

# **SAPP**

## **Software Requirements Specification (SRS)**

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# Version History

Version	Date	Author(s)	Change Comments
0	02/23/21	Ammar Jivraj Daniel Portuondo Alexandra Syunkova	Functional/Non-functional requirements
0.1	03/09/21	Ammar Jivraj Daniel Portuondo Alexandra Syunkova	System Constraints  Requirements Modeling

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# 1. System Requirements

## 1.1 Functional Requirements

### 1.1.1 Sign Up

Title	Sign Up
Description	User should be able to create an account so that their experience is catered to their interests
Priority	0
Precondition(s)	User must have a valid e-mail address

Basic Flow	<ol style="list-style-type: none"> <li>1. User enters email</li> <li>2. User sets up password</li> <li>3. User re-enters password</li> <li>4. User is given option to set up 2FA with telephone</li> <li>5. User clicks Register button</li> </ol>
Postconditions(s)	User is taken to their new custom home page
Use Case Diagram	<Link or number, if present>

## 1.1.2 Log In

Title	Log In
Description	User should be able to access their account so that their experience is catered to their interests
Priority	0
Precondition(s)	User must have account
Basic Flow	<ol style="list-style-type: none"> <li>1. User enters email</li> <li>2. User enters password</li> <li>3. User passes CAPTCHA test</li> <li>4. User clicks Log In</li> </ol>
Postconditions(s)	User is taken to their custom home page
Use Case Diagram	<Link or number, if present>

## 1.1.3 Search

Title	Search
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Description	Users will be able to search for every ticker/crypto in the SAPP database
Priority	0
Precondition(s)	N/A
Basic Flow	<ol style="list-style-type: none"> <li>1. User clicks/taps on search bar</li> <li>2. User enters name of desired investment</li> <li>3. Suggested options are presented in a drop down below the search bar</li> <li>4. User chooses from suggested options</li> <li>5. User is taken to page</li> </ol>
Postconditions(s)	User is taken to page
Use Case Diagram	<Link or number, if present>

### 1.1.4 Pin to Watchlist

Title	Pin to Watchlist
Description	User will be able to pin their tickers of interests so they are added to their customized homepage
Priority	2
Precondition(s)	User must be signed in
Basic Flow	<ol style="list-style-type: none"> <li>1. User access ticker page</li> <li>2. User selects option to add to watchlist</li> <li>3. Confirmation banner appears</li> </ol>

Postconditions(s)	Ticker information populated home page
Use Case Diagram	<Link or number, if present>

### 1.1.5 Price Chart Manipulation

Title	Price Chart Manipulation
Description	Users will be able to manipulate the price history chart of each ticker by changing the time frame, visuals, and opting for viewing volume.
Priority	2
Precondition(s)	User must be on ticker page
Basic Flow	<ol style="list-style-type: none"> <li>1. User can tap/click on: <ol style="list-style-type: none"> <li>a. Desired time frame on bottom of graph: 1 day, 1 week, 1 month, 3 months, 6 months, 1 year</li> <li>b. Desired visual representation on top of graph: bar chart, line graph, candlesticks</li> <li>c. Button to show volume on bottom of graph</li> </ol> </li> </ol>
Postconditions(s)	Price Chart changes accordingly
Use Case Diagram	<Link or number, if present>

### 1.1.6 Pie Chart Drill Down

Title	Pie Chart Drill Down
Description	Users will be able interact on any social media on score distribution pie chart to drill down and view more in-depth data

Priority	3
Precondition(s)	User must be signed in User must be on ticker page of investment
Basic Flow	<ol style="list-style-type: none"> <li>1. User taps/clicks on specific portion of pie chart</li> <li>2. Animation takes user to in-depth page</li> </ol>
Postconditions(s)	User is redirected to ticker in-depth page User can go back to main site
Use Case Diagram	<Link or number, if present>

### 1.1.7 Social Media Relevant Post Exploration

Title	Social Media Relevant Post Exploration
Description	Within a social media in-depth page, users will be able to scroll through the most influential posts impacting the sentiment score of any particular ticker
Priority	4
Precondition(s)	User has drilled down on score distribution pie chart
Basic Flow	<ol style="list-style-type: none"> <li>1. User can swipe/scroll through most relevant tweets, Reddit Posts, or FaceBook Posts</li> <li>2. Users can tap/click on any post to view a sidebar of additional information</li> <li>3. User taps/clicks again to remove sidebar and continue scrolling</li> </ol>
Postconditions(s)	User can return to ticker general page
Use Case Diagram	<Link or number, if present>



## 1.1.8 Ticker Background

Title	Ticker Background
Description	User will be able to learn about a ticker's history, background, and current popularity below selected ticker's chart
Priority	0
Precondition(s)	User is either on favorites/watch list or searching for currency
Basic Flow	<ol style="list-style-type: none"><li>1. User selects ticker<ol style="list-style-type: none"><li>a. User searched for ticker</li><li>b. User clicked it from homepage watchlist</li></ol></li><li>2. User will be able to access currency background on this page</li></ol>
Postconditions(s)	User is on Currency Details page
Use Case Diagram	<Link or number, if present>

## 1.1.9 Email/Text Alerts

Title	Email/Text Alerts
Description	User will be able to opt for email or texts alerts on particular investment if major changes are predicted
Priority	4
Precondition(s)	User must have an account and be logged in User must have their phone number in their account

Basic Flow	<ol style="list-style-type: none"> <li>1. User navigates to particular ticker</li> <li>2. User can: <ol style="list-style-type: none"> <li>a. Select checkbox opting for email alerts</li> <li>b. Select checkbox opting for text alerts</li> <li>c. Select both checkboxes</li> </ol> </li> </ol>
Postconditions(s)	User will receive periodic alerts on selected ticker
Use Case Diagram	<Link or number, if present>

### 1.1.10 Billing Info

Title	Billing Info
Description	User will be able to input and edit payment details used to make charges to their account
Priority	0
Precondition(s)	User must have an account and be logged in
Basic Flow	<ol style="list-style-type: none"> <li>1. User navigates to profile page</li> <li>2. User select billing info link</li> <li>3. User must re-enter password</li> <li>4. User can update details of their credit card</li> </ol>
Postconditions(s)	User will be given an alert that their payment info has been updated
Use Case Diagram	<Link or number, if present>

### 1.1.11 Currency Conversion

Title	Currency Conversion
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Description	Users will be able to view the price of a given ticker in major international currencies
Priority	5
Precondition(s)	None
Basic Flow	<ol style="list-style-type: none"> <li>1. User clicks/taps on currency option on top right of most site pages</li> <li>2. Drop down menu appears with options listed alphabetically</li> <li>3. User taps on desired currency</li> </ol>
Postconditions(s)	All prices on site are adjusted to reflect selected currency
Use Case Diagram	<Link or number, if present>

## 1.2 Non-Functional Requirements

### 1.2.1 Response Time

Title	Response Time
Description	In most browsers, informational pages will load within 1 second, depending on the individual user's connection strength, with up to 10 thousand users per hour.
Priority	3
Applicable FR(s)	Search

### 1.2.2 Update Time

Title	Update time
Description	The sentiment analysis portion of a currency page and all relevant charts will update automatically every 30 seconds in response to updated analysis results.
Priority	0
Applicable FR(s)	Currency background; Pie chart drill down

### 1.2.3 Reliability

Title	Reliability
Description	The system will be available and accessible online to users at all times with 99% availability. Any crashes will be resolved within 24 hours, and required maintenance will be announced at least a week ahead of time.
Priority	1
Applicable FR(s)	Search; Log in; Sign up

### 1.2.4 Security

Title	Security
Description	All user information and data such as pins and search history will be hashed and stored on the authentication server.
Priority	0
Applicable FR(s)	Log in; Sign up; Pinning favorites

## 1.2.5 Compatibility

Title	Compatibility
Description	The system will be accessible from all major browsers, including Google Chrome, Safari, Mozilla Firefox, Opera, and Internet Explorer. It will also be easily accessible from mobile devices of various companies through a standard mobile browser. On a mobile device, the website will adopt a different layout so as to improve the user's experience.
Priority	2
Applicable FR(s)	All

## 2. System Constraints

### 2.1 Tool Constraints

#### 2.1.1 Twitter API

Title	Twitter API
Description	The software must leverage the Twitter API to pull data from the site for analysis
Priority	0

### 2.1.2 Reddit API

Title	Reddit API
Description	The software must leverage the Reddit API to pull data from the site for analysis
Priority	0

### 2.1.3 Facebook Graph API

Title	Facebook Graph API
Description	The software must leverage theFacebook Graph API to pull data from the site for analysis
Priority	0

### 2.1.4 Zeplin

Title	Zeplin
Description	The software will allow us to create consistent and clean UI along with user flows for both web and app
Priority	0

