

Interim Report

January 17, 2023

Name: Eileen Sugrue

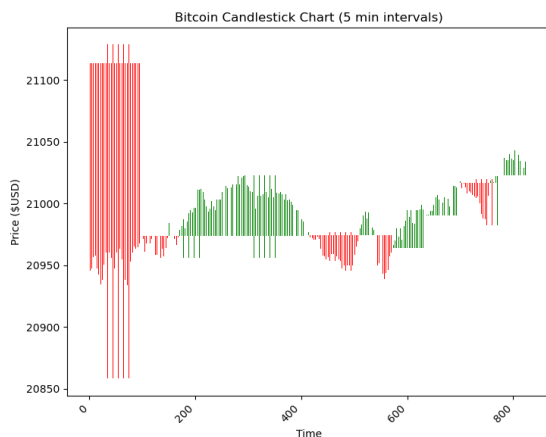
Supervisor's name: Marie Vasek

Project title: Investigation into the patterns of trading in lesser traded cryptocurrencies.

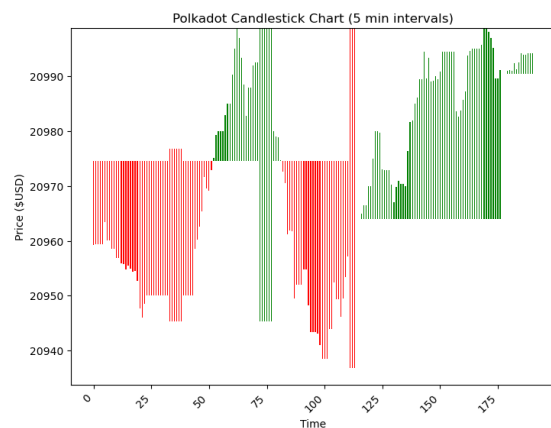
1 Progress made to date

Investigation into previous research on this topic has been completed, with a spreadsheet of relevant papers created and a report created summarising recent research. This report defines cryptocurrencies, summarises lesser-traded cryptocurrency trading patterns, and summarises manipulations of the cryptocurrency market, such as pump-and-dump schemes. This also informs what analysis should be performed on the data collected later on, such as identifying the peer influence of “buy” actions versus “sell” actions.

A design specification for a program that gets data from cryptocurrency exchange APIs has been created, detailing goals and features. It has flowcharts for user navigation of the program, details the steps of getting and storing data, and has structure charts specifying the necessary classes and libraries used for each part of the program. This is updated alongside development of the data collection program.



(a) Bitcoin kline graph



(b) Polkadot kline graph

Figure 1: Cryptocurrency candlestick data from the Huobi crypto exchange

A structure for the data collection program (for collecting data on lesser-traded cryptocurrencies from cryptocurrency exchanges) has been created based on the design specification, using interfaces to interact with the cryptocurrency exchange API. The program can successfully subscribe to the Huobi cryptocurrency exchange API and get real-time market data for all supported cryptocurrencies. An example of data collected are in 1.

2 Remaining work to complete

2.1 Essential tasks to complete

Necessary to create minimum viable product.

- Use current software to collect more data over longer periods of time (e.g. 3 days) for multiple (10-15) lesser-traded cryptocurrencies.
- Analyse the results of data collected and create visualisations of the data collected.
- Write documentation for the data collection program.
- Create a report on the results obtained from the analysis of the trading data, and a discussion of the significance of results.

2.2 Other tasks to complete

Needed to fully complete all the objectives set out in the original project plan.

- Improve data storage to use proper databases such as MongoDB, as the current implementation uses CSVs.
- Extend the data collection program to collect historical data and data from other cryptocurrency exchanges.
- Create a design specification for a program to perform different types of analysis on the market data.
- After an initial round of data collection and analysis, collect more specific data based on the results of the analysis.
- Create unit tests for both programs (data collection and analysis).

2.3 Revised work plan

Mid-January to Mid-February (4 weeks): Complete analysis of the data collected.

- Collect data over the course of a few days (ex. 3 days).
- Visualise the dataset to inform the best ways to analyse what's been collected.
- Analyse the data, and evaluate the results with supervisor. Iterate data collection and analysis depending on the results of the analysis.

Mid-February to end of March (6 weeks): Evaluate all findings, create final readable graphics to visualise the dataset and analysis, and write the final report.

2.4 Revised key dates

- (27/01/23): Analysis on an initial set of data completed.
- (20/02/23): Complete working versions of software to obtain and store trading data and analyse said data complete, analysis complete.
- (15/03/23): Initial version of video preview completed.
- (29/03/23): Initial version of project report completed, for review by supervisor.