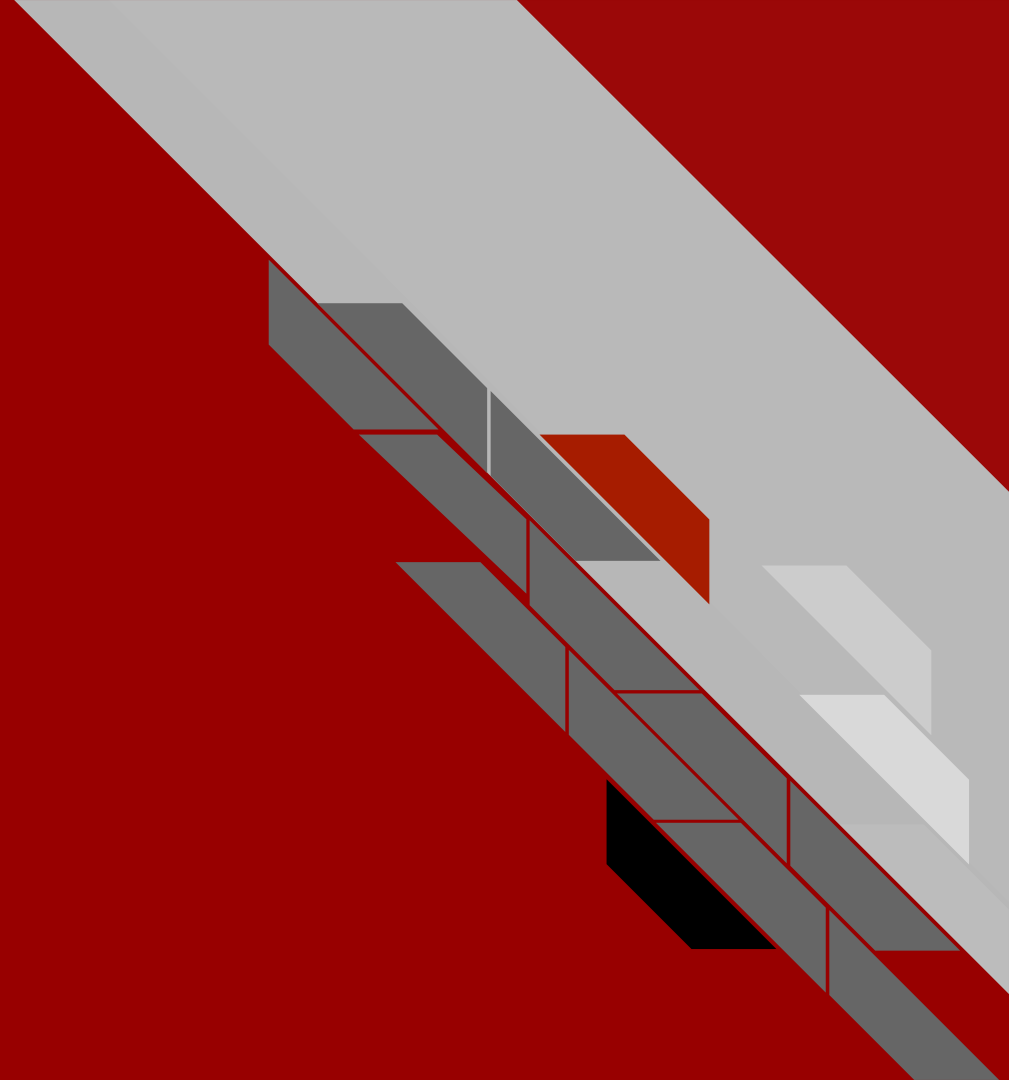




**Cut out the trouble. Start investing.**

Alpa Sheladia, Will Turner, Mischelle Massey

# ***Our Objective***





## Objective:

Provisioner of simple investing through automated trading.

