WEB-SRAPPING FOR REAL TIME STOCK PRICE

The appeal of the stock market lies in its potential for growth. However, like any journey, it's filled with twists and turns. My web scraping project aimed to capture a snapshot of this dynamic landscape, and the results paint an interesting story.

1.1. Project Experience

As part of my internship project, I developed a Python program that provides real-time stock prices from a popular financial news website (Google Finance). The program utilizes web scraping techniques, data extraction, and data storage methods to ensure accurate and structured data is obtained.

1.2. Implementation Details

The Python script imports essential tools such as BeautifulSoup, requests, time, pandas, matplotlib.pyplot, and logging to handle errors. A maximum number of retries was set to three, with a delay time of ten seconds between retries. Any errors encountered during the web scraping process are logged in a separate file (`errors.log`).
The program fetches the most active stocks' data from the financial news website and extracts the symbols, full names, prices, price changes, and percentage changes. The extracted data is organized into a pandas dataframe and cleaned up using pandas methods such as `strip()`, `replace()`, and `astype()`.

1.3. Data Visualization

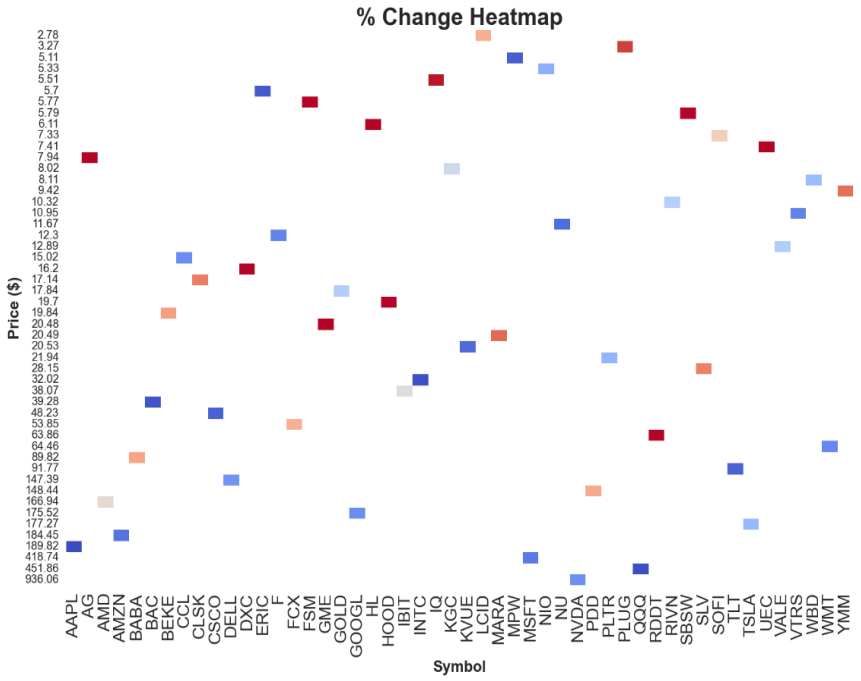
Heatmap:

A Sea of Yellow and Red: Imagine a map where colors represent how much stock prices have changed. Red indicates strong surges, yellow signifies moderate gains, and blues and greens depict stagnation or decline. When I unveiled my heatmap, a wave of yellow and red dominated

the landscape. This suggests a generally positive market sentiment – a rising tide lifting many boats.

Affordable Wins; Diamonds in the Rough: Interestingly, the heatmap revealed a concentration of yellow and red squares on the left side, representing lower-priced stocks. This could be a sign of opportunity for budget-minded investors. Perhaps these affordable stocks are experiencing a surge in popularity, making them potential diamonds in the rough.

High Flyers: The story doesn't end there. Even on the right side of the heatmap, where pricier stocks reside, there's a presence of red squares. This suggests that even established, expensive companies are experiencing significant growth. This could be due to strong financial performance, industry trends, or investor confidence.

