Coin Expanse

A next Generation Crypto Trading Platform

Their Functionality

- Popular crypto trading platforms such as Crypto.com, FTX exchange, and Binance all have similar buying and selling formats:
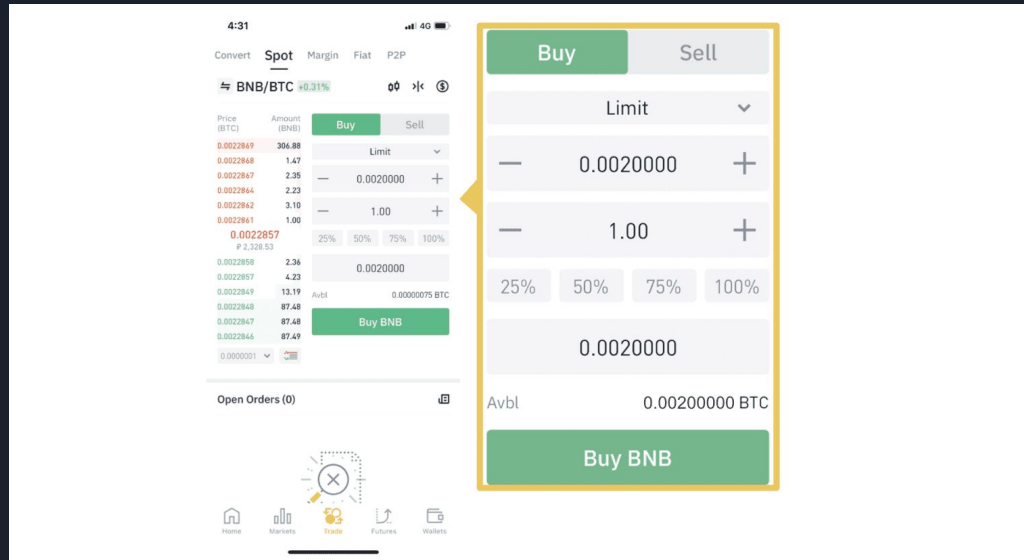
Our Functionality

- Our buying and selling format is a non-traditional way to manage your crypto portfolio:

Problem solved: the problem of missing strategies

- With other crypto trading websites you can't implement automatic trading strategies, you can only set bounds for limit orders:
  - Limit orders enable the user to set buy and sell orders once a coin reaches a certain market price.
- Coin expanse enables the user to not only create more complicated trading strategies, but also enables the user to save these strategies for later use.
- Coin Expanse users are allowed to condition their strategies on the market price of coins, as well as various indicators such as RSI's and STOCH's.
  - RSI - The Relative Strength Index (RSI) is a momentum indicator that measures the magnitude of recent price changes to analyze overbought or oversold conditions.
  - STOCH - A stochastic oscillator (STOCH) is a momentum indicator comparing a particular closing price of a security to a range of its prices over a certain period of time.
    - Our customers are able to use these indicators to assist them in their trading.

Website Dependencies

- Binance API*
  (https://github.com/binance/binance-spot-api-docs/blob/master/rest-api.md) - an official REST API provided by the crypto trading platform Binance. This is where we send our get requests to query for data, as well as make post requests for transactions.
- News api - the api we use to make get requests for up to date crypto news and market changes.
- net - gem used to build http user agents.
- uri - URI is a module providing classes to handle Uniform Resource Identifiers.
- binance-ruby - "(not yet used) api wrapper for binance queries".
- json - provides an API for parsing JSON from text as well as generating JSON text from arbitrary Ruby objects.
- seedbank - used to organise the seed files into a folder.
- digest - "performs the encryption of user passwords stored in the database".
- chartkick - gem used for organising market data into tables and graphs.

Technical Details

- Utilizes a wide variety of gems to implement a streamlined UI and backend
  - chartkick, binance-ruby, securerandom, sidekiq
- Javascript, jQuery, jQuery-ui
  - All utilized for asynchronous modification of different pages on our application
  - Key component in creating the meta-programming GUI for automated strategy creation
- Bootstrap/MDB
  - Used mainly for SCSS styling
  - Also used to give smaller components dynamic functionality
    - Modals, pop-ups, and button/link events
- Strategies utilize a mini-parser to determine if a given strategy should execute given the current state of the indicators and the conditions referenced in the strategy
  - DOM mapping function used to convert HTML of GUI into a JSON, which is stored as a string in our DB
  - Ruby function parses this JSON every 15 minutes using a mini interpreter, which constructs a final boolean value
- All graphs and charts are managed by chartkick, which we feed information into from API calls that get cryptocurrency data and metrics

Non-Technical Details

- Most Proud of: We are most proud of our finished product as well as how we seamlessly worked as a team, had minimal arguments, and encouraged each other to be our best selves.
- Room For Improvement: There is always room for improvement, however, we would like to be able to:
  - brush up the front end manual ordering page
  - add support for more coins on the manual ordering page and automatic trading page
  - add more functionality to the automatic strategies page
  - add a user portfolio to enable the user to view all their coins and trading strategies
- Teamwork lessons:
  - successful conflict resolution is a major part of good teamwork
  - patience and empathy are two key traits
  - Communication and trust are essential

Culmination

- Most proud of
    - Strategy creation GUI
    - Live-updating charts with chartkick and task scheduling
    - Mini parser for strategies
    - Use of API and network protocols and certs for transactions
- Future Improvements
    - Portfolio
    - Ways to share and import strategies from other users
        - Ways to query
    - In-depth news querying
- What we learned
    - Effective coding techniques
    - API usage and design
    - Good UI/UX in RoR, as well as dynamic content updating

Live Demo

http://www.coinexpanse.com/