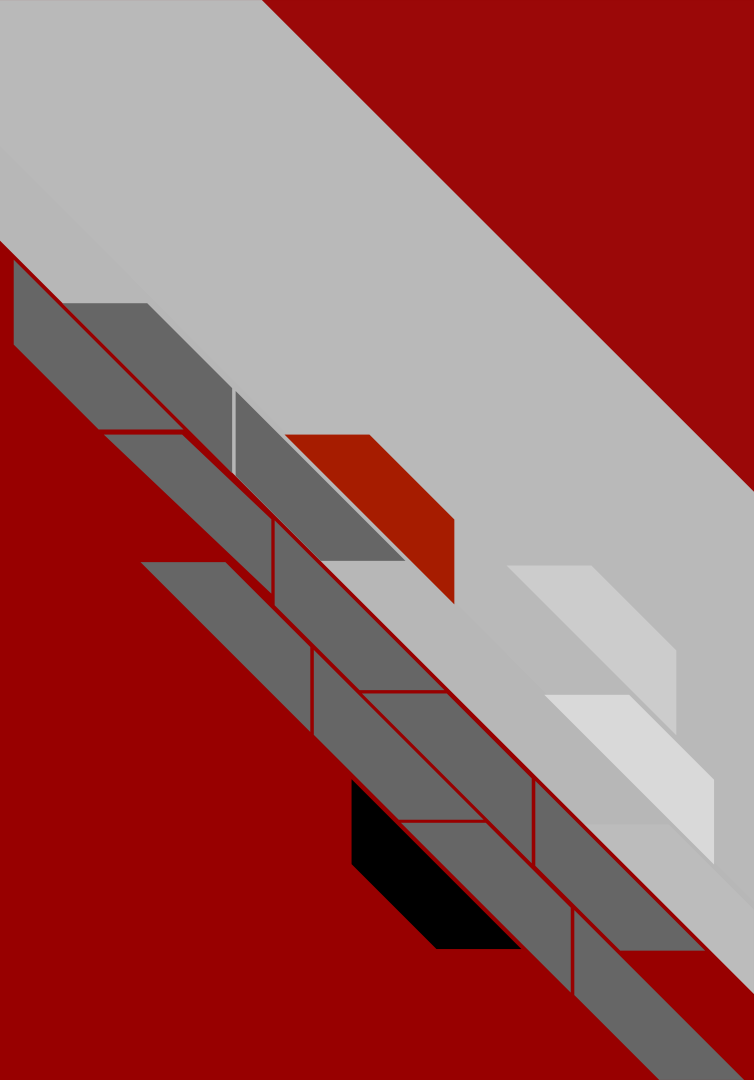
- Executing through two essential elements
  - Automated algorithmic trading bot
  - Smart contract



# Important Elements

- The model utilizes three different gauges when picking securities for different risk level baskets. Risk levels are categorized by filtering performance of each security by its: Earnings Per Share, Revenue and Cash Flows. Attempted to keep the fundamentals simple in the sense of capturing the company's profitability for its investors in EPS, company's overall relevance & revenue in its niche market and the company's ability to cover its expenses and debts through cash flows.
  - Risk Tolerance
    - Risk Averse (Conservative)
      - Companies with positive and an increase in EPS, Revenue and Cash flows in the past 3 years(MSFT, AAPL, AMZN, NFLX, GOOGL)
    - Risk Neutral (Moderate)
      - ETFs, Blend of both volatile stocks and long time performers. This pool can have negative revenue as long as their cashflows are positive and increasing.
    - Risk Lover (Aggressive)
      - Short term performers, Highly volatile, where EPS and revenue growth can be compromised but cashflows remain steady.

# ***Algorithmic Trading Bot***

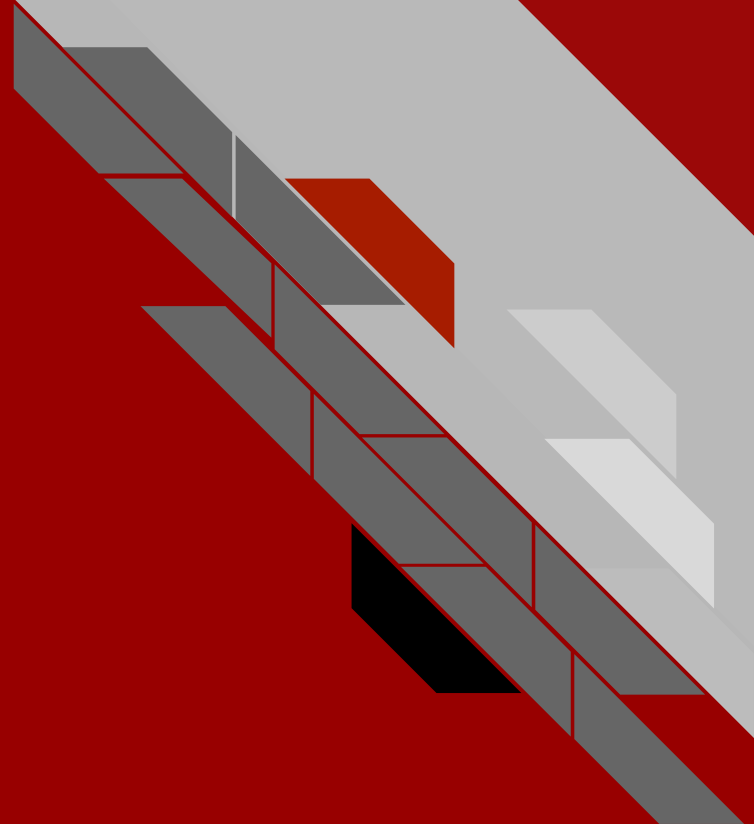




# Summary of Our Model

- Aspects within our model for algorithmic trading using the Alpaca API
  - Having the model place a market order
    - Automated trading bot that automatically trades on the entry/exit triggers
  - Check positions before they are closed and then collect the close price data
    - This consisted of standardizing the data then creating a LSTM model
    - Plotted the Real vs Predicted Prices
    - Created a simulation and then eventually tested the model's efficiency
      - Best was 0.656
  - Trading Indicators
    - Moving Average
    - ROC Indicator
    - CMO

