

COMP3900 - Computer Science Project

Stock Portfolio Management System - W18A-group-group

Name	Email	Student ID	Role
Tony Jang	z5060771@unsw.edu.au	z5060771	Developer
Frank Nguyen	z5169802@unsw.edu.au	z5169802	Developer
Jun Park	z5062476@unsw.edu.au	z5062476	Scrum Master
Lai Ming Lam	z5234450@unsw.edu.au	z5234450	Developer
Zhuoling Zhou	z5257915@unsw.edu.au	z5257915	Developer

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Background

With the banks' interest rate at an all-time low of 0.1% (Australia Interest Rate, 2021), more and more people are considering investing their money in stocks over a savings account where the money would get eaten up by inflation (Measures of Consumer Price Inflation, 2021). Initiating investment and trading stocks leads to starting on a share trading platform. The most convenient option is to use the share trading platform provided by their primary bank. However, these often come with high commissions and fees, such as \$20 per trade, deterring newer investors who only want to invest a small amount. They may prefer to open accounts with platforms that offer lower fees or additional features. The result is they end up holding shares on various share trading platforms. For example, you might want to buy and hold ETFs in Superhero because of the \$0 brokerage on ETFs (Superhero Fee Schedule, 2021) and hold other stocks on another platform such as Stake or SelfWealth. Since you're investing in stocks, you may also want to share what you're investing with people around you.

The Problem

When investors own a combination of stocks on several platforms, they'll need a way to keep track of this information. Furthermore, the users may lack insight into how well their stock trading journey is doing and hence, it is hard to make an informed decision on what to do. Most people will also want to share their investment decisions with other people or see what investments they hold. A share portfolio management system would help solve these problems. However, the current existing platforms do not entirely solve these problems.

Existing Solutions and their Drawback

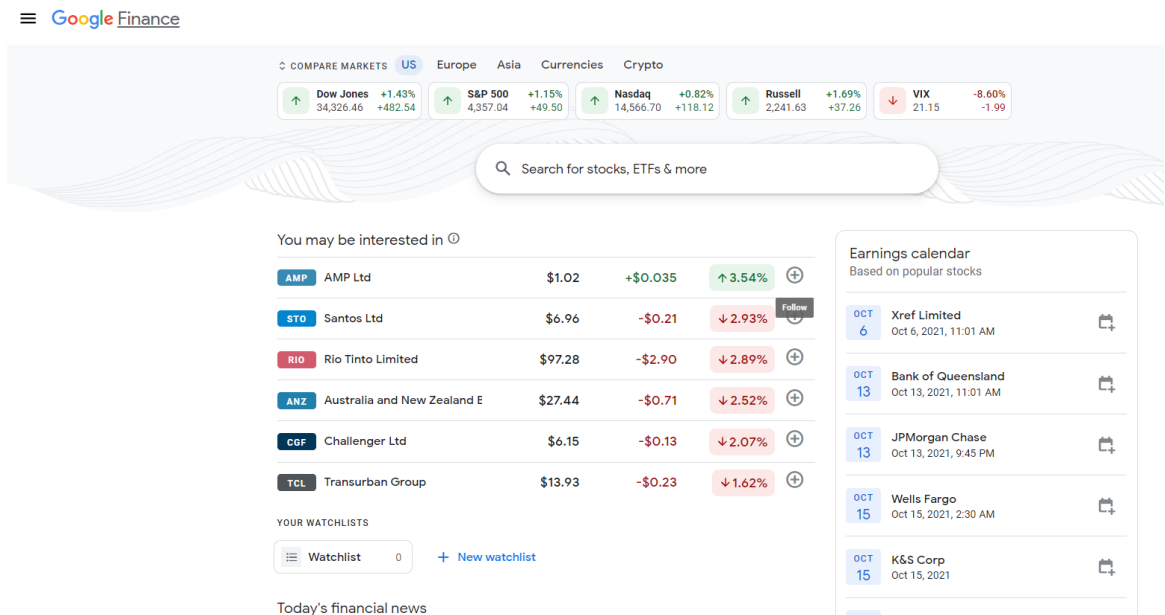
Currently, existing portfolio management systems do not entirely satisfy the problems stated above. We have researched four similar portfolio management systems: Google Finance, Commsec, Yahoo Finance, and ShareSight.

Google Finance

A simple, clean, and minimal stock tracking platform by Google provides information on stocks and news and lets investors follow certain stocks through watchlists.

Benefits

- Investing Information: a large volume of stock quotes and financial news,
- Tracking: a list of stocks, including transaction information, kept a cash balance provided real-time *stock charts*
- The interface is simple and easy to use



- Allows you to take your stock portfolio wherever you go without needing an Internet connection
- Reliable content
- Has desktop and mobile viewing
- Free service

Drawbacks

- 2018: reducing the number of publicly traded companies it tracked regularly.
- More suited for new and casual investors
- Give no analysis or screening with limited information
- its charts and company (stock) information aren't as detailed
- not all of its market information is updated in real-time

Commsec

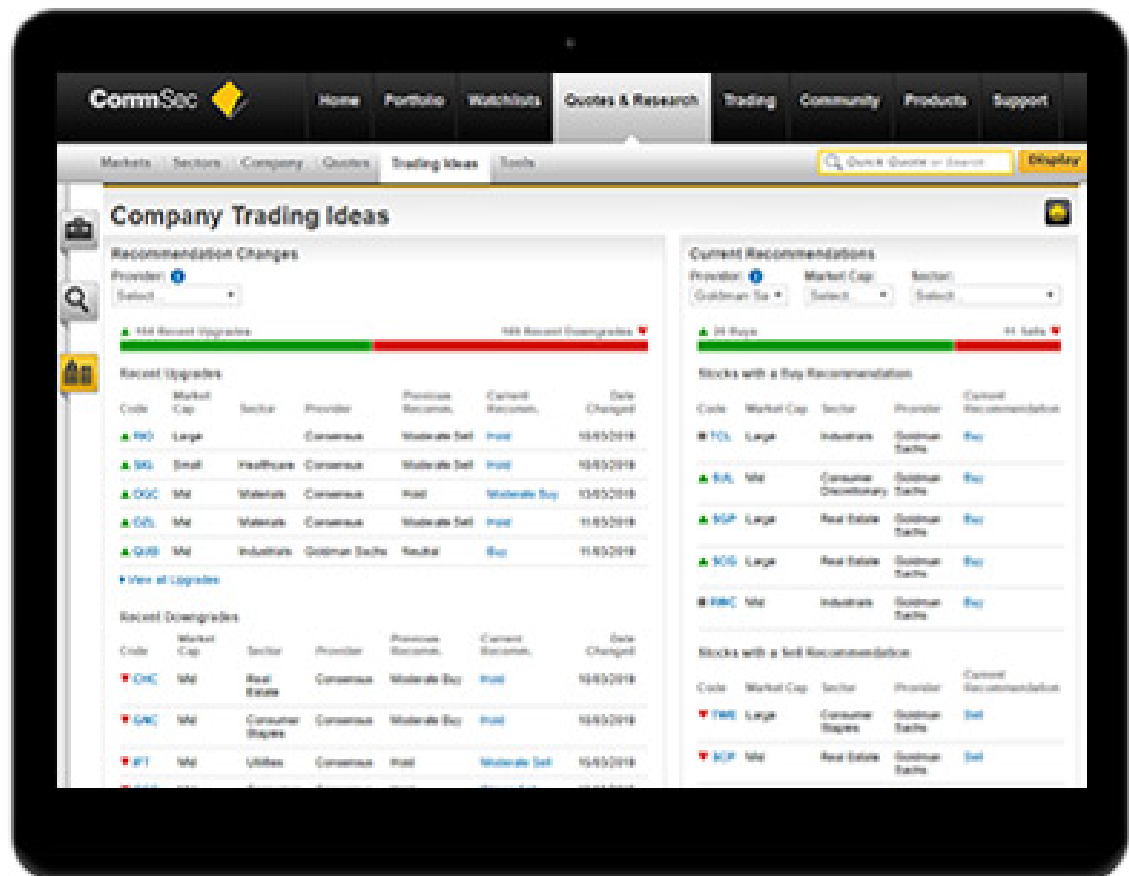
Commsec is an online internet trading platform that offers brokerage service, working as an intermediary between a buyer and seller of financial instruments.

