

FINAL PROJECT PRESENTATION

GROUP 9

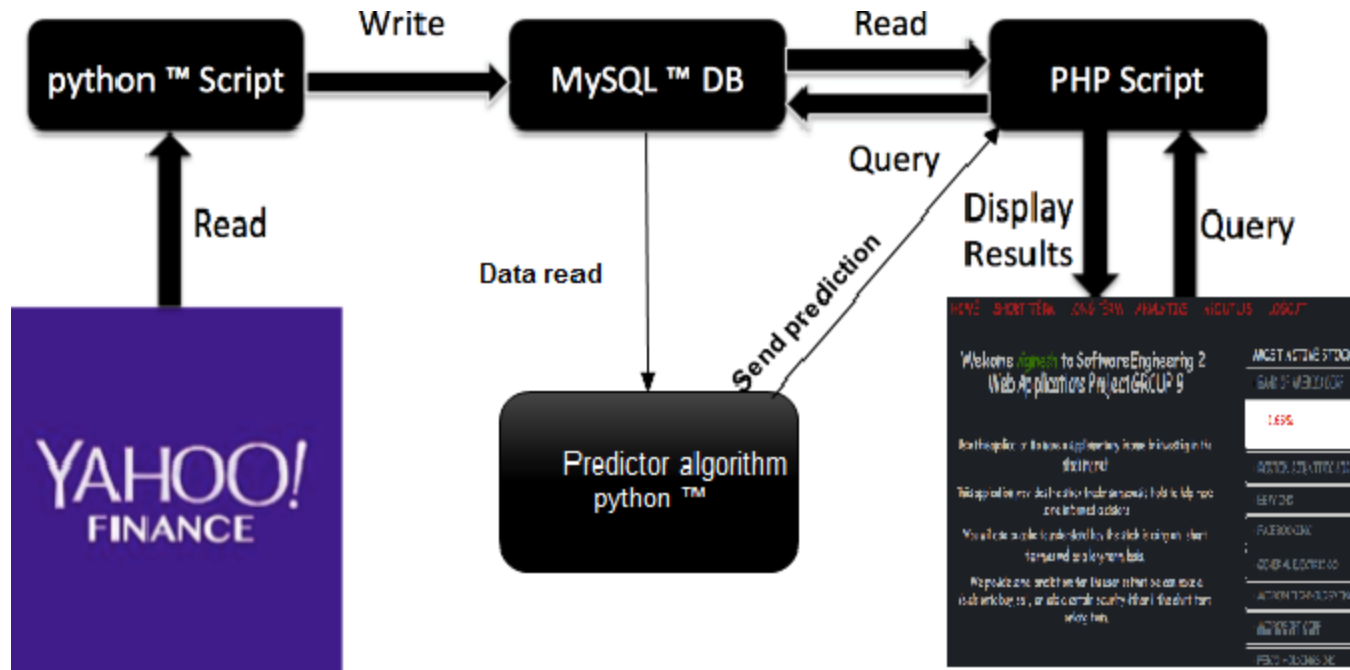
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BACKGROUND

- Stock prediction
 - Short “term” using Bayesian and RSI , MACD in SVR
 - “Long” term prediction using pattern recognition in SVM
- Assist naïve traders in giving some confidence of trading a security.
- Supervised machine learning techniques (regression analysis and classification).
- An interactive front end with easy to use interface.
- A simple but effective voting mechanism to assist the users

