

12. PB Ratio: Price-to-Book ratio, showing the company's market value relative to its book value.

13. Dividend Yield (%): The percentage of the stock's price paid as dividends to shareholders.

14. Beta: The stock's volatility relative to the overall market.

15. 52-Week High: The highest price the stock has reached in the last 52 weeks.

16. 52-Week Low: The lowest price the stock has reached in the last 52 weeks.

17. EPS (Earnings per Share): The company’s profit divided by the number of outstanding shares.

18. Revenue (in millions): The total revenue of the company in millions.

19. Net Income (in millions): The company’s net profit.

20. Operating Margin (%): The percentage of revenue left after deducting operational costs.

21. Debt-to-Equity Ratio: A measure of the company’s financial leverage.

22. Free Cash Flow: The cash available after capital expenditures.

23. Dividend: The dividend paid per share.

24. Industry: The specific industry to which the company belongs (e.g., Software, Cloud Computing).

Part 1: Basic Formatting

The first part of this task focuses on applying essential formatting techniques to the dataset to make it more readable and visually appealing.

Tasks for Part 1: Formatting

1. Freeze Top Row: Freeze the top row to keep the column headers visible while scrolling down.

2. Apply Number Formatting: Format numeric columns (such as Open Price, Close Price, Volume) with appropriate number formatting (e.g., two decimal places for stock prices, commas for large numbers like volume).

3. Date Formatting: Ensure that the 'Date' column is formatted in a consistent dd-mm-yyyy format.

4. Auto-Adjust Column Widths: Adjust the column widths automatically to fit the content without cutting off text.

5. Bold and Center Headers: Apply bold and center alignment to the column headers to make them stand out.

6. Gridlines: Ensure gridlines are visible to make reading and analyzing data easier.

7. Conditional Formatting for Price Range: Apply conditional formatting to highlight cells in the 'Close Price' column where the values are greater than $1,000 in green, and values below $500 in red.

8. Highlight Market Capitalization: Use conditional formatting to create bands of market capitalization, for example:
- Greater than $10 billion: Green
- Between $5 billion and $10 billion: Yellow
- Less than $5 billion: Red

9. Text Alignment: Align text to the left in columns such as 'Company Name', 'Ticker Symbol', and 'Industry'.

10. Column Title Wrapping: Ensure column titles are fully visible by wrapping text if necessary.

11. Font Standardization: Use a standard font (e.g., Calibri) throughout the sheet with a readable size (10-12pt).

12. Create Borders Around Cells: Add borders around the data to clearly define each cell.

13. Important Columns Shading: Lightly shade important columns such as 'Close Price', 'PE Ratio', and 'Dividend Yield (%)'.

14. Sheet Naming: Rename the sheet to 'Stock Prices IT' for better identification.

15. Insert Comments (Optional): If necessary, add comments to key cells to explain calculations or highlight important data points.

Part 2: Data Understanding Using Basic Formulas and Conditional Formatting

Once the data is formatted, the next step is to apply basic formulas and conditional formatting to explore the dataset from different perspectives. This will help reveal trends, patterns, and key insights.

Tasks for Part 2: Understanding the Data

1. Conditional Formatting for Volatility: Highlight stocks that show a high level of daily volatility by identifying rows where the difference between 'High Price' and 'Low Price' exceeds $100.

2. Calculate Daily Price Change: Insert a new column called 'Daily Price Change' that calculates the difference between 'Open Price' and 'Close Price' using a simple subtraction formula.

3. Identify High Dividend Yields: Use conditional formatting to highlight companies with a 'Dividend Yield (%)' greater than 4%.

4. Count of Days with High Volume: Use the COUNTIF function to count how many trading days had a volume greater than 10 million shares.

5. Calculate Market Capitalization: Ensure that the 'Market Capitalization' column is calculated correctly using 'Close Price * Volume'.

6. Highlight Stocks with Low PE Ratio: Use conditional formatting to highlight stocks with a PE Ratio less than 20.

7. Count of Companies per Industry: Use the COUNTIFS function to count the number of companies belonging to each industry (e.g., Software, Cloud Computing).

8. Average Close Price per Company: Use the AVERAGEIF function to calculate the average 'Close Price' for each company.

9. Max and Min Close Prices for Companies: Use the MAX and MIN functions to find the highest and lowest closing prices for each company.

10. Calculate Total Revenue for Companies: Use the SUMIF function to calculate the total revenue generated by each company over the period.

11. Identify Companies with High Beta: Use conditional formatting to highlight stocks with a Beta greater than 1.5, indicating higher volatility than the overall market.

12. Count of Trading Days in a Price Range: Use COUNTIFS to count how many trading days a stock traded within a specific price range (e.g., between $500 and $1,000).

13. Calculate Average PE Ratio: Find the average PE Ratio across all companies using the AVERAGE function.

14. Identify Stocks with Negative Daily Change: Use conditional formatting to highlight rows where the 'Daily Price Change' column is negative.

15. Find the Highest and Lowest Beta: Use the MAX and MIN functions to identify the stock with the highest and lowest Beta, indicating the most and least volatile stocks.