Benefits

- It also has a mobile version (Commsec pocket), allowing for trading anywhere on the go.
- Structured learning materials to help newcomers build investment knowledge
- Provides live share market news, videos, stock prices and trends through 'Commsec Experts', providing relevant information to investors to make more informed decisions
- Includes research tools that offer stock recommendations
- Intuitive to use and easy to navigate through the platform
- Ability to create a personal watchlist and also gives investors a high degree of control over their portfolio.

Drawbacks

- Popular features aren't free (e.g. live data charting software requires a monthly fee)
- Lack of live support
- Difficult account opening process
- Recommendations are not personalised



Yahoo Finance

Yahoo Finance is a stock portfolio management system that focuses on financial news and stock performance, focusing less on your portfolio and more on what is happening in the markets.

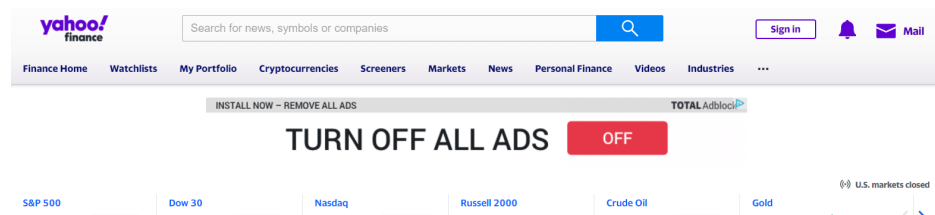
Benefits

- Up to date and reliable information
- Detailed and in-depth stock analysis
- Simple interface and layout of the stock information page
- Can create multiple portfolios to suit your needs.

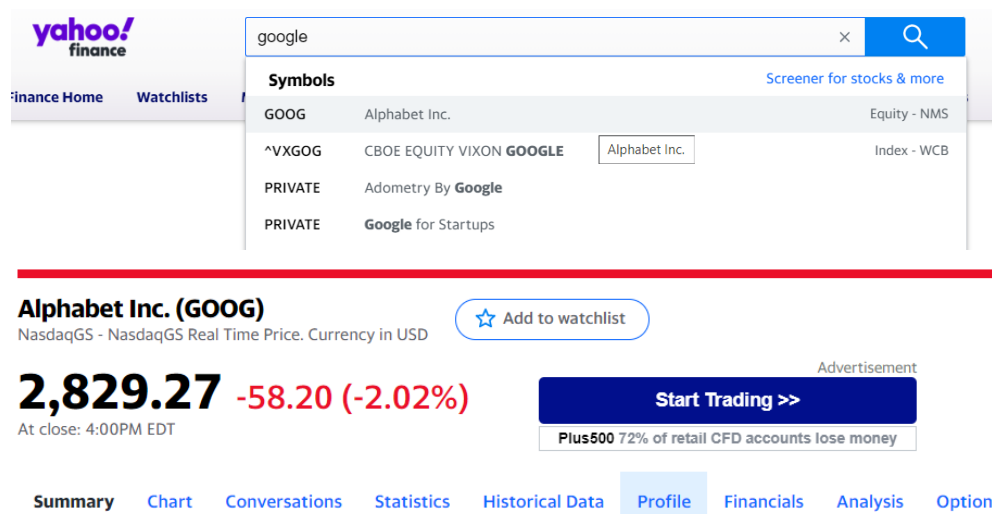
- Relevant news and stocks are shown.

Drawbacks

- Lack of authentication options (only via google, AOI and direct yahoo finance account).
 - We can provide more powerful authentication options that many users already use, such as Google, Facebook and Netflix.
- Yahoo finance provides lots of financial news, but there are lots of distracting advertised articles and banners everywhere in the middle/side of the page.
 - Excluding advertisements and Simple/intuitive UI increase user experience.



- Poor UI/UX.
 - Too many unnecessary functionalities are leading to a multi-page application that is outdated. It is not acting as a portfolio web application (travel, retirement, sports information etc.)
 - Requires additional page loading to view company's detail (stock price, trends and performance). Implementing SPA (single page application) features as much as possible will reduce page loading time resulting in a high user experience.



- Portfolio sharing is not allowed.

Sharesight

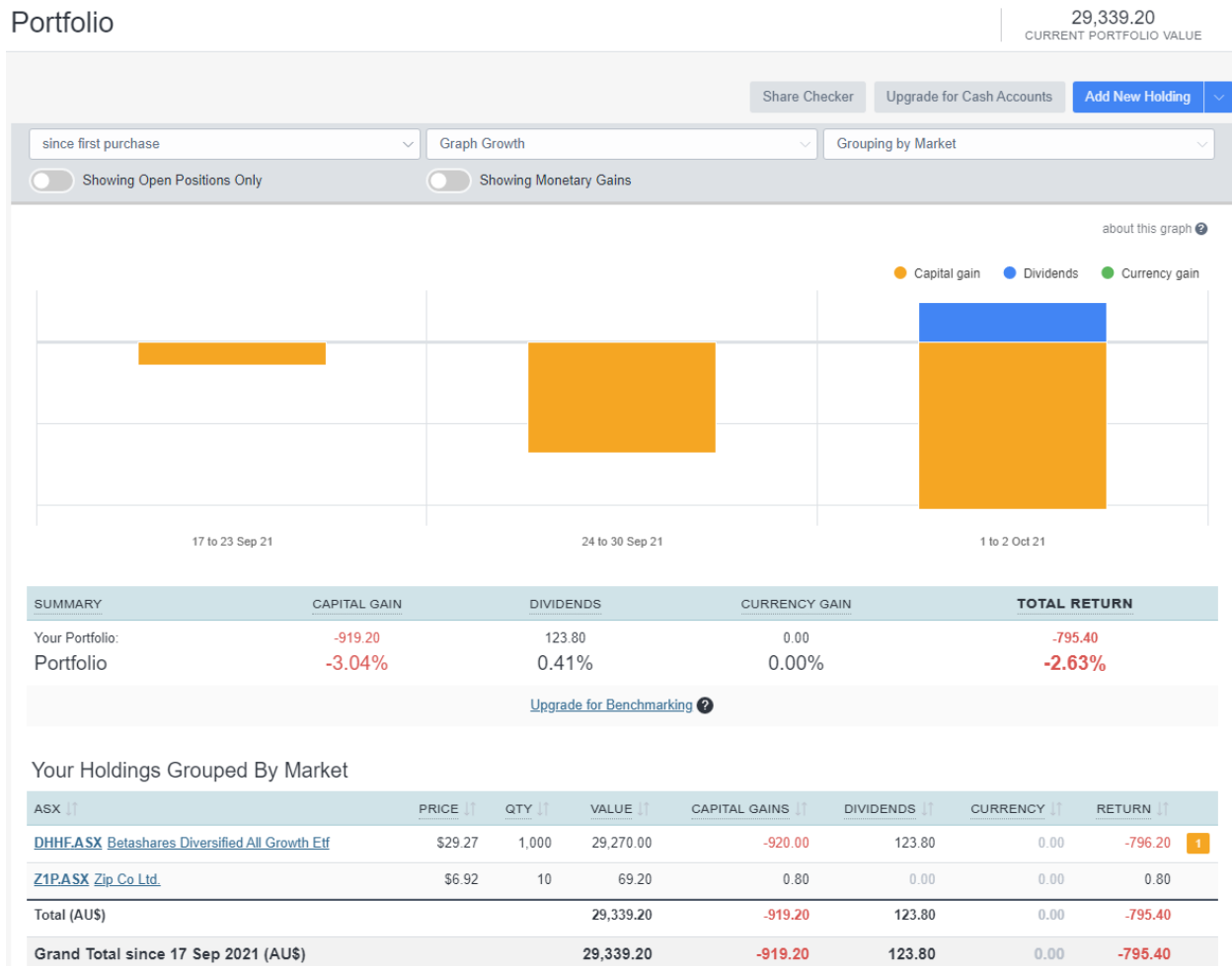
Sharesight is a popular and unique stock portfolio management tool used by experienced investors to track share performance and generate comprehensive tax reports. They are generally used by investors that have received distributions or dividends with complex tax

implications. Sharesight makes things easy by combining all the tax information into a comprehensive tax report that you can use to fill out your tax return. They also provide essential features that are expected of a portfolio management tool. (Investment Portfolio Performance, 2021)

Benefits

- Clean summary of your portfolio
- Detailed insight into your holdings
- Good UI/UX
- The portfolios provide valuable information on your current capital gains and losses.
- Ability to generate a tax report and share it with your accountant

Portfolio



Drawbacks

- Requires users to log in before they can create a portfolio
- It does not support multiple portfolios or cash holdings on the free version
- Cannot visualise a stock as a percentage of the portfolio
- No watchlist feature
- Does not take into account your goals and targets

Our Solution

A stock portfolio management system for newer investors to help you organise and track your stocks so that you aren't overwhelmed by the many available share trading and investing services. Our solution would also allow you to show your portfolios off to whoever you want, applicable if you're a social butterfly and want to let others around you know what shares you currently hold. We would target new and mid-level investors who may or may not want to share their portfolios with other new or inexperienced investors.

