WEEK 1:

Name	Report
Alban PUECH	What I did : - I created the Trello team, the board and I organized it - I investigated on the k-means strategy in order to use it to give trading recommendations to the user. However, I realized that this method could not give us the result we want but can only classify the different assets according to some criteria. - I looked for other strategies that I could implement and chose the momentum strategy. - I did a report and a description of the algorithm that I have to implement for my strategy. (available on Trello) - I tried to make the backtest environment that we will use to check our implementation work on my computer running windows but I could not do it. - I installed Ubuntu on a virtual machine to finally run it. What I have to do : - Start to implement my algorithm for the momentum strategy using the CSV file we already have as input for test. finishing to create all the classes needed to compute the momentum at any date would be great. - Think about the way to translate the numerical result into a binary recommendation : buy/ sell.
Maxime LAMY	What I did: - Created a sketch of the GUI to implement. - Researched what should be included when implementing a trading option which resulted in my finding many different attributes that should be included for the trading of equities. - Wrote a document that acts as the overview for the implementation of the GUI, that includes a highly detailed synopsis on the functionality of the home and trading tab. - Found example GUIs that could inspire some of the functionalities like the graphs. - I explored QT library, looking at the basic aspects and familiarising myself with the library to create a GUI. I created a little applet that used buttons, had horizontal sliders, allowed messages and pop up windows with options such as to close them. What I will do: - I will mainly be working with Khanh, who is also part of the

	GUI team, and we will be conducting research on all the different types of attributes that should be part of the skeleton structure of the GUI. - I will continue to practice coding with the QT GUI library so that I will be able to code the classes I am working on with Khanh. <Draft complete ; Ready to upload>
Vinh NGUYEN	What I did: - Researched with the API team to find a suitable API to use. - Searched for a backtest system in C++ on Github which helped the ML team to download past stock data and evaluate their strategies. - Researched different strategies for trading and splited the ML team to groups focusing on each of them. - Implemented the first strategy - Simple Moving Averages. - Implemented some build/run scripts for the Github repository and tested some first functions of the API class. - Consulted the GUI team for their next steps. What I will do: - Continue researching on trading strategies (maybe involved machine learning) and implementing them. - Help members in the ML team on their research. - Help finish the API class. - Add ClangFormat to the project.
Maayane ATTIAS	-In our ML team, we split into subgroups for different trading strategies. Mira and I worked on a Linear Regression strategy *What I did: -I got familiar with the backtesting environment. -First, I did some research to understand **how linear regression is used as a strategy in trading**. I watched videos for trading beginners. Thanks to linear regression, we are able to identify a general trend of stocks' prices over time. By connecting "swing tops along the top of the curve" and "swing lows along the bottom of the curve", traders can identify the anchor and the support of the curve. -Then I learnt about the theory behind linear regression **(the mathematics formulas and the machine learning).** I chose to opt for a gradient-descent method since we want to optimize the Mean Square Error function while dealing with our datasets. -After discussing with Mira we agreed on that method. Now we have a clear picture of the **architecture** of our code(classes, functions, ...) *What I will do: -By Thursday, we hope to be done with the linear regression plot

	code. Once this is done, we want to add some recommendations based on the output of the linear regression's plot. We have already done some research on the theory behind the recommandations.
Frédéric Marcel TCHOULI	***What I did:** -Got familiar with our strategy backtest environment after installing and running a Virtual Machine (Ubuntu) on windows 10. -Read about and implemented a standard exponential Moving Average strategy (EMAS) using the MainStrategy class provided by the backtest environment. -Tested my implementation on available backtest data with different smoothing parameters in order to ensure profitability while minimising overfitting (multi-objective optimization) -Read about the Trading Deep Q-Network Algorithm ***What I will do:** -Work with the ML team leader on Moving Average (MA) strategies and perform additional backtests and graph various moving averages. -Continue reading about and begin implementation of the Trading Deep Q-Network algorithm as sketched by literature.
Mehdi Makni	What I did: - Researched within the API team for different APIs from which we can retrieve our data. Went through the cons and the pros until we decided on what we will be using. - Went through the basics of the libcurl library in order to make sure the api class calls finnhub correctly and matches my design for the stock class. - Attended all meetings of the different teams to make sure we are synchronized, tasks are well-split and progress is being made. - Researched trading strategies and helped split them within the ML team. - Implemented the skull of the Stock class as well as the two subclasses StockByDay and StockByMinute. What I will do: - Implement the different functions in the subclasses of Stock that will use the tested api class. - Decide the way data should be stored in coordination of the

	other teams and implement the needed functions for that.
Mira HAJAR	Maayane and I are working together on the Linear Regression strategy in Machine Learning. **What I did:** - Research and understand more the basics of machine learning in C++ - Research the different ways of implementing Linear Regression in general on C++. After discussing with Maayane, we opted for the gradient-descent method in order to minimize the mean square error. - I went more in-depth in my financial knowledge and made sure I knew all the basics, then I specifically researched how to properly use the linear regression strategy for trading (plotting the average line and standard deviations for the closing prices and establishing a trend in order to predict which stocks to use etc.) - After looking at some examples of basic codes for this online, Maayane and I discussed the general outline of our code and what we want it to look like. **What I will do:** - During the next TD, Maayane and I will start coding the linear regression strategy.
Vishrut Malik	**What I did:** ● Understood stock market, read articles and watched videos ● Explored the mlpack cpp library, read documentation ● Researched on K nearest neighbours strategy ● Were supposed to work on ML for KNN but we found it doesn't serve the purpose we are looking forward to achieve ● Found Momentum strategy to be a more convenient one to work with, started looking into it ● Have a condensed report on Trello for momentum strategy containing key points and related links **What I will do:** ● Try to setup backtesting environment successfully ● Work on Momentum strategy, hoping to implement it by the end of next week
Mamoune	What I did:

Mouchtaki	- Starting to learn more about the Qt libraries through tutorials (building some simple programs) What I will do: - Starting researching on trading strategies and continues on Maxime's program for creating some graphs.
Khanh Nguyen	What I did: - Got familiar with Qt libraries through examples and building simple programs. - Participated in GUI team's meetings, and brainstormed ideas and next steps. What I will do: - Research and implement with Maxime to create detailed classes for the project. - Start to implement basic features of the GUI.
Guruprerana SHABADI	What I did: - Initiated the GitHub repository and laid the foundations of the app by creating a proper folder structure and also introduced everyone to version control and how to properly use it. - As the GUI team leader, organized meetings with the sub-team and ensured everyone could set up the working environment and the libraries we are using. - Setup Qt project and started experimenting with it. What I will do: - Continue on Maxime's design and create detailed sketches of UI of each page. - Start implementing the design in Qt for a basic stock display page.
Rayen Ayari	What I did: - Got familiar with the libcurl library - Got familiar with Cmake - Participated in the API meetings - Researched for different APIs with the API team - Implemented a Curl function to retrieve the stock data. What I will do: - Get familiar with the Qt libraries and learn how to use them.