SAPP

The Sentiment Analysis Application

Meet Our Team

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Scrum Master
Requirements Engineer

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Front-End Designer

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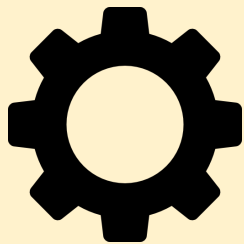Back-End Developer

Project Overview

- The SAPP app will leverage the growing strength of the retail investor by analyzing their means of communication to anticipate changes in the stock and crypto market
- SAPP will provide in-depth sentiment analysis of stock tickers and cryptocurrencies across major social media sites: Reddit, Twitter, Facebook, and Instagram
- By recording and processing posts across social media platforms, it will offer users relevant data regarding the positive, neutral, or negative connotations associated with a post

System Overview: 3 Tier Architecture

Client
- Send and receive requests from bottom two layers
  - Login and sentiment score updates
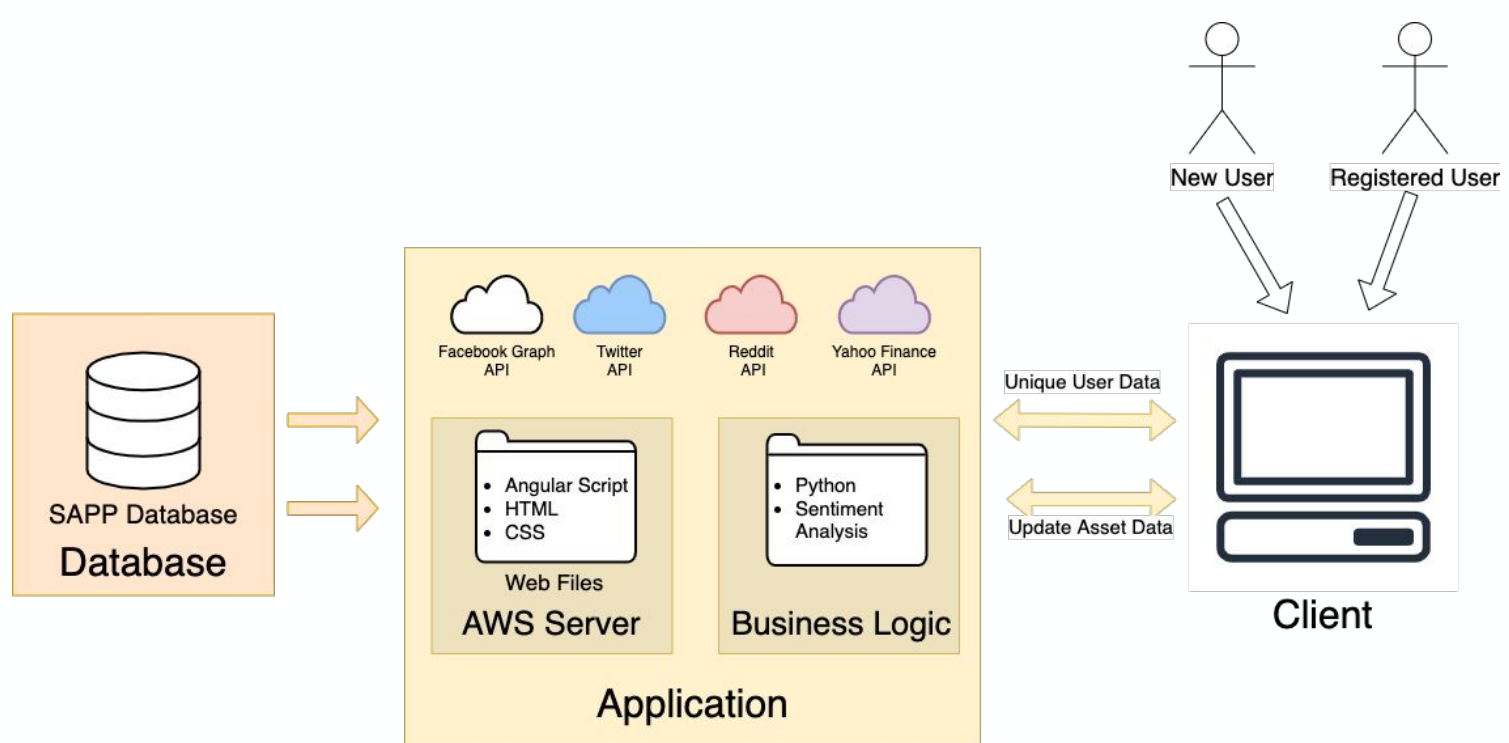
Application
- Business Logic
  - Sentiment Score Analysis algorithm
  - Search parsing
- AWS Server
  - Web Files for UX and UI
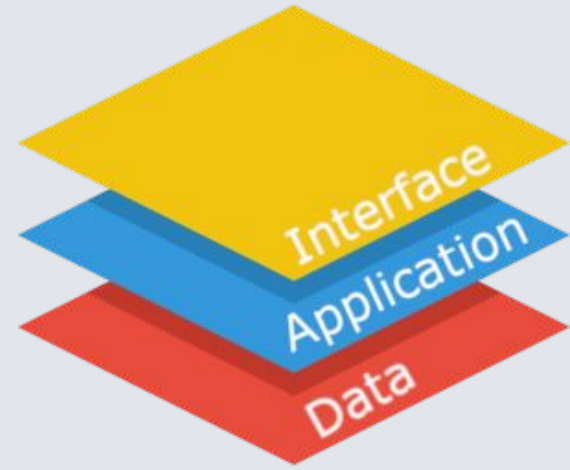- APIs

