Group 6 Project Summary

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Our project will provide a stock charting app that will allow users to compare subcategories of the technology industry. When a user comes to our web application, they are able to pick which subcategory of technology stocks they would like to look at (Software, Hardware, or Big Data). From this the user will select up to seven different stocks. The first decisions of which subcategory will be 3 buttons and then selecting one of them will draw up a table of radio buttons that will allow up to 7 stocks to be chosen. Once the appropriate parameters are chosen, we will display a stock chart with the correlating chosen features. The chart will have two tabs, one that represents the stock prices over time and the second tab will show stock percent change over time. The time frame was made to be very simplistic with minimal options, 1-month, 3-month, 6-month, or 1-year time frame.

Research Questions:

1. How does somebody's familiarity with stocks and career determine which chart they spent more time on?
    a. Track average time spent for chart 1 and chart 2 through tasks
    b. Use question to calculate the right answer or not/ how long it took them to complete tasks and see how they understand the chart
2. How does the number of stocks chosen to plot while on the web application vary with somebody's familiarity with stocks?
    a. Track number of clicks/varying charts

When an Amazon MTurk user gets onto our site, they will first be prompted to fill out a survey. This survey will be hosted on Qualtrics, and our web application on Github pages:

https://marquette.az1.qualtrics.com/jfe/form/SV_bHrOc0Tctg3NMFL

https://nathanlang14.github.io/TechStocksGraphing/

As seen on the survey most of our questions will be background and demographic related as well as familiarity with stocks, etc. This survey will allow us to further understand our users and lead us to answer our research questions through statistical analysis.

On our end, we will first have the informed consent form and then the MTurk user will receive instructions. As mentioned in our research questions, we will have the user do a total of 5 tasks. Each task will be separated on the survey by page, so we are able to timestamp and track the time taken for each task. The first task will be simple such as select "Software", select "Microsoft" and we will ask what the price of Microsoft on January 1st, 2019 was. This will ensure that users are able to add stocks to the stock chart and read them. Also, this first task will give us a ground truth for the time taken for this specific user. Then the next four tasks will slightly increase in difficulty:

1. We will have the user select "Big Data", select "Intel", on a 1-year time frame what was the lowest percent change Intel saw over the past year.
2. We will have the user select "Software", select "Facebook", compare the maximum price of Facebook on the 3-month time frame with the 6-month time frame what was the maximum in those time frames.

3. We will have the user select “Hardware”, select “Nvidia” and “AMD” and on the percent change chart set to a 3-month span what was the difference in percent change of the two on March 3rd, 2019
4. We will have the user select “Software”, select “Google”, “Amazon”, “Apple”, and “IBM”. The user then will be asked the following
    a. Minimum price of the four over last 3-months
    b. Maximum percent change over last 6-months
    c. Maximum price of the four over last year

These varying tasks will allow us to ensure the timestamps are valid and be able to perform statistical analysis to further analyze our research questions previously proposed.