Our system would be a Stock Portfolio Management System, where the corresponding stock would be entered in the portfolio when the user buys the stock. The watchlist would be for speculation, while the portfolio would organise the stocks you currently own.

Many brokering services do not offer the generation of tax documents. Out of the services we researched, only ShareSight provides this feature. On ShareSight we have to enter many of the details surrounding the purchase of the share. Our service will improve upon this by tracking the stocks' details and generating the tax report accordingly.

As with the point above, many of the brokering services do not provide data on the current year's profit/loss. Our service will improve upon that by adding the feature so that the customer knows how much gain or loss they have made that year.

User stories and Sprints

Product backlog

Proposed functionalities

- Create/delete portfolio
- Add/remove stock from the portfolio
- Refresh/sync stocks prices
- Demonstrate portfolio performance
- Watchlist
- Authentication: register and login
- A simple and intuitive website
- Collaborative portfolios
- Data aggregation (tax estimation, gains statistics, profits since the start)

User stories for the first sprint on Jira

▼ HR3900 Sprint 1 29 Sep - 13 Oct (8 issues)			19				...
Complete the base backend of the system with the account management and stocks implemented.							
■	HR3900-25	As a new user I want to be able to sign up and create an account so I can have a personalised experience of the portfolio management software.	ACCOUNT CREATION AND MANA...	4	🔴	TO DO	👤
■	HR3900-27	As an existing user I want to be able to change my password so that I can better secure my account.	ACCOUNT CREATION AND MANA...	2	🟡	TO DO	👤
■	HR3900-26	As an existing user I want to be able to sign in so that I can access my account and receive the necessary access to resources and settings.	ACCOUNT CREATION AND MANA...	3	🔴	TO DO	👤
■	HR3900-30	As an existing user I want to be able to logout of my account so that my account is secured and no one else can access it.	ACCOUNT CREATION AND MANA...		🟡	TO DO	👤
■	HR3900-29	As an existing user I want to be able to delete my account so that I can remove my data from this service.	ACCOUNT CREATION AND MANA...		🟡	TO DO	👤
■	HR3900-28	As an existing user, I want to be able to find my password so that I can continue the service.	ACCOUNT CREATION AND MANA...	2	🟡	TO DO	👤
■	HR3900-46	As a user, I want to be able to access basic information for a stock I'm interested in so that I can see how much it's trading.	STOCK	3	🔴	TO DO	👤
■	HR3900-47	As a user I want to be able to search for a particular stock so that I can find out more about it.	STOCK	5	🔴	TO DO	👤
+ Create issue							

Backlog on Jira

▼ Backlog (26 issues)

57

Create sprint

■

HR3900-11 As a new potential user, I want to import my existing portfolios as a CSV so that I can save time by moving from my old portfolio management system

PORTFOLIO MANAGEMENT

2

▼

TO DO

👤

■

HR3900-12 As an existing user, I want to export my existing portfolios as a CSV so that I can save the data offline.

PORTFOLIO MANAGEMENT

1

▼

TO DO

👤

■

HR3900-13 As a user, I want to create a portfolio(s) so that I can start adding stocks in it.

PORTFOLIO MANAGEMENT

4

↗

TO DO

👤

■

HR3900-14 As a user, I want to delete portfolio(s) so that I do not worry about unnecessary stock(s).

PORTFOLIO MANAGEMENT

3

↗

TO DO

👤

■

HR3900-15 As a user, I want to add stock(s) into my portfolio(s) so that I can add value.

PORTFOLIO MANAGEMENT

3

↗

TO DO

👤

■

HR3900-16 As a user, I want to remove stock(s) in my portfolio(s) so that I can keep it.

PORTFOLIO MANAGEMENT

3

↗

TO DO

👤

■

HR3900-17 As a user, I want to be able to share my portfolio so that user get feedbacks by peers

PORTFOLIO MANAGEMENT

4

▼

TO DO

👤

■

HR3900-18 As an existing user, I want to be able to look at a stock and see its performance for the past day, week, 3 months, 6 months, year and from a custom set time.

PERFORMANCE TRACKING

6

=

TO DO

👤

■

HR3900-19 As an existing user, I want to be able to see my overall performance when I view my portfolio

PERFORMANCE TRACKING

2

=

TO DO

👤

■

HR3900-20 As an existing user, I want to be able to look at the trend of a stock and see its performance for the past day, one month, one year and three years in a line graph format.

INFORMATION VISUALISATION

3

↗

TO DO

👤

■

HR3900-21 As an existing user, I want to be able to view the value of stock in number amount or in percentage.

INFORMATION VISUALISATION

1

=

TO DO

👤

■

HR3900-22 As an existing user, I want to be able to view my portfolio with respective information of each stock in a table

INFORMATION VISUALISATION

2

=

TO DO

👤

■

HR3900-23 As an existing user, I want to be able to view my multiple portfolio and able to select each portfolio

INFORMATION VISUALISATION

1

↗

TO DO

👤

■

HR3900-24 As a user, I want to see real time data for stock so that I can take actions immediately

INFORMATION VISUALISATION

2

▼

TO DO

👤

■

HR3900-31 As a user, I want to add stock(s) to the watchlist so that I can put interesting stock(s) to track updates.

WATCHLIST

2

↗

TO DO

👤

■

HR3900-32 As a user, I want to move a stock from watchlist to the portfolio to avoid redundant actions

WATCHLIST

4

▼

TO DO

👤

■

HR3900-33 As an existing user, I want to be able to see the performances of each stock I have invested in

PERFORMANCE TRACKING

2

=

TO DO

👤

■

HR3900-35 As a user, I want to be able to calculate tax estimates based on my earning because I want to calculate how much tax I would need to pay.

DATA AGGREGATION

3

▼

TO DO

👤

■

HR3900-36 As a user, I want to get a financial tax statement at any time because I want to know how much tax I currently need to pay.

DATA AGGREGATION

3

▼

TO DO

👤

■

HR3900-37 As a user, I want to look at my portfolio and set the display to show gain/loss for the current year because I want to see how much profit/loss I have made.

DATA AGGREGATION

1

▼

TO DO

👤

■

HR3900-39 As a user, I want to give permission to other people so that they can work on my collaborative portfolio.

COLLABORATIVE PORTFOLIO

4

▼

TO DO

👤

■

HR3900-40 As a user, I want to be able to accept permission to other portfolio(s) so that I can start adding value to those.

COLLABORATIVE PORTFOLIO

3

▼

TO DO

👤

■

HR3900-41 As a user, I want to see collaborative portfolios in lists to identify the differences.

COLLABORATIVE PORTFOLIO

1

▼

TO DO

👤

■

HR3900-42 As a user, I want to add stocks to collaborative portfolios to add value

COLLABORATIVE PORTFOLIO

2

▼

TO DO

👤

■

HR3900-43 As a user, I want to remove stocks from the collaborative portfolios so that I dont have to keep track of unnecessary stocks.

COLLABORATIVE PORTFOLIO

2

▼

TO DO

👤

■

HR3900-44 As the owner of a collaborative portfolio, I want to be able to delete participant(s) so that I have full ownership.

