

## Crypto Trader Specs:

### Functionality Specs:

- Full Trade
  - Inputs: Market, Sell Price, Buy Price, Stop Price
  - Outputs: Order objects, Trade status, Current price
- Half Trade
  - Inputs: Market, Buy Price, Stop Price
  - Outputs: Order objects, Trade status, Current price
- Trailing Stop
  - Inputs: Stop percentage, Market, Current open orders
  - Outputs: Stop status, Current price
  - Algorithm: Trailing stop algorithm using specific candle frame
- RSI Calculator
  - Inputs: Markets, Phone number
  - Outputs: Graphical/Text data of current RSI, Texts to phone for RSI above 70/below 30.
  - Algorithm: 14 30m-candle RSI using Wilder smoothing technique.
- Automated Algorithms (Two rudimentary algorithms based on technical indicators)
- More algorithms to come...

### General UI Specs:

- Home Page
  - Price display for current coins owned
  - Amount display for current coins owned
  - Button map for different functions
- Full Trade
  - Drop down for market choice
  - Input boxes for buy, sell, stop prices
  - Execute trade button
  - Output space for current status of trade and price of market
- Half Trade
  - Drop down for market choice
  - Input boxes for buy and stop prices
  - Execute trade button
  - Output space for current trade status and price of traded market
- Trailing Stop
  - Radio buttons for multiple markets
  - Drop down for stop %
  - Output for current percentage
- RSI Calculator

- Radio buttons for multiple markets
- Output dynamic graphs with each line representing a different market (overachieve)
- Output text numbers with timestamps (not overachieve)
- Contact Us
  - Title text box for the title of the users message
  - Message textbox for the users message
  - Submit button that creates an email and sends it to our group's email
- About Us
  - Text box describing the intentions of this group and the problem we were trying to solve, that Binance can only handle one trade at a time.
- Frontend Tech Stack:
  - Web Sockets will be used to create real time capabilities i.e. for cryptocurrency prices, graphs representing currency data etc , Bootstrap for the CSS styling and smooth UI creation, and native Java/Javascript to perform the correct functions.

#### Division of Labor:

- Frontend - the frontend will be designed and created by Christine and Akhil, with knowledge of the necessary specifications of the backend, such as sign in/login capabilities, ability to display a user's trades and graphical data representation of the user's balance/ current cryptocurrency prices.
- Backend - the connections to the Binance API, Algorithmic trading strategies, and computational functions that dictate the trades will be done by Sean and Pavlo.
- If necessary we have pivot team members, i.e. Pavlo and Christine, who will be able to switch positions and work on either the frontend or the backend.
- The endpoint connections of the frontend and the backend will be discussed by the group and created as a team to ensure there are no problems having the frontend accept the data from the backend.

#### Schedule

- Frontend
  - 3/22 - High fidelity mockups to represent actual design
  - % - HTML/CSS styling without functionality done
  - 4/12 - Signin/profile/contact us/ work done on web socket functionality
  - 4/19 - Have web-socket functionality completed and frontend ready to accept data from the backend
  - 4/23 - First demo presentation
  - 5/1 - Integration capabilities of Frontend and Backend are created and worked on
  - 5/4 - have demo at working capability and create presentation.
- Backend
  - 4/1 - Half Trade, Full Trade completed

- 4/5 - RSI Calculator completed
- 4/9 - Trailing Stop Completed, Trading Algos started
- 4/16 - Trading Algo 1 completed, Trading Algo 2 close to finished
- 4/23 - All functions finalized

## Expected Problems

- Frontend
  - Login/signin capabilities incorrectly working i.e. user data isn't being verified, hashed and stored correctly.
  - Ability to accurately pull realtime information from the Binance API and display on the frontend.
  - Having constantly updating components of the frontend
- Backend
  - Having trading strategies work as expected algorithmically, especially in crypto markets that exhibit great change i.e. drops in the market, frequent changes in prices of multiple coins, popularity trends representing the backing of certain coins.
  - The ability to correctly connect with the Binance API using public and private keys may be an issue, if the information received is not current it can lead to computational issues.

## Mockups

- What the buttons do
  - Home page
    - The sign up page will allow you to sign up
    - Also there's a small button at the bottom lets you login if you already have an account.
    - Also the logo/name of our company will take you back to the home page (it's in the header, so this works on any page)
    - Also, the coin button in the header ,will take you to the conduct trade page.
  - profile page
    - Buttons to change email, add photo, change name, change phone number, etc.
    - Also buttons to look at your balances and trades.
  - About us
    - Has no buttons, except for the contact us button in the button right corner
  - Contact us
    - Just the submit button, submits the query
      - Will email us with the contents

- Conduct trade
  - Full Trade - takes in market choice, buy, sell, stop prices and sends data to the backend to conduct the trade.
  - Half Trade - takes in market choide, buy, sell prices and sends data to the backend to conduct the trade
  - Informative icons that look like this ⓘ in order to provide information regarding the what full trades and half trades.
  - RSI Trade - takes in the market choice, and outputs the graphical/text data for the current RSI, possible text alerts if RSI above 70 or below 30 given the profiles phone number.