SmartTick:
Obscure Stock Analysis

● ● ●

4/18/2025

Team Members

- **Product Owner:** Rudy Chavez
- **Scrum Master:** Greg Grigorian
- **Developer:** Jonathan Guité
- **Developer:** Antonio Duran-Ramos
- **Developer:** Rithvik Mungara
- **Developer:** Joey Lee

Overview

- We aim to provide stock analysis that goes beyond traditional techniques by combining factors like the influence of political figures, complex mathematical models, and historical data.
- Who will care or who will it help?
  - Investors & Traders
    - In order to make informed decisions about buying/selling stocks

Disclaimer: We are developers, not financial advisors. Always conduct your own research and consult with a licensed financial advisor before making any real investments.

Project Scope

- **High level goals**
  - Be able to see a graph of a listed stock, what it's trading at and projected value forecasts based on analysis
    - Receive clear buy or sell recommendations
  - Be able to see the recent trades of congress' stocks
    - Various filter systems to organize by stocks/politicians
    - Watchlist for stocks/politicians with notifications

Sprint 1

User Stories

- As a user, I want to be able to see information about a particular stock.
- As a user, I want to view all recent trades made by politicians in one place, so I can easily track and compare them.

Spikes

- Familiarization with tech stack
- Early research into stock analysis techniques

Infrastructure Tasks

- Set up shared github repo for project management and version control
- Set up secure database for data and user info
- Set up shared space for documentation and task assignment
- Set up integration with external stock APIs
- Set up docker environment for development

Sprint 2

User Stories

- As a user, I want to see analysis of a stock so I can make more accurate assessments of a stock's value and make better trading decisions.
  - Can include use of historical data, algorithms, and other methods to analyze behavior and trends
- As a user, I want to see which politicians recently traded a particular stock.

Spikes

- In-depth research and development of stock analysis strategies
- Possible issues with API usage

Sprint 3

User Stories

- As a user, I want to be able to view additional information about the stock/politician
- As a user, I want filtering options for trades and stocks, so I can customize what I see based on my interests.
- As a user, I want to receive updates (notifications) about stocks or politicians that I am interested in.

Spikes

- Gathering information regarding politicians.
- Implementing notifications for users

