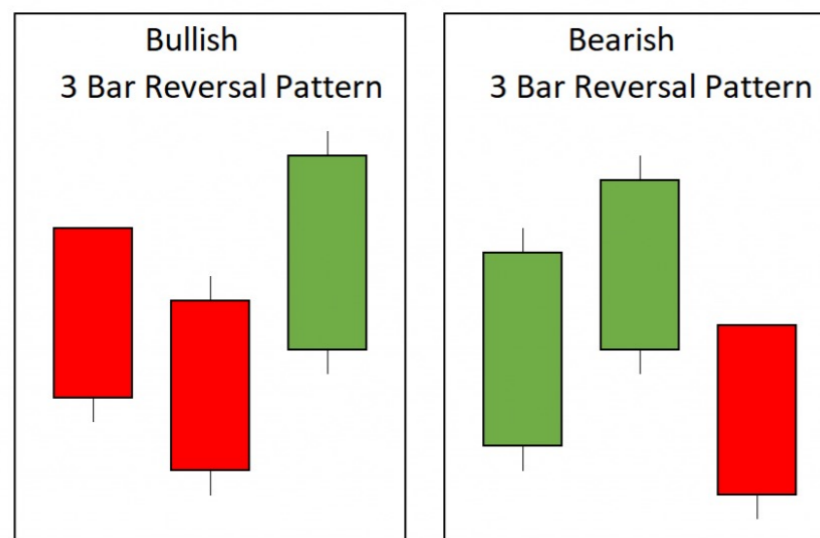


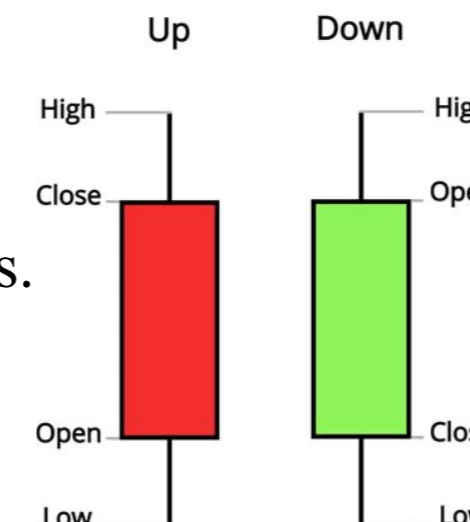
Motivation

- Recognizing patterns, such as the three-bar pattern, in stock graphs represents a major turning point in the market, which indicates the best moment to invest
- Once a potential three-bar pattern is found, day traders analyze and assess stock information to verify if the pattern is desired. This cumbersome process often results in them missing the golden 3-5 minutes window of opportunity
- Unfortunately, existing tools and websites provide incomplete analysis and often require a paid subscription



Terminology

- Candlestick Graph**
A graph commonly used in stock market to describe price movements.
- Three bar pattern**
A pattern in candlestick graphs that shows significant turning points in stock market.



Solution - Core Three-Bar Pattern Hunting Algorithm

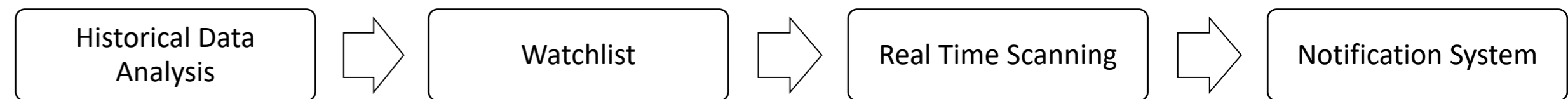
- Multiple measuring factors including average length of previous bars, quantity of previous bars, upper tail and lower tail ration, bar color, market cap, price range, volume, etc.
- Fully customizable parameters to fit different user needs
- Multithread program and parallel computing to accelerate the pattern recognition and analysis process.
- Preprocessing feature to eliminate pre & post market data to reduce bias.