COLLABORATIVE PORTFOLIO

3

▼

TO DO

👤

Sprint periods

Sprint 1: Week 3 (29/09/2021)- Week 5 (13/10/2021)

Epics to be completed: Account Creation and Management, Stock

Sprint 2: Week 5 (13/10/2021) - Week 8 (04/11/2021) (1 week break during flexibility week)

Epics to be completed: Watchlist, Performance Tracking, Information Visualisation, Portfolio Management

Sprint 3: Week 8 (04/11/2021)- Week 10 (17/11/2021)

Epics to be completed: Data Aggregation, Collaborative Portfolio

Satisfaction of project objectives by user stories.

Create/delete portfolio

- [HR3900-11](#): As a new potential user, I want to import my existing portfolios as a CSV so that I can save time...
- [HR3900-12](#): As an existing user, I want to export my existing portfolios as a CSV so that I can save the data offline.
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- [HR3900-14](#): As a user, I want to delete portfolio(s) so that I do not worry about unnecessary stock(s).

Add/remove stock from the portfolio

- [HR3900-15](#): As a user, I want to add stock(s) into my portfolio(s) so that I can add value.
- [HR3900-16](#): As a user, I want to remove stock(s) in my portfolio(s) so that I can keep it.

Refresh/sync stocks prices

- [HR3900-20](#): As an existing user, I want to be able to look at the trend of a stock and see its performance...
- [HR3900-21](#): As an existing user, I want to be able to view the value of stock in number amount or percentage.
- [HR3900-24](#): As a user, I want to see real-time data for stock so that I can take action immediately
- [HR3900-33](#): As an existing user, I want to be able to see the performances of each stock I have invested in

Demonstrate portfolio performance

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- [HR3900-23](#): As an existing user, I want to be able to view my multiple portfolios and able to select each portfolio
- [HR3900-18](#): As an existing user, I want to be able to look at a stock and see its performance...
- [HR3900-19](#): As an existing user, I want to be able to see my overall performance when I view my portfolio

Watchlist

- [HR3900-31](#): As a user, I want to add stock(s) to the watchlist so that I can track updates from interesting stock(s).

- [HR3900-32](#): As a user, I want to move stock from the watchlist to the portfolio to avoid redundant actions
- [HR3900-46](#): As a user, I want to be able to access basic information for a stock I'm interested in so that I can see how much it's trading.
- [HR3900-47](#): As a user, I want to be able to search for a particular stock so that I can find out more about it.

Authentication: register and login

- [HR3900-25](#): As a new user I want to be able to sign up and create an account so I can have a personalised experience of the portfolio management software.
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- [HR3900-28](#): As an existing user, I want to be able to find my password so that I can continue the service.
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- [HR3900-30](#): As an existing user I want to be able to log out of my account so that my account is secured and no one else can access it.

Data Aggregation

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- [HR3900-36](#): As a user, I want to get a financial tax statement at any time because I want to know how much tax I currently need to pay.
- [HR3900-37](#): As a user, I want to look at my portfolio and set the display to show gain/loss for the current year because I want to see how much profit/loss I have made.

Collaborative portfolio building

- [HR3900-17](#): As a user, I want to be able to share my portfolio so that user get feedback from peers
- [HR3900-39](#): As a user, I want to give permission to other people so that they can work on my collaborative portfolio.
- [HR3900-40](#): As a user, I want to be able to accept permission to other portfolios so that I can start adding value to those.
- [HR3900-41](#): As a user, I want to see collaborative portfolios in lists to identify the differences.

- [HR3900-42](#): As a user, I want to add stocks to collaborative portfolios to add value
- [HR3900-43](#): As a user, I want to remove stocks from the collaborative portfolios so that I don't have to keep track of unnecessary stocks.
- [HR3900-44](#): As the owner of a collaborative portfolio, I want to be able to delete participant(s) so that I have full ownership.

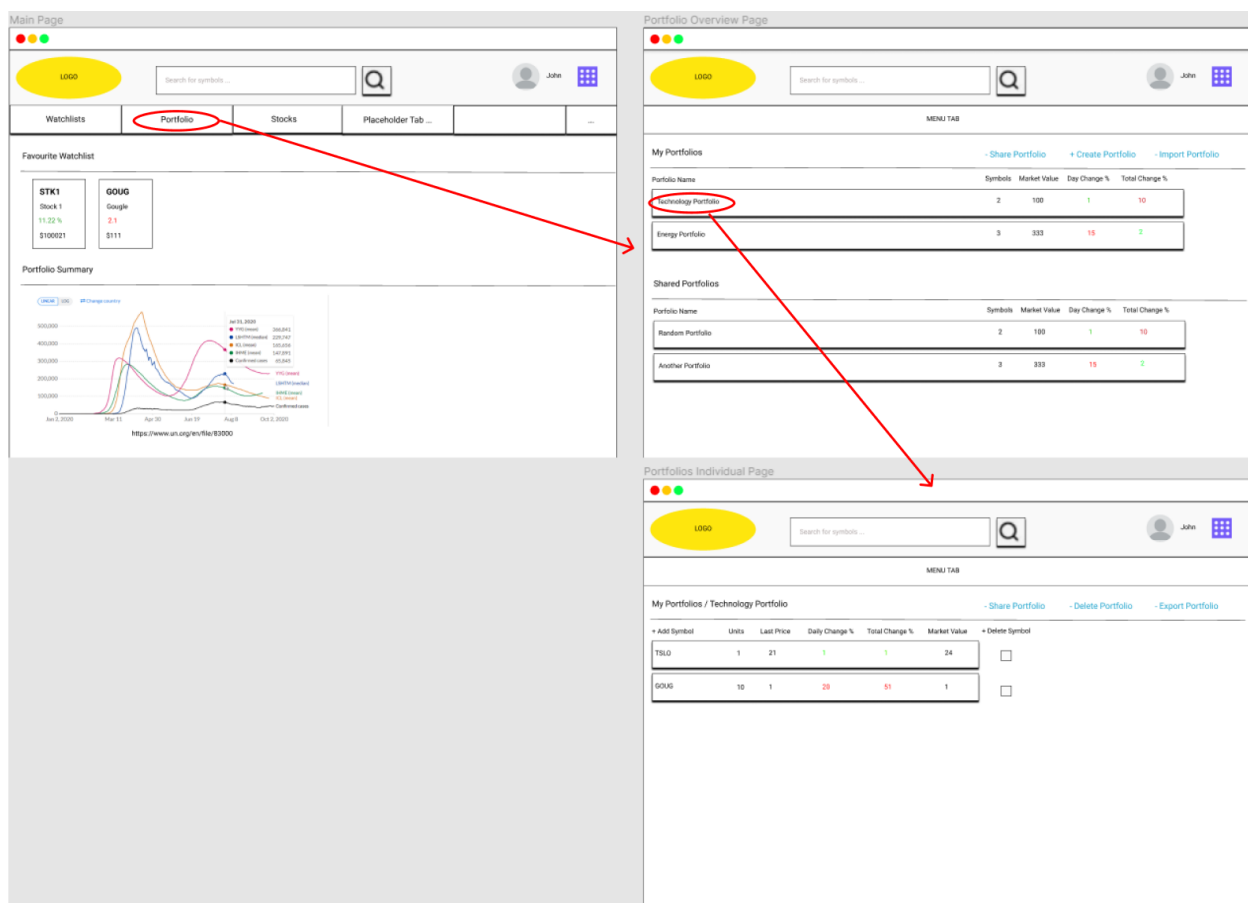
Interface and flow diagrams

Storyboards

We create the storyboards by using Figma.

