Stock Market Prediction and Analysis Using Naïve Bayes

Mahajan Shubhrata D.
B.E. Computer
BVCOEL
Pune,India
Shubhrata.mahajan20@gmail.com

Deshmukh Kaveri V.
B.E.Computer
BVCOEL
Pune,India
kaverid07@gmail.com

Thite Pranit R.
B.E Computer
BVCOEL
Pune,India
pranit.thite@gmail.com

Samel Bhavana Y.
B.E.Computer
BVCOEL
Pune, India
samelbhavana@gmail.com

Prof. Chate P.J
Computer
BVCOEL
Pune, India
parinitachate@gmail.com

Abstract— The stock market is the most popular investing places for users. Because of its expected high profit. Recently forecasting stock market returns gaining more attention. The prediction of stock markets is regarded as a challenging task. Data analysis is the way of predicting future value. if future stocks prices will increase or decrease. The main objective of this paper is to predict future stock price using prediction concept. In that Parse Records then calculate predicted value and send to user. And automatically perform operations like purchase and sale shares using Automation concept. For that use Naïve Bayes Algorithm. There is Real time Access by Download log forms yahoo finance website and Store in dataset.

Keywords- Shares, Artificial Neural Network; Naïve Bayes Algorithm;Automation; Prediction; Stock Market

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I. INTRODUCTION

In Current System user's daily checkout the shares details so it is very time consuming process. Hence, in order to overcome this process we are going to develop an application to make it easier. We are covering processes like Daily checkout websites & see the information about the shares. Stock Market which handle the information about the share market.in this system also maintain the details about the Company and users.

In this system admin do the registration of the company. Whenever required admin update the information about company like shares. Admin see the list of company and send messages to all users. User perform two operations like purchase and sale the shares of company. In this system two concepts like automation and prediction are used for improve the performance of the system. By using automation user set fix price of share then shares are automatically sale or purchase. And prediction concept is used with Dummy and real time prediction. by using dummy prediction we predict the future price of share .and by using real time prediction we predict the current share price.

II. SYSTEM MODEL

In stock market system there are admin do the registration of companies. User do the registration and then login to the system. And see the profile and company details. And perform some operations likes sales and purchase the shares. in this system also perform automation and prediction to predict the shares future price and automatically perform the operations like sale and purchase the shares.
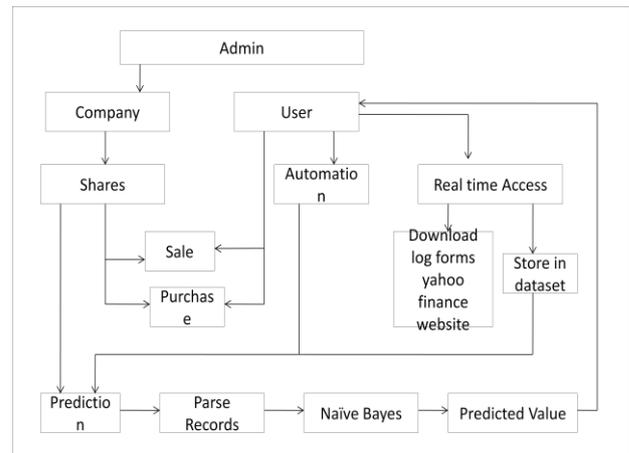

Figure 1. Block Diagram of Stock Market System

Figure 1 shows the block diagram of stock market system. Following are the explanation of modules for stock market system.

1) Admin: Admin do the registration of company and users. Admin update the information about the company whenever required. Admin see the list of company and users. Also admin send the message to all users.

2) Company Registration: In Company registration form contain registration phase for new Company. Admin fill all the information about company like company name, shares, price etc. for sale and purchase share.

3) User Registration: In user registration form contain registration phase for new User. Admin fill all the

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information about user like user name, address, DOB etc. in that admin provide username and password to user.

4) Prediction: The possible market prediction goal can be the future stock price or the volatility of the prices or market trend. In the prediction there are two types like Dummy and Real time prediction. In dummy prediction we define some rules and predict the future price of shares. In the real time prediction use internet and see current price of shares.

5) Automation: in automation user perform two operations like purchase and sale the shares. In that perform operations automatically. Set one price to system after match it automatically purchase or sale the shares.