Our Goal

- To develop a web application that
- Help day traders recognize and analyze the three-bar pattern
 - Notify day traders of a three-bar pattern occurring
 - Help day traders analyze historical trends based on the patterns found

Our Work Flow

- Use core algo to run historical data analysis up to 10 years back to find stocks with most potential
- Add desired stocks to our watchlist
- The real time scanning uses a faster version of core algo to monitor stocks in watchlist
- Once a desired pattern is found, send out a notification immediately



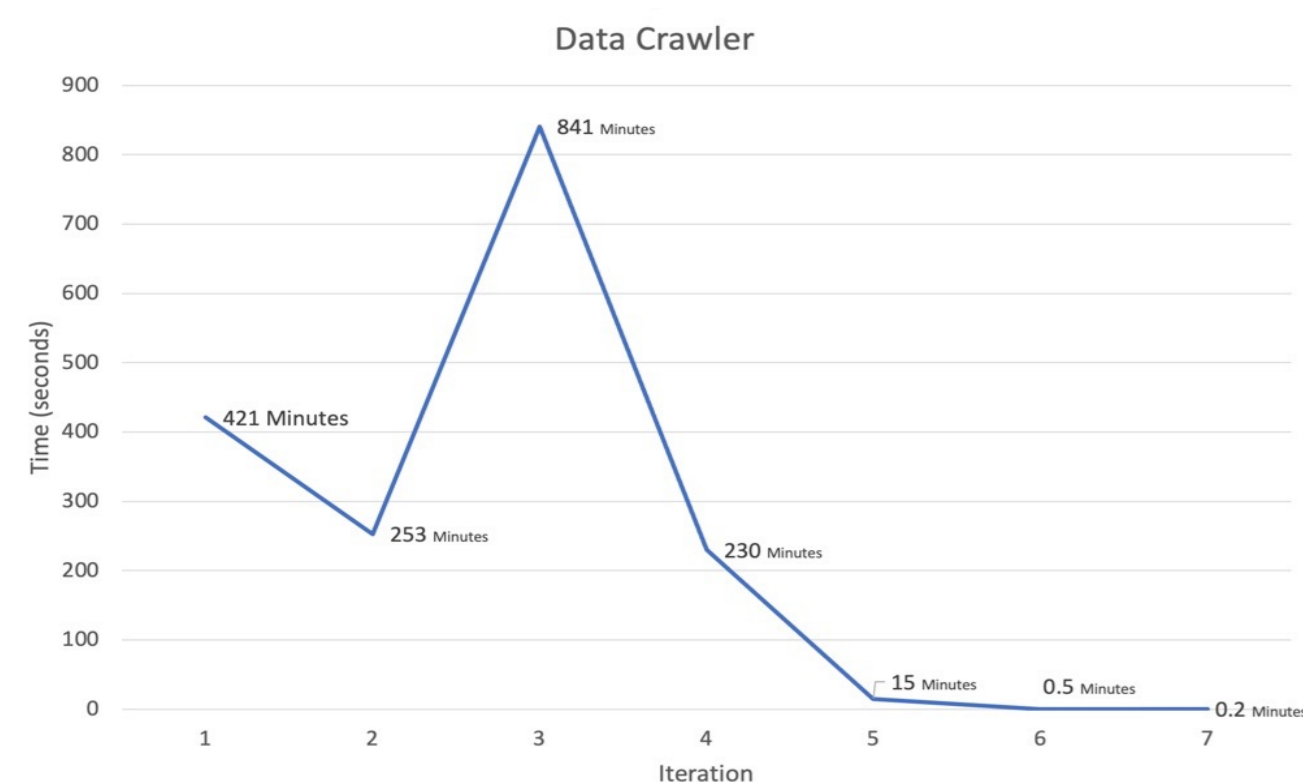
Backend Process

Data Crawler

- Pull the historical and real time stock data including open, high, low, close, volume.

Improvement

- Function to preprocess stock data allows removing undesirable columns to reduce false positives.
- Asyncio enhances performance to speed up historical analysis, and to guarantee that traders are notified in real-time when a pattern is found.

