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RETRIEVING FUNDAMENTAL VALUES OF EQUITY

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Abstract - *The Patronage can guide you to learning about the fundamental values related to the company before making an investment. The use of machine learning model for growth prediction of stocks will also be covered. It also dwells into how the project can help to find the overall insights related to fundamental values of equity of a particular company as well as rise of stock market prediction.*

Key Words: **Equity, Fundamental values, Machine Learning, Stock Market, Growth Prediction**

1. INTRODUCTION

The pace of the world is changing rapidly and the generation is taking more interest in investments. Stock market for the last hundred and fifty year is used for wealth generation. Fundamental analysis is significant from the perspective of the evaluation of stock market price for long term investment. In the current world scenario, many people have started investing in the market and before investing one should have proper insights. Whenever a Person wants to invest, they should have a proper piece of information related to company equity values and it is very hard to seek out the proper details. By finding out the proper details a particular person will take their decisions wisely and it will turn out to their own benefits. Any person tries to seek out fundamental values of a particular company rather than going on multiple websites, there should be a one system which displays the fundamental values of a company. Our project proposes to gather all the details related to all companies at one place. The system shows the information of companies such as their Market Cap, their earnings in the Financial Year, and many more details. So, the system will share the real time data of a particular company as per their search.

2. PROBLEM STATEMENT

The problem occurs when people start thinking about where to invest and what they should consider about a company before investing their hard-earned money. Lot of people just put their money into trending stocks or the companies they only heard about and when the market does not react according to their interest they just panic. Therefore, beginner investors need to gather the key information related to equity about any company and then based on that information they should make a decision.

3. LITERATURE REVIEW

With existing systems, if you need information about your company's core values, you need access to several sources. H. Various financial websites. As a result, things are getting busy for our users, and we know that there is a lot of messy data that can provide false information about stocks and companies. One of the systems of the past uses machine learning algorithm classification techniques to perform a basic analysis of stocks associated with a company. Fundamental analysis is a way to determine the actual value or "fair market" value of a stock. Fundamental analysts look for stocks that are currently trading at prices above or below their true value. The system proposes an analysis of the company's stock value and ranks the stock according to daily trading data updated by the ML algorithm. However, the problem is that the prediction uses bias data, which can be tricky. Therefore, the result is two options, favorable or unfavorable. When searching the literature, data from the stock market forecasting system currently in use is taken into account.

Over the last two decades, stock return determination has become a major research area. In most cases, scientists sought to establish a direct link between macroeconomic factors, namely stock returns, but scientists revealed a record non-linear gradient of returns in the financial stock market. Had an incredible move. Focus on non-linear expectations of stock returns. Despite the fact that many papers have emerged on the non-linear measurable representation of stock returns, most of them required displaying a non-linear model before the estimation was performed. Indeed, to declare financial exchange earnings confusing, uncertain, confusing, and non-linear. Various functions are available for predicting parameters. The mainly contains binary thresholds, linear thresholds, hyperbolic sigmoids, and brown.

4. IMPLEMENTATION

There will be two sets of functionalities in our web app. First is the search functionality and another one is growth

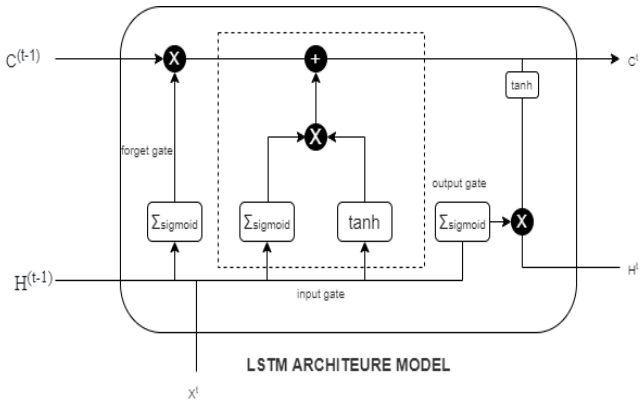
prediction of stocks. The users will put the name of a listed company as an input in the search box. First of all, there is a fixed data set in which we have data about the companies which are listed on the exchanges that data is extracted from the Yahoo finance website using the API of yahoo finance. To resolve ambiguity between companies each company has assigned a ticker symbol as shown below.