Database
- User Data and Preferences
- Historical Data

System Diagram

Why 3 Tier?

- Popular and efficient with web-based applications
- SAPP requires several operations
    - API requests
    - Sentiment Analysis Machine Learning Techniques
    - High volume of stock and crypto data
- Consolidate these operation onto a single application for conceptual and logical clarity
- Effective load distribution of requests across multiple layers
    - Reduce strain on database
- Modular independence
    - Scalability
    - Development

Actors

Primary

New User
A user without an account who uses the system to create an account or view accessible pages.

Registered User
A user with an existing account who can log in, access pages, and edit their account settings.

Secondary

Social Media APIs
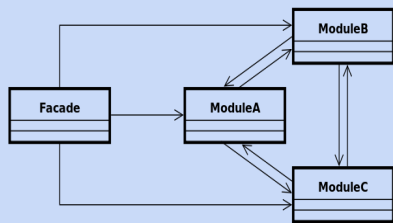Used to support a user's request for sentiment analysis data.

Stock Data API
Used to support a user's request for sentiment analysis data.
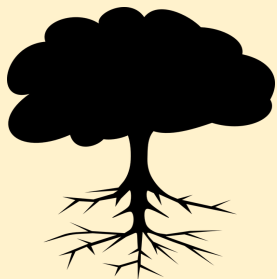
Amazon Web Service
Used to support a user's request for sentiment analysis data.
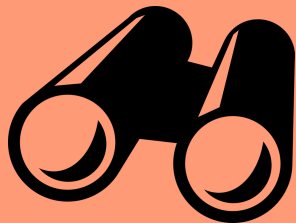
Design Patterns

Facade

- Applicable to ticker info pages
  - Require complex underlying functionality, but users are limited in what they can view

Decorator

- Individual user settings
  - Users can choose and edit which tickers they have pinned
  - Choose and change the types and threshold of notifications that they receive from SAPP

Observer

- Ticker information (sentiment score, pie chart drill down) depends on (thus "observes") social media APIs
  - State changes result in automatic updates to ticker information