### 2.1.5 NLTK Library

Title	Natural Language Processing Library
Description	The software will utilize Python's NLTK library for human natural language processing
Priority	0

### 2.1.6 NumPy Library

Title	Scientific and Computational Calculations Library
Description	The software will leverage Python's NumPy library for assistance in machine learning computations
Priority	0

### 2.1.7 Matplotlib Library

Title	Data Visualization
Description	The software will leverage Python's Matplotlib library to generate 2D visualizations of collected and interpreted data
Priority	0

### 2.1.8 Pandas Library

Title	Data Processing
Description	The software will leverage Python's Pandas library for data preprocessing and analysis
Priority	0

## 2.1.9 AWS

Title	Amazon Web Services
Description	The software will use Amazon Web Services to deploy and host the web application
Priority	1

## 2.2 Language Constraints

### 2.2.1 Python

Title	Python Language
Description	The software will be written with in Python backend due to its strong machine learning libraries
Priority	0

### 2.2.2 Angular



Title	Angular Framework
Description	The software will leverage the Angular framework for front-end development
Priority	0

## 2.3 Platform Constraints

### 2.3.1 Mobile

Title	Mobile
Description	App should be functional on both iOS and Android devices
Priority	5

### 2.3.2 Desktop

Title	Desktop
Description	Web app should be functional on computers running any OS
Priority	5

## 2.4 Network Constraints

### 2.4.1 Internet Required

Title	Internet Connectivity Required
Description	The software will require consistent internet connection to be able to continuously pull and update data both on the user and developer end
Priority	0

## 2.5 Transition & Support Constraints

### 2.5.1 End of Life

Title	End of Life
Description	At the end of the grading period for CSC431, the service will stop being maintained, and a new team will need to take over in order for development to continue.
Priority	5

## 2.6 Schedule Constraints

### 2.6.1 Schedule

Title	Schedule
Description	Project must be completed prior to final date of Spring 2021 semester
Priority	3

## 2.7 Privacy Constraints

### 2.7.1 User Security

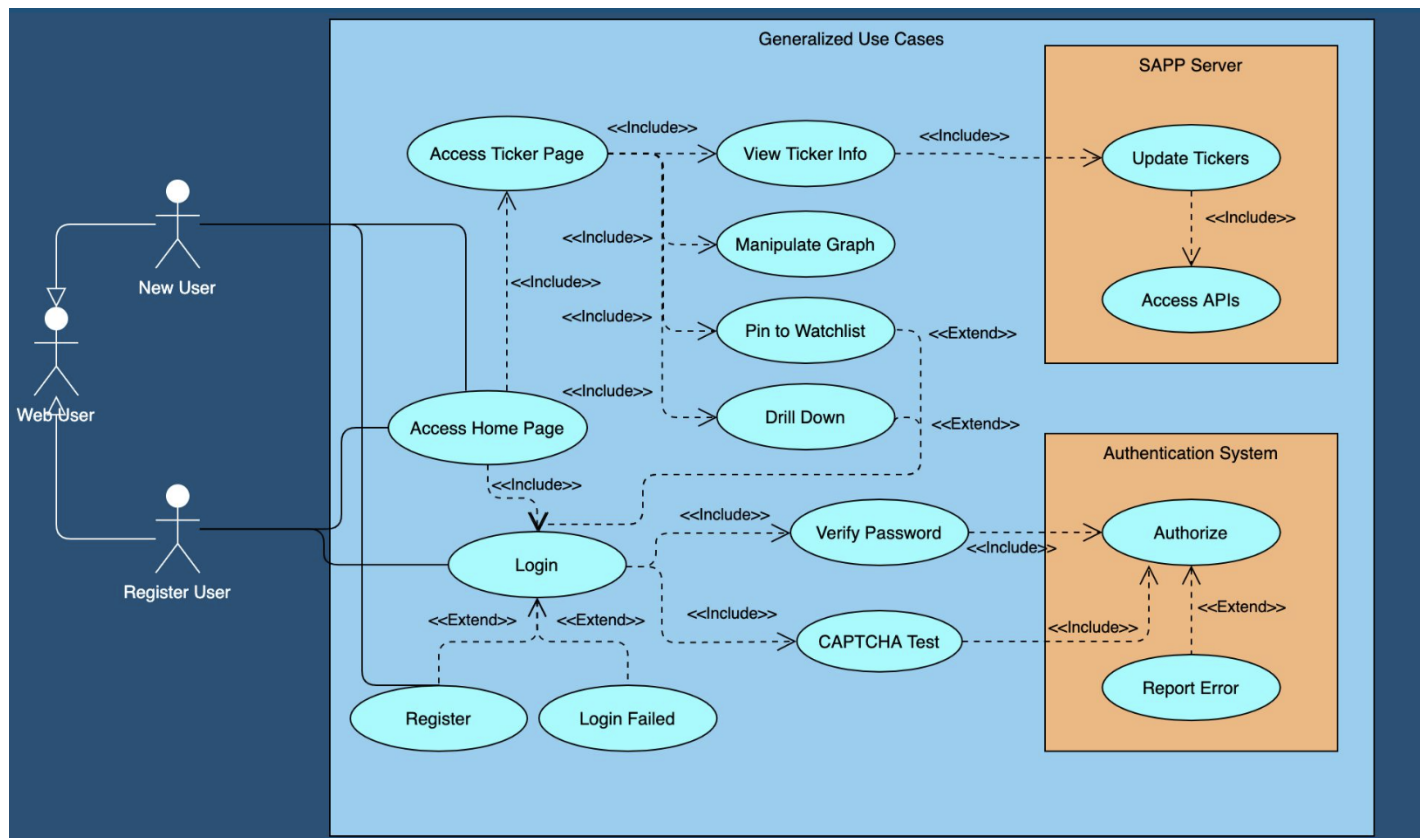
Title	User Security
Description	User credit card and password information will never be shared with third-parties
Priority	0

