

# **Project Proposal**

## **Names & NetID**

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## **Theme**

Intelligent Browsing

## **Topic**

Create a Google Chrome Extension

## **Extension Idea**

Our goal is to create a Google Chrome extension which shows useful information for the top x trending stocks and cryptocurrencies for the day. Everyday the extension gets refreshed, before the market opens, with the latest trending for the day. We hope to achieve this by scraping web pages like Yahoo Finance, CNN Finance etc. We will then use this information that we have scraped to show useful data and visualizations like - latest news on that company, trading volumes, trading price, volatility etc. We hope to go one step deeper and look at the sentiment for the stocks (how many % of analysts think the stock should be held, bought and sold).

## **Questions:**

### **1. What system have you chosen? Which subtopic(s) under the system?**

#### **a. If it is not listed above, how is it related to the class?**

We have chosen Intelligent Browsing and we will be developing a Chrome Extension.

### **2. Briefly describe any datasets, algorithms or techniques you plan to use**

Datasets/websites: <https://www.cnbc.com/>, moneycontrol, yahoo finance, the motley fool, stock APIs such as rapidAPI

<https://developer.chrome.com/docs/extensions/mv3/getstarted/> This is the basic tutorial that we would follow to develop the chrome extension

<https://usefulangle.com/post/339/chrome-extension-create-page-scraper> - This is the technique that we would follow in order to develop a web scraping extension. We will first gather the URLs for different stocks from websites mentioned above. We will then analyse the elements on the pages to extract useful information from the DOM. We will then use this information to show important tables and visualizations about different

stocks. As an extension to this, we will also attempt to find sentiments for the stocks given the data we have extracted.

**3. If you are adding a function, how will you demonstrate that it works as expected? If you are improving a function, how will you show your implementation actually works better?**

- a. In order to ensure our chrome extension runs as expected, we will run the extension on the chrome browser. We will also run some test cases to ensure that the values of our results are accurate according to our expectations. We plan to use testing libraries such as Selenium.

**4. How will your code communicate with or utilize the system? It is also fine to build your own systems, just please state your plan clearly**

- a. Our code will interact with the system by scraping data from various web pages and collecting key information on stock and cryptocurrency data. Using this data we will produce a simple, convenient and clear visual that shows the top trending stocks. We will use various metrics and generate a score from the articles to rank the top trending stocks. Users can simply download and click on the extension to view this daily information.

**5. Which programming language do you plan to use?**

- a. We plan to use JavaScript to develop the chrome extension

**6. Please justify that the workload of your topic is at least  $20 \cdot N$  hours, N being the total number of students in your team. You may list the main tasks to be completed, and the estimated time cost for each task.**

Main Task	Time Cost
Research stock websites to scrape	5 hours
Collect web scraping data/urls	6 hours
Scrape the websites	15 hours
Analyze the scraped data	15 hours
Gather our findings from the data	6 hours
Create visualization in extension of our results	15 hours
Run test cases on the chrome extension	5 hours

N = 3 group members

Total estimated time: 67 hours  $\sim 20 \cdot N = 20 \cdot 3 = 60$  hours