MEAN Framework

- Familiarity with Javascript and prevailing frameworks
- Cryptocurrency prices keep surging and retail investor interest in the stock market continues at an all time high
  - SAPP must leverage this popularity and be deployed as quickly as possible to improve initial success and garner more attention
- The MEAN Framework utilizes only Javascript
  - Faster development of the product with a cohesive, similar-skilled team
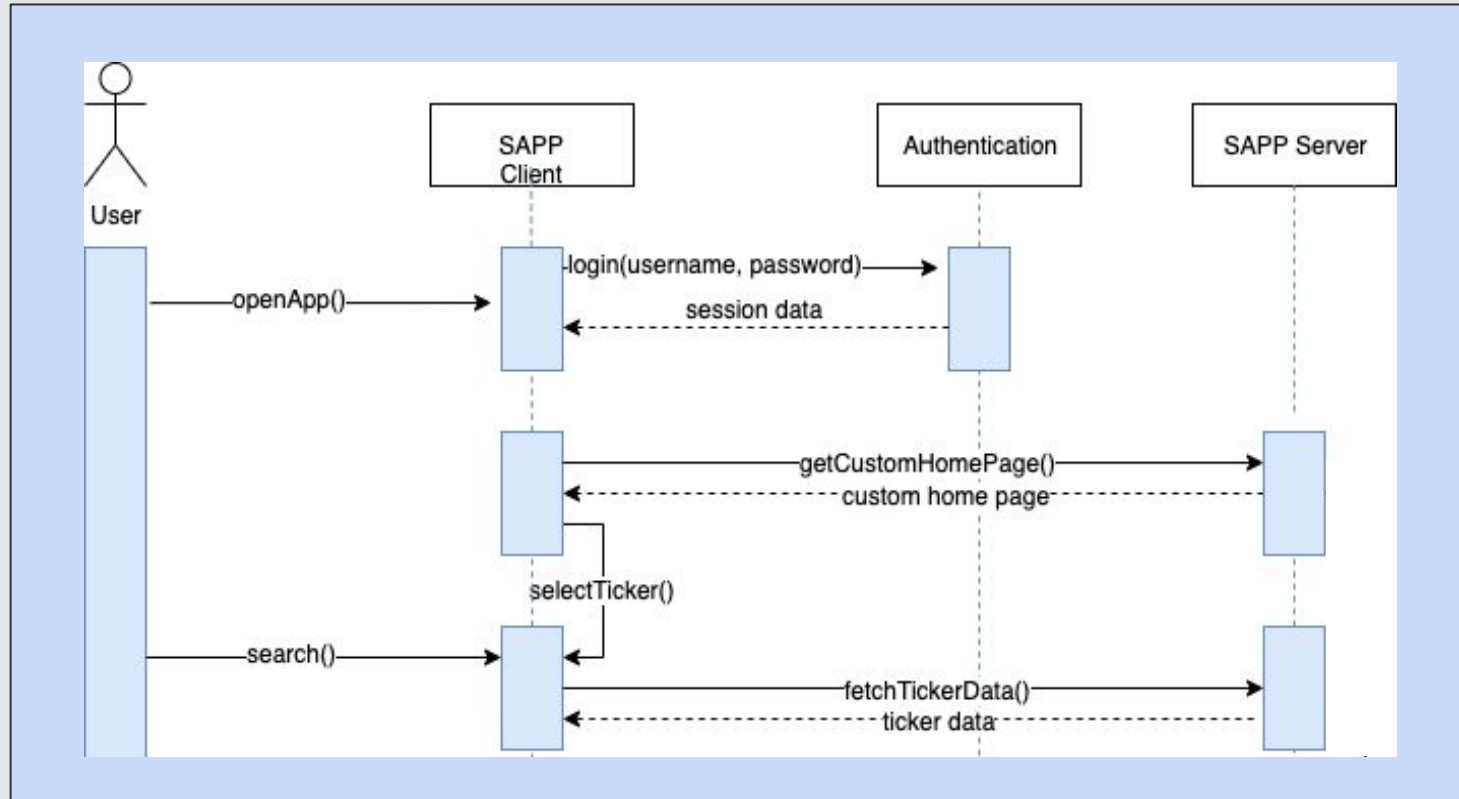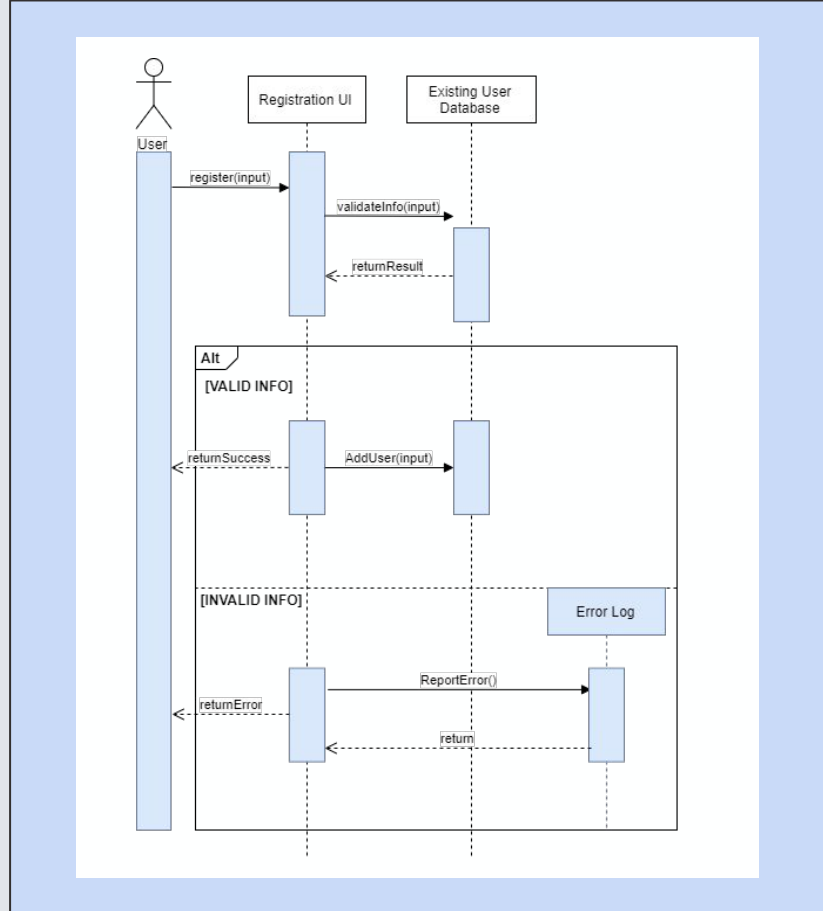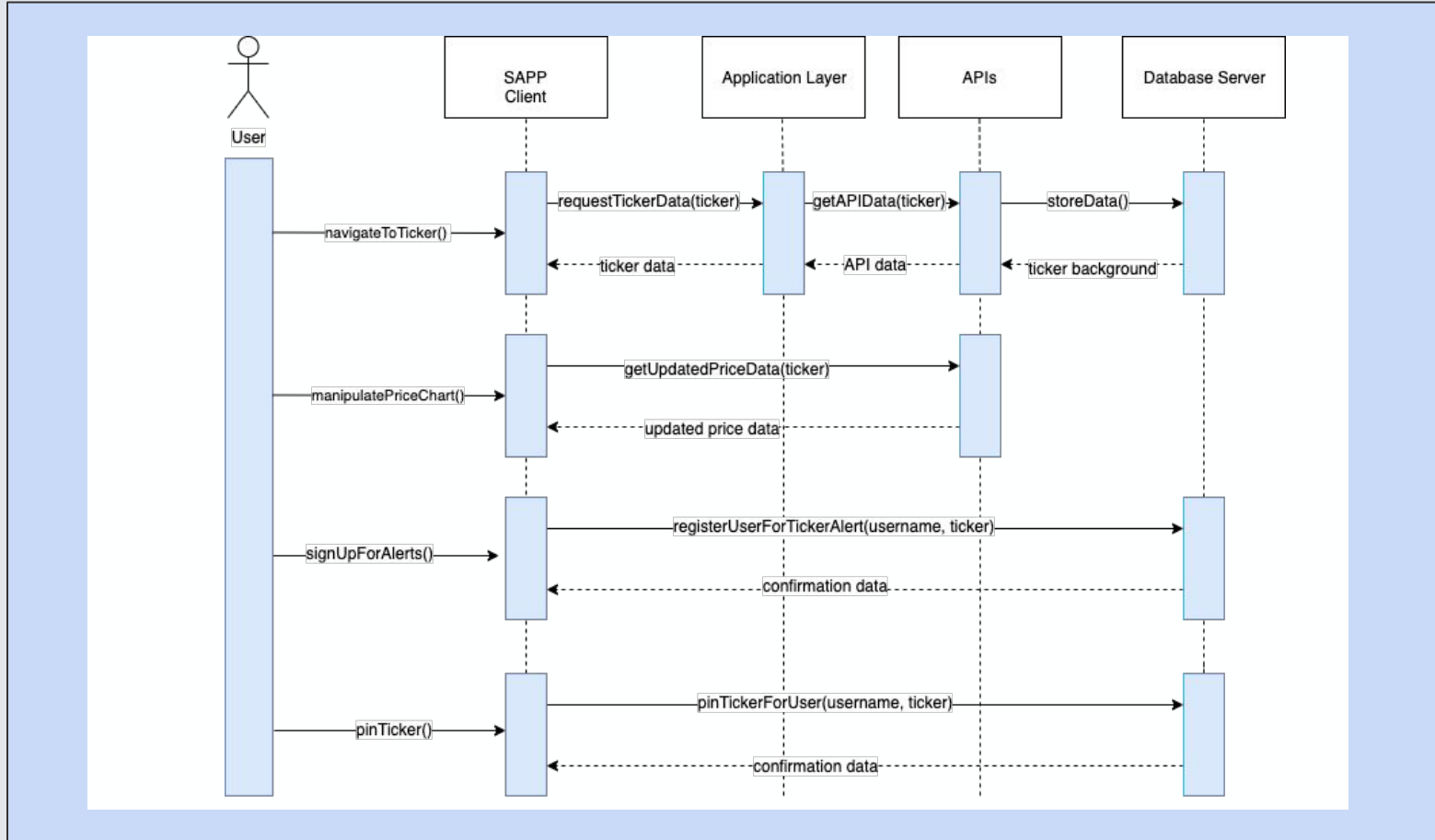 - Maintain flexibility and speed
- Open source

