

# MAS

## A Web Application For Visualizing Stocks

### Abstract

This Computer Science based project aims to create a web application that utilizes data analytics and visualization to take API data from various stock markets and other commodities. The application is designed to show and interpret this data in a way that allows the end user to track the trajectory of the price of these assets in real time.

The end user will have the capability to view a desired ticker symbol of a stock or commodity, and can then utilize drawing tools and indicators to form possible investment strategies. Additionally, users will have the ability to create a watch list and a portfolio in order to monitor price changes.

### Key Features:

- Unique web application that integrates data analytics and visualization
- Utilizes computer science technology to provide end users with investment tools
- Real-time data visualization using web sockets
- Includes drawing tools and indicators for investment strategy formation
- Offers the ability to create a watch list and portfolio to monitor price changes.
- User-friendly interface with a user manual for guidance on how to use the application.

### Potential Benefits:

- Provides a convenient and efficient way for users to track the price of stocks.
- Enables users to make informed investment decisions based on real-time data
- Allows users to form investment strategies using drawing tools and indicators
- Offers the ability to monitor price changes through a watch list and portfolio
- Helps users stay up-to-date with the latest market information.



### Project Overview

**Goal Statement:** To create a web-based application that utilizes data analytics and visualization to provide users with the tools to make informed decisions regarding investing, trading, and economics based on the selected stocks and commodities. The application aims to track the trajectory of the price of these assets in current and historical time.

**Purpose:** The purpose of this project is to allow end-users to monitor the price of various stocks and commodities and use the provided tools within the web application to make their own investment decisions. The application will retrieve API data from various stock markets and other commodities and display and interpret the data in a way that is useful for tracking the price of these assets.

### Milestones

#### Milestone #1: Web Application

**Goal:** To create a local environment to host the web application, which will serve as the base interface for implementing all the features described in the project tasklist, including a login page, chart interface, watchlists, indicators, portfolios, alerts, timeframes, and drawing tools.

#### Milestone #2: Database

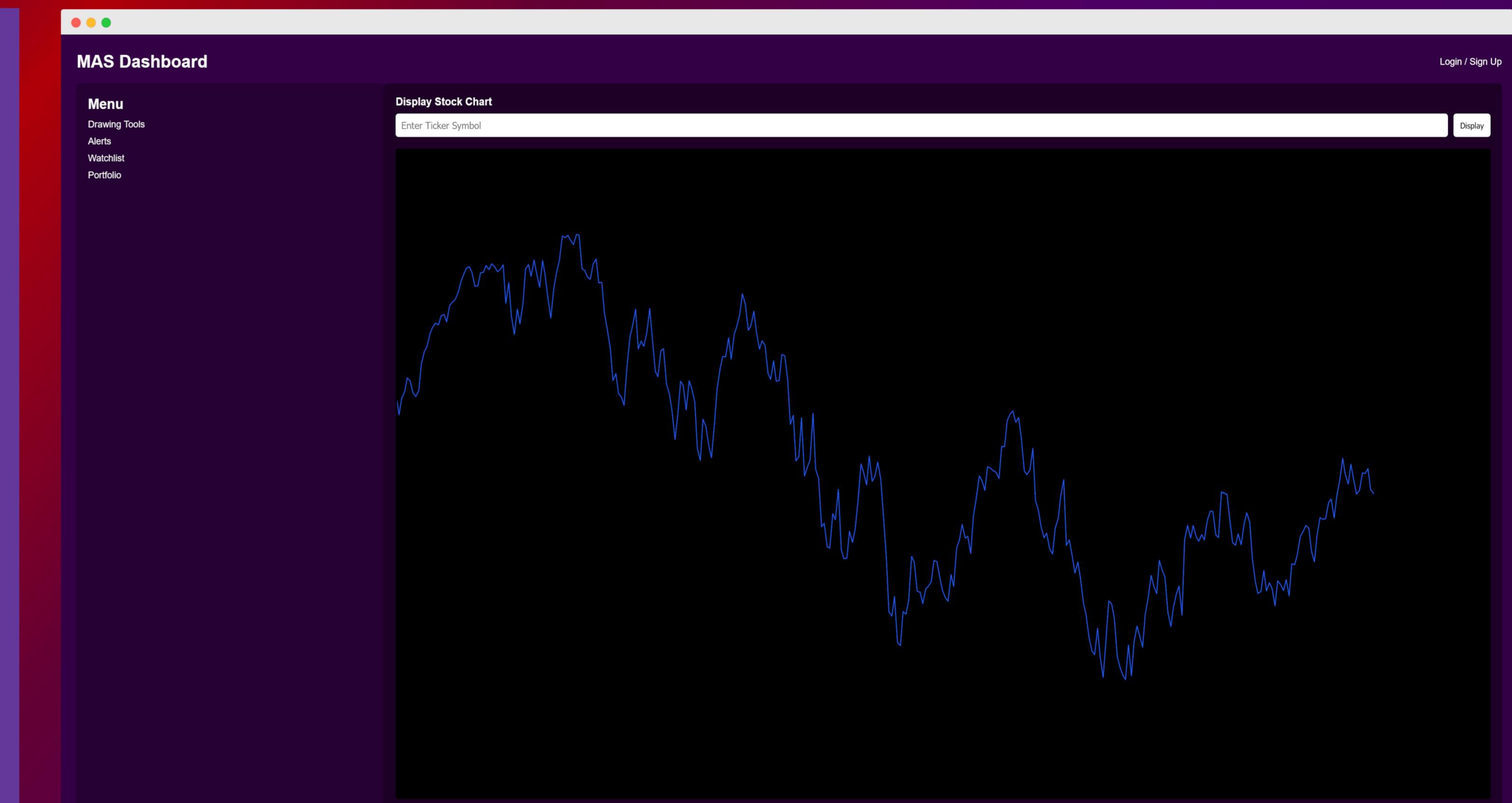
**Goal:** To create a remote database to store user information, including login information, watchlist data, portfolio data, timeframes, ticker symbols, queried stock/commodity data, chart drawings, and indicators.

#### Milestone #3: Documentation

**Goal:** To document the project progress and development throughout the course of the project to track the progress of the project and ensure everything is completed according to the tasklist and timeline.

### Future Work

- Expand the number of stock markets and commodities covered
- Improve user interface for better usability
- Add more advanced data analysis and visualization tools



### Challenges

- One of the biggest challenges faced was integrating the data analytics and visualization features into the web application.
- Finding a way to efficiently query data from APIs and display it in real-time while ensuring the application remains up-to-date with the latest information was especially difficult.
- Another challenge was implementing the drawing tools and indicators to allow users to form possible investment strategies.
- Coming up with a method to ensure that the web application is user-friendly and easy to navigate.

To overcome these challenges, extensive research and testing was conducted in order to find the best possible solutions to each problem.

### Team



Michael Stephens

Project Advisor:

Fred Annexstein