

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

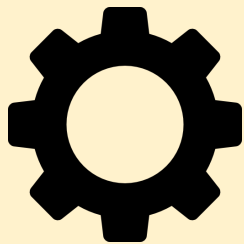
- The SAPP app will leverage the growing strength of the retail investor by analyzing their means of communication to anticipate changes in the stock and crypto market
- SAPP will provide in-depth sentiment analysis of stock tickers and cryptocurrencies across major social media sites: Reddit, Twitter, 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

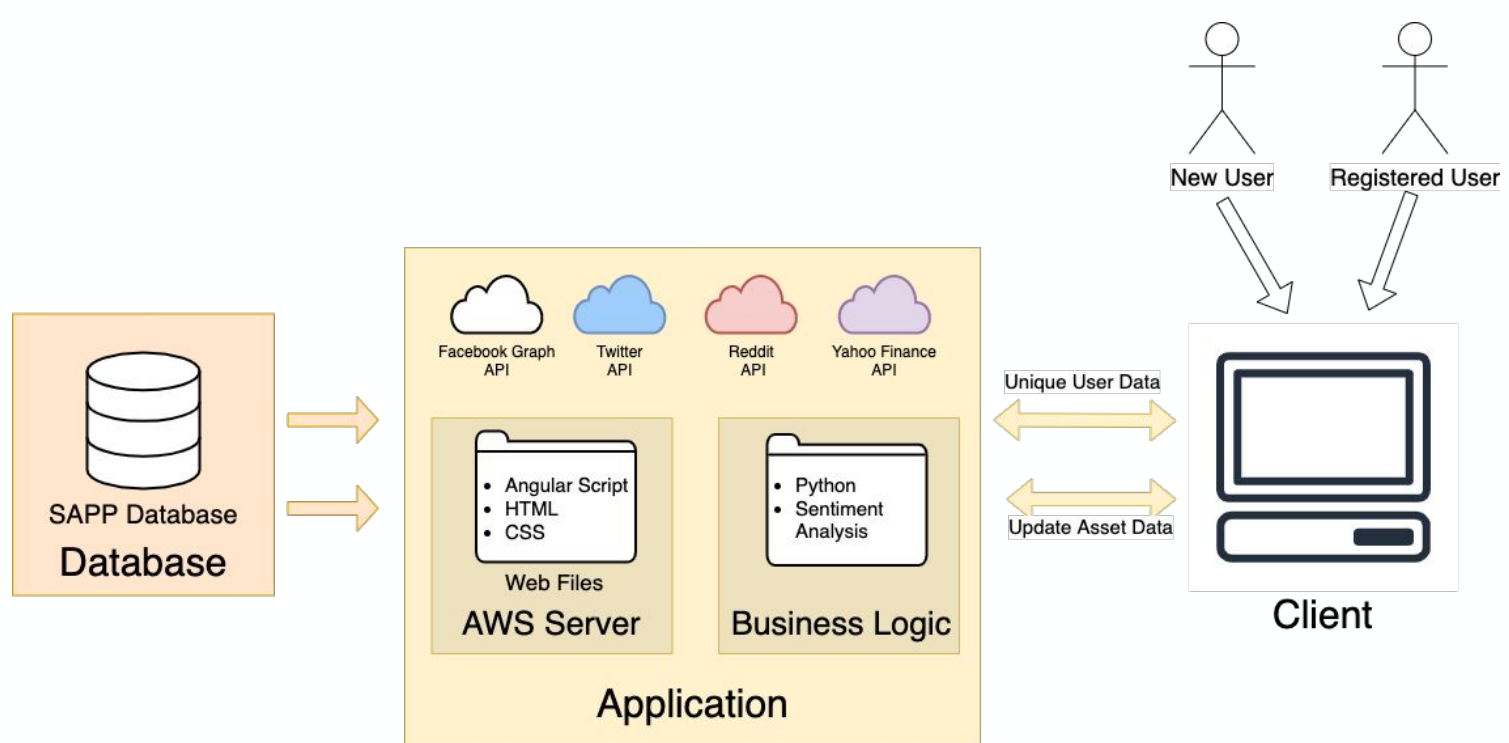
- Business Logic
 - Sentiment Score Analysis algorithm
 - Search parsing
- AWS Server
 - Web Files for UX and UI
- APIs