General Sequence Diagram

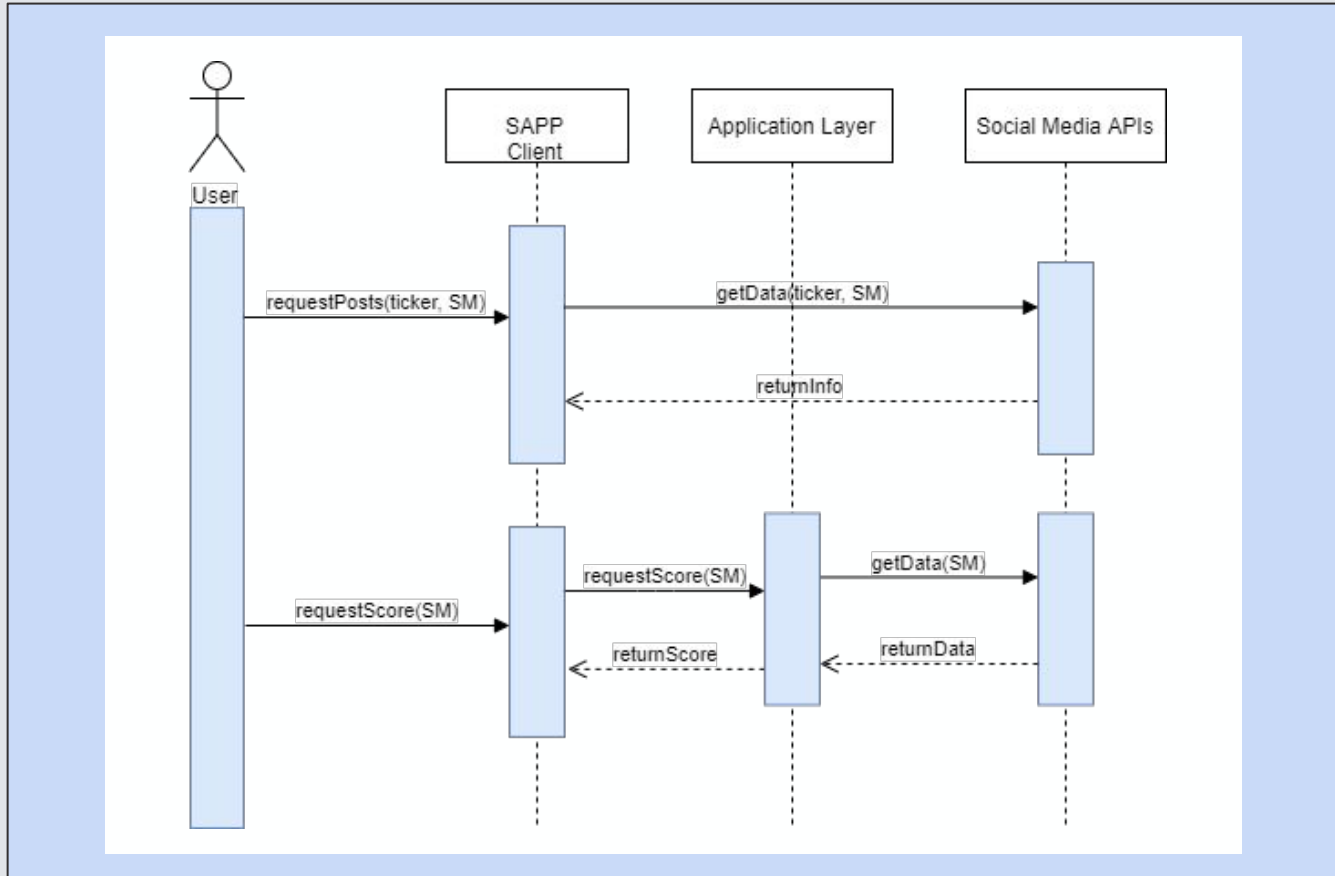