

CS 416 – Data Visualization: Narrative Visualization

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Tesla Stock Analysis from 2010 – Present Day

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Message:

Tesla is a well known, cutting edge company in today's Market. This narrative visualization will take us through the history of the stock, and provide context behind some of the market numbers we discuss as well as give us an idea of how this company will do and has done over time.

Narrative Structure:

This narrative visualization follows an interactive slideshow structure. This is due to its presentation style creation, where the user can click through each scene using the navigational buttons located at the bottom "Previous" & "Next". They can also explore the visuals as they move through the visualization, with a couple of unique interactive implementations throughout the narrative visualization.

Visual Structure:

The visual structure is a combination of graphs, images, and writing that takes the user through the story of the data. This way the user can understand some of the context behind the numbers and what they mean. There are labels on each graph indicating the type of data, and interactive capabilities. The interactive capabilities include a mouseover functionality in the first scene which shows the data point that the user is on (highlighted in steel-blue), and the stock value for that point. On the bar graphs there is a hover functionality that allows the user to see the data values for each year. This way they are both able to see the bigger picture and trends of the data but also dig deeper into the details of the data. There are footnotes that help the user interact with the graphs as well, to ensure that the visualization is utilized to its fullest capabilities.

Scenes:

There is a main page and 3 scenes in this narrative visualization. The main page gives the user some context as to what will be discussed in this visualization and what to expect. Scene 1 starts off broad, with a graphing of the closing stock prices over time. This allows us to take a clear overall view of what the stock trend has been from 2010 to 2022. Scene 2 dives into the earnings per share and how to calculate the P/E ratio, which is an indicator of stock health. Those numbers are discussed and compared to the context of the business during that time. Scene 3

allows the user to toggle between Annual Revenue and Gross Profit, to see at a high level how Tesla was doing in the numbers regardless of their popularity.

Annotations:

The annotation I included in this project is in scene 1 where the overall stock is being discussed. It indicates the time that the COVID-19 crisis occurred to explain why the dip at that time happened. This helps the user understand the context of the data. The annotation does not change based on user interaction.

Parameters:

The parameters of scene 1 are the dates & times, as well as the Open, Closing, High, and Low of the stock. Graphed is the closing price of the stock for the day, but when the user hovers over the graph they can see all the stats for that day. Scene 2's parameters are the earnings per share. They define how Tesla was doing over time. Scene 3's parameters are the gross profit and revenue. They define how Tesla was doing as a company overall, past just the stock price.

Triggers:

On scenes 1 and 2 they are able to trigger the graph interactivity by hovering over the graph. On scene 3, the user is able to trigger each graph with the buttons above labelled gross profit and revenue. There are footnotes available that explain how each graph works and how to interact with them. The buttons are also brightly colored as to make it clear they can be pressed to enable interactivity. In scene 3 it is especially helpful as they are able to compare the two statistics almost side by side when they switch between them.