Sprint 4

User Stories

- As a user, I want to see how a politician's trades performed compared to the actual stock performance.
- As a user, I want to see the top gainers in congress.
  - Leaderboard by percentage (YTD, 5YR, 1YR, 3M,...))
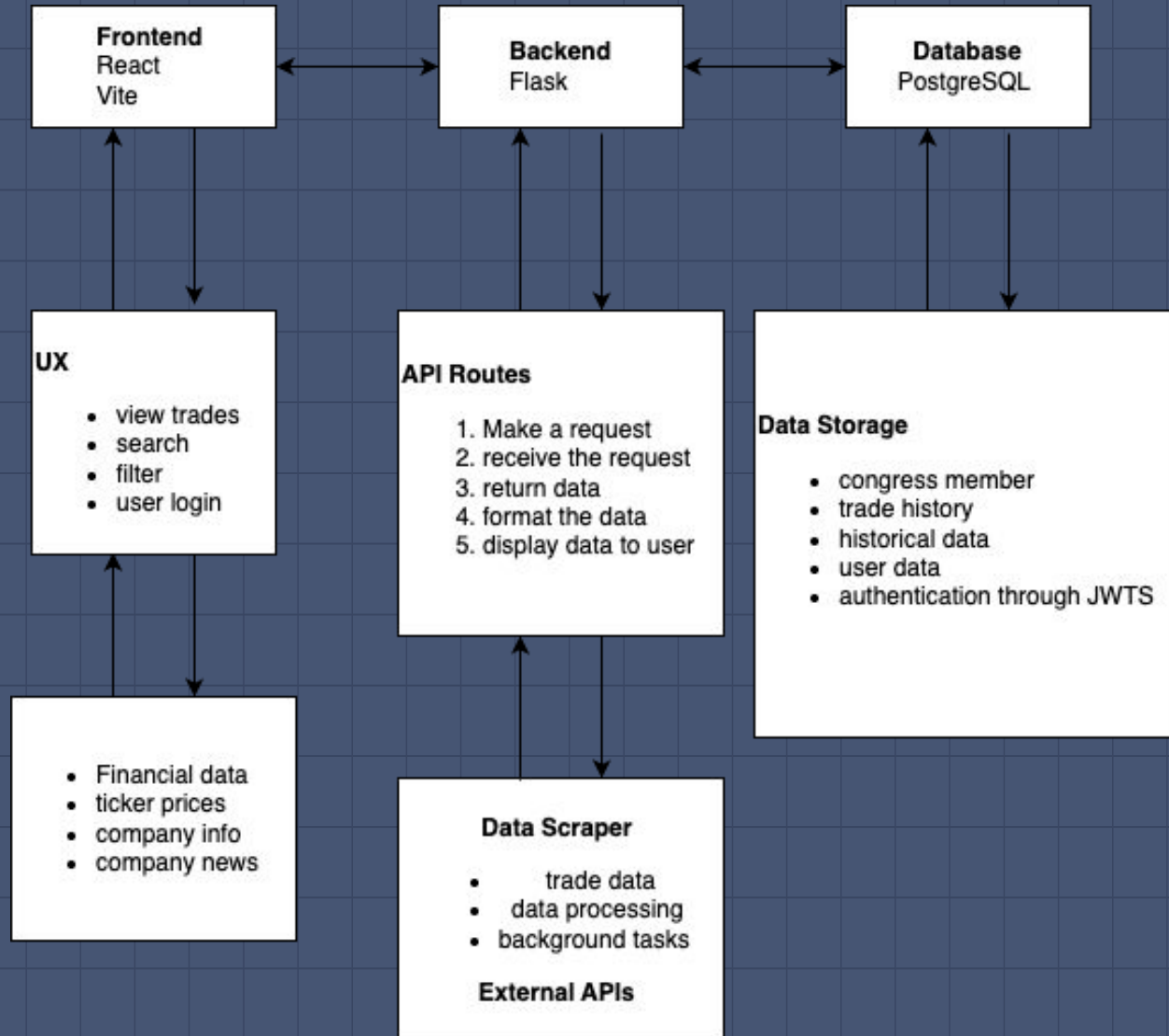- As a user, I want to see recent tweets by politicians and how they affect particular stocks.

Spikes

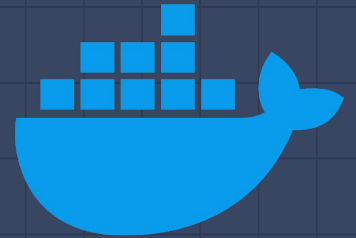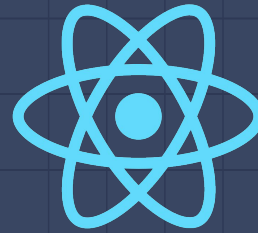- How to compare if a politician outperformed a stock.

Infrastructure Tasks

- Integrating X (formerly Twitter)

Architecture

Frontend
React
Vite

Backend
Flask

Database
PostgreSQL

UX

- view trades
- search
- filter
- user login

API Routes

1. Make a request
2. receive the request
3. return data
4. format the data
5. display data to user

Data Storage

- congress member
- trade history
- historical data
- user data
- authentication through JWTS

- Financial data
- ticker prices
- company info
- company news

Data Scraper

- trade data
- data processing
- background tasks

External APIs

Technologies

- **Frontend:** React JS

- **Backend:** Flask

- **Database:** PostgreSQL

- **Environment:** Docker

Challenges/Risks

- **Real-Time Data Integration**

  - Live stock data often comes at a cost.
  - Free APIs (e.g., Alpha Vantage, Yahoo Finance) may have strict rate limits or delays.

- **Public Backlash or Political Attention**

  - If the website gains significant traction — particularly by highlighting trades made by members of Congress — it may attract scrutiny, even though the data is publicly available.

- **Unfamiliar with stock trading strategies**

  - Ensuring users are getting the most optimal methods of analyzing a stock could be difficult given our experience

Minimum Viable Product (MVP)

Product:

- Website that displays a particular stock and analysis
- Website that displays recent congress's trades

User Stories:

- As a user, I want to be able to see information about a particular stock and its analysis.
- As a user, I want a table that shows recent politicians' trades so I can see all the relevant trading information in one place.