III. PREDICTION CONCEPT

The possible market prediction goal can be the future stock price or the volatility of the prices or market trend. In the prediction there are two types like Dummy and Real time prediction used in stock market System. In Dummy prediction we define some rules and predict the future price of shares by calculating average price. In the Real time prediction compulsory use internet and see current price of shares of companies.
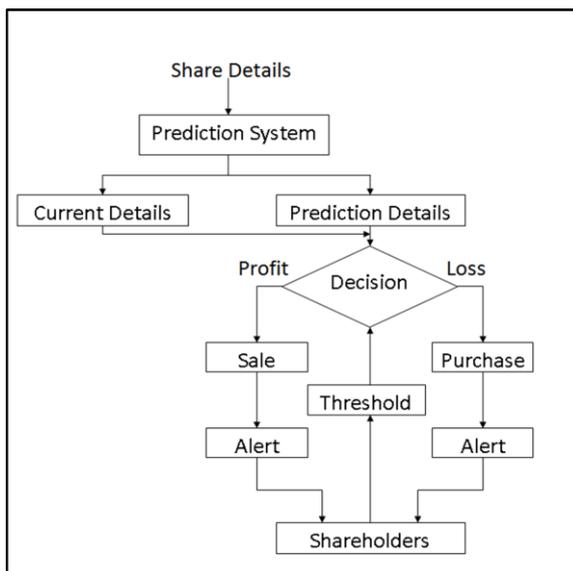

Figure2.Block diagram of stock market prediction

Figure 2 shows the prediction of the stock market. In stock market system here stakeholder share the personal details with Admin after that admin do registration of stakeholder and company. After that stakeholder login the system and perform the prediction operation.

Prediction system: in this system there are two types of predictions are used. Dummy Prediction and Real time prediction.

Dummy Prediction: in Dummy prediction stakeholder select date and company name and take decision depend on profit or loss. When there are profit then stakeholder sale shares. And if loss then stakeholder purchase shares. After that send alert to stakeholder and predict the future price (threshold).

Real-time Prediction: in real time prediction stakeholder select company name and select date to view current shares price of selected company.

IV. AUTOMATION CONCEPT

In automation stakeholder perform two operations like purchase shares and sale the shares. In this system these operations are perform automatically. When stakeholder Set one fix price to sale the shares, after that system match price of shares& automatically perform sale operation. like that purchase operation is also performed. In that Set one fix price to purchase the shares, after that system match price of shares& automatically perform purchase operation.

V. NAÏVE BAYES ALGORITHM

Naïve Bayes algorithm is a classification technique which generates Bayesian Networks for a given dataset based on Bayes theorem. It assumes that the given dataset contains a particular feature in a class which is unrelated to any other feature. For example, an object is considered to be A because of some features. These features presence may depend on each other or on other features but all of the features presence independently contribute to the probability that this object is A. and that is the reason it is known as „Naïve". Advantages of Naïve Bayes algorithm are it is easy to build and useful for very large datasets and even known to outperform highly sophisticated classification techniques. Following were the important steps to be performed in this algorithm.

1. The given dataset is to be converted into a frequency table. 2. Calculate probabilities of the events and using the probabilities create Likelihood table.
2. Using the Naive Bayesian equation, calculate the posterior probability for all classes.
3. The class with the highest posterior probability is the outcome of prediction.

VI. BENEFITS OF SYSTEM

The benefits of stock market could include:
1. Making it easier for you and other investors - including venture capitalists - to realize their investment.
2. Increasing your public profile, and providing reassurance to your customers and suppliers
3. Creating a market for the company's shares
4. Automatically sale or purchase shares using automation concept.
5. Predict future price of share by using Dummy prediction concept.
6. Predict current shares price by using Real-time prediction concept.
7. Reduce stakeholder's time.
8. The system to be developed will help to find share market value as per stakeholders need.
9. System maintains the details about the stakeholder and companies and also easily views all details of company and stakeholder.

VII.   RELATED WORK

K. Senthamarai Kannan, P. Sailapathi Sekar, M.Mohamed Sathik and P. Arumugam," Financial Stock Market Forecast using Data Mining Techniques "

Data mining is well founded on the theory that the historic data holds the predicting the future direction. This technology is designed to help investors discover hidden patterns from the historic data that have probable predictive capability.The prediction of stock markets is regarded as a challenging task of financial time series prediction. Data analysis is one way whitch is use for predicting the stock price if future stocks prices will increase or decrease. Five methods of analyzing stocks were combined to predict if the day's closing price would increase or decrease. This paper discussed various techniques which are able to predict with future closing stock price will increase or decrease better than level of significance.