Fig1.1

Tickers	
1	"symbol":"AABA","name":"Altaba Inc."
2	"symbol":"ABCB","name":"Ameris Bancorp"
3	"symbol":"FGEN","name":"FibroGen Inc"
4	"symbol":"FIVN","name":"Five9 Inc."

So, whenever a user enters a name of a company the fundamental data such as market cap, opening and closing price of the day, dividend and the trading volume of that particular stock is displayed. The data is extracted from yahoo website through API as we have said earlier the use of assigning ticker symbol to each company is used to extract the particular data or intended data on which user want to see. The data will be stored on a JSON file using node js as a backend to process the data. So, this data ultimately will be displayed to the user on our web application user interface. We have also created a graph related to some value as visual presentation will be easier to understand. The other functionality is the growth prediction model which we have implemented. Later with this fundamental data the user will go to our prediction section and put these details as an input. Actually, it's not automated because of the use of different programming standards. We have used the LSTM machine learning model. This model is mainly used for prediction, classification and forecasting as well as it gives accuracy between 80% to 90%. With the help of LSTM machine learning Model, we are predicting the future value of that stock or company so that users can make a proper investment decision.

Fig1.2



The proposed model used for implementation is LSTM model and it follows particular steps in order to achieve output

1.Finding dataset: The data-set we have chosen is from yahoo finance data which has already built-in package which scrapes data online from yahoo finance website. Just we have to import yahoo. Stock market prices are highly unpredictable and volatile. This means that there are no consistent patterns in the data that allow you to model stock prices over time near-perfectly.

2.Data exploration: we will be using only high, low, open, close value and volume for prediction so the extra columns will be removed as date, adj-close value etc

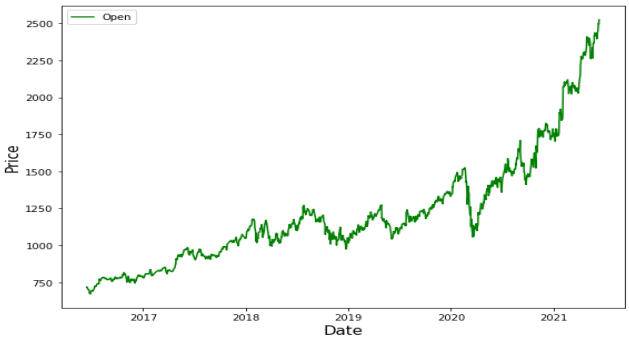
Fig 1.3

Date	High	Low	Open	Close	Volume
2021-12-27	180.419998	177.070007	177.089996	180.330002	74919600.0
2021-12-28	181.330002	178.529999	180.160004	179.289993	79144300.0
2021-12-29	180.630005	178.139999	179.330002	179.380005	62348900.0
2021-12-30	180.570007	178.089996	179.470001	178.199997	59773000.0
2021-12-31	179.229996	177.259995	178.089996	177.570007	64062300.0

3.Data Visualization:

We have performed a few features extraction here. We take the dates alone from the overall date variable. Now we can be using matplotlib to visualize the available data and see how our price values in data are being displayed. The green colour was used to visualize the open variable for the price-date graph, and for the closing variable, we used red colour.

Fig 1.4



Open value graph

Fig 1.5

Close value graph

4.Data Pre-processing:

We must pre-process this data before applying stock price using LSTM. Transform the values in our data with help of the fit_transform function. Min-max scaler is used for scaling the data so that we can bring all the price values to a common scale. We then use 80 % or 70% data for training and the rest 20% or 30% for testing and assign them to separate variables.

5.Splitting Data into a Training set and a Test set:

Now we can split the training data and test data. The training data will be the first 6000 data of the company and 2000 will be test data as contained in yahoo finance data total of 8000 companies.

