Project Initiation Document

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# Introduction

Cryptocurrencies such as Bitcoin are a store of monetary value with a volatile price. Purchasing them can result in huge profits or losses of fiat value depending on whether you act at the right time or not. Due to the basic needs of a human being – the need for rest, nourishment, etc. – it is impossible for a single investor to monitor the market all of the time, but with cryptocurrency exchanges never closing, there is a need to do so. It is also possible for a human to apply bias to the decision itself when the need to act arises – favouring currencies that they like the name of, have earned them profitable positions in previous experiences etc. A good night’s sleep coupled with a poor decision can very quickly turn a profitable portfolio into an unsuccessful one.

# Business Case

## Business Need

Currently investors are required to spend a considerable amount of time researching technology behind a particular currency to decide whether to invest or not, potentially missing the optimal opportunity to purchase and therefore missing out on potential profits. Coin prices often spike up and down following news articles, endorsements and criticisms from celebrities, and various other factors including investors simply following the market because they are worried about the value of their portfolio as one currency reduces in value, so they switch to a currency that is holding or likely to increase in value. It is impossible for an individual to follow all potential reasons for price changes simultaneous and calculate their combined influence on the price at any given time, let alone to operate 24/7. It is also possible to ignore such signs due to affiliation with the particular currency based on past performance.

## Business Objectives

Develop a system that allows for automated trading in a way that:

1. Removes the need for user interaction once the system has been initialised.
2. Allows the user to automatically cash out profits or the initial investment once a target has been reached to prevent loss.
3. Improves trading efficiency by:
   1. Reacting to the market rather than allowing human biases to interfere.
   2. Operating whenever the application is active.
   3. Ensuring no human error causes miscalculations.

# Project Objectives

1. To implement a system that collects data from the GDAX API endpoint and calculates price changes.
2. To implement a process that interprets whether action needs to be taken and acts accordingly.
3. To implement a process that allows the user to protect investment capital.
4. To implement a process that retrains the system as necessary.

# Initial Scope

1. The application collects trading information and calculates the price change percentage against the previous collection, displaying this change to the user.
2. The application is able to make an interpretation of market movements.
   1. The application is able to make a recommendation based upon its interpretation of market movements.
   2. The application is able to act based upon its interpretation of the market movements.
3. The user is able to protect investment:
   1. Option to cash out profits of a set amount when the currency’s value reaches a certain target. (Recurring if constant price rises).
   2. Option to cash out a set amount of the currency once it reaches a certain value. (Single withdrawal to protect investment).
4. The system monitors its prediction accuracy and can be retrained.
   1. Retraining button.
   2. Automated retraining after set amount of time.

# Resources and Dependencies

None.

# Method of Approach

https://en.wikipedia.org/wiki/Stock\_market\_prediction

http://www.nature.com/news/counting-google-searches-predicts-market-movements-1.12879

https://trends.google.com/trends/explore

# Initial Project Plan

# Initial Risk List

# Quality Plan

# Legal, Social, Ethical, and/or Professional Issues

# Miscellaneous Issues