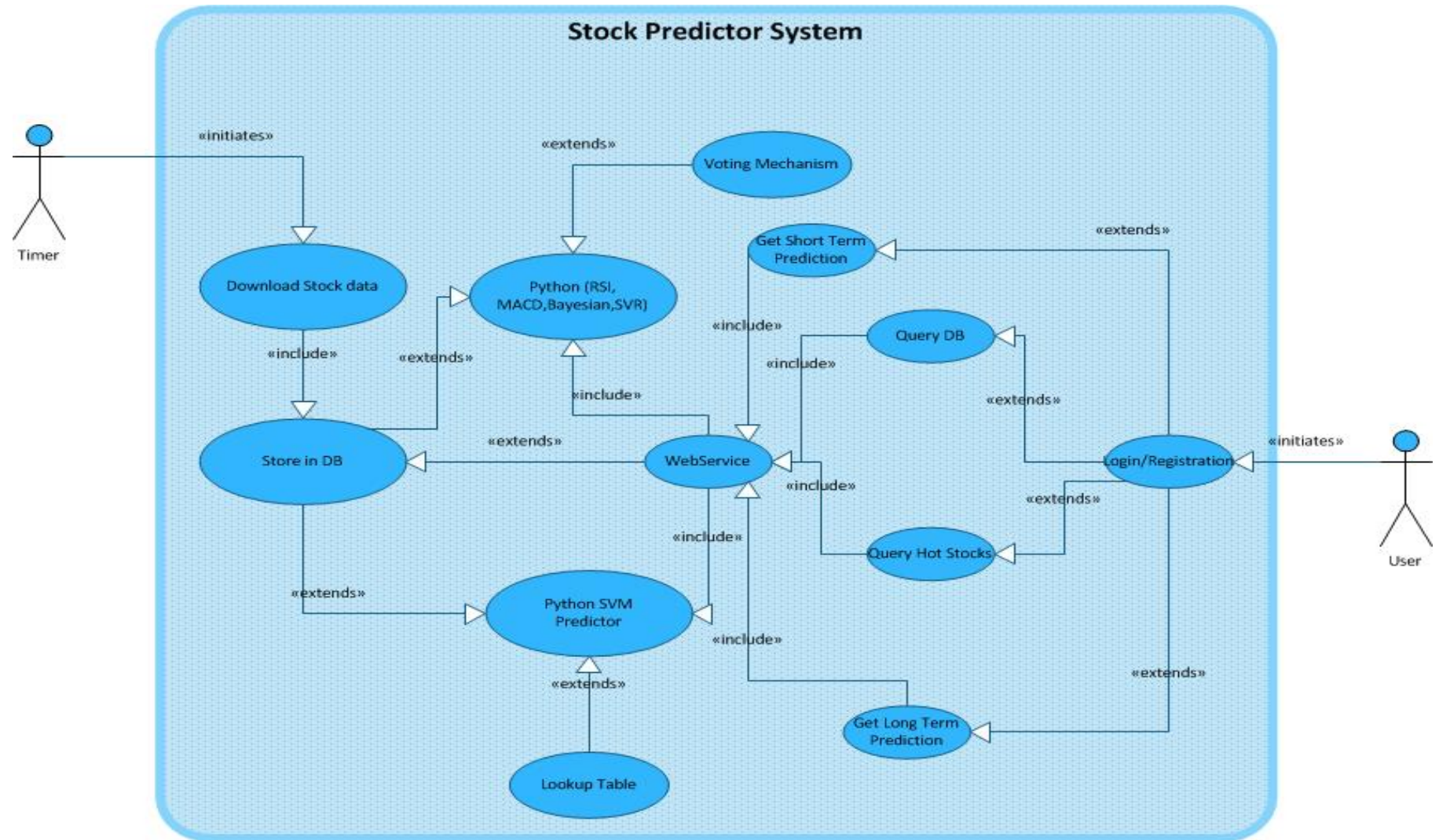


System Design

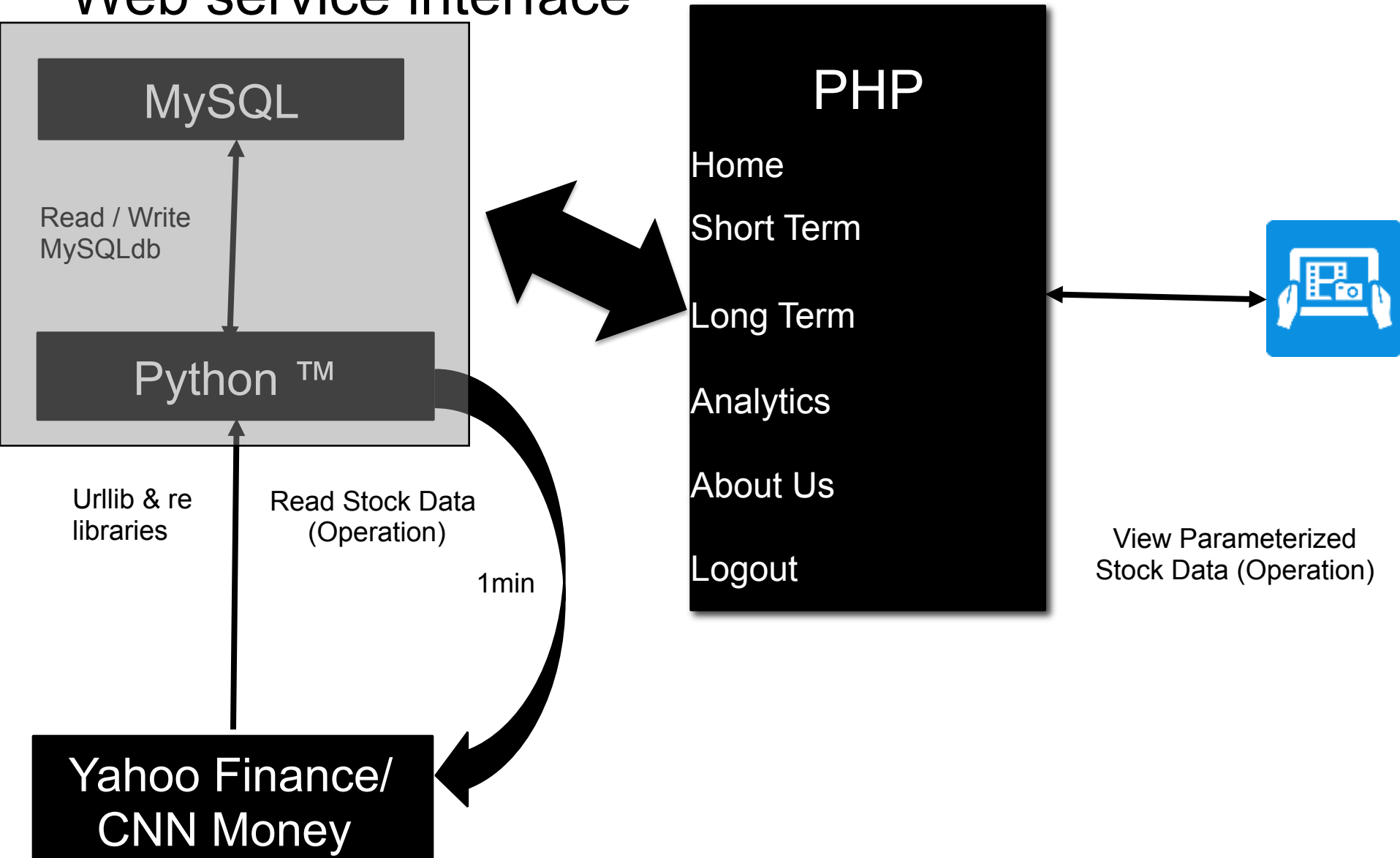


User Interface

UML Diagram



Web service interface



Prediction Strategies

- Short term
 - SVR analysis on stock and features like RSI & MACD; Bayesian also.
 - Use linear interpolation to predict next value for stock, RSI, and MACD.
 - Voting mechanism to predict Sell/Buy/Hold (majority wins)
 - Raw data used: Stock Price, RSI*, and MACD*
 - Metrics are highly indicative of how market has behaved recently.
- Long term
 - Strategy is to predict general trends in data than values.
 - Detect “Triangles”, “Rounding Bottom”
 - Use SVM prediction to detect the patterns.
 - Voting mechanism to predict Sell/Buy/Hold
 - Raw data used: Stock price
 - Metrics are highly indicative of local minima/maxima and good positions to buy & sell.

