

**IT258 SGP**

**STOCK PRICE PREDICTION USING MACHINE LEARNING**

**PROJECT REPORT**

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**ABSTRACT**:

Stock price forecasting is a popular and important topic in financial and academic studies. Stock Market is an untidy place for predicting since there are no significant rules to estimate or predict the price of stock in the stock market. Many methods like technical analysis, fundamental analysis, time series analysis and statistical analysis, etc. are all used to attempt to predict the price in the stock market but none of these methods are proved as a consistently acceptable prediction tool. In this project we are using machine learning algorithms to predict stock market prices. With the help of historical data analysis. Although, stock market can never be predicted, due to its vague domain, this project aims at applying machine learning in forecasting the stock prices.

**1.INTRODUCTION**

**Problem Definition**

Stock market is very vast and difficult to understand. It is considered too uncertain to be predictable due to huge fluctuation of the market. Stock market prediction task is interesting as well as divides researchers and academics into two groups, those who believe that we can devise mechanisms to predict the market and those who believe that the market is efficient and whenever new information comes up the market absorbs it by correcting itself, thus there is no space for prediction. Investing in a good stock but at a bad time can have disastrous result, while investing in a stock at the right time can bear profits.

**PROJECT OVERVIEW**

The correct prediction of stocks can lead to huge profits for the seller and the broker. Frequently, it is brought out that prediction is chaotic rather than random, which means it can be predicted by carefully analyzing the history of respective stock . Machine learning is an efficient way to represent such processes. It predicts a market value close to the tangible value, thereby increasing the accuracy. Introduction of machine learning to the area of stock prediction has appealed to many researches because of its efficient and accurate measurements because a little change in the data can perpetuate massive changes in the outcome In this project, supervised machine learning is employed on a dataset obtained from Google and Tesla. This dataset comprises of following five variables: open, close, low, high and volume. Open, close, low and high are different bid prices for the stock at separate times with nearly direct names. The volume is the number of shares that passed from one owner to another during the time period. The model is then tested on the test data.

**HARDWARE SPECIFICATIONS**

Memory and disk space required per user: 1GB RAM + 1GB of disk + 5 CPU core.

Server overhead: 2-4GB or 10% system overhead (whatever is larger) . 5 CPU cores, 10GB disk space.

Port requirements: Port 8000 plus 5 unique, random ports per notebook.

**SOFTWARE SPECIFICATIONS**

Anaconda Navigator

Jupyter Notebook

**2.LITERATURE SURVEY**

**EXISTING SYSTEMS**

The existing system fails when there are rare outcomes or predictors, as the algorithm is based on bootstrap sampling. The previous results indicate that the stock price is unpredictable when the traditional classifier is used. The existence system reported highly predictive values, by selecting an appropriate time period for their experiment to obtain highly predictive scores. The existing system does not perform well when there is a change in the operating environment. It does not focus on external events in the environment, like news events or social media. It exploits only one data source, thus highly biased. The existing system needs some form of input interpretation, thus need of scaling

**PROPOSED SYSTEM**

In this proposed system, we focus on predicting the stock values using machine learning algorithms like Regression and LSTM models. Regression and LSTM models are engaged for this conjecture separately. Regression involves minimizing error and LSTM contributes to remembering the data and results for the long run. Finally, the graphs for the fluctuation of prices with the dates (in case of Regression based model) and between actual and predicted price (for the LSTM based model) are plotted.