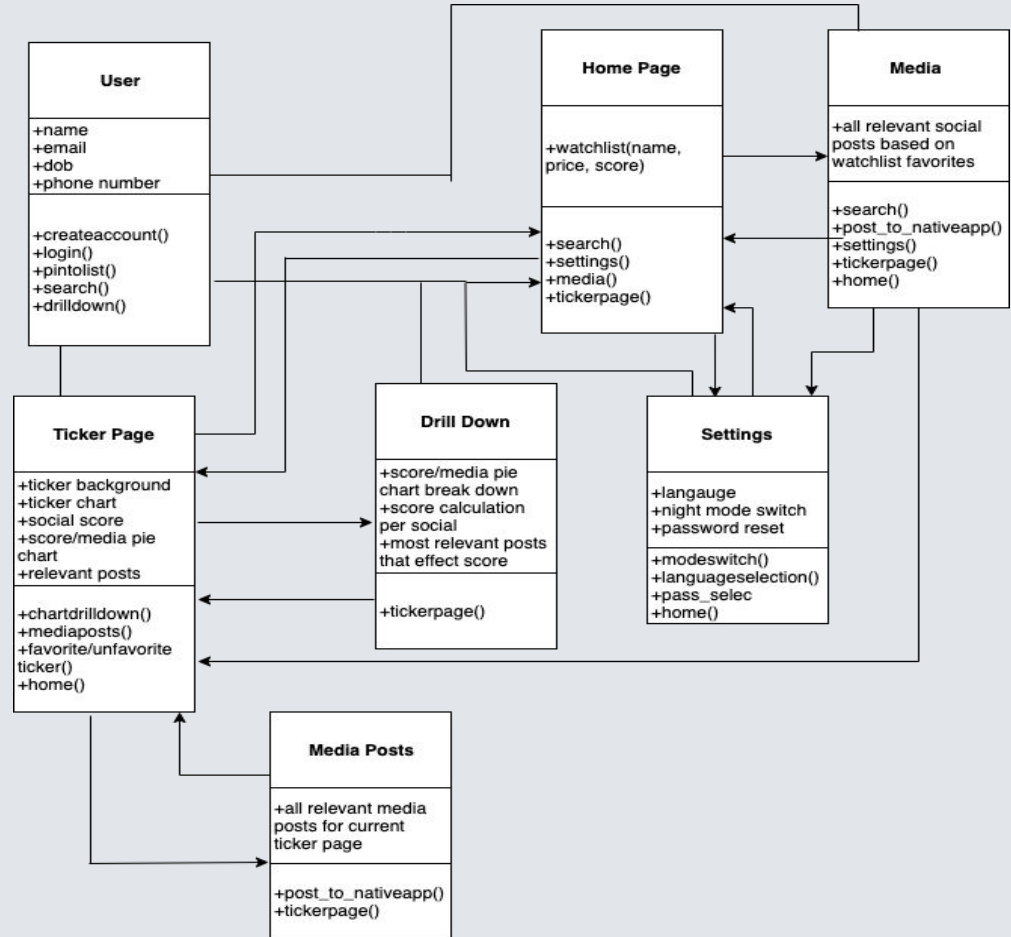# Account Creation Sequence Diagram