QASEM A. AL-RADAIDEH, ADEL ABU ASSAF, EMAN ALNAGI," Predicting Stock prices using data mining Technique."

Forecasting stock return is an important that has attracted researchers' attention for many years. It involves an assumption that fundamental information publicly available in the past has some predictive relationships to the future stock Returns. The decision taken will be based on decision tree classifier which is one of the data mining techniques. To build the System, the CRISP-DM methodology is used.

Ruchi Desai,Snehal Gandhi," Stock Market Prediction

Using Data Mining"

Data mining is the historic data holds the essential memory for predicting the future values. This technology is designed to help investors.that have probable predictive capability in their investment decisions in the market. The prediction of stock markets is regarded as a challenging task of financial time series prediction. Data analysis is important for predicting when future stocks prices will increase or decrease. Also, it investigated various global events and their issues predicting on stock markets. Text mining approach is also used for measuring the effect of real timenews on stock. It uses different techniques to predict ups and downs in the stock market.In this paper, the changes of stocktrend by analyzing the influence of non-quantifiable information.

G.S.Navale, NishantDudhwala, KunalJadhav," Prediction of Stock Market using Data Mining and Artificial Intelligence"

In the stock market Predicting anything is very hard where the relationship between inputs and outputs are non-linear in nature. The prediction of stock market values is one of a challenging task of financial time series. Mostly the online applications are use for buying andselling the shares in high amounts these days. The next step of this web application will be not just registering, buying and selling the shares but it will also be predicting the future shares values in the market. We are proposing the system which will studythe database of shares and will give predictions according to it. For prediction particularly   ARMA(autoregressive-moving-average)

algorithm is used. Hence the system willbe able to give highest probability predictions for particular shares.

Dr.Debesh Bhowmik," STOCK MARKET VOLATILITY: AN EVALUATION"

The paper evaluated the stock market volatility. High indices of stock market in every aspect of measurement implied less variability of volatility. Political turmoil or instability has negative impact on stock market. The stock market volatility has the growth rate of a nation i.e. high volatility reduces growth rate. There is causality between them. Since stock market volatility brings the forth economic crisis and which has ultimately spill over on growth inversely to other countries as well. The international trade and stock market volatility is negatively related. that volatility reduces the volume of trade and increases current account and capital also account deficits.

Vishal Parikh, Parth Shah," Stock Prediction and Automated Trading System"

Stock market is a very challenging and difficult task of financial data prediction. Prediction about stock market with high accuracy movement yield profit for investors of the stocks. complexity of stock market financial data, development of efficient models for prediction is very difficult, and it must be accurate. This develop for prediction of the stock market and to decide whether to purchase or sale the stock using data mining and machine learning techniques. The classification techniques used in these models are naive bayes algorithm and random forest classification. Technical indicators are mostly calculated from the stock prices based on time-line data. and it is used as inputs of the proposed prediction models. Based on the data set, these models are capable to generate purchase or sale signal for stock market as a output. The main goal of this paper is to generate decision as per user's requirements.

SayaliMetkar , Akash Bhagyawant , VrushaliBagul, "Stock Market Prediction and Automation of Sale Purchase Event using History Analysis."

This paper provides support on the predictive power of online area traffic with the regard to stock prices. Using the largest dataset to date, straddling 8 years and almost the complete set of stocks, we guide a classifier using a set of features witch are entirely extracted from web traffic data of financial online communities. The classifier is shown to break the predictive power of a baseline classifier based on cost time-series, and to have related performances as the classifier built considering price and traffic features collectively. The predictive performances are achieved when the information about stock capitalization is joined with long-terms, and midterm web traffic levels. In the subsequent part of the paper we show how there exists a group of users whose traffic patterns constantly do better. The result set interesting future works in the explanation of novel market indicators for market scrutiny.

VIII.   CONCLUSION

The studies reveal a high potential of Naïve Bayes Algorithm in predicting the return on investment in the share market. Already, we know the evaluation of the return on investment

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in the share market through any one of the traditional techniques. the return on investment in share market is always uncertain and ambiguity in nature, so that no traditional techniques will give the accurate or appropriate solution. in stock market we are providing Prediction for predict the future value by using naïve bayes algorithm. and apply automation to automatically done the work of purchase and sale the shares. So we conclude that the system is automatic system which is very useful for users. so we conclude that system is automatic so it is very easy for users to handle and save time.

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