Database

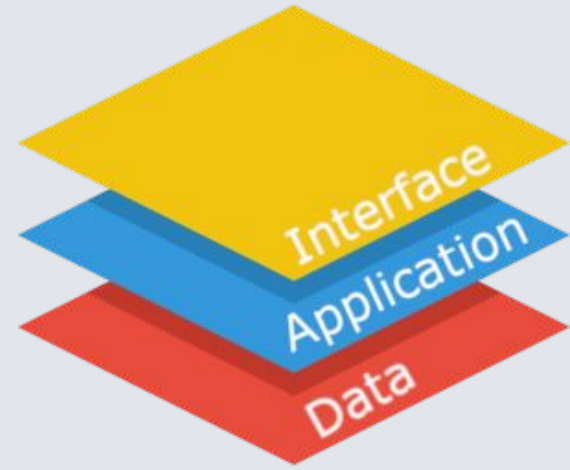
- User Data and Preferences
- Historical Data

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

```
graph TD; Primary([Primary]) --- NewUser[New User]; Primary --- RegisteredUser[Registered User]; Secondary([Secondary]) --- SocialMedia[Social Media APIs]; Secondary --- StockData[Stock Data API]; Secondary --- AmazonWeb[Amazon Web Service];
```

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.

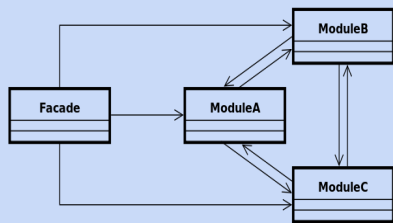
Stock Data API

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



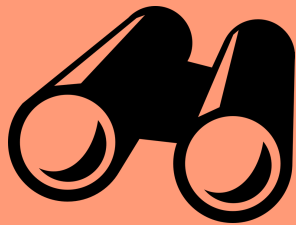
Facade

- 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

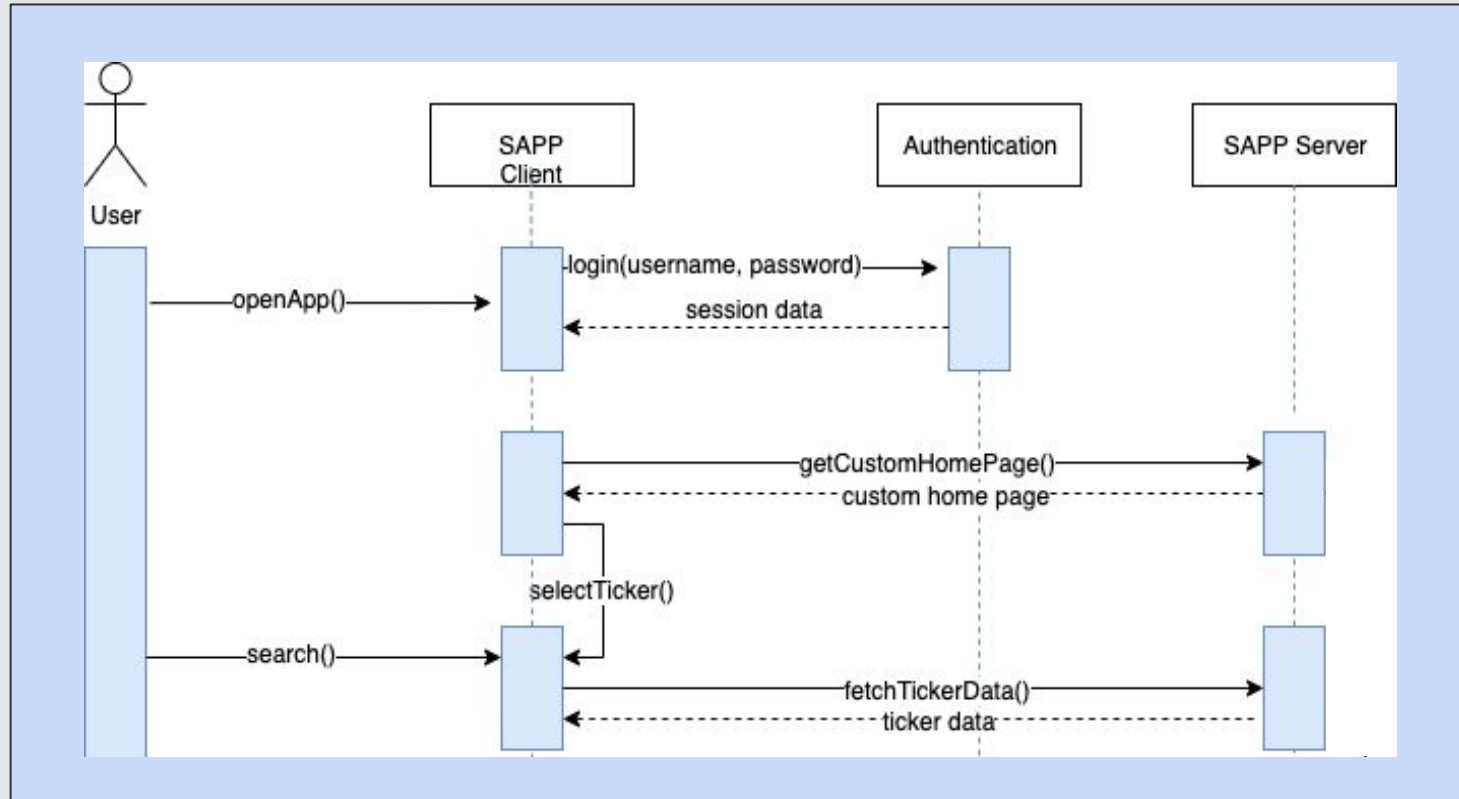


mongoDB

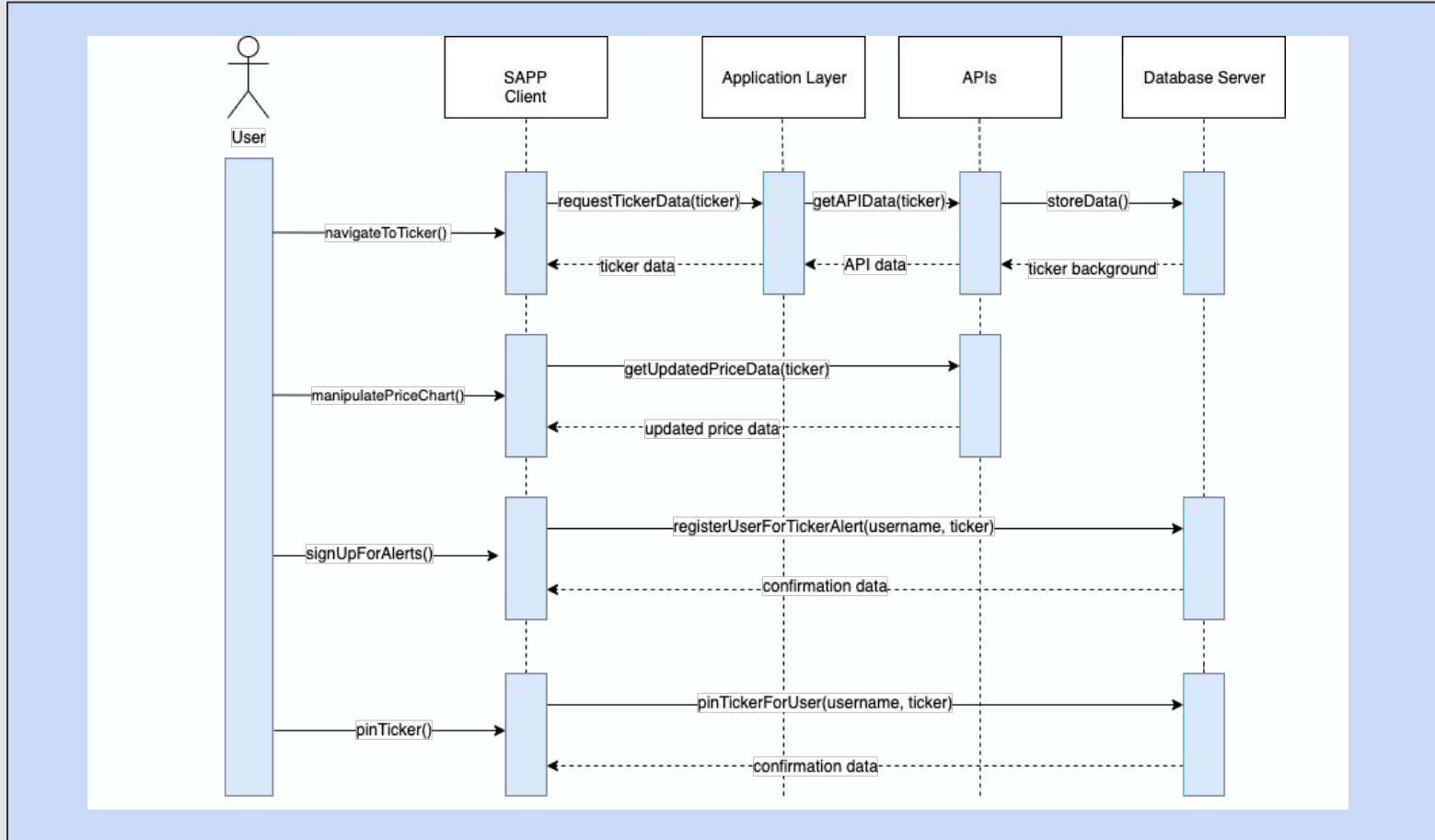