Portfolio

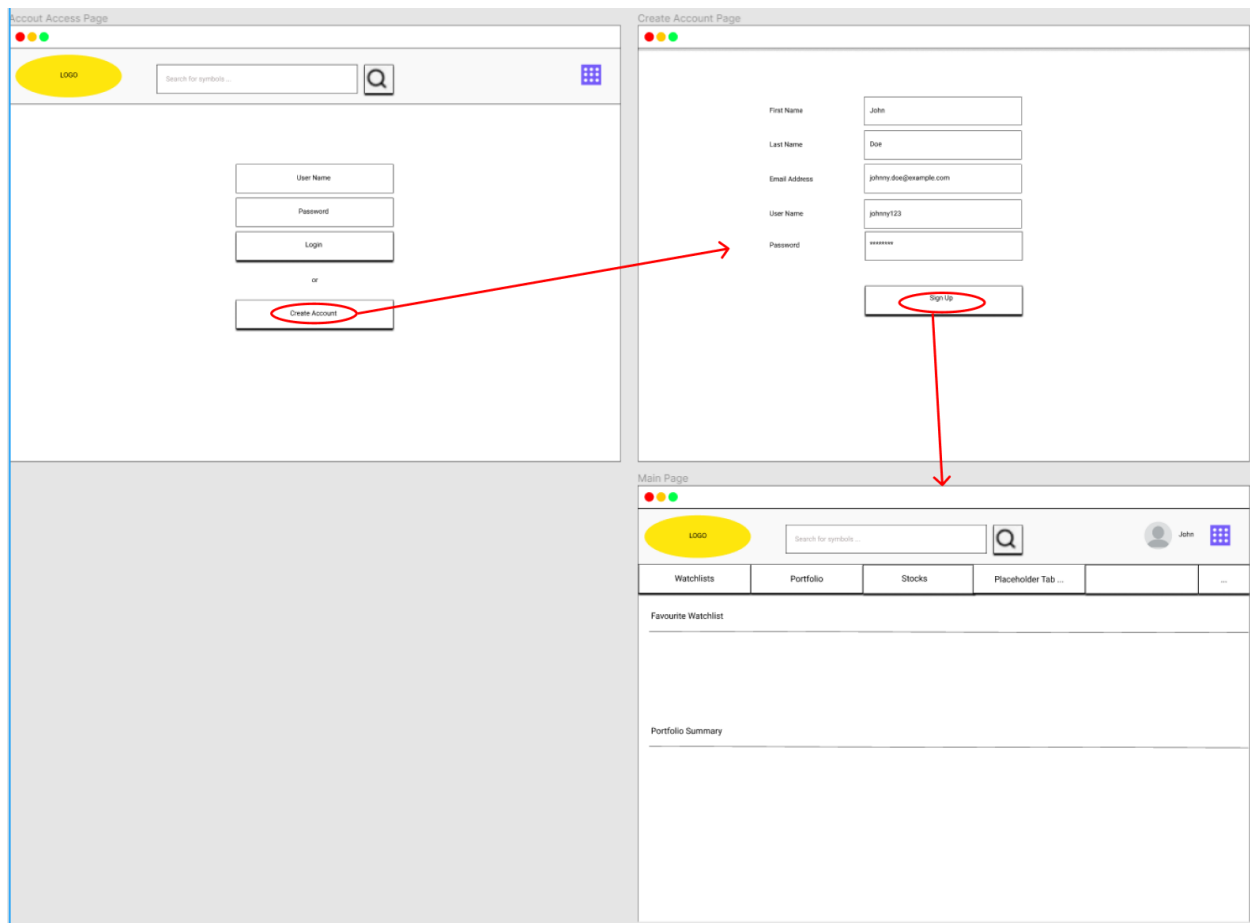
The portfolio page is accessed via the portfolio tab near the top of the page, which links to the main portfolio page. When clicking on a portfolio on the portfolio page, they are redirected to the portfolio's overview page, where they can see what stocks are in the portfolio.



Account storyboards

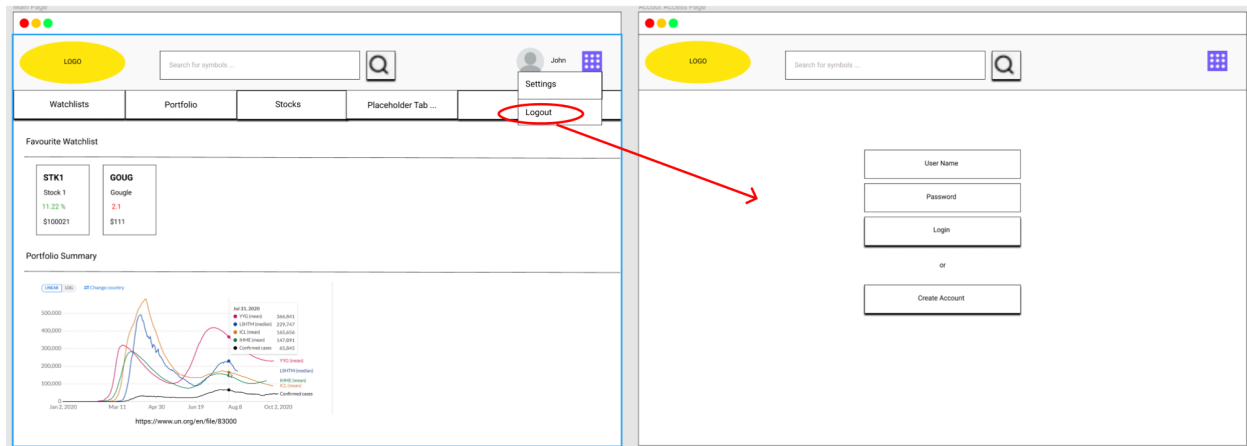
Account creation

On the sign-in page, the user can choose to create an account by pressing the 'Create Account' button. They are then redirected to the Registration form where they enter their details. Upon filling in the form correctly for all the required fields, and pressing the 'Sign Up' button, they are redirected to the main page.



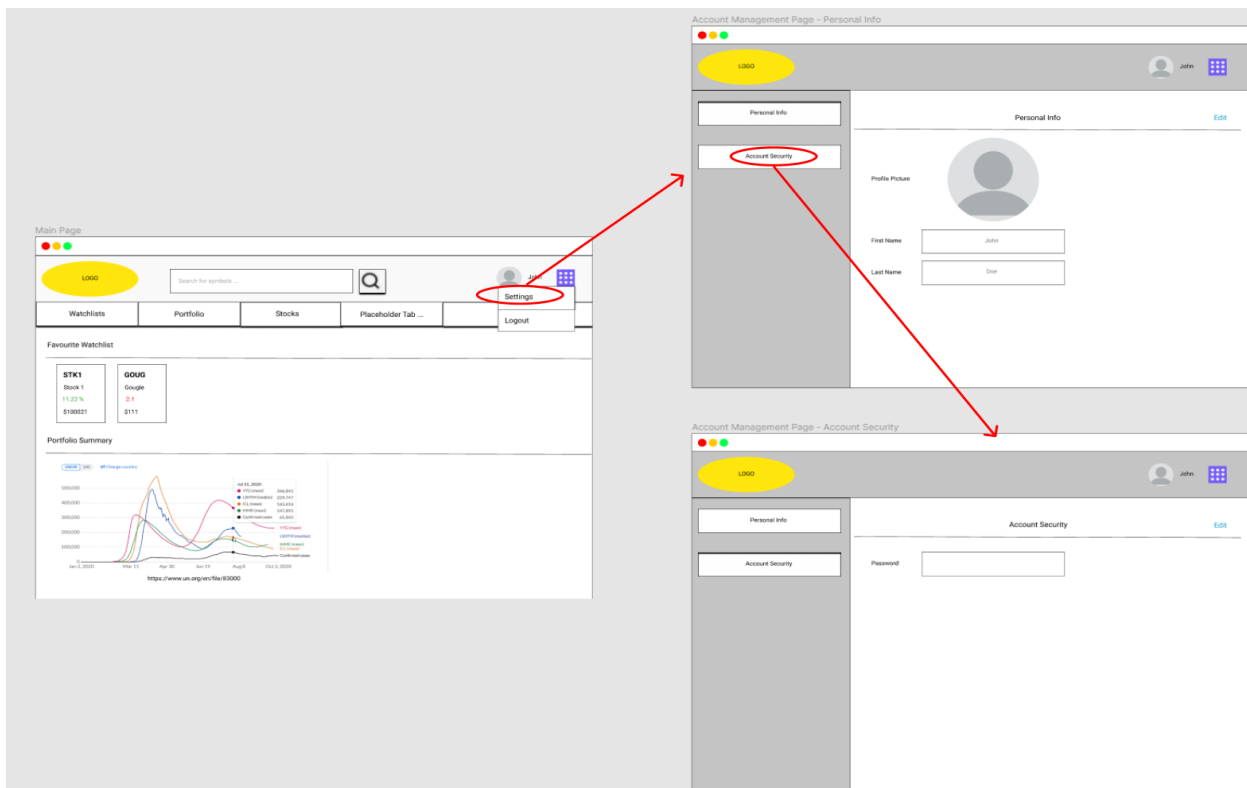
Account logout

The user can log out by pressing the logout button located at the top right of the website. This will log the user out and redirect them to the login screen.



