Methodology:

I had heard this story about bob a long time ago and thought it would be a cool project idea to depict his earnings over the years in graph format. However there was some challenges with how to go about that.

Methodology:

I started by finding some of the more interesting booms and busts of the stock market and picked some well known crashes through history, along with us gdp numbers

<https://www.investopedia.com/timeline-of-stock-market-crashes-5217820>

Next I needed historical data for the SP500. Data for SP500 was somewhat easily found going back to 1800’s. This data was backdated as the SP500 didn’t exist until the mid 1900’s. The values matched other records however because it was by month I decided to average the amounts

<https://www.multpl.com/s-p-500-historical-prices/table/by-month>

one issue with doing this is that it was not inflation adjusted which would need to be done to compare to 2022 dollars. So, a historic consumer price index was brought in and the dollars were adjusted using the following formula

From here I needed to find a monetary growth calculator for bob’s money, since dividends are a large part of the reinvested/compounded money. I was able to find a site that did this and ran it for the total accrual between gap years. E.g. he invests $250 in 1929 and 5,000 in 1987, I had to find the compounding growth between 1927 for $250 and then add $5000 more on in 1987 onwards to the next investment. The data was taken and used as Bob’s wealth growth

<https://www.officialdata.org/us/stocks/s-p-500/1929?amount=250&endYear=1987>

this also had to be aggregated to years and I went with the end month of each year.

once I had the sp500 values and the total money, I was able to calculate the growth of SP500 for each year and also bob’s monetary growth for each year.

Issues/Considerations:

Due to some issues in finding true close prices, the sp500 values were averaged instead of taking December start values. This doesn’t exactly match with Bob’s year end values and if I had more time I would fix this.

One other issue is that years of heavy inflation/deflation (compared to 2023), skew the true % increase/decrease of the sp500 values. It also affected how much bob made and lost in those time frames. I found some years that showed an sp500 loss, depicted a gain for bobs portfolio (this is likely a mismatch between average values of sp500 and year end money for bobs portfolio.

Other areas for improvement:

Had I more time I wish I could have added brushing. I attempted it a couple times but ultimately wasn’t able to implement it.

I also encountered an error where the button clicking only worked after hovering over an an item. I attempted to revert back to older code but can’t seem to find where this occurred. The buttons still work but it requires hovering first. If you change to a minimized window it also seems to work on first click.