

**Project Proposal - UCapital**

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Group 2

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## **Introduction**

UCapital is a dual asset tracking application that allows users to track not only the performance of stocks but also cryptocurrencies. Stock and cryptocurrency data are separated into two separate tabs and in each tab contains various tools to manage the visualizations of different prices. The main objective that these tools aim to achieve is to allow users customizability with the information that they are presented with so they're not overwhelmed and able to make informed decisions in their investments in stocks and crypto. Another objective that this application strives to meet is the ability for users to "keep an eye" on certain stocks that they have either interest in or investment in which is met through the favorites tab. Lastly, this application is very keen on keeping the user well informed through different media posts and trends on all investment related content uploaded on the application. Thus allowing users easy access to information that is important to their current context without ever having to leave the application.

## **User Requirements**

The primary user group for our website will be the individuals who are actually monitoring their stocks and crypto information. These people will be using our system directly as they will have their stock and crypto information saved. The needs of these users include up to date stock and crypto information, a login for them to keep their personal favorite stocks and/or cryptocurrencies, and relevant news articles.

### High level example of primary user:

John, a 25 year old male, has invested \$2000 on a multitude of stocks. He wants a reliable site where he can track and monitor these stocks. By using our web page, John is able to sign up and start saving the stocks he has invested in so that he can keep an eye on them whenever he wants. John is also able to view news articles on different stocks and how the market is looking overall and is very satisfied.

The secondary user group are individuals who are interested in stocks and crypto but are not investing in it yet. They may come to our website to look at the stock and crypto news and maybe try and understand stocks more before investing.

### High level example of secondary user:

Sara is browsing different stock websites and lands on our web page. Sara has not invested in stocks but is interested in what she sees in the news articles from our web page. Sara is not directly using the site to manage any stocks but is just browsing by for anything which looks interesting in the stock and cryptocurrency news. Sara leaves the website when she is done browsing.

## **Functional and Implementation Requirements**

The major tasks that we will be implementing will be on our four pages for stock info, crypto info, news page and personal favourites. On the stock info page, the stocks will be shown their stock ticker information which will have the ability to be sorted based on their information and filtered out based on their categories. As well, there will be a favorites button to save the stocks to the users personal favorites and a search bar to search up specific stocks. Similar functions will be available on the crypto info page as well for cryptocurrencies. On the news page, there will be the latest news for stocks and cryptocurrencies which can also be filtered out based on their categories. On the favorites page, the saved stocks and cryptocurrencies will be shown in a layout similar to the stock and cryptocurrency info page. There will be authentication to allow each user to have their own favorites saved as well as remembering their preferences for how the stocks/cryptocurrencies are sorted and what categories they're interested in.

## **Proposed technologies**

To build the front end of this application we will be using React, a free and open source JavaScript library. React will allow us to create and render HTML components that can be styled with CSS. In addition we will be using socket.io to connect the client to our server, and also use a handful of JS libraries to visualize information, this includes but is not limited to Chart.js and Plotly. To help speed up the design and aesthetics of our website, we will be using either the Bulma or Bootstrap CSS libraries.

For All database related requirements, such as user authentication, we will be using MongoDB and host our database in the cloud. In the case that MongoDB cannot satisfy our project's needs, we will resort to a local instance of MySQL.

In order to build and communicate with our server we will be using Node JS along with the Express library. This will allow us to quickly build and run a backend environment. Using the same tools, we will make API calls to several different API's including:

- CCXT – CryptoCurrency eXchange Trading Library
- Yahoo-finance NPM API
- Google-Finance API

These API calls will be dealt with using either Axios or React query, which are built in libraries for making requests to REST API's

For version control, we will be using Github, our repository can be found at: <https://github.com/deliarm/seng-final.git>.