When comparing the stock information of 12 tech stocks over a 20-year period, you can focus on several key comparisons and analyses to gain valuable insights. Here are some specific comparisons and metrics to consider:

1. \*\*Stock Price Trends:\*\*

- Plot the historical stock prices for each of the 12 tech stocks over the 20-year period. This will provide a visual representation of how the stock prices have evolved.

- Calculate and compare the compound annual growth rate (CAGR) for each stock to assess their long-term performance.

2. \*\*Volatility and Risk:\*\*

- Calculate and compare the historical volatility of each stock using metrics like standard deviation or beta. This will help you understand the risk associated with each stock.

- Compare the maximum drawdown for each stock to assess how much an investor could have potentially lost during the worst periods.

3. \*\*Dividend Yield (if applicable):\*\*

- If any of the tech stocks pay dividends, calculate and compare their dividend yields over the 20-year period.

4. \*\*Financial Ratios:\*\*

- Calculate and compare financial ratios like the price-to-earnings (P/E) ratio, price-to-sales (P/S) ratio, and price-to-book (P/B) ratio for each stock.

- Analyze how these ratios have changed over time and compare them to industry averages.

5. \*\*Market Capitalization:\*\*

- Compare the market capitalization of each tech stock at different points in time. This will show how smaller companies have grown or if larger companies have maintained their dominance.

6. \*\*Earnings Growth:\*\*

- Analyze and compare the historical earnings growth rate of each stock. Look for periods of rapid growth or stagnation.

7. \*\*Dividend Growth (if applicable):\*\*

- If stocks pay dividends, analyze and compare the historical dividend growth rates of each stock.

8. \*\*Correlations and Diversification:\*\*

- Calculate correlations between the stock returns of the 12 tech stocks. This will help determine how closely their performance is linked and whether they provide diversification benefits when combined in a portfolio.

9. \*\*Relative Strength and Weakness:\*\*

- Identify periods when specific tech stocks outperformed or underperformed the broader market (e.g., S&P 500 or a relevant tech sector index).

10. \*\*Fundamental Analysis:\*\*

- Conduct a fundamental analysis of each stock, including factors like revenue growth, profit margins, debt levels, and competitive positioning.

- Compare key financial metrics and fundamentals to identify strong and weak performers.

11. \*\*Corporate Actions:\*\*

- Take note of significant corporate actions, such as stock splits, mergers, acquisitions, or spin-offs, and assess their impact on the stock prices.

12. \*\*Relative Valuation:\*\*

- Compare the valuation of each stock to its historical averages and the current market conditions. Assess whether stocks are overvalued or undervalued.

13. \*\*Sector and Industry Trends:\*\*

- Consider broader sector and industry trends that may have influenced the performance of tech stocks. Analyze how each stock performed relative to its peers.

14. \*\*Events and News Analysis:\*\*

- Identify major events or news releases that had a significant impact on the stock prices, such as product launches, regulatory changes, or earnings reports.

15. \*\*Long-Term Investment vs. Short-Term Trading:\*\*

- Determine which stocks may be better suited for long-term investment strategies and which ones may be more suitable for short-term trading based on historical performance.

These comparisons and analyses will provide a comprehensive view of the 20-year performance of the 12 tech stocks, helping you identify trends, outliers, and investment opportunities. Keep in mind that historical performance is not indicative of future results, so additional research and analysis are necessary for making informed investment decisions.

**What to use**

**Certainly, here are specific insights you can aim to find using each application (SQL, Python, and Power BI) in your analysis of the stock information for 12 tech stocks over a 20-year period:**

**\*\*SQL:\*\***

**1. \*\*Data Retrieval and Cleansing:\*\***

**- Ensure that you retrieve clean and accurate historical stock price data for the 12 tech stocks over the specified 20-year period.**

**- Check for and eliminate duplicate or overlapping data points to ensure data integrity.**

**\*\*Python:\*\***

**1. \*\*Stock Price Trends:\*\***

**- Calculate and visualize the historical stock price trends for each of the 12 tech stocks over the 20-year period using Python libraries like `matplotlib`.**

**2. \*\*Performance Metrics:\*\***

**- Calculate and compare key performance metrics for each stock, such as CAGR (Compound Annual Growth Rate), total return, and standard deviation (volatility).**

**3. \*\*Correlations and Diversification:\*\***

**- Calculate and visualize correlations between the stock returns of the 12 tech stocks to assess their level of diversification benefits when combined in a portfolio.**

**4. \*\*Risk Analysis:\*\***

**- Assess risk by calculating metrics like beta, which measures a stock's sensitivity to market movements, and maximum drawdown to understand potential loss scenarios.**

**5. \*\*Dividend Analysis (if applicable):\*\***

**- Analyze dividend growth and yield for stocks that pay dividends over the 20-year period.**

**6. \*\*Financial Ratios:\*\***

**- Calculate and analyze key financial ratios like P/E ratio, P/S ratio, and P/B ratio for each stock at various points in time.**

**7. \*\*Earnings and Revenue Growth:\*\***

**- Analyze earnings and revenue growth trends for each company to assess their financial performance.**

**\*\*Power BI:\*\***

**1. \*\*Interactive Dashboards:\*\***

**- Create interactive Power BI dashboards that allow users to explore stock performance visually. Include slicers and filters to enable users to select specific stocks, time periods, or performance metrics.**

**2. \*\*Time Series Analysis:\*\***

**- Present time series line charts to show how each stock's performance evolved over time. Users can easily identify trends and anomalies.**

**3. \*\*Risk and Volatility Visualization:\*\***

**- Use Power BI to create visual representations of risk metrics, such as volatility, beta, and drawdown, to help users understand the risk associated with each stock.**

**4. \*\*Correlation Heatmaps:\*\***

**- Visualize correlation matrices in Power BI to show how closely the stocks are related to each other. Highlight clusters of positively or negatively correlated stocks.**

**5. \*\*Financial Metrics Comparison:\*\***

**- Compare key financial metrics and ratios (e.g., P/E, P/S) for the 12 tech stocks in Power BI. Use tables, charts, or KPI cards to display this information.**

**6. \*\*Dividend and Earnings Growth:\*\***

**- Present dividend and earnings growth trends using Power BI visuals. Highlight periods of significant growth or decline.**

**7. \*\*Event Analysis:\*\***

**- Use Power BI to showcase major events or news releases that had a significant impact on stock prices. You can add annotations to your charts and reports to provide context.**

**8. \*\*Relative Strength:\*\***

**- Create visualizations that show when specific tech stocks outperformed or underperformed a relevant benchmark index, such as the S&P 500.**

**9. \*\*Performance vs. Industry and Sector:\*\***

**- Compare the performance of the 12 tech stocks against industry and sector benchmarks to assess their relative strength.**

**10. \*\*Narratives and Interpretation:\*\***

**- Use Power BI to add narrative elements, descriptions, and interpretations to your visuals, helping users understand the significance of the insights.**

**Remember that the specific insights you aim to find may vary depending on your analysis goals and the characteristics of the 12 tech stocks you are examining. It's essential to tailor your analysis to answer specific questions and provide actionable insights for informed decision-making.**