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STOCK MARKET PREDICTION USING MACHINE LEARNING ALGORITHM

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Abstract: The aim is to predict the future value of the financial stocks of a company. The recent trend in stock market prediction technologies is the use of machine learning which makes predictions based on the values of current stock market indices by training on their previous The project focuses on the use of Regression and LSTM based Machine learning to predict stock values. Factors considered are open, close, low, high and volume.

Index Terms **- Backpropagation, Hydropower, NEPSE, LSTM, Nepal Stock Exchange.**

• Introduction

Stock Market prediction and analysis is the act of trying to determine the future value of a company stock or other financial instrument traded on an exchange. Stock market is the important part of economy of the country and plays a vital role in the growth of the industry and commerce of the country that eventually affects the economy of the country.It is based on the concept of demand and supply. If the demand for a company's stock is higher, then the company share price increases and if the demand for company's stock is low then the company share price decrease .

• Proposed System

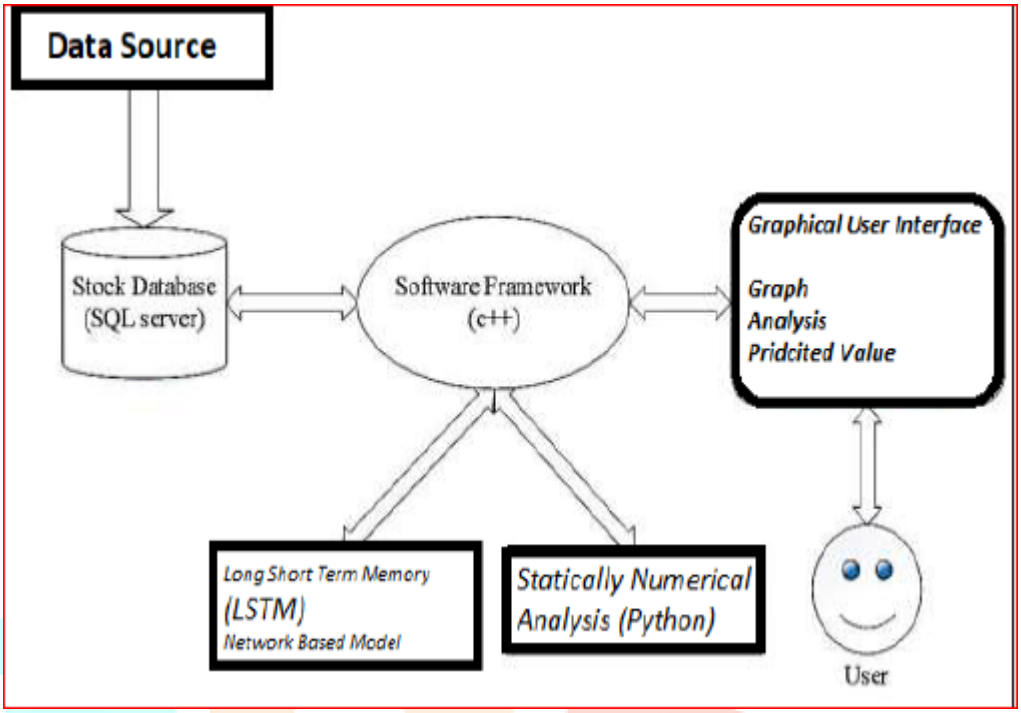
www.stock- forecasting.com (Center of Mathematics & Science, Inc., Chicago, United States of America) provides innovative price-prediction technology for active Day Traders, Short- and Long-term Investors. They develop web-based software for stock market forecasting and analysis. The artificial intelligence www.stockforecasting. com software is based on neural network technology, advanced statistical methods and non-periodic stock price wave analysis. The Stock-Forecasting software predicts stock prices, generates trading "Buy-Hold-Sell" signals, computes the most profitable company to invest in and analyzes the accuracy of predictions.

• Objectives

1. To identify factors affecting share market
2. To generate the pattern from large set of data of stock market for prediction of YAHOO
3. To predict an approximate value of share price
4. To provide analysis for users through web application

- **System Overview**

A. System Architecture



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B .Explanation of Blocks

The purposed method for developing the system consists of mainly three main steps. Firstly, data is collected and sorted for relevancy from various sources. Secondly, analysis is carried out on the collected data by examining the current market direction, tracking the industry group and specific companies after which the data is represented and scored accordingly. At last, an ANN is designed and a suitable algorithm yielding best accuracy is chosen to predict the stock value which shown in system block diagram of figure

- **MODULES**

A. Regression Based Model

Linear Regression as governed by the above equation is performed on the data and then the relevant predictions are made. The factors considered for the regression were low, open, high, close and volume. The R-square confidence test was used to determine the confidence score and the predictions were plotted to show the results of the stock market prices vs time.

B. Long Short Term Memory (LSTM) Network Based Model

LSTM is the advanced version of Recurrent-Neural- Networks (RNN) where the information belonging to previous state persists.The main purpose behind using this model in stock market prediction is that the predictions depends on large amounts of data and are generally dependent on the long term history of the market [6]. So LSTM regulates error by giving an aid to the RNNs through retaining information for older stages making the prediction more accurate [7]. Thus proving itself as much more reliable compared to other methods.

• TESTING

Testing is a process used to help identify the correctness, completeness and quality of developed computer software. Here testing activities are enlisted which have been carried out for the dissertation. It describes the software test environment for testing,identifies the tests to be performed and provides schedules for test activities.

Sr. No	Test Cases	Test Status	Test Result
1	Take the input user username, password, mobile number	Registration successfully	Test pass
2	Take the input wrong username, password, mobile number	Registration incomplete	Test Fail
3	Take the input is empty	Please fill details	Test Fail
4	Take the input user id and password for logging	Logging into the system	Test pass

• Conclusion

This project was an attempt to determine the future prices of the stocks of a company with greater accuracy and reliability using machine learning techniques. The primary contribution of the researchers being the application of the novel LSTM Model as a means of determining the stock prices. Both the techniques have shown an improvement in the accuracy of predictions, thereby yielding positive results with the LSTM model proving to be more efficient.

• Acknowledgement

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- **References**

M. Usmani, S. H. Adil, K. Raza and S. S. A. Ali, ”Stock market prediction using machine learning techniques,” 2016 3rd International Conference on Computer and Information Sciences ICCOINS), Kuala Lumpur, 2016, pp. 322-327.

[2] K. Raza, ”Prediction of Stock Market performance by using machine learning techniques,” 2017 International Conference on Innovations in Electrical Engineering and Computational Technologies (ICIEECT), Karachi, 2017, pp. 1-1.

[3] H. Gunduz, Z. Cataltepe and Y. Yaslan, ”Stock market direction prediction using deep neural networks,” 2017 25th Signal Processing and Communications Applications Conference (SIU), Antalya, 2017, pp. 1-4.

[4] M. Billah, S. Waheed and A. Hanifa, ”Stock market prediction using an improved training algorithm of neural network,” 2016 2nd International Conference on Electrical, Computer & Telecommunication Engineering (ICECTE), Rajshahi, 2016, pp. 1-4.