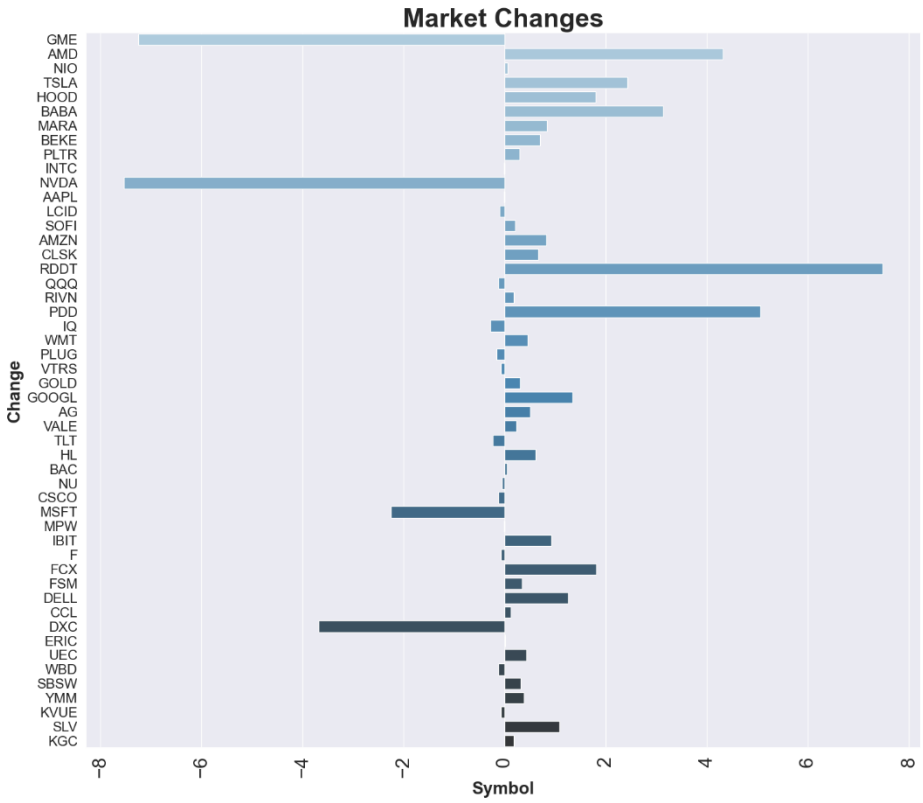


However, with absence of the specific timeframe for this data (e.g., daily changes, weekly changes), it's difficult to say definitively whether these trends represent short-term fluctuations or longer-term growth patterns.

Bar Chart:

A Closer Look at the Champions

While the heatmap provides a general view, the bar chart allows us to zoom in on individual stocks. The bars, representing price changes, highlight the clear winners and losers (at least for the timeframe captured by the data). By looking up the stock symbols, we can identify the companies leading the charge and those experiencing a downturn.



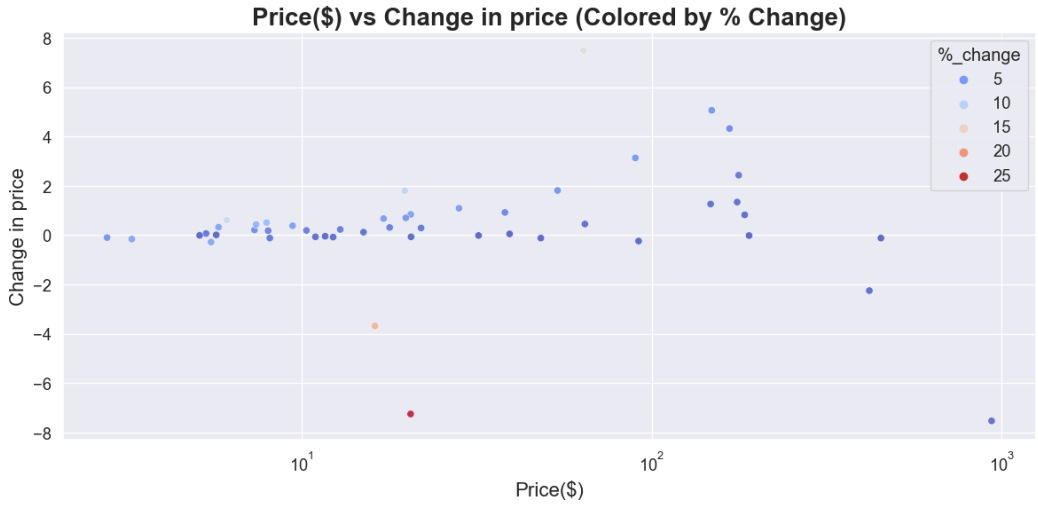
Upon inspection, we can spot and understand the meaning behind the X and Y-axes, which represent the stock price's "Change" and "Symbol" respectively. Scanning the graph's bars, bands of blue shades indicate how each stock price has increased or decreased, with darker shades representing a more significant decrease and lighter shades indicating a more significant increase.

This format makes it easy to determine the most significant price decreases (bars extending below the x-axis with the largest negative values) and stock's most significant price increases (bars extending above the x-axis). At the same time, shorter bars closer to the x-axis indicate smaller price changes, either positive or negative.

Scatter Plot; Unveiling the Price-Performance Link:

Finally, the scatter plot offers a unique perspective. It explores the connection between a stock's price and its change in price. The data points, colored by the percentage change, reveal an interesting pattern. There's a hint of a positive correlation – some of the higher-priced stocks are

experiencing larger gains. However, the plot is far from a straight line. There are many exceptions, highlighting that a stock's price tag isn't the sole factor influencing its performance.



A Story Unfinished

The beauty (and frustration) of the stock market is that it's constantly evolving. My data doesn't tell the whole story. Without knowing the timeframe (daily, weekly, etc.), it's hard to say if these trends are fleeting fluctuations or long-term growth trajectories. However, this glimpse offers valuable insights for further exploration.

1.4. Data Storage

To save the data, the program exports it to a CSV file called "stock_prices.csv" for further analysis or use in other applications.

1.5. Conclusion

Overall, this internship project provided valuable hands-on experience in web scraping, data extraction, data cleaning, data storage, and data visualization using Python. The ability to combine these skills allows for the creation of informative tools and analyses from real-world data sources.