DAYANANDA SAGAR COLLEGE OF ENGINEERING

(An Autonomous Institute affiliated to VTU, Belagavi, Approved by AICTE & ISO 9001:2008 Certified)

Accredited by National Assessment & Accreditation Council (NAAC) with 'A' grade, Shavige Malleshwara Hills, Kumaraswamy Layout, Bengaluru-560078.

Minor Project Report

on

"REAL TIME NSE STOCKS PREDICTIONS & ANALYSIS DASHBOARD IN PYTHON"

Submitted By

Mrinal Walia

[1DS17CS068]

[Sixth Semester B.E (CSE)]
in

Machine Learning

Under the guidance of
Prof. Poornima K S
Dept. of CSE
DSCE, Bangalore

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Dayananda Sagar College of Engineering
Bangelore-78

REAL-TIME NSE STOCKS PREDICTIONS & ANALYSIS DASHBOARD IN PYTHON

Mrinal Walia
1Ds17CS068

What is NSE?

The National Stock market of India is the biggest stock market of India which is found in Mumbai, which was first established in Nov 1992 and it was the very first fully automated electronic exchange of India with a nationwide presence.

In this project, I have implemented the following:

- *how to fetch data of any stock(NSE) in realtime*
- *how you can perform basis visualizations to analyze the stock price*
- *using machine learning algorithms to predict the future stock price*
- *and how to make an interactive web-app using Streamlit framework available in python*

Machine Learning algorithm used is LSTM:

Long Short Term Memory, usually just called "LSTMs"- are a special kind of Recurrent neural network which is capable of learning long-term dependencies i.e remembering information for long periods of time.

Note: *Predicting future prices is very difficult, even for machine learning models. Especially when it comes to the Stock Market,the only input your algorithm take is the stock price, there is a whole lot of information you are going to lose about the underlying factor that will affect the price. Just remember your main motive of this project is to learn new techniques and tools.*

Github:*https://github.com/abhiwalia15/AI-for-Finance-Stocks-real-time-analysis-*
Medium:*https://medium.com/@waliamrinal15/real-time-nse-stocks-predictions-analysis-dashboard-in-python-f34046110 1c6*

