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SRI RAMACHANDRA FACULTY OF ENGINEERING AND TECHNOLOGY

Stock price Prediction

Flask Application

HACK-24-THON PRESENTATION

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Stock Price Prediction

ABSTRACT

Stocks management are usually considered to be a high end job where normal day-to-day middle class members of the society barely participate. We aim to break that model to help them better understand the stock-price trends/waves of companies.

We built an application ML-Model which would take the ticker name of a company and then it would train a model and predict values in real time.

Stock Price Prediction

PROBLEM STATEMENT

In first world countries, day trading seems as it’s as easy as getting groceries, something that anyone could pull off and doesn’t necessarily demanding a business degree to be good at.

An active market increases liquidity in economy.

But in India, a large percentage of the population is fairly inactive in the stocks market, opting to weakers options such as mutual funds in fear of losing money over Day-Market. We intend to make it easier on them to see how the general trend of the stock is heading towards.

We intend to make on the people to make faster and easier trades.

Stock Price Prediction

WORKFLOW / METHODOLOGY

We built a few models based on LSTM systems and tested them in isolated environments and comparing the loss, soon landing on the best one.

Going further, the ideation of how the application would usually look like and building small testing zones to make modular parts of the Flask application.

As each component was slowly getting finished, we glued them altogether into a working model.

Stock Price Prediction

INNOVATIVENESS AND UNIQUENESS

The current stock prediction models split data in a way that the most recent data is taken as test-data., which is time-dependent. We wanted to get rid of that dependency. So, fetching recent data for a short time interval where a certain trend (increasing/decreasing) is evident and split them in such a way that it’s both recent and past data ends on both training and testing data.

This might seem counterintuitive, as the essence of the trend might get lost. But by picking the right ratio of interval-period and train data-test data’s size. (Testing data has be considerably smaller) We paint an almost full picture of the trend while training, giving only few spots for the model to predict on it’s own.

Similarly, when we feed in today’s/yesterday’s data, it reviews the trends from the training data to accurately predict data values.

Stock Price Prediction

SCOPE AND SCALABILITY

Any company with a strong enough trend and the current interval-period ratio would yield great results. Companies outside of that can still be predicted with results ranging from decent to poor. The graph would better help you to gauge how well the model works for the requested the company. The baseline is, any company that is listed on the open-market and have available datasets of formats we use, could be predicted.

Not every company is the same, just like how not even company is the same, when it comes to scalability, just adding a few models for different locations under functions and calling the user’s demand would work wonders.

Stock Price Prediction

APPLICATIONS IN REAL WORLD

Instead of giving redundant information. Here’s our results!

Predicted - - - Actual results

1. 31.6108$ - - - 31.690$ (UBER - 31/3/23)
2. 167.997$ - - - 164.899$ (AAPL - 31/3/23)
3. 387.773INR - - - 383.5INR (ITC.NS - 31/3/23)
4. 103.19INR - - - 104.5INR (TATASTEEL.NS - 31/3/23)

Using the accuracy to our advantage, almost anyone could start trading, starting today– No, starting Now! The values speak for themselves.