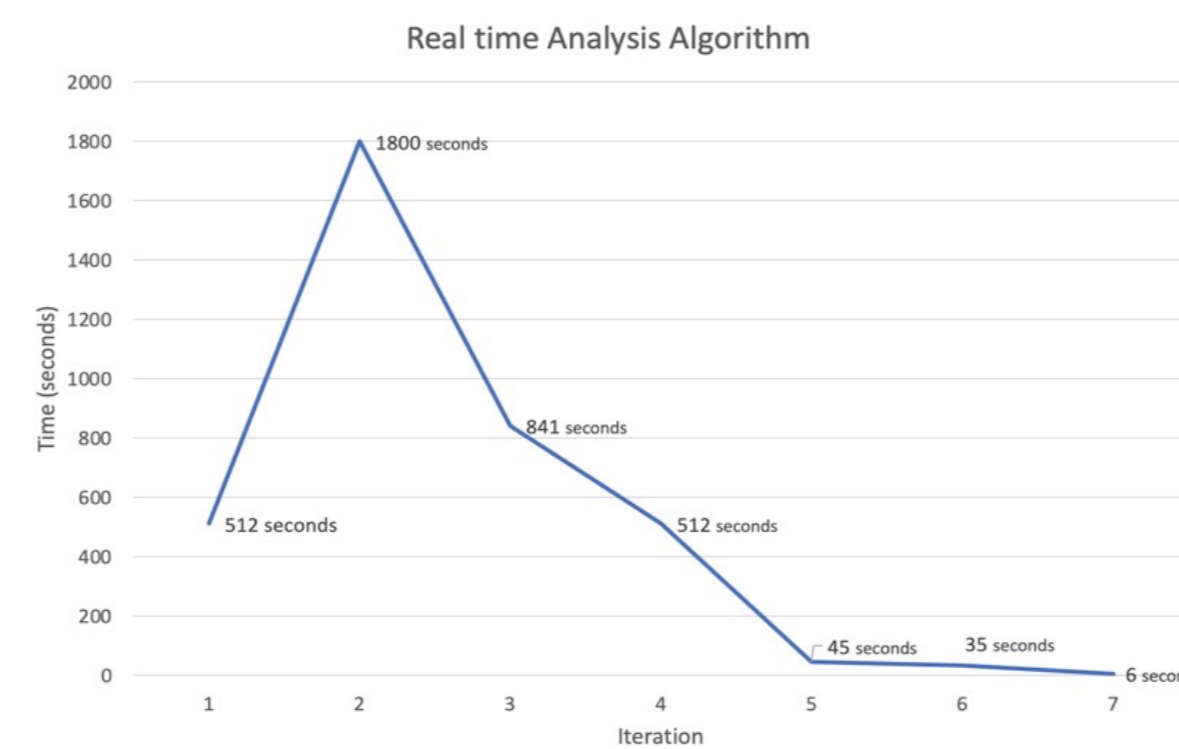


Core Algorithm

- Use specified parameters to find three-bars in both real time and historical data.

