**NSE/ BSE ARBITRAGE RECOMMENDATION SYSTEM**

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**Problem Statement**: To construct a trade recommendation system based on arbitrage opportunity based on NSE and BSE (from Nifty Stocks)

**Scope:** The scope of this project is -

* We have considered 500 Nifty stocks to generate a set of recommendations where arbitrage opportunities exist.
* The statistics are displayed for each stock based on data for the past three months.
* The net profit is calculated on the basis of the number of shares the user wants to trade and considering brokerage charges and taxes for both the markets.
* The system allows the user to save a recommendation which can be accessed any time later.
* We provide a personalized watchlist where the user can add his favourite stocks and can access the live, dynamic data any time.

**Functionalities**: The functionalities includes –

* **Login** : The system allows the user to login with username and password.
* **Recommendation** : The home page displays a set of recommendations on the basis of the difference between NSE and BSE price in descending order of profit percentage.
* **Search Recommendation**: The user can search for a company to check whether arbitrage opportunities exist or not.
* **Display Statistics**: The launch button alongside each suggestion will display the key statistics with a chart showing the closing price for the past three months.
* **Save Recommendation** : The save button allows a user to save any suggested arbitrage trade with quantity and current market price. While saving, the user needs to enter the quantity and the calculated net profit is displayed. To calculate the net profit, we have considered the brokerage prices, Securities Transaction Tax (STT), NSE Transaction charges, BSE Transaction charges and GST. (The above mentioned figures have been taken with respect to Zerodha.)
* **Display saved recommendations**: The saved recommendations are displayed when the user navigates to the “Saved” tab.
* **Delete saved recommendations**: The user can delete a saved recommendation.
* **Watchlist** : The user can search for a stock of the interested company and add it to the watchlist and can access the live, dynamic data any time.
* **Remove from watchlist:** The user can remove a stock from watchlist in which he/she is no more interested.
* **Logout:** The user can choose to logout anytime and the application redirects the user to the login page.

**Assumptions:** The assumptions are –

* We have assumed that the user closes his/her position by the end of the day in both the markets.
* We have considered –
* Brokerage charges : 0.01% of NSE/BSE price
* NSE transaction charges : 0.0325% of NSE price
* BSE transaction charges : 0.03% of BSE price
* STT : 0.025% of selling exchange price
* GST : 18% of (transaction +Brokerage)

These figures are taken as per Zerodha Charges.

**Technology Stack:** The technologies used are –

* Angular 7 (Front-end)
* Spring framework (Back-end)
* MongoDB (database)