Taking an interest in financial markets, I was curious about how US gasoline prices have gone down and up over the past few decades. After some research I stumbled upon some data with gas prices since 1950[1] and used it to build my narrative visualization.

The message I want to give with this visualization is to provide context about what was occurring in the world since 1950 and how it has impacted gasoline prices during those times. This way the reader can better understand what events have typically resulted in large rises and falls in the price of gasoline.

The narrative structure that I decided to go with is an interactive slideshow. My visualization achieves this style by giving the user access to move through the data while also introducing interactive elements on each “page” or “scene”, by hovering over data points for details. As the author I am guiding the user, but I do allow for some exploration within the data presented on each “scene” for the user to “drill down”.

The visual structure I implemented is a left to right line chart telling a story through 10 year intervals. The data is split into 2 colors, and a legend is provided for context. I also made it simple for the user to step through the data with a single button, a note explaining they can hover over highlighted data, and a restart visualization button if they want to start over. Since we are showing values over time, the line chart works best as the medium to clearly show the data to the user. Highlight is implemented by only having the current data range of the scene with a high contrast while the older data has a lower contrast. Thus, making the user focus on the newer data presented. This also helps the user understand how the data is connected to data in other scenes by retaining that old data they can compare it to what is being shown in the existing scene.

The scenes in my narrative visualization are structured in data ranges of 10 years from 1950-2023, with the last scene only highlighting 2020-2023 as the data set ends there. I ordered the scenes in this way because it gives a solid range of time to witness some potential changes while also not being too long where there are too many world events going on influencing the data. It also keeps the data on each scene focused.

The template followed by the annotations is to provide details on “cause and effect” of what might’ve caused prices to rise and fall that correspond to the data. When there was not much direct impact on the price of gasoline, I provided some historical data to give the user some details on what historical events happened during that time period. When there was a direct impact, I made sure to highlight that and made note of it. This way the user can be made aware of why the price of gas rose or fell greatly, or if it remained steady they can associate the time period shown with a well known historical event. The annotations change when new data is displayed in each scene by highlighting the focused data range. The old annotations in the background become faded to not make them the focus while still giving the user the option to look back at them. Then at the very end they can see all the data highlighted.

The parameters of the narrative visualization include the button used to start and advance the chart as well as the button to restart the visualization. These parameters determine what is displayed and have an impact on what is being shown to the user. The states of the visualization is highlighted or faded. This is dictated by which data range is currently being shown to the user. The parameters define the state and each scene by being the control of what data is accessible to the user to view and “drill down".

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[1] “Alternative Fuels Data Center: Maps and Data - Average Annual Retail Fuel Price of Gasoline.” *Afdc.energy.gov*, afdc.energy.gov/data/10641.

The triggers are tied to the parameters. When the button is clicked to advance the chart to the next range of data, the button triggers the next data to be shown and highlighted and accessible to the user to “drill down”. When this happens the previous data remains but faded, so that it is able to be referenced but not be the focus of the current scene. Once the data has reached the end, the button behavior changes and the user can interact with the “Click to Highlight All Data” button to access all of the presented data. If at any point the user wants to restart the visualization without reloading the page, the “Restart Visualization” button achieves that by triggering a reset back to the original state of the visualization.