Dynamic Portfolio Management

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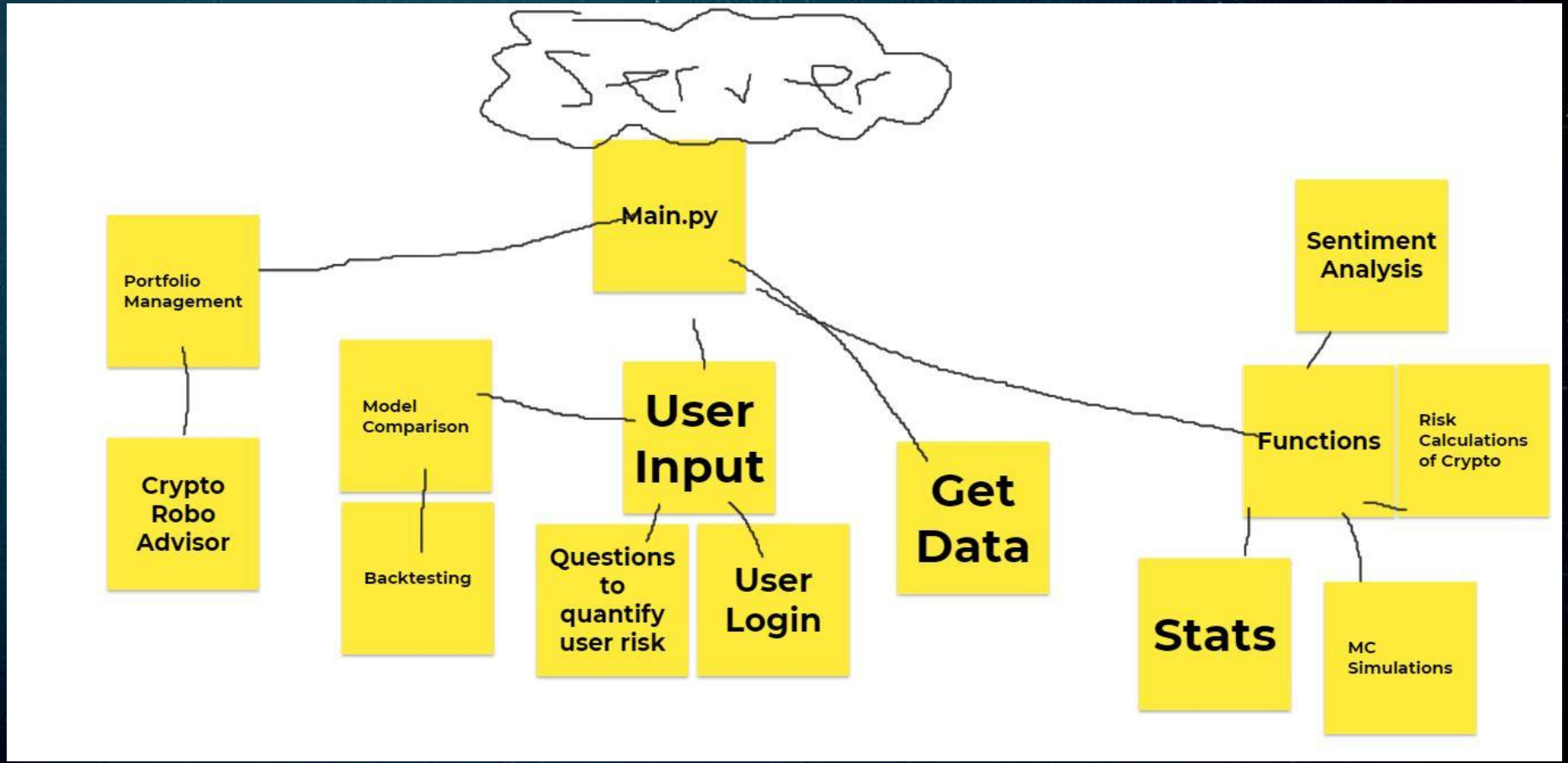
Project Goals

- Create a user interface that imports an existing stock portfolio and adds crypto assets to that portfolio based on the users risk tolerance
- The program will calculate the cumulative return of the new portfolio with added crypto currencies from the past year

System Architecture



APIs and Data Sources Used

- Alpaca API: historical stock price data
- Binance API: Crypto historical data
  - CSVs
- Coinbase API
- Pandas Datareader: gets cmc 200 index (crypto index)
- Twitter API: sentiment analysis

Selecting Crypto

- Chose 10 cryptocurrencies to be added to portfolios
  - ADA, BTC, ETH, LTC, XLM, XRP, LINK, DOT, BNB
  - Limited to the past year for data - some were only listed on Binance in 2020
    - DOT, VET

Crypto Portfolios

- Crypto portfolios match user risk tolerance by standard deviations

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Low Risk Cryptos - BTC:0.039394843988365534
Low Risk Cryptos - ETH:0.052361023385229806
Low Risk Cryptos - LTC:0.055038082950316425
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Medium Risk Cryptos - ADA:0.05999963720001747
Medium Risk Cryptos - BNB:0.059774181554073 27
Medium Risk Cryptos - LINK:0.07157632906865609
Medium Risk Cryptos - VET:0.06852191988742666
Medium Risk Cryptos - XLM:0.06330666486672644
Medium Risk Cryptos - XRP:0.064909309074807 14
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High Risk Cryptos - DOT:0.08365198580869644
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Next Steps

- Monte Carlo Simulation to forecast future returns
- User Goals
- User Login system
- Twitter sentiment using Twitter API
- Dashboard