Stock Trends

- Trends

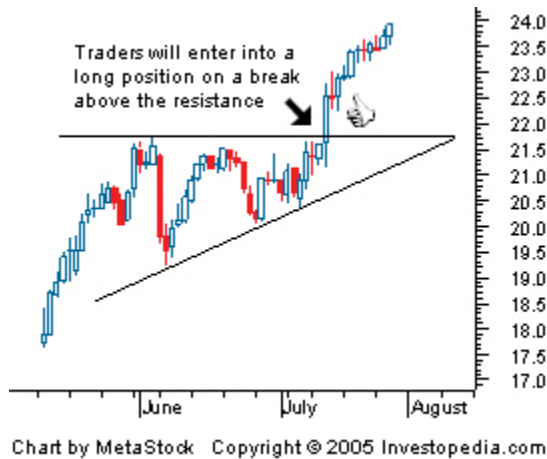
- $RSI = 100 - 100 / (1 + RS^*)$

*Where $RS = \text{Average of } x \text{ days' up closes} / \text{Average of } x \text{ days' down closes}$

- MACD

- MACD stands for Moving Average Convergence Divergence. It makes use of moving averages of different time frames to indicate momentum changes and swings in the mood of the crowd, to give buying and selling signals that catches the big moves.
 - 26 day EMA – 13 day EMA; signal line is 9 day EMA