# ***Smart Contracts***





# Explanation of the Contracts

## *The Trim-X Contract*

*The Trim-X contract allows investors / users to purchase tokens that represents a share of a particular portfolio.*

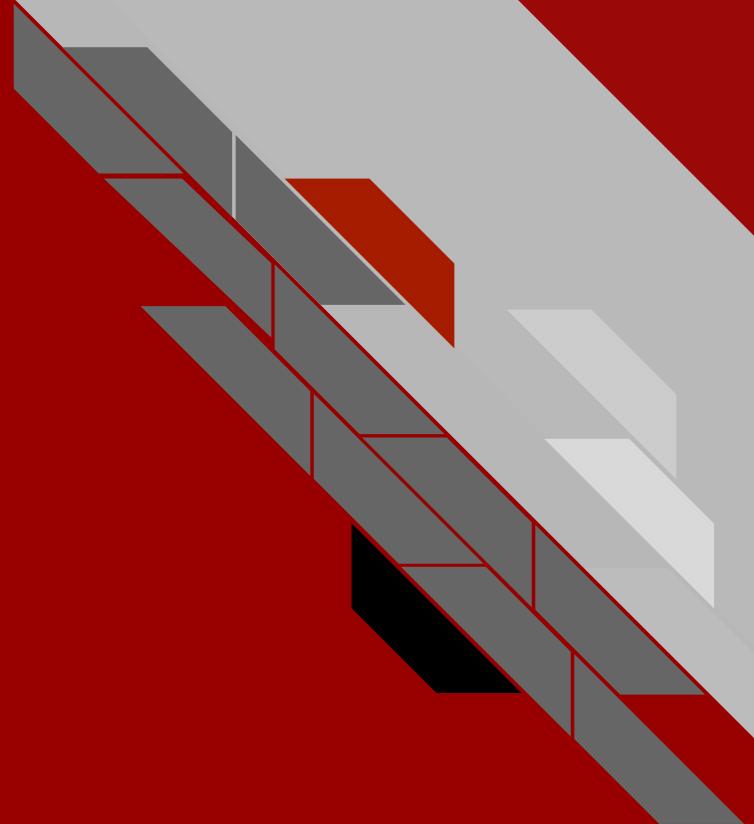
- *Portfolios are listed as Risk Averse, Risk Neutral, and Risk Lover.*
- *Each basket of assets is assigned to a specific portfolio.*

*To make our contracts compatible with off-chain data, we implemented the Chainlink contract Integration Process*

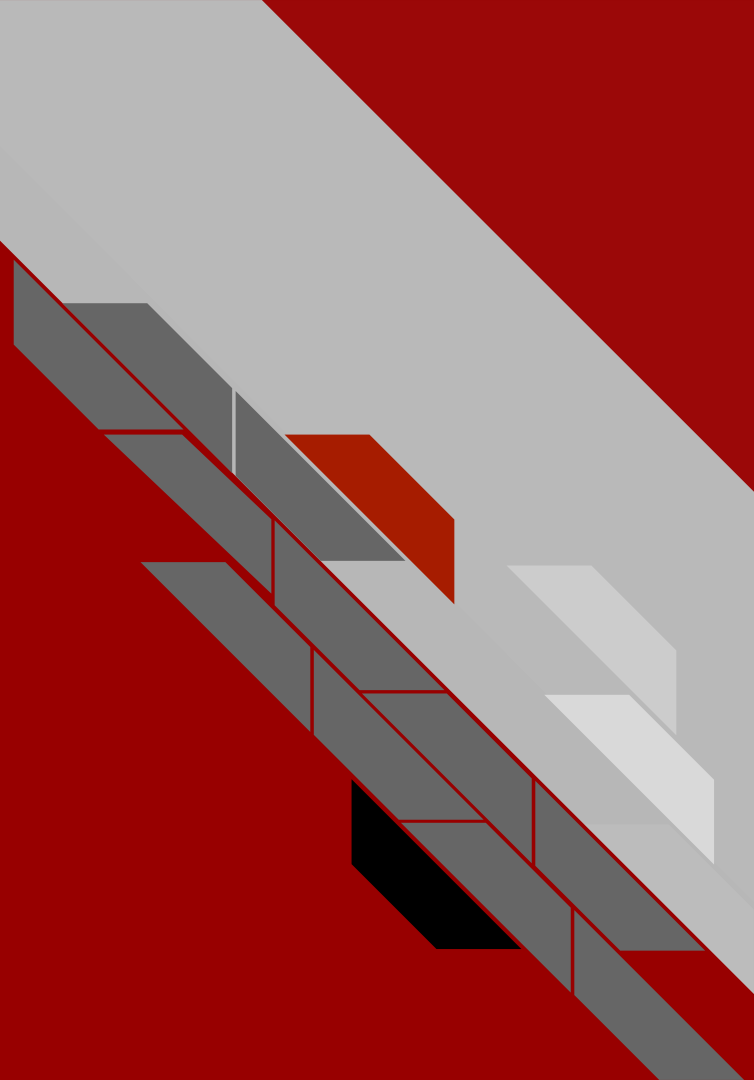
- *Incorporated Oracle to retrieve the current value of ETH and USD*
- *Integrated Chainlink to compute the value of the token for each of the baskets*
  - *For Chainlink oracle we need:*
    - *OracleID:*
    - *JobID:*
    - *Link(currency needed for running oracle API calls)*



