

## **StockCoin**

StockCoin is a type of cryptocurrency, that we plan on implementation as a premium feature in our stock simulation program. The business value for the states concept is that paying members have the opportunity to collect StockCoin, when their portfolio is doing well (which is calculated by the portfolio performance and profit/loss). Based on the performance, small amounts of StockCoin will be added to profile automatically. These StockCoin's can be used to purchase goods from the reward webpage, challenge other account users, or collect them for the future. The future plan would be to make StockCoin a public cryptocurrency like Bitcoin so that it can be used as a currency in the digital world.

Given that Bitcoin is open source, I plan on creating StockCoin, by cloning the Bitcoin repository and making changing based on the licensing and rules provides. I have been educating myself on cryptocurrency and the concepts related to it. After an understanding these concepts, I can better explain to my team and write this email about my plan to implement or at least having StockCoin running. The protocol used by Bitcoin, ensures good trust and verification of the transactions and the coins. The best part of this type of currency is that there is no central location/company (like banks) to verify these transactions, they are carried out by the popularity of users in the service. The transactions are timestamped to ensure accuracy and multiple transactions from a single user.

There will be two computers running the custom-made StockCoin library. These two computers will be referred to as nodes. Based on the physical capabilities of the computer, the nodes attempt to produce a solution to a complex problem (like quantum physics). Transactions taken

place between these nodes, is also sent out to every other node that is connected so that the information is on as many computers possible. Based on the performance of the computer, the solution to the problem can take hours, days, months or years. Once the solution is found, a block is produced. This block consists of the transactions and solution that took place during the time the node was computing the solution. Then the block is added to the rest of the nodes on the computer and the becomes a block chain. A coin is given for helping with the creation of the solution and contributing to the block chain. It is like renting your computer hardware and being paid by digital currency. For our purposes, when a user is about a certain return rate for their portfolio, a block is created and a coin is rewarded. This process will happen every time the stock market closes.

This process is very secure as these processes are happening simultaneously. So, if someone were to try and changes these blocks, the computers that are adding to the network are working at a fast rate and the computational power need to change a block before heading to the network is quite challenging. The libraries that I will use in making StockCoin (available from [packages.ubuntu.com](http://packages.ubuntu.com)): git, openssl, libboost (all libboost packages), libdb5.1-dev, bitcoinrpc.

Will the above information satisfy, so that I can began making StockCoin?