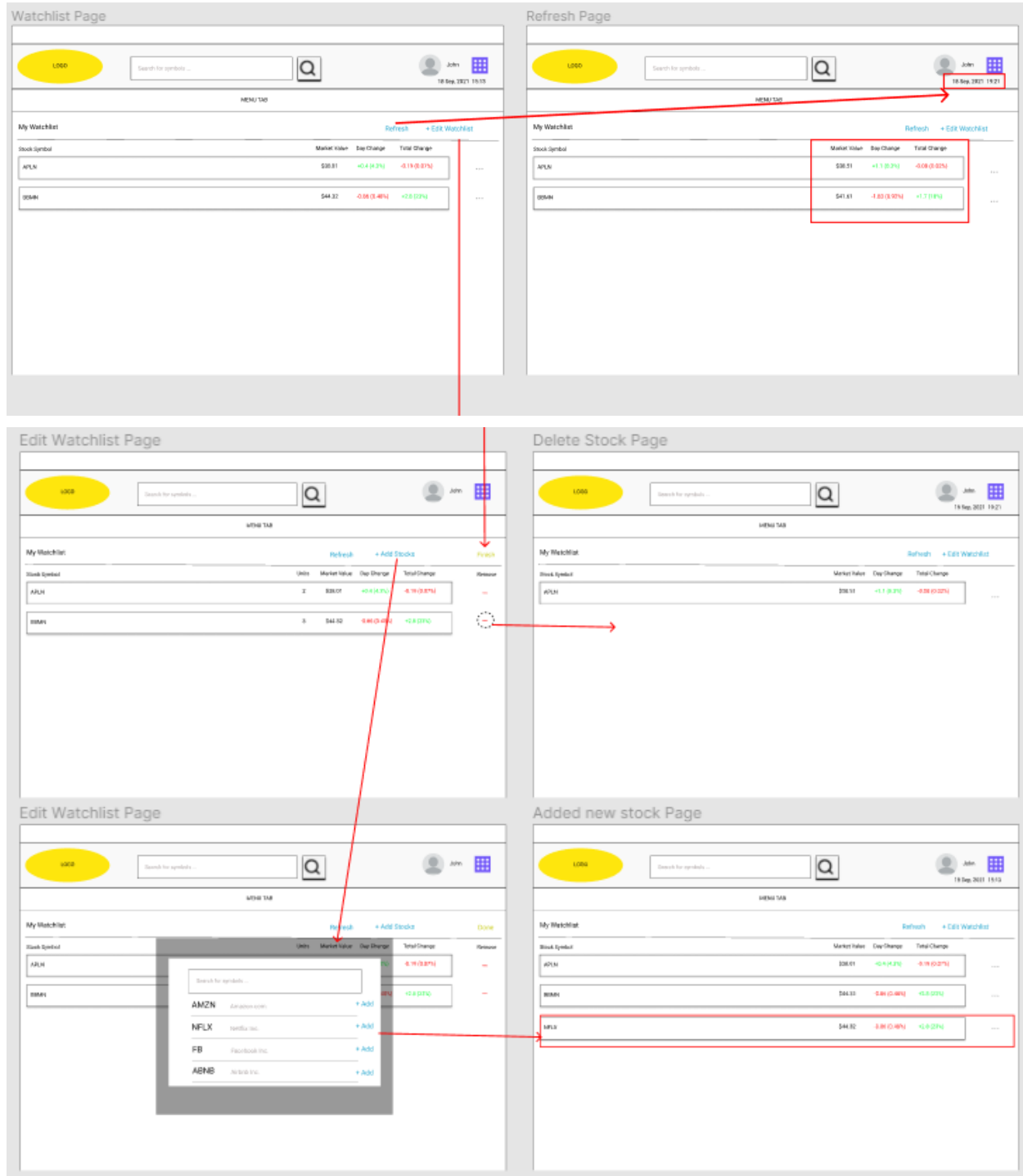
Account settings

They can go to their account settings by pressing the 'Settings' button on the top right of the website. This will lead to the user's settings page, where they can change their personal information and password.



Watchlist Page

On the Watchlist Page, they include a table of stocks that users are currently following. On top of the table, there is “Refresh”, which updates the new trend of stocks, and the “Edit Watchlist” button, which can add and delete stocks inside the playlist.



Stock Page

If anyone clicks on the symbol of stock on any pages, like Portfolio Page or Watchlist Page, they will be redirected to the Stock Page related to that stock. Stock Page includes information of stock, like full name and symbol of stock, performance and statistics of stock in different periods.

The image displays three screenshots of a stock page for AAPL (Apple Inc.), illustrating different user actions and their outcomes.

Stock Overview Page: This is the initial view. It shows the stock name, symbol, and a search bar. The main content area displays the stock's performance today, including the current price (\$803.78), a percentage change (+0.03%), and a line chart showing the stock's price movement over time. A red arrow points from the 'Add to Watchlist' button to the 'Add to Watchlist Page' screenshot.

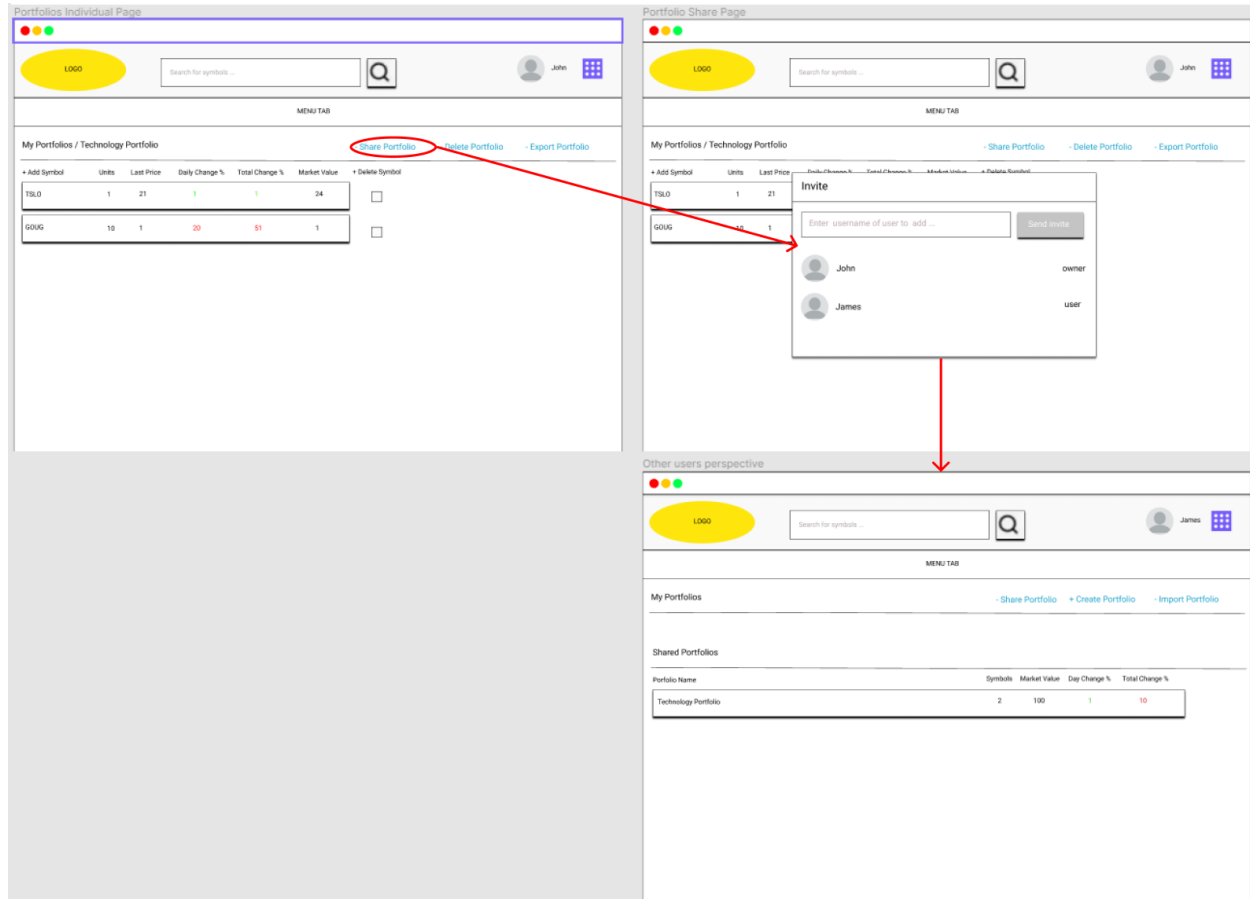
Add to Watchlist Page: This screenshot shows the result of clicking the 'Add to Watchlist' button. A modal dialog box appears, stating 'Successfully added to Your Watchlist'. A red arrow points from the 'Add to Portfolio' button to the 'Add to Portfolio Page' screenshot.