# ***Proof of Transactions***



# ***Problems and Questions***

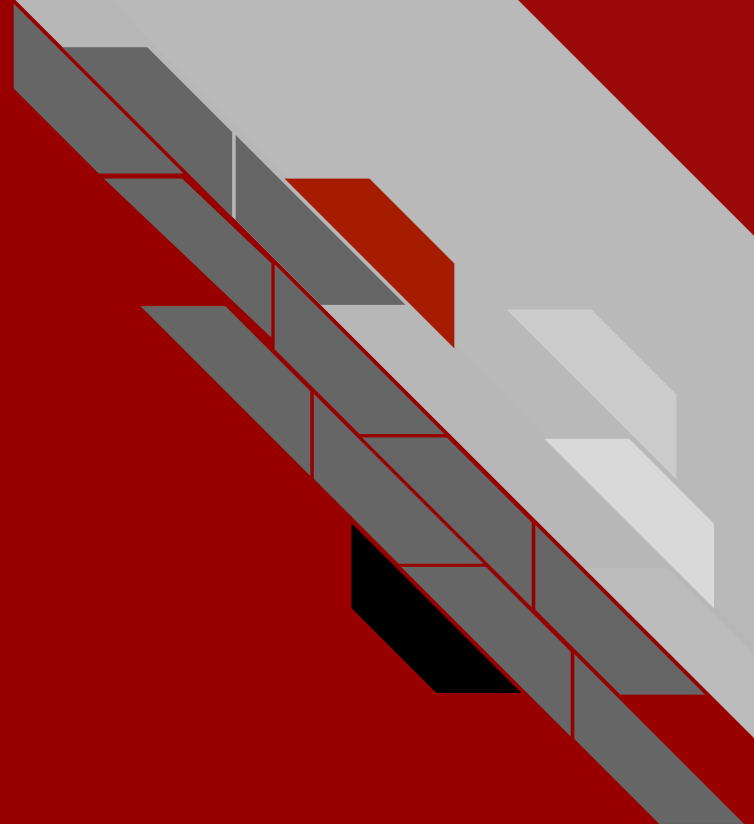




# Issues and Solutions

- We ran into a few issues however, using teamwork we worked through each issue to bring forth our vision to this project.
  - Lex or HTML Front End (will expand on it's creation later)
    - Connecting it to the other project elements
  - Smart Contract Issues
    - Getting Link for our account,(customize by chainlink)-- paired keys, headers
    - Coin exchange via Uniswap (ETH -> LINK)--paste the Kovan faucet link into the contract
    - Connecting Chainlink to retrieve real time data for our contracts.
  - ERC 884
    - Difficulty finding the port
    - Syntax Issue

# ***HTML Front-End***



Name

Hunter Norris

Age

42

Risk Level

Risk Averse

Investment Amount

4500.00

Submit

Name

Hunter Norris

Age

42

Risk Level

Risk Lover

Investment Amount

4500.00

Submit



# Creation and Implementation

- The `Extreme_trading` Bot is derived from the seed idea of providing an interface allowing interaction with a TradingBot to provide information for various levels of traders. Services are offered from a range of risk averse to risk lover.
- A thorough analysis of Stock values are performed through machine learning techniques as a strategy to better assess the investors risk levels.
- The Blockchain will list these investment transactions based on the Trim-X TradingBot recommendations.



# Questions & Future Improvements

- Potentially using ERC 884?
- Upgrade to a Lex or HTML front end in the future? How would we like to connect it in the future?
- Creating an oracle to access Alpaca accounts
  - We would have had to create an external adapter through Chainlink. We could not find any clear documentation.
  - The purpose would allow investors to purchase tokens, where each token represents a share of a particular portfolio of assets