Ticker Page Sequence Diagram

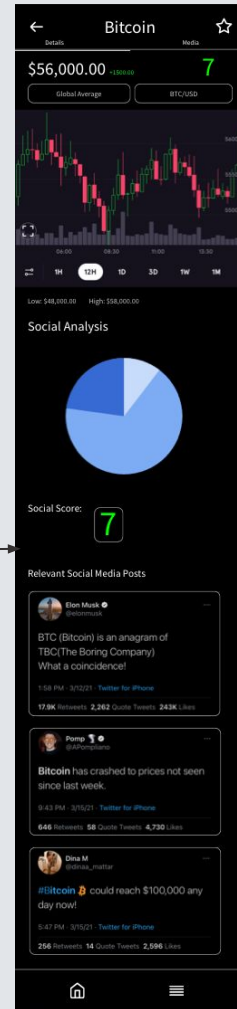# Pie Chart Drill Down Sequence Diagram

Class Diagram

User

+name
+email
+dob
+phone number

+createaccount()
+login()
+pintolist()
+search()
+drilldown()

Home Page

+watchlist(name, price, score)

+search()
+settings()
+media()
+tickerpage()

Media

+all relevant social posts based on watchlist favorites

+search()
+post_to_nativeapp()
+settings()
+tickerpage()
+home()

Ticker Page

+ticker background
+ticker chart
+social score
+score/media pie chart
+relevant posts

+chartdrilldown()
+mediaposts()
+favorite/unfavorite ticker()
+home()

Drill Down

+score/media pie chart break down
+score calculation per social
+most relevant posts that effect score

+tickerpage()

Settings

+langauge
+night mode switch
+password reset

+modeswitch()
+languageselection()
+pass_selec
+home()

Media Posts

+all relevant media posts for current ticker page

+post_to_nativeapp()
+tickerpage()

SAPP Mock-Up

GitHub Link

**Thank you for your attention!
Any questions? :)**