Add to Portfolio Page: This screenshot shows the result of clicking the 'Add to Portfolio' button. A modal dialog box appears, allowing the user to select a portfolio to add the stock to. The dialog box lists 'Portfolio 1' and 'Portfolio 2', each with an 'Add' button. A red arrow points from the 'Add to Portfolio' button to the 'Add to Portfolio Page' screenshot.

A yellow callout box in the center of the image states: 'For Portfolio Management, there will be the option to add a stock to one or more portfolios.'

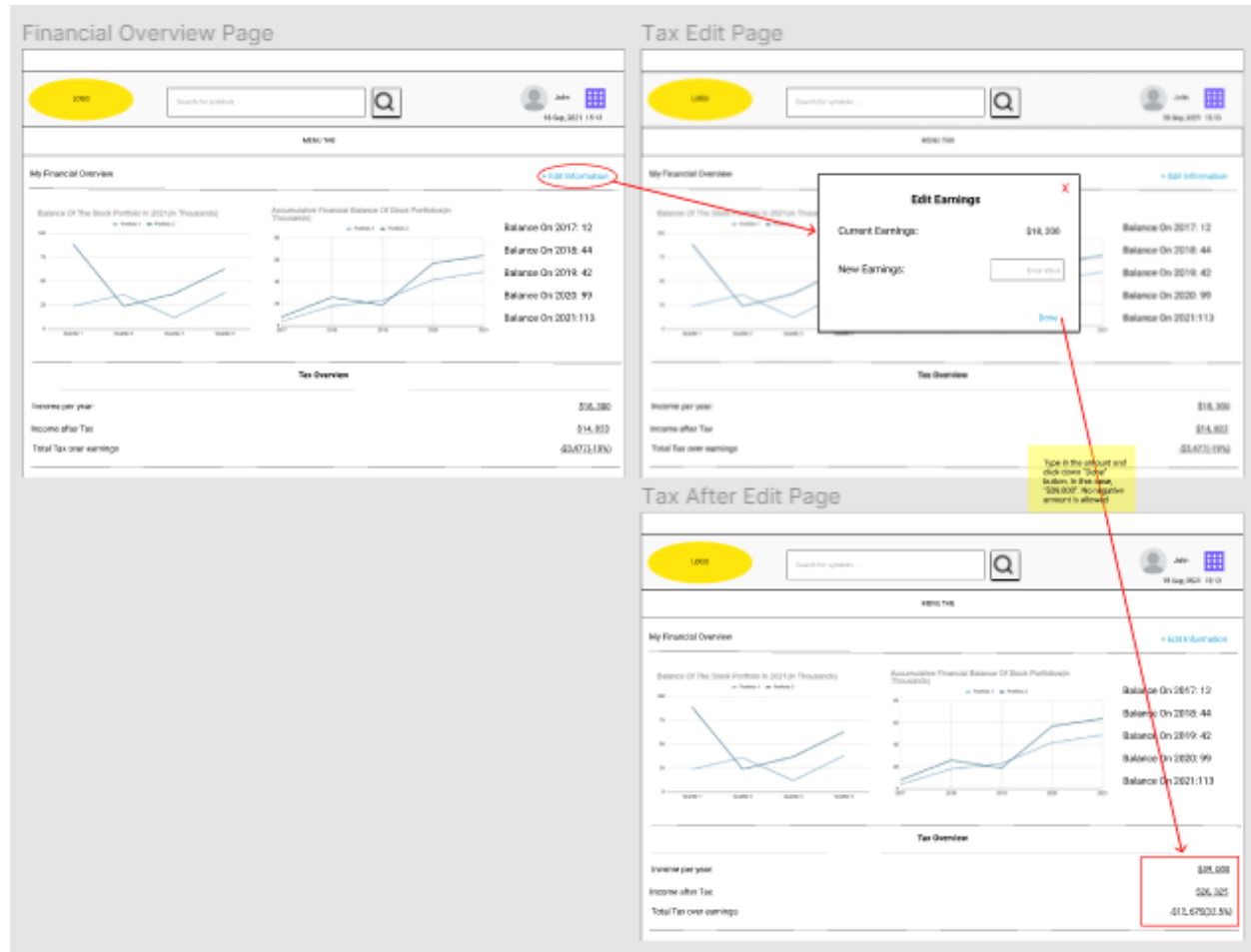
Novelty Feature 1: Collaborative Portfolio

The user can share their portfolio with other people by pressing the 'Share Portfolio' button on the portfolios. They can invite certain users, and shared portfolios will show up under the invited user's 'Shared Portfolio' section.



