Arbitrage Recommendation System(NSE/BSE)

Table of Contents for a SRS Document

1.Introduction:

To create a web application for Arbitrage Recommendation System.

1.1 Purpose of this Document:

This SRS describes the function and performance requirements of the Arbitrage Recommendation System.

1.2 Scope of the Development Project:

1. A UI interface for login page where user can enter the credentials and login to home page.
2. A home page where all the arbitrage opportunities are shown.
3. From the arbitrage opportunities user can save the stocks for later use.
4. All the saved stocks of a particular user can be displayed on different page for a particular website.

2. General Description:

2.1 User Personas and Characteristics:

1) User A has username: abc and password: 123 and the user enters correct credentials on the login page.The user is directed to the home page.
2) User B has username:xyz and password 456 and the user enters incorrect credentials on the login page. The user is prompted to an alert to enter correct credentials.

2.2 Overview and Functional Requirements:

Arbitrage Recommendation System:

a) Users can login into their account with proper credentials. Once the login details are verified the user is redirected to the home page of Arbitrage opportunities.
b) Separate database is created for login credentials of users.
c) The BSE/NSE stock prices of different companies are fetched from the Yahoo Finance API.

d) The Arbitrage opportunity is calculated in the following way:

diff=abs(NSE Price - BSE Price).

e) User can also save stocks i.e arbitrage opportunities for further buy/sell.

f) The user can see all the saved opportunities by navigating to the saved stocks page. For this a separate database is created for storing the saved options for all the users.

3. Specific Requirements:

3.1 Tech Stack

Frontend:- Angular

Backend:- SpringBoot

Database: MySQL

Features of Angular:

1. High Quality of the Application.
2. Improved Speed and Performance.
3. Faster Development Process.
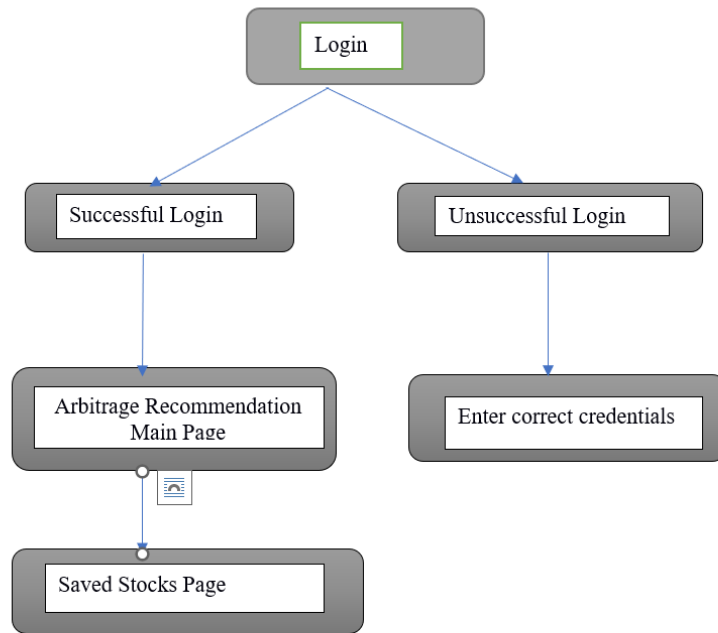4. Readable and Testable Code.

Features of SpringBoot:

1. It reduces lot development time and increases productivity
2. It avoids writing lots of boilerplate code, Annotations and XML configuration.
3. It provides embedded HTTP servers like Tomcat , Jetty,etc. To develop and test our web applications very easily.
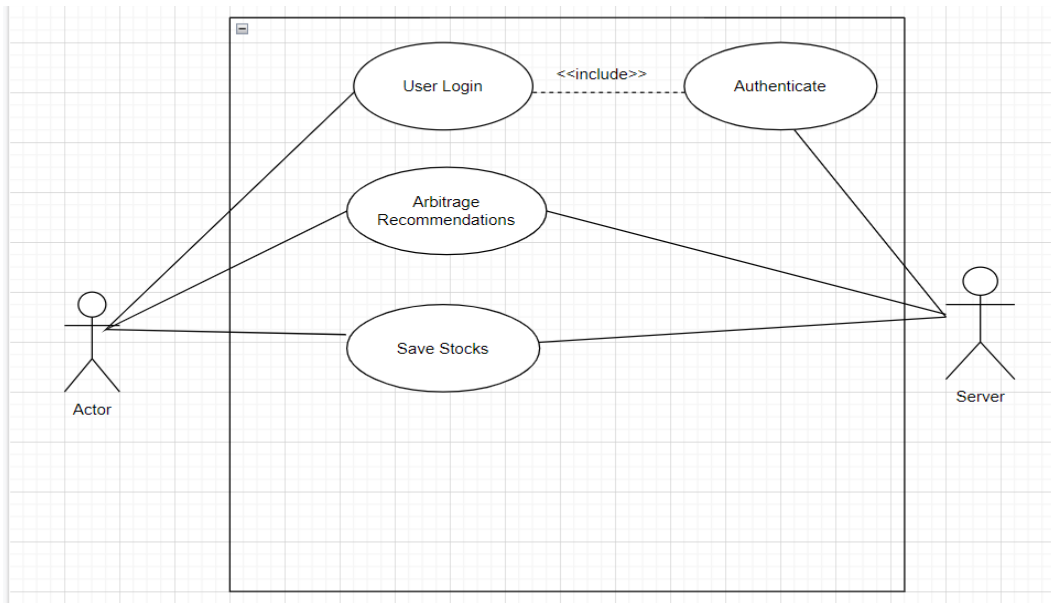
Yahoo Finance API:

1. The Yahoo Finance API is a range of libraries/APIs/methods to obtain historical and real time data for a variety of financial markets and products, as shown on Yahoo Finance.

2. Some of the offerings include market data on Cryptocurrencies, regular currencies, stocks and bonds, fundamental and options data, and market analysis and news.

3. Why should I use the Yahoo Finance API?
   - Free
   - Impressive range of data
   - Quick and easy to set yourself up
   - Simple

4. MySQL Features:
   - Open Source
   - Quick and Reliable
   - Scalable
   - Data Types
   - Secure
   - Support for large databases
   - Client and Utility programs

3.2 Workflow

3.3 Use Case Diagram

4. Non-functional requirements

4.1 Performance requirements:

Simultaneous access to the system is expected.All the users can simultaneously be able to access the website.

4.2 Security requirements:

Only users can access their profiles.The list of saved stocks will only be visible to them. The third party websites or brokers cannot view the user's profile.

4.3 Software Quality Attributes:

Adaptability: The Arbitrage system will be designed to be adaptable to a subsequent WEB Interface

Availability: Downtime of the website should be less than 10%.

Portability: System should be ported to different database vendors in future versions

Robustness : Backup data is expected to be up-to-date till the previous working day.

Testability : System should have a debug mode in which self diagnostic messages should be printed on the screen.

Usability : The interface of the website should be user friendly.

5.Benefits

1. User can see various arbitrage opportunities.
2. Recommendation of the arbitrage opportunities is provided.
3. The facility for save the stocks is provided.
4. User friendly interface.

6. Future Scope:

1. Adding a page to display all the stocks for different companies together.
2. Enhancing compatibility for mobiles,desktop,tab,browsers.
3. Adding a delete stock functionality for user.
4. Graphical representation in historical analysis.