6.Training the model:

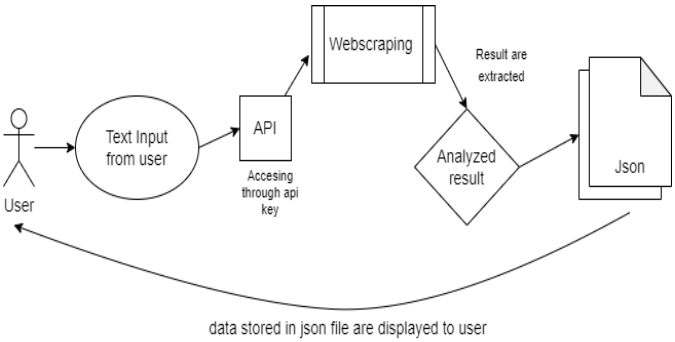
We have used LSTM model which has four layers interconnected with it as show in fig 1.2 we have added units = 50 which represents 50 data points and the unit is increased per layer by 10 units and dropout of 0.1. Dropout is applied to the updates to LSTM memory cells, i.e. it drops out the input/update gate in LSTM. We have used mean squared method in which past 100 days data will be removed and from next index mean will be calculated as so we can also predict of removing 200 days and changing the data particularly. Then the model will be trained. Just to save the trained model we have used keras.h5 method.

So, whenever user puts ticker symbol or values as user input in text-box the growth prediction analysis will be shown to the user in the web-application.

4. DESIGN MODELS

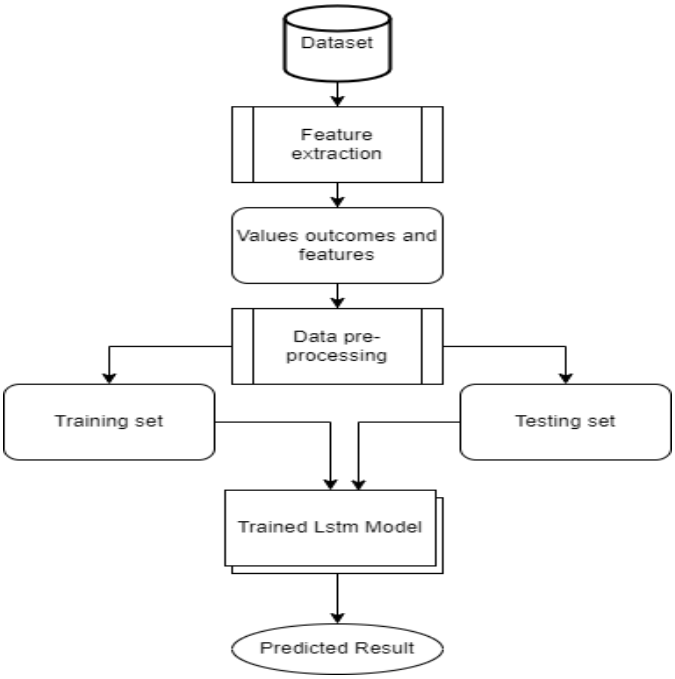
1.Workflow Diagram:

Fig 1.6



2. Stock Growth Prediction Model

Fig 1.7



5. CONCLUSION

In this project we have implemented a web scraping process to retrieve the equity values of the company as per user's requirements and machine learning model for prediction purposes. We have created a web application which is user friendly. Our project helps users to find the required fundamental knowledge about the equity of a company of their interest and proper insights will be gained. Based on the collected data and with help of the growth prediction model of our project users can get a prediction or return idea of their investments. So, our project will make a huge impact on investors and it will make easy for them as it resolves the problem of finding information and going on multiple websites and it can just show the information at one place. In the future we can add a Sentimental analysis and recommendation system for listing of companies. We can upgrade the API in future, as it is currently used for only limited searches means per day only 100 searches are available. We can also use beautiful-soup of python for web scraping process to enhance our system more. By upgrading we can make the search functionality wider. We can improve the system's usability. We can also provide a new section in our project which will define each value of equity in understandable manner for users for the purpose of learning.

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