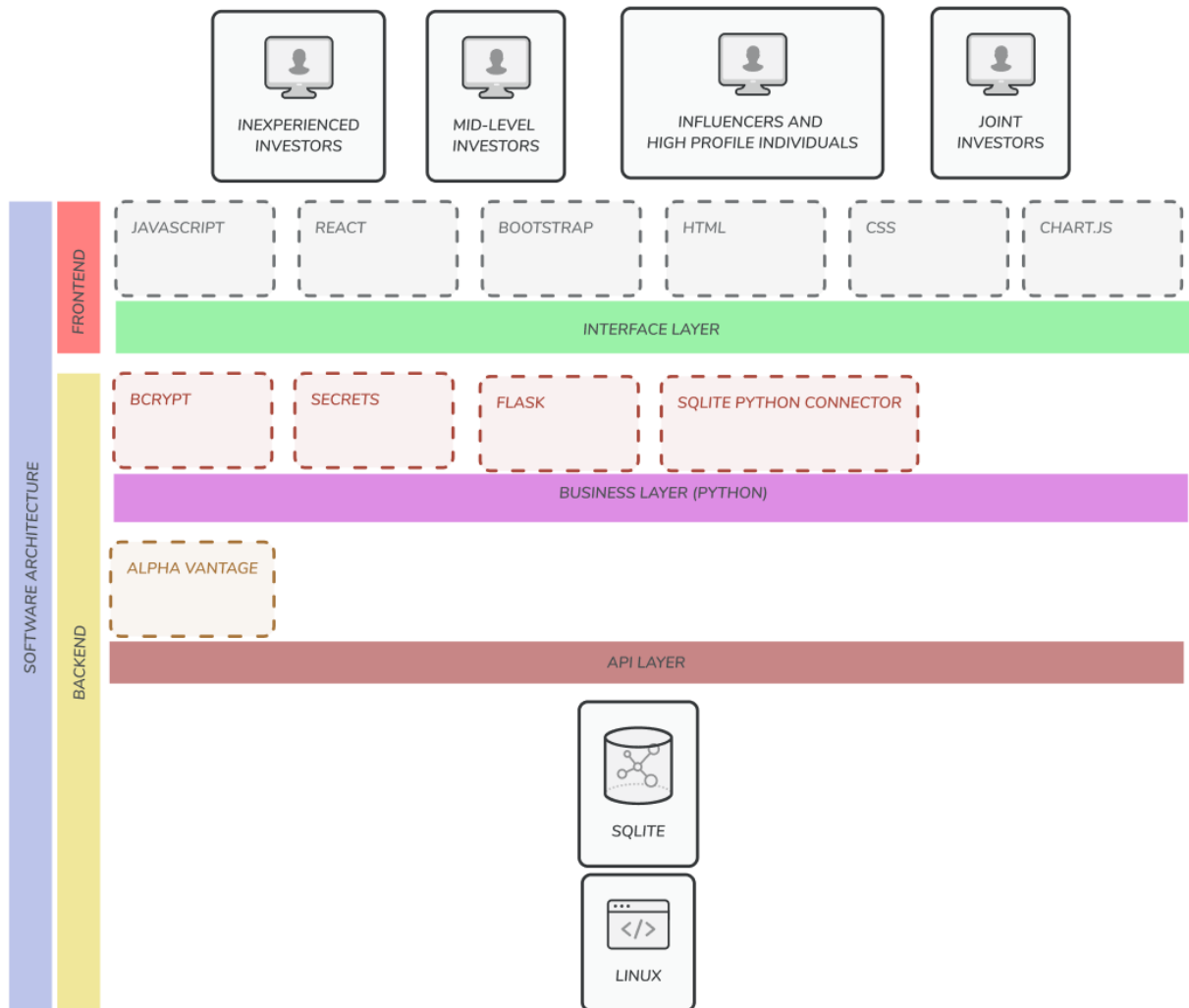
Novelty Feature 2: Data Aggregation

Financial contains the breakdown of the balance of the user account throughout the year and the journey they have been through in our software. It shows the performance of the portfolios in an overview graph and a specific year. It also provides an up-to-date tax estimation calculator.



System Architecture

System architecture diagrams



Technologies and languages planned for use

Interface layer

The interface layer covers the frontend development part of the project. The interface layer consists of the following language/tools:

1. HyperText Markup Language(HTML)
2. Cascading Style Sheets(CSS)
3. Javascript
4. Bootstrap
5. React
6. Chart.js

HyperText Markup Language(HTML)

HTML code specifies which element (button, anchor, checkbox etc.) to render and therefore, it is one of the foundations of web development. The project is going to use HTML to build the structure of a website.

Cascading Style Sheets(CSS).

If HTML describes the structure of a website, then CSS is used to control the presentation of the website. Elements will have different appearances/presentations depending on how CSS describes each element. Similar to HTML, CSS is essential to build a user-friendly interface website and therefore, the project will use CSS.

Javascript

Javascript is the programming language that the team is going to use for the frontend development. Javascript controls the behaviour of the elements structured by HTML and styled by CSS. Javascript blends better with HTML and CSS than any other language. In the modern web development industry, Javascript is used in almost 95% of all websites(Mindfire solutions, 2017). Not only that, but javascript also offers a lot of frameworks and libraries which makes web development a lot easier.

Bootstrap

Bootstrap is an HTML, CSS and Javascript library which allows users to design/develop a website faster and easier. Bootstrap is recommended for beginners up to intermediate developers who want to make their idea into production quickly. One of the benefits of Bootstrap is that the users can build pre-made components with basic knowledge of HTML and CSS with minimal customisation. By referencing documents provided by Bootstrap, developers can customise different components to develop their User Interface for their website.

Bootstrap is less flexible for component customisation and is not recommended to make significant customisations. However, it is the best choice for the project as the actual production time is limited. Bootstrap will save a lot of time to build a user-friendly interface, allowing the team to focus on fulfilling the functional requirements/features of the website.

React

As described in the paragraph above, the team will build website components using Bootstrap. A website consists of many components, and such components are usually complex and have nested structures. React helps to collaborate on such components to build a complete UI. React controls the states in the website. Every time the state changes, react will update its virtual DOM element to match the state and then re-renders all components to sync to the actual DOM element. The developers save a lot of time by not writing codes to manipulate the DOM elements with React's help.

React is the most highly demanding frontend library in the market and industry (Ryan Daws, 2021). This does not simply mean there are lots of resources to reference, but also, each individual in a team will potentially step their foot into the industry and be industry-ready.

Chart.js

Chart.js is an open-source chart drawing library. The project requires a lot of graphs to be displayed for multiple purposes and therefore customisation for graphs is essential. Chart.js is a simple and intuitive library so that one line of the script is sufficient for the setup and it provides a lot of details on graph configurations in the document. Most importantly, the team chose to use Chart.js because it supports all types of graphs required for the project such as pie charts and scatter charts.

Business layer

Python

Python is a powerful interpreted language suitable for developing large projects. With Python, the team will be able to create solutions in the given time-limited situation quickly. Moreover, most of the team should have some experience working with Python, as it is used in core CSE courses at UNSW. The main reason for choosing Python over any other programming language is the speed of development and its simple and accessible syntax, making it the ideal programming language for this project.

Flask

Unfortunately, the Python built-in standard library does not come with a webserver. We will need a RESTful web server so that the client/frontend can communicate with the backend to exchange information regarding stock portfolio management. This requirement is satisfied by Flask: a small and straightforward microframework that contains the core features needed to host a webserver. In addition, Flask has been used in core CSE courses at UNSW, so the team should be familiar with this library. Since there are no other alternatives that the team is familiar with, Flask is the best option.

Bcrypt

Bcrypt is a password hashing library used to convert raw passwords into secure hashes which can be safely stored in the database. The main reason for using Bcrypt is that it is one of the password hashing libraries installed on VLab; the other is Hashlib, a built-in python library. It is essential to hash the passwords instead of storing them as plaintext so that if the database is ever leaked, the passwords should still be safe.

Secrets

Secrets is a built-in Python library for handling account authentication and security tokens. When the frontend is communicating with the backend, there needs to be a way to verify that the frontend is who they say they are. By using tokens, we can verify a user's requests. An alternative to secrets that are currently not installed on VLab is JWTs.

SQLite3 Python connector

The official SQLite3 python connector is an interface that allows us to interact with the SQLite3 database using Python. This module is already preinstalled in the VLAB environment, as it is a built-in library, so our project will need no further setup. This module is required to communicate with the SQLite3 server, and there are no other suitable alternatives.

Database layer

SQLite

SQLite is a small and fast SQL database engine suitable for this project. There is no need for the user to set up a separate server just for the database. Instead, the user can just read and write directly to the SQLite file. This feature makes it easier for everyone to set up and configure the database. Moreover, it is taught in the database course at UNSW, so the team should be familiar with it if they have taken this course. This means that SQLite is already installed on VLab, so no additional configuration or setup is needed.

API Layer

Alpha Vantage APIs are grouped into five categories:

1. Time Series Stock APIs
2. Fundamental Data
3. Physical and Digital/Crypto Currencies (e.g., Bitcoin)
4. Economic Indicators
5. Technical Indicators

Allows for forex (foreign exchange) data, which includes cryptocurrencies.

The APIs provided by Alpha Vantage will allow us to retrieve real-time data on stocks, cryptocurrencies, foreign exchange rates and some other features listed above. We chose to use Alpha Vantage because the APIs created by Yahoo and Google were decommissioned or deprecated. Many of the other APIs have similar rate-limiting (~5 requests/minute). Alpha Vantage offers free intraday trading, whereas others like Quandl are faster than other APIs like RapidAPI. Overall, Alpha Vantage offers recent and relevant data with reasonable limits, which is what we want.

External Actors

First-time/inexperienced investors

These are users that are relatively new to the investing and trading scene. They would be using our portfolio system to keep track of shares that they buy to get insight into how well their investing journey is going.

Mid-level investors

Mid-level investors are users that are somewhat experienced with trading stocks. They would be using our portfolio to organise their stocks within their potentially multiple accounts and the features that give them information on how well their stocks are performing.

Influencers and high-profile people

People that want to share their portfolios with other people to let them know what they invest in, such as influencers and high-profile people, would use our portfolio system to achieve this goal. They would be able to provide a link from our system that redirects to their current portfolios so that followers can view what stocks the influencers and high-profile people currently hold.

Group/joint investors

Groups of individuals looking to invest in a joint portfolio would find our software useful as it allows multiple people to work together on a portfolio. They will be able to add users to a portfolio and control the permissions to ensure that effective group portfolio management is done.

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