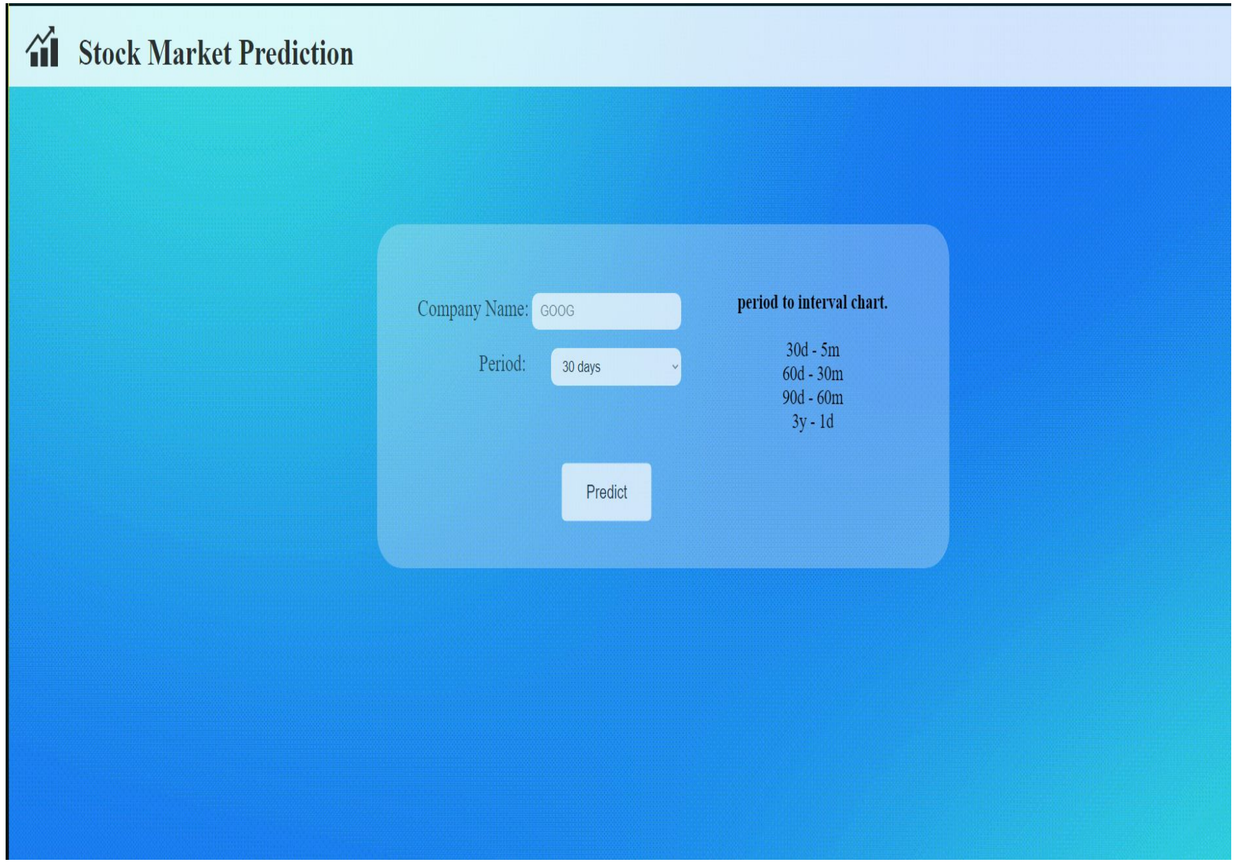
CONCLUSION

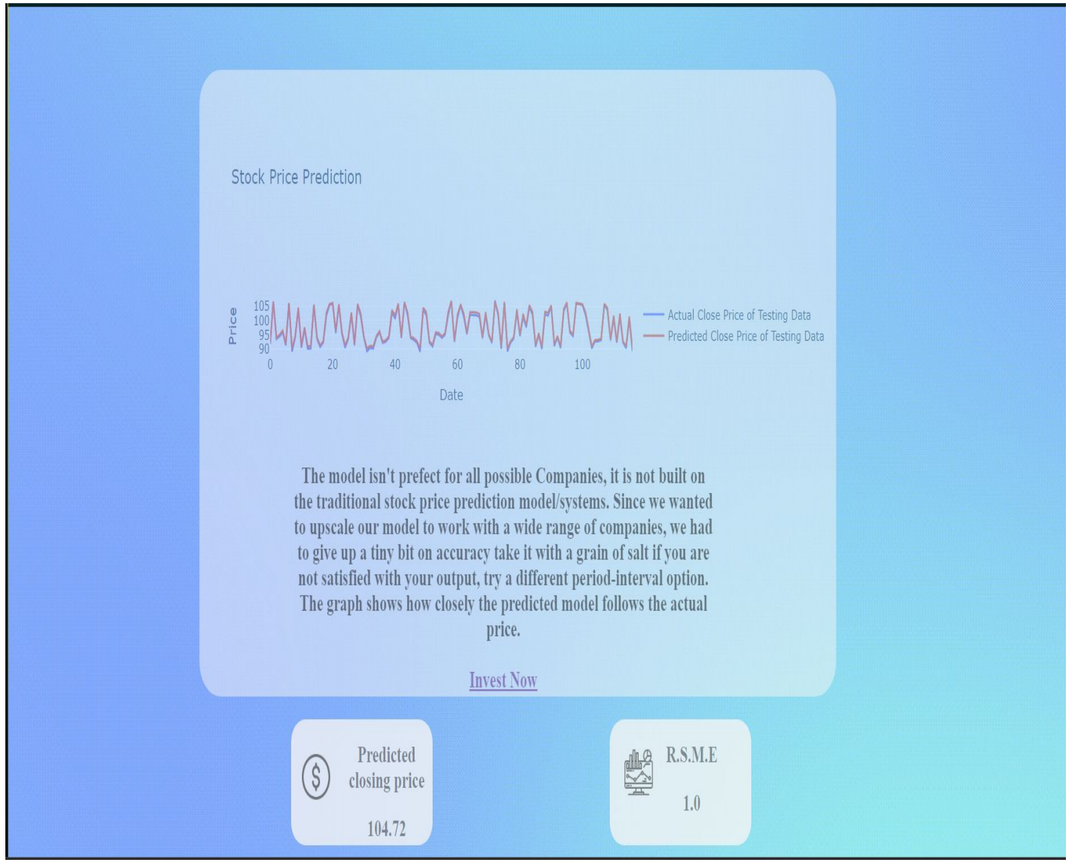
We conclude that if the data we fetched in real time is even slightly suitable, we could dish out decent to great predictions on a stock's closing price based on the stock's performance over the data-set that we collected.

Going ambitious with the model sure has its drawbacks, but we are happy to say that it works well with all of the major companies in all of the industries who tend to follow a traceable trends of stock prices.

We aim to further improve on this project and provide support to better the performance and cover an even wider range of companies.

DEMO


Stock Market Prediction
Company Name:
GOOG
Period:
30 days
Predict
period to interval chart.
30d - 5m
60d - 30m
90d - 60m
3y - 1d


Stock Price Prediction
Price
105
100
95
90
0
20
40
60
80
100
Date
Actual Close Price of Testing Data
Predicted Close Price of Testing Data
The model isn't prefect for all possible Companies, it is not built on the traditional stock price prediction model/systems. Since we wanted to upscale our model to work with a wide range of companies, we had to give up a tiny bit on accuracy take it with a grain of salt if you are not satisfied with your output, try a different period-interval option. The graph shows how closely the predicted model follows the actual price.
Invest Now
Predicted closing price
104.72
R.S.M.E
1.0

Stock Price Prediction

PROJECT REPOSITORY

Github Repository Link:

https://github.com/YaeshwanthUrumaiya/Stock-Price-Prediction-Model

Thank You