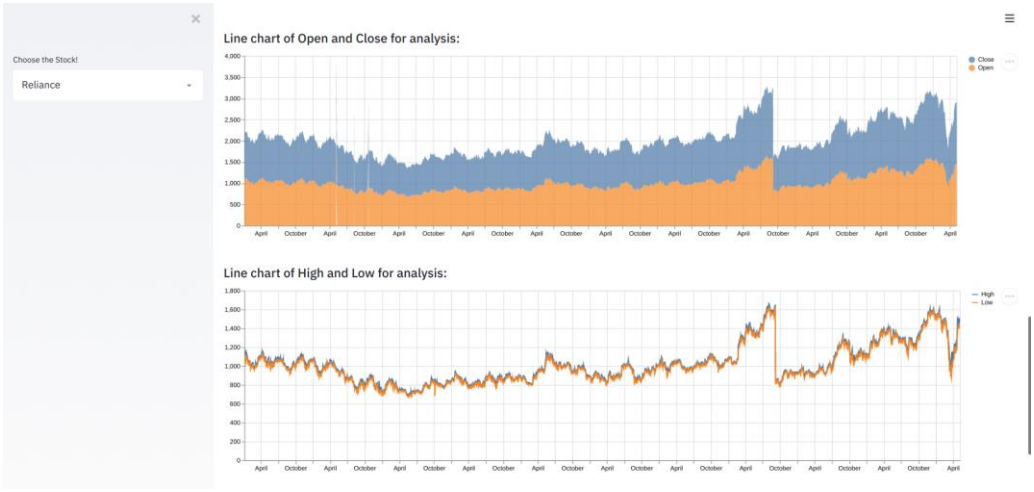
Minor Project- Report
Aug-2019-2020

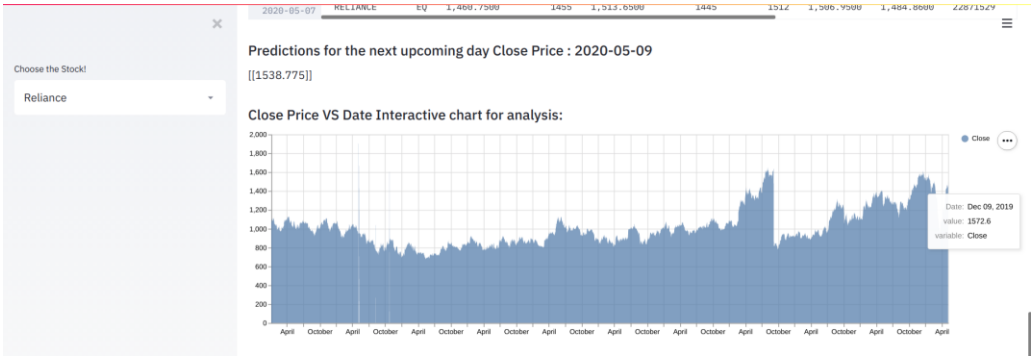
Course Faculty: Poornima K S Course Name & code:
Machine Learning, 17CS6DCMLG
Semester:6th Date:20th may, 2020

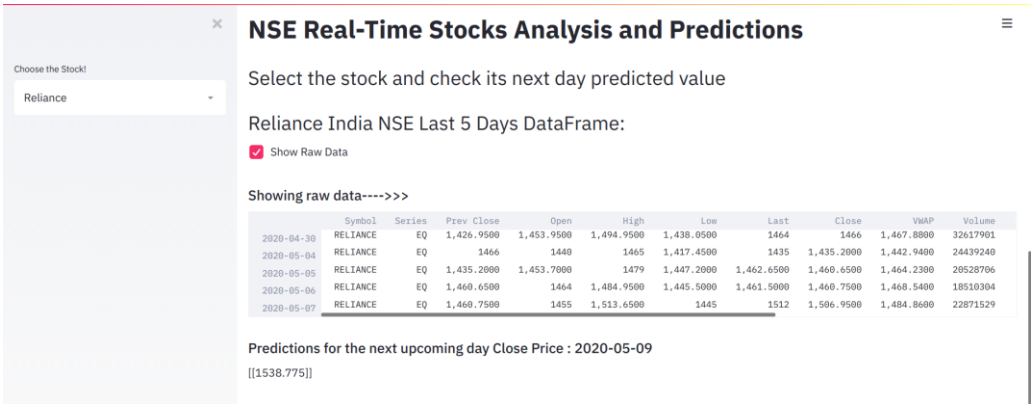
TITLE OF THE PROJECT	# Real-Time NSE Stocks Predictions & Analysis Dashboard in Python			
STUDENT NAME	Mrinal Walia			
USN	1DS17CS068			
INDIVIDUAL CONTRIBUTION	Implementation of the complete project.			
GUIDE	Poornima K S Dr. Md Tajuddin			
PROJECT ABSTRACT :	**In this project, I have implemented the following:** • how to fetch data of any stock(NSE) in realtime • how you can perform basis visualizations to analyze the stock price • using machine learning algorithms to predict the future stock price • and how to make an interactive web-app using Streamlit framework available in python			
PLATFORM USED (H/W & S/W TOOLS USED	GOOGLE COLAB, JUPYTER NOTEBOOK, KERAS, TENSORFLOW, STREAMLIT, PYTHON, PYTHON DATA VISUALIZATION LIBRARIES			
INTRODUCTION	**What is NSE?** The National Stock market of India is the biggest stock market of India which is found in Mumbai, which was first established in Nov 1992 and it was the very first fully automated electronic exchange of India with a nationwide presence. **Note:** Predicting future prices is very difficult, even for machine learning models. Especially when it comes to the Stock Market,the only input your algorithm take is the stock price, there is a whole lot of information you are going to			

	lose about the underlying factor that will affect the price. Just remember your main motive of this project is to learn new techniques and tools.
LIST OF PAPERS/URLS REFERRED	**GITHUB:**HTTPS://GITHUB.COM/ABHIWALIA15/AI-FOR-FINANCE-STOCKS-REAL-TIME-ANALYSIS- **MEDIUM:**HTTPS://MEDIUM.COM/@WALIAMRINAL15/REAL-TIME-NSE-STOCKS-PREDICTