**System Requirements**

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|  | Priority | Requirement |
| REQ1 | 5 | The system should gather a set of company’s price history into database. |
| REQ2 | 5 | The system should operate the predictions on the future trend and price of the price with the prediction algorithm based on history data and store them in the database. |
| REQ3 | 5 | The system should allow users to search for a company stock and display history, real time data/graph and prediction suggestion for users. |
| REQ4 | 4 | The system should allow users to choose stocks to track |
| REQ5 | 4 | The system should allow administrator to add/remove stocks in the stock database |
| REQ6 | 3 | The system should allow users to set up accounts(email,password) |
| REQ7 | 2 | The system should provide an index page showing a list of all the stocks that it can provide along with the latest price. |
| REQ 8 | 1 | The system should provide relative information Identifierabout the stock for users. |

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| REQ1a |  | The system should have two databases. One is used to save the history stock price for past 1 year. The other is used to save the real time data of every minutes. |
| REQ1b |  | The database should be able to save at least 10 stocks. |
| REQ1c |  | The database should support extension to save informations of price predictions. |
| REQ1d |  | The database should support extensions to save user account |
| REQ1e |  | The database should support allow administer two add and delete stocks in database. |
| REQ2a |  | The prediction should be able to give both long term and short term predictions that can help making stock investment decisions. The long term prediction give prediction of tomorrow based on the data from past 14 days. The short term prediction gives the prediction of next minute based on the short term history. |
| REQ2b |  | The short term prediction is based on bayesian which gives the price of next minutes |
| REQ2c |  | The long term prediction is based on RSI, SVM and EMA. RSI and SVM can provide a price prediction. The EMA give a suggestion between sell, hold and buy. |
| REQ3a |  | The search function should give search result based on the keywords input by the users. The result should be listed according to the relevance with the key words. |

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| REQ3b | The stock info page should be displayed into two parts. The relevant information should be displayed correctly. The stock name, current price, update time and the graph of the price are shown on the left part of the graph. The stock graph gives the history price line chart of past month and the real time data of the past day. The other part of the graph gives the prediction information along with some statistical history information. The statistical information includes the maximum price in the last 10 days, the minimum price over the last year and the average price in the past year. |
| REQ4a | The system keep the stock list each user choose to track. User can check the price whenever they need it. |
| REQ6a | The system should be able to display the account info about uuid given to the user, the username, the email for registration and the regdate. |
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Use Cases

UC-1: login- Allow users to access their account and view information about the stocks they tracked.

UC-2: Search- Users can search for a stock by keywords and view the relative information about the stock

UC-3: Track- Users can add and delete stocks to their track list.

UC-4: Register- Visitors can register to be a user.

UC-5: Check stock info-visitors and users can check the stock info covering price,graph, time and prediction.

UC-6: Suggest- all a user to request for the prediction info about a stock.

UC-7: Add/Delete Stock- administers can change the list of stocks that can be stored in the database.

Fully dressed description

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| Use case -login |
| Initiating Actors: Users  Actor’s Goal: To login in the account and browsers the tracked stocks in the database.  Participating Actors: Database  Preconditions: The user has already registered an account.(UC-4)  Success End Conditions: User login the account and able to browse the information he/she needs.  Failure End Conditions: Login failed because of wrong passwords or have not registered.  Flow of Events for Main Success Scenario:   1. User click login and web for user to login shows up; 2. User type in the email address and password and click login; 3. User is notified a login success and redirected to the index page |