### 2.7.2 User Activity

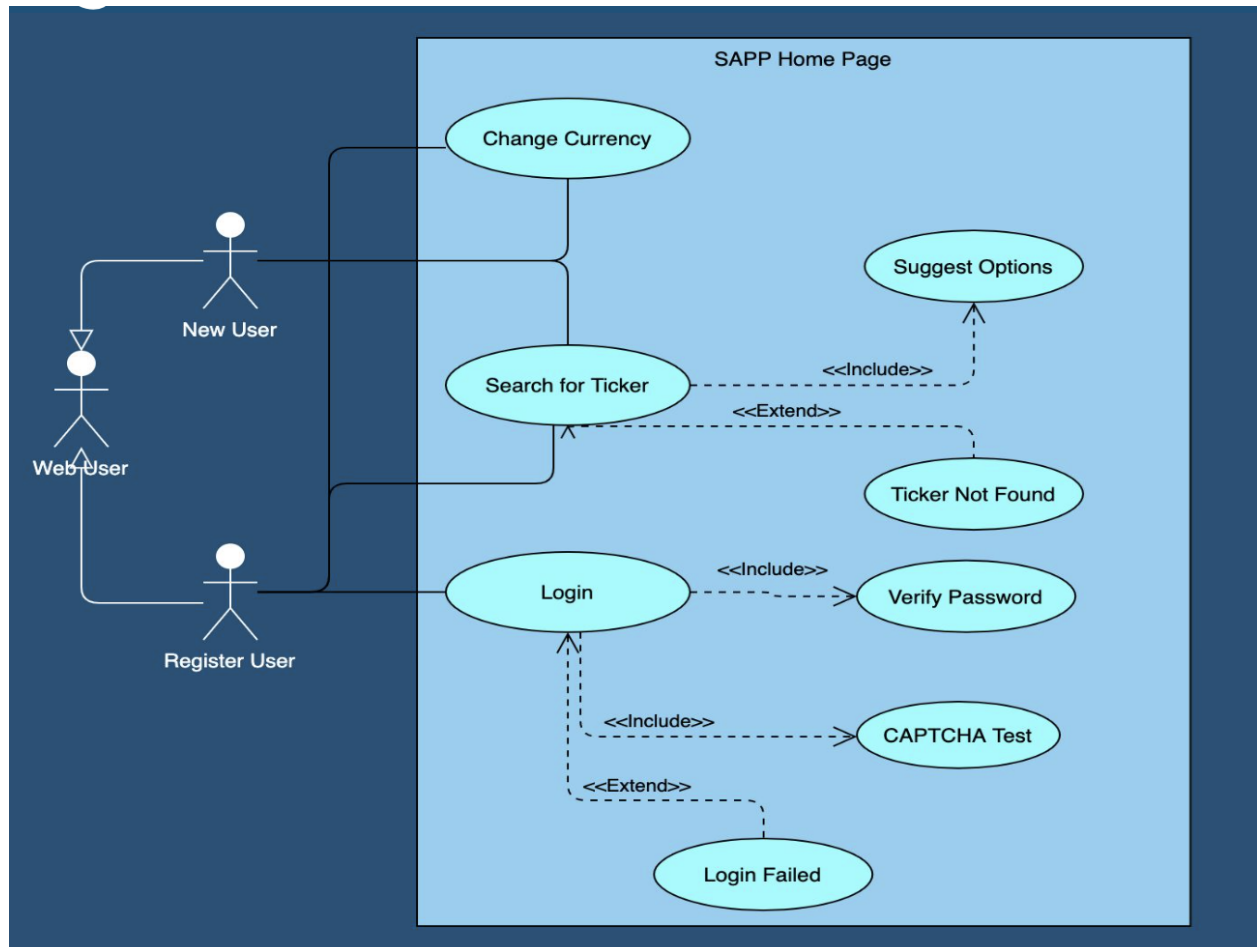
Title	User Activity
Description	User must agree to have their activity on the app (followed tickers, time on app, etc.) tracked before SAPP can collect this information
Priority	2