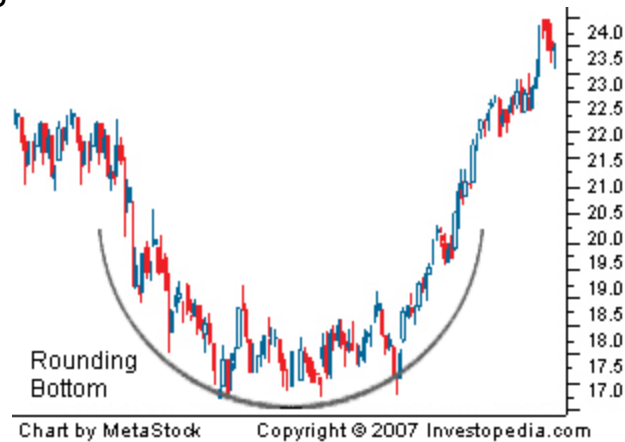
Stock Patterns



Ascending Triangle



Descending Triangle



Rounding Bottom

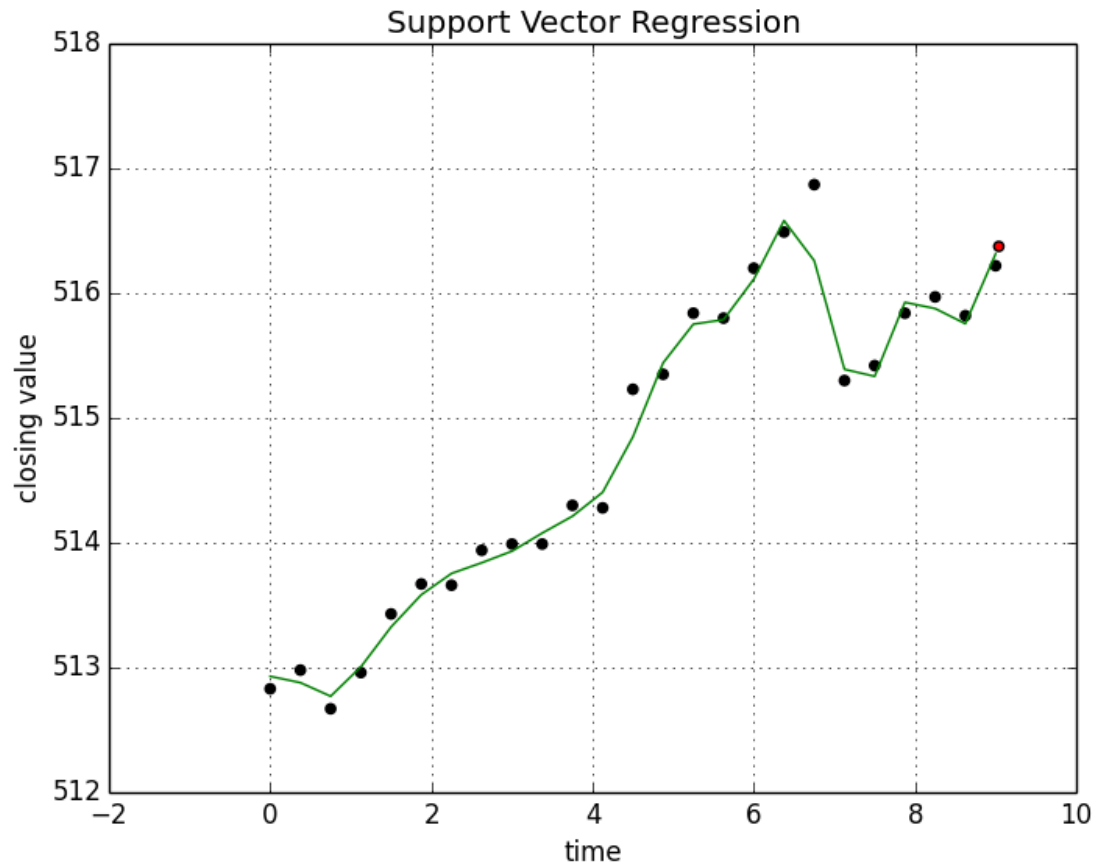
FEATURES

- Short term and Long term Prediction.
- Stock Visualizer.
- Secure Login.
- Maintaining User History.
- Hot Stocks.
- Stock Analyzer.



