Github Repo: <https://github.com/annabellesanok/DS4200finalProject>

Website: <https://annabellesanok.github.io/DS4200finalProject/>

Visualization 1: Boxplot

We decided to use a box plot for this visualization to allow for a clear comparison of debt between each of these industries. By using boxes and whiskers, the visualization clearly highlights the distribution and extremes of this ratio for each industry.

**Marks**: The primary marks used in this visualization are boxes and lines to create the boxplot and circles to display outliers.

**Channels**: The position on the vertical axis represents the value of the debt-to-equity ratio, while the horizontal axis categorizes these values by industry. Color is used as a channel to differentiate between the two industries.

Visualization 2: Scatterplot

The choice for this visualization was a scatter plot with trend lines, which serves to showcase the changes and trends over time. This type of visualization is well suited for financial data that is tracked across time, like the current assets and liabilities of each company, allowing for an easy visual tracking of their progression and any patterns that may emerge.

**Marks:** The primary marks in this visualization are the dots and lines. Each dot represents an individual data point for current assets, current liabilities, or working capital at a specific time. The lines, which pass through or near the dots, help to show the general trend over time, giving a sense of how these values have increased, decreased, or fluctuated.

**Channels:** The horizontal axis tracks time, which allows viewers to see how current assets, current liabilities, and working capital have changed over the years. The vertical axis quantifies these financial metrics, showing the magnitude of each at any given time. The use of color as a channel is also effective here, making it easy to distinguish between the three different metrics.

Visualization 3: Bubble Plot

A bubble plot is effective here because it allows us to see three pieces of information at the same time: the PE Ratio, the PCF Ratio, and the ROE. This type of chart is helpful for comparing these things all at once, so you can easily determine which companies have a high ROE and how they stand on the PE and PCF scales.

**Marks:** The marks in this bubble plot are the circles, each representing a different tech company.

**Channels:** The positioning on the horizontal axis shows the PE ratio, while the vertical axis shows its PCF ratio. The size of the bubble is another channel that conveys the ROE, where larger bubbles correspond with a higher ROE.

Visualization 4: Line Chart

**Marks**

**Line Marks**: The visualization uses line marks to represent both PE Ratio and EPS. Line marks are ideal for showing trends over time, as they help track changes in data points continuously, making it easy to observe rises and falls in values.

**Channels**

**Position (X and Y axes)**: The horizontal axis (x-axis) displays time, providing a temporal context for the data. The vertical axis (y-axis) shows the values of PE Ratio and EPS, allowing users to gauge their magnitudes relative to each other over the timeframe.

**Color:** Color is used to differentiate between the two metrics. For instance, PE Ratio might be represented in blue, and EPS in green. This color coding helps users quickly distinguish between the data series without having to cross-reference with the axes or legend constantly.

**Interactivity**

**Dropdown Menu**: A dropdown menu enables users to select a specific stock ticker. This interactivity allows the chart to dynamically update and display the corresponding PE Ratio and EPS trends for the chosen stock, making the visualization adaptable to user interests.

Visualization 5: Stacked bar chart

**Marks**

**Bar Marks**: The visualization uses bar marks to represent 'gross\_profit' and 'operating\_income'. Stacked bars are effective for showing parts of a whole, where each segment of the stack represents a different financial metric, allowing comparison of their relative sizes within each ticker.

**Line Marks**: A line mark is used to represent the 'close' price over the same period, providing a perspective on the stock's financial health relative to its market performance.

**Channels**

**Position**: The horizontal position (x-axis) represents different stock tickers, organizing the data categorically. The vertical position (y-axis) indicates the quantitative values for 'gross\_profit', 'operating\_income', and 'close'.

**Color**: Color differentiates between 'gross\_profit' and 'operating\_income' within each stacked bar. This channel helps users quickly identify which part of the bar corresponds to each metric.

**Length/Height**: The length or height of each segment within the stacked bars represents the value of each financial metric, showing their proportions in relation to each other.

**Interactivity**

**Dropdown Menu**: dropdown menu allows users to select a ticker, which allows users to focus their analysis on a specific company

**Overlaying Line**: Including a line chart overlay on the stacked bars integrates an additional data dimension (closing price) directly within the same visualization space. This allows users to correlate the financial performance directly with stock price movements, all within the same interactive visual context.