express



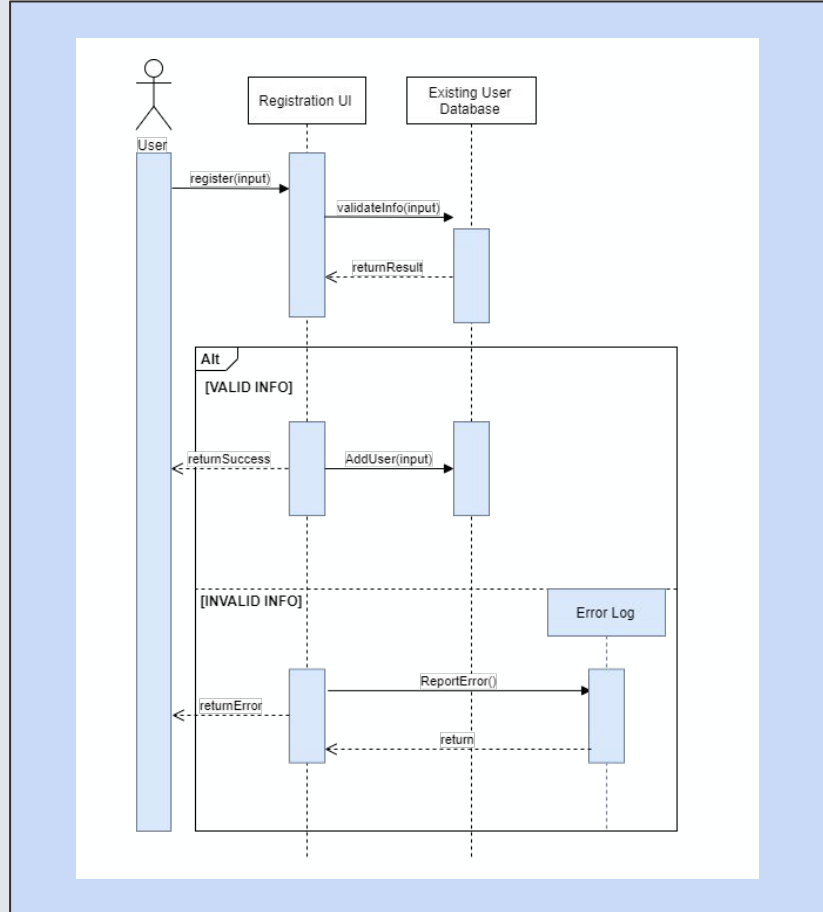
General Sequence Diagram



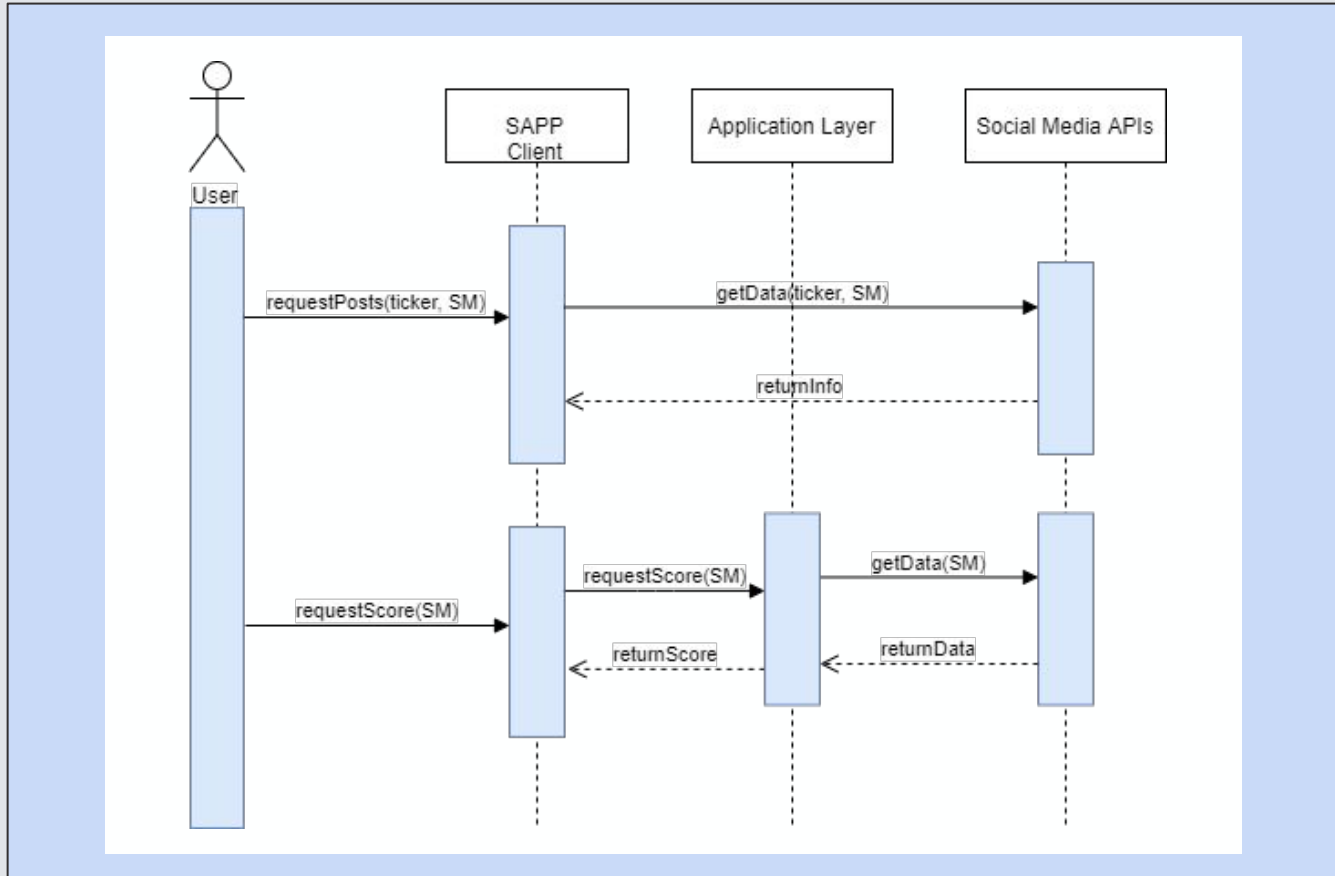
Ticker Page Sequence Diagram



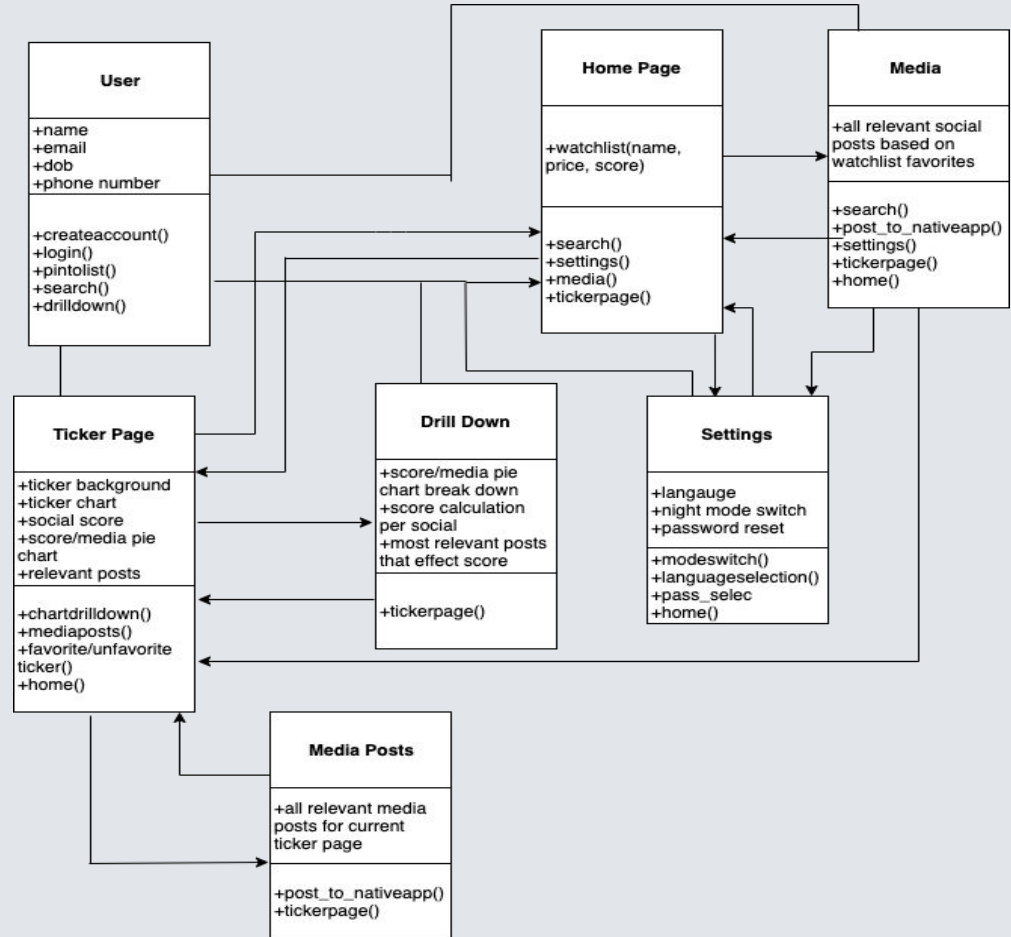
Account Creation Sequence Diagram



Pie Chart Drill Down Sequence Diagram



Class Diagram



SAPP Mock-Up

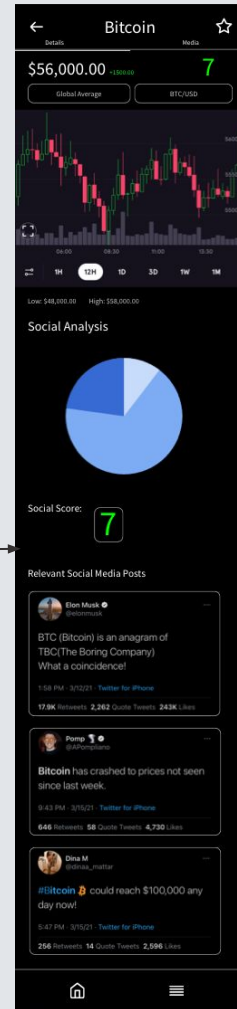
SAPP

Login to your account

Or sign in with

Don't have an account? [Sign up](#)

Watchlist				
	Filter	Price	Score	
	BTC	\$56,000.00 -1047.8	7	
	\$TSLA	\$700.00 -55.8	4	
	LINK	\$32.54 +2.33	8	



Bitcoin

\$56,000.00
+1500.00
Most Relevant Social Media Posts

Elon Musk @elonmusk
BTC (Bitcoin) is an anagram of TBC(The Boring Company) What a coincidence!
1:58 PM · 3/12/21 · Twitter for iPhone
17.9K Retweets 2,262 Quote Tweets 243K Likes

Pomp @APompliano
Bitcoin has crashed to prices not seen since last week.
9:43 PM · 3/15/21 · Twitter for iPhone
646 Retweets 58 Quote Tweets 4,730 Likes

Dina M @dinaa_mattar
#Bitcoin could reach \$100,000 any day now!
5:47 PM · 3/15/21 · Twitter for iPhone
256 Retweets 14 Quote Tweets 2,596 Likes

GitHub Link



<https://github.com/danport899/SAPP/projects/1>