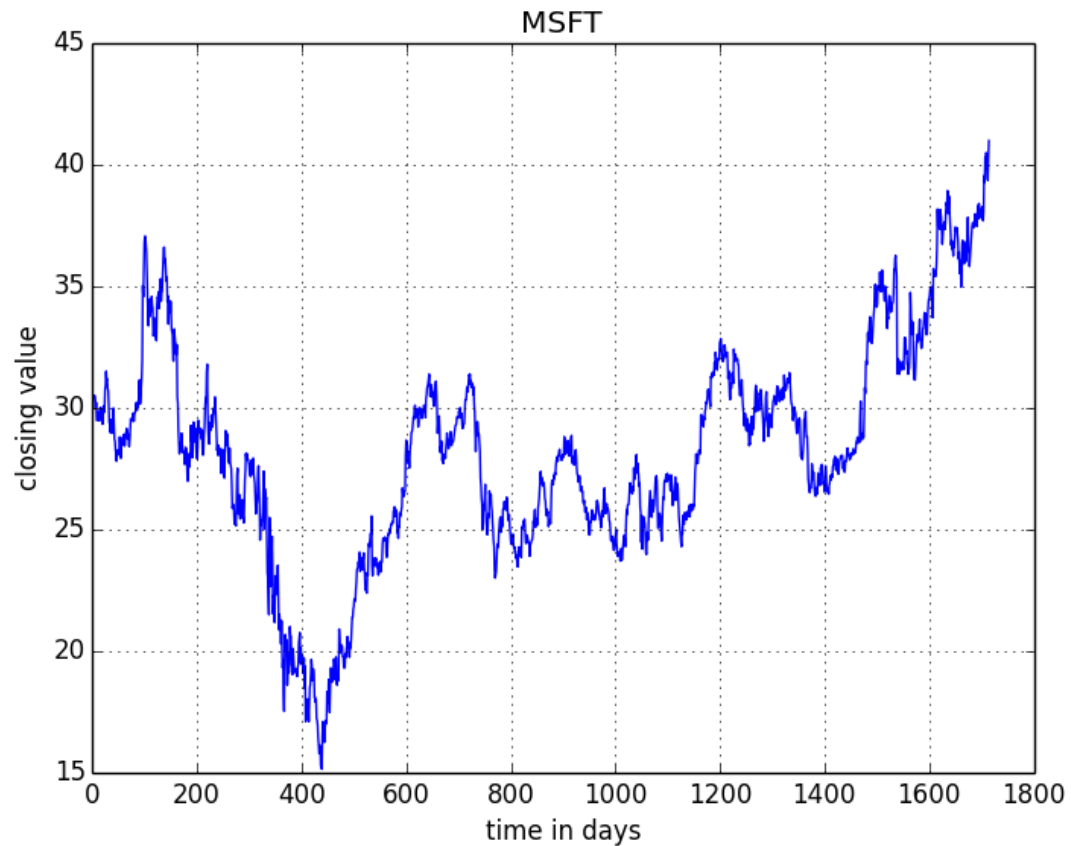
Short term Prediction

Short Term Prediction:
Machine learning & Bayesian estimation, RSI, MACD,

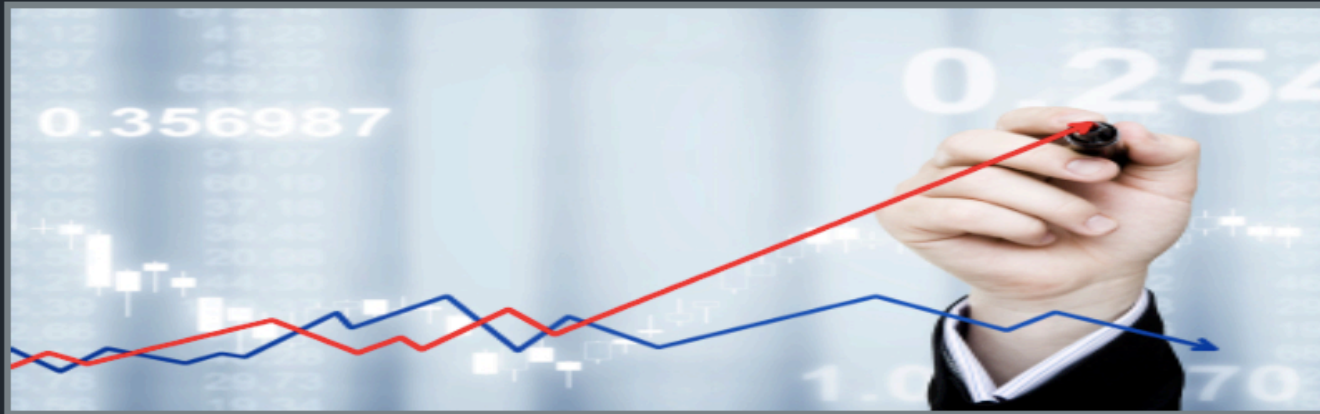


Long term Prediction

Support vector machine techniques (SVM)



Stock Visualizer



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LONG TERM PREDICTOR

You can obtain a prediction on the long term trend of any stock here:

Our system uses a quadrature prediction mechanism to serve your needs with greater accuracy.

Please enter the name of the stock available in your profile.

Stock Symbol:

Submit

STOCK PLOTTER

Start date:

Final date:

Stock symbol:

Submit

May 2014						
Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Secure Login

Stock Market Login


Input username

Input Password

Sign in

Not Registered Yet??? [Sign Up Here](#)

Maintaining User History



0.356987 0.254 1.0 70

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SHORT-TERM PREDICTOR

You can obtain a prediction on the immediate trend of any stock here:

Our system uses a quadrature prediction mechanism to serve your needs with greater accuracy.

Please enter the name of the stock* available in your profile.

Stock added in the last hour can cause erroneous predictions.

Stock Symbol:

NFLX

Submit

USER HISTORY

AAPL
AMZN
MSFT

Hot Stocks



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Welcome **vignesh** to Software Engineering 2:
Web Applications Project GROUP 9

Use this application to make a supplementary income by investing in the stock market.

This application provides the stock trader some basic tools to help make some informed decisions.

You will also be able to understand how the stock is doing on a short term as well as a long-term basis.

We provide some predictions for the user so that one can make a decision to buy, sell, or hold a certain security either in the short term or long term.

MOST ACTIVE STOCKS

- BANK OF AMERICA CORP
-0.66%
- BOSTON SCIENTIFIC CORP
- EBAY INC
- FACEBOOK INC
- GENERAL ELECTRIC CO
- MICRON TECHNOLOGY INC
- MICROSOFT CORP
- PEPCO HOLDINGS INC
- PFIZER INC
- SLM CORP

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Stock Analyzer



Web Sources

- Data pulled from Yahoo Finance
- PHP front end
 - User based input to access application.
 - Pulls data directly from the SQL database to perform the prediction
- Input – Stock symbol, time duration (short/long)
- Output – Predicted stock value (short) & Prediction for Buy/Sell/Hold.



CONTRIBUTION

- Each team member will be contributing equally to the project.