### 3. Requirements Modeling

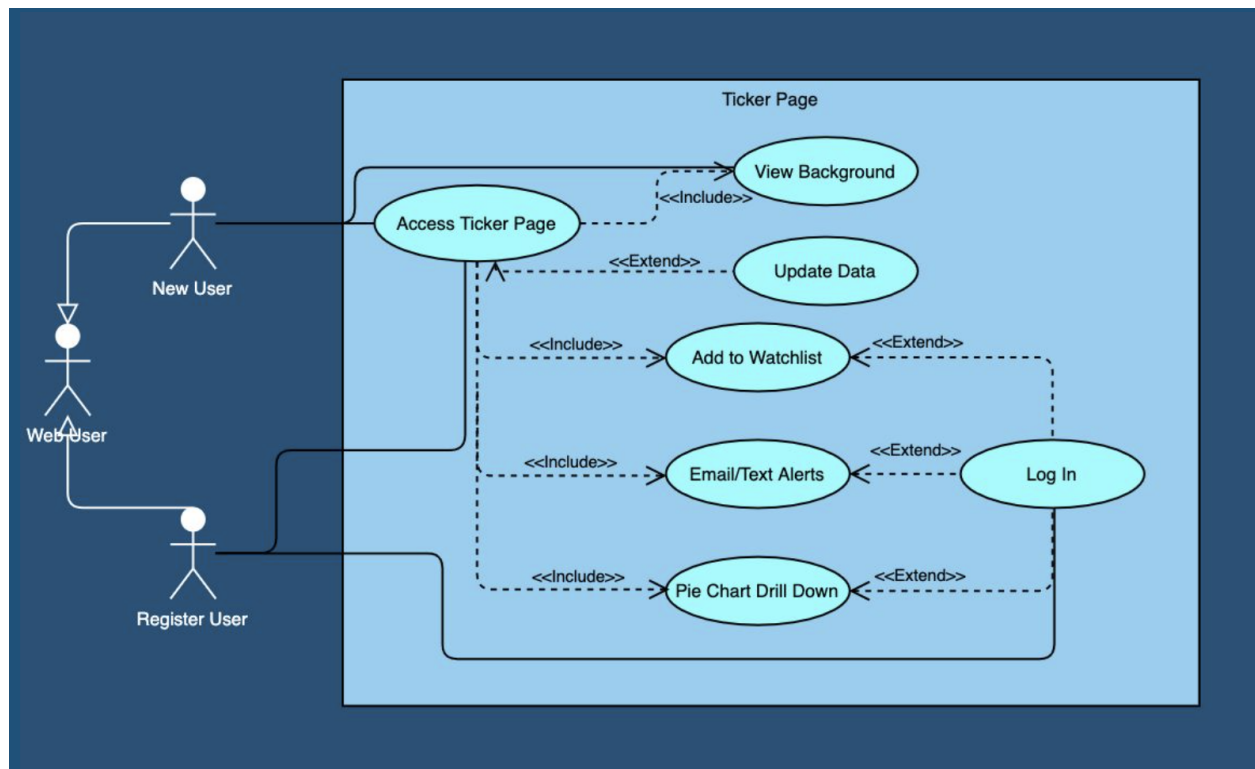
#### 3.1 Generalized Use Cases



## 3.2 Home Page Use Cases



### 3.3 Ticker Page Use Cases



### 3.4 Social Media Explorer Page Use Cases

