Stock Market Monitoring Using Raspberry Pi

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Abstract

The Internet of Things (IoT) inevitably changes the way organizations communicate and organize day-to-day business and industry processes. Its adoption has proven to be well suited to sectors that hold large amounts of assets and integrates complex and distributed processes. This study analyzes the enormous potential of using IoT technologies (i.e., data-driven applications or embedded automation and intelligent dynamic systems) to transform modern wars and offer similar benefits to those in the industry. Stock analysis using data mining will be useful for new investors to invest in the stock market depending on the various aspects considered by the software. The stock market includes day-to-day operations such as Sensex calculations, stock exchanges. The exchange offers an efficient and transparent market for equity trading, debt instruments and acquired assets. Our software will analyze Sensex based on the company's stock price. So in this project we will use a python based system on Raspberry Pi (IoT). The app will basically monitor the stock prices in the stock market. Also try to make a trader analysis, that it is easier for the stock market trader to choose a particular stock / buy stock.

1 INTRODUCTION

Many statistical methods have been tried and tested in stock market analysis and forecasting. The Exponential Smoothing Model (ESM) is a popular smoothing technique used in time series data, actually using the exponential window function to smooth out time series data and analyze the same (Belah et al. 2006). UDe Faria et al. (2009) compared the ANN model with adaptive ESM predicting Brazilian stock indicators. Their experiments demonstrated ESM's predictive power and the results of both methods show similar performance even though the neural network model i.e., the multilayer feedforward network has slowed the ESM flexibility according to the Root Means Square (RMSE) error. Dutta et al. (2012) took an interesting approach by selecting financial estimates as independent variables of the order model and analyzing the relationships between these factors and the performance of the stock. This paper focuses on the task of classifying companies to predict whether they are good or bad depending on the performance of one year. The results show that financial estimates - such as net sales, PE book price, booking price (P / B), EBITDA, etc. - classifies companies into positive and negative categories with an accuracy of 74.6%, which is a good indicator of why the company's health issues analyze stocks and forecasts. The Internet of Things (IoT) inevitably changes the way organizations communicate and organize day-to-day business and industry processes. Its adoption has proven to be well suited to sectors that hold large amounts of assets and integrates complex and distributed processes. This study analyzes the great potential of using IoT technologies (i.e., data-driven applications or embedded automation and intelligent dynamic systems) to transform modern wars and offer similar benefits to those in the industry. Stock analysis using data mining will help new investors to invest in the stock market depending on the various aspects considered by the software. The exchange offers an efficient and transparent market for equity trading, debt instruments and acquired assets.

2 LITERATURE SURVEY

As mentioned earlier currently there is no system to monitor the stock market using the portable device Raspberry Pi. We have referred “A Prediction Approach for Stock Market Volatility Based on Time Series Data” for the predictions of stock prices

3 PROPOSED SYSTEM

1. Start Sock market monitoring software.
2. Take Input of stock symbol.
3. Grab the value from NSE official website.
4. Display current value of the input stock.
5. Display live graph for analysis.

3.1 HARDWARE REQUIREMENT

Our propose system contain following hardware requirement :

1. Raspberry Pi
2. LED Display
3. Keyboard
4. Mouse

3.1.1 Raspberry Pi

Raspberry Pi is a series of small board computer which is developed in U.K. by the Raspberry Pi foundation. This particular device is portable and capable of performing task like the traditional computer. This device is small but effective for almost any type of project.

Fig. 1: Raspberry Pi

3.1.2 LED Display

The LED Display is the external device to the Raspberry Pi which user has to buy for the user interface. This is a output device used in the project. This display will allow end user to interact with the software and look for the outputs generated by the software. This particular display is attachable with the Raspberry Pi with the help of the HDMI port available in the Raspberry Pi board.

Fig. 2: Raspberry Pi with LED Display

3.1.3 Keyboard

Keyboard is input device used in the project. End user can input values required to use the software. A mini keyboard is preferrable to the Raspberry Pi.

Fig. 3: Official Rasperry Pi Keyboard

3.1.4 Mouse

Mouse is another input device used the project. The mouse is used for handy use of the software.

Fig. 4 Official Raspberry Pi Mous

3.2 METHODOLOGY

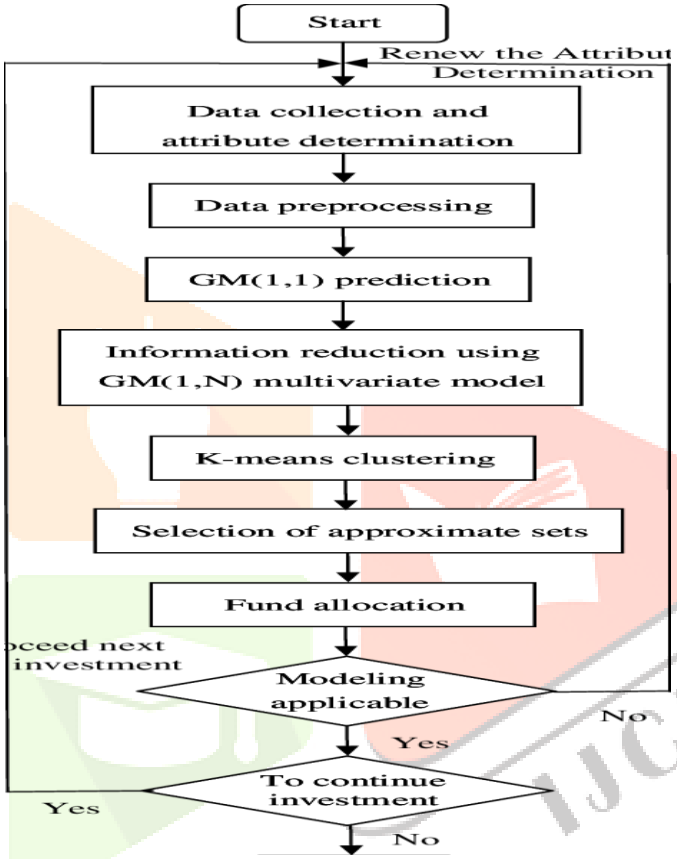

Fig. 5 Flow chart of Proposed System

4 CONCLUSION

The system is much preferrable by the stock market broker or investor for daily trading. This system can monitor the stock price which help the stock trader to check on and trade the correct stocks and make heavy profits. This is a portable and cheaper system which is currently not available in the market.

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