

FYP24095

The University of Hong Kong

Department of Computer Science

FITE4801 Final Year Project (2024-2025)

**FYP24095: A Central Hub to Facilitate  
Organization of Financial Information to Improve  
Financial Decision**

Detailed Project Plan

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## Project Background

As there are many variety of financial products available in the market, managing one's portfolio becomes crucial for successful investments. Therefore, this project aims to provide a platform for users to easily manage and adjust their portfolio.

## Literature Review

There are few different types of finance portfolio app out there, (i.e. Empower, SigFig Wealth Management and Sharesight.) They all have a few common functions, for example, they allow the user to do portfolio tracking, performance reporting and monitor their portfolio. They often also have advising services like retirement planning for the user to plan out their future investments.

However, a lot of the apps are of very active management nature, meaning it is suitable for users who are already traders and has a portfolio, instead of people who are wanting to get into trading. With that said, our project aims to fill the gap by acting as an app with more of an all-for-one nature, meaning traders and non-traders alike can use it to test out and review their portfolio.

This project was initiated to aim to benefit investors, new or experienced alike, by providing a platform for them to manage their portfolio. This platform serves as one central location for the investors to review their portfolio, allowing them to view and look at their portfolio in details in different aspects.

Furthermore, it provides useful functions for the investors to adjust and improve their portfolio. For example, function to search up information about a product, and

comparison features between them. The functions are to be further discussed in the next section.

In conclusion, this project allows investors to better design their own portfolio, thus optimizing it to their own goals in the long run.

## Project Objectives

The project has the following three objectives.

First, it provides a location to display the user's portfolio. This will display the current products the user has in their portfolio. Further information regarding the portfolio will also be displayed. For example, the distribution of each sector (i.e. tech, energy, health care), and the detailed information of each product (i.e. quantity, buy-in-price).

This will help achieve the first aim of the project, allowing the user to view in depth information of their current portfolio in one place easily.

Second, it provides a function for the user to search up on information on selected products. For example, if the user would like to know more about the stock AAPL, the user can search it up with this function. It would then display the relevant information of the stock, such as stock price, price history, company ownership etc. This function also applies to the First objective, where it can be used on the existing products within the user's portfolio.

Third, it provides a second function for comparison between different financial products. For example, assuming the user have searched up both AAPL and GOOG stock with the function in Second objective, the user can then do a direct comparison

between the two products. Such as displaying their difference in past price history, their difference in total amount of issued shares.

Together this will help achieve the second aim of the project, as the 2 functions allow the user to effectively find out information about their desired product, then further analyze it with another product within or outside their portfolio. Thus, allowing them to judge whether they should keep, add, or switch out a product currently in their portfolio.

The above objectives allow the user to easily view their current portfolios, thus quickly and efficiently adjust it according to their needs.

## Project Methodology

First, Data Collection is needed. Since the information about the product (i.e. price history, current price) are publicly available, we would need to use an API to grab it from the internet when the user asks for it. For stock data, we can use the Yahoo! Finance API to get it. The data can then be further processed with python libraries such as pandas to do filtering and adjust it to the different objectives.

Second, a frontend graphic user interface is needed for the users to navigate. This can be created with the Python GUI library. The GUI would consist of the interface like the display of the portfolio, the searching function, charts and numbers that displays the information of the product etc.

Third, a back-end program is needed to manage all the data of the products, including the user's portfolio. This could be done by using python, Object Oriented Programming is expected to be used to manage the different product information. This

would also allow easy comparison between them assuming they has the same data fields. There would also be a saving mechanism to preserve the user's portfolio for the next time the user uses it.

## Challenges of the Project

There are a few challenges with the current project.

First, the issue of importing the user's current portfolio. As there are a large variety of trading platforms (i.e. HSBC investment for stock, crypto.com for cryptocurrency) they each will have their own output format of the product portfolios. In order to prevent the issue of different format, the user would have to input their current portfolios details by hand (i.e. amount and buy price). Luckily with the saving mechanism, they would only need to input it once and subsequent access would not need to input from zero again.

Secondly, internet is needed for calling the API. Each time when the user search for a product, the API is called, which limits the user having an internet connection when the user wants to use this function. We can mitigate this issue by storing the data got from API locally each time, to allow the user to also access the data when the device is offline. However, note that a "last updated time" should be presented as the information such as past stock price would update frequently.

Thirdly, there is a certain degree of programming complexity in this project as both frontend and backend need to be developed simultaneously. The backend is relatively simpler than the frontend in comparison as the code serves as the backbone and would not be presented to the users. However, the frontend GUI needs to be

carefully designed so as to create a nice and effective user experience for the user, providing them with an easy to use and clean display of the information. This can be overcome by planning both the frontend and backend at the same time, making sure the displays that the GUI has is backed by codes from the backend, thus confirming the GUI can be properly displayed.

## Project Schedule and Milestones

Time Frame	Milestone
AUG 2024	Initial Research
SEP 2024	Project Plan + Project Website setup
OCT 2024	Research on API + Python GUI
OCT 2024	Design GUI + Code Structure
OCT 2024	Start Program Development
JAN 2025	First Presentation
JAN 2025	Preliminary Implementation + Detailed Interim Report
APR 2025	Finalized Test Implementation + Final Report
APR 2025	Final Presentation
APR 2025	Project Exhibition