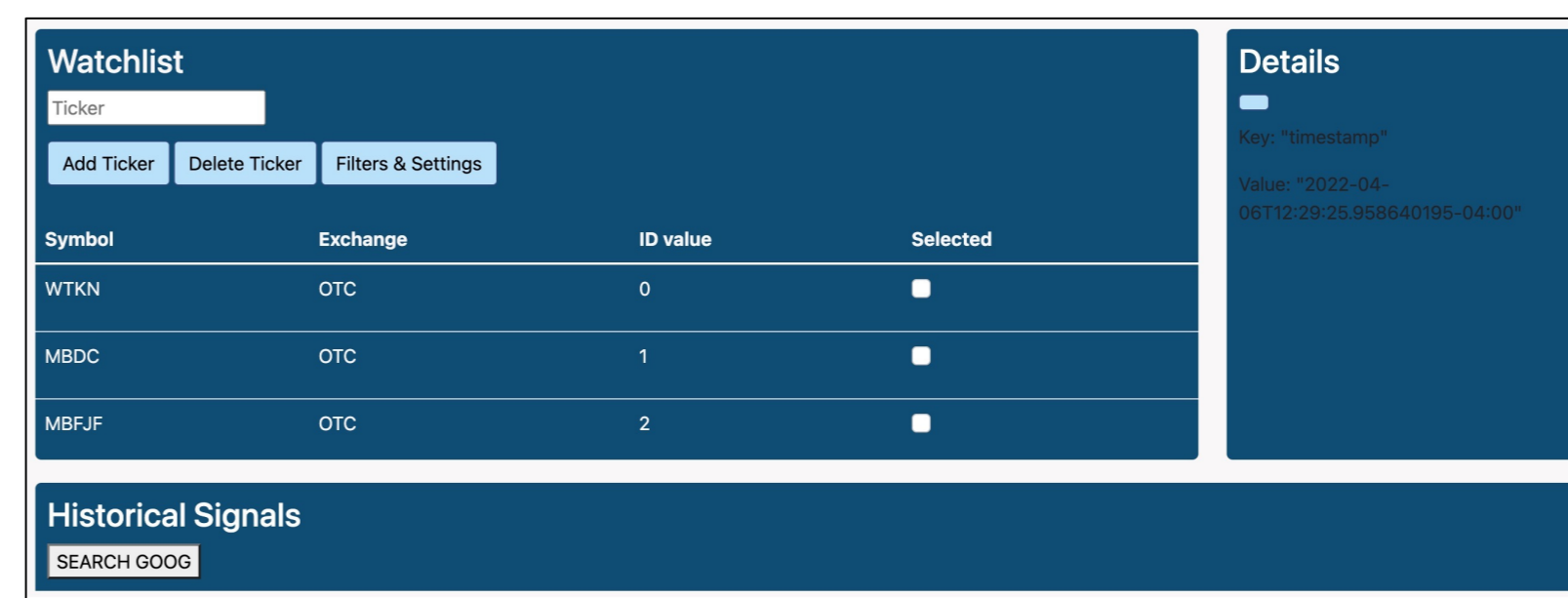
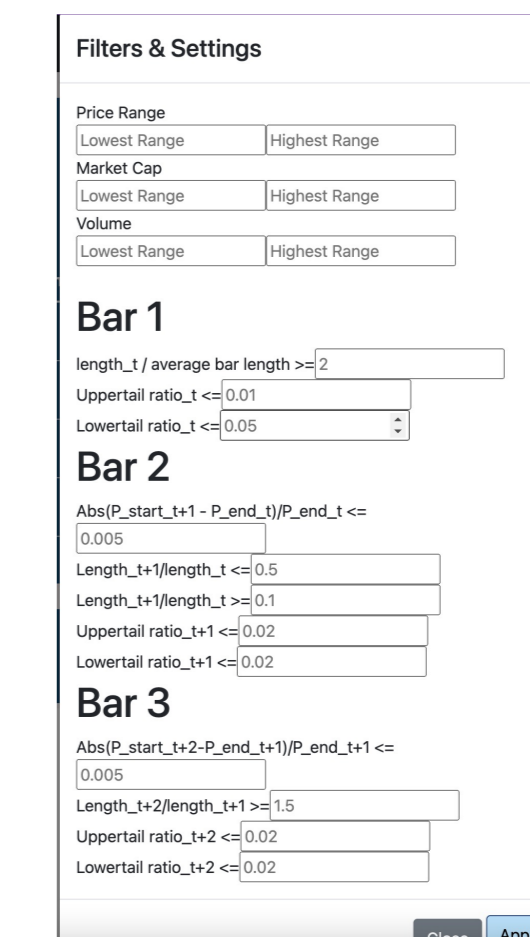
Improvement

- Enhanced three-bar seeking criteria with extensive customizable algorithm parameters
- Applied parallel computing for quicker pattern recognition in notification system.
- Scalability to track hundreds of stocks concurrently on computers with different specs



Frontend Process

- A ticker filter to quickly find the desired stock.
- Interface to input specific parameters for three-bar hunting
- GUI for add, delete, and search for stocks in watchlist
- A world clock ready to switch time zone as needed
- A pop-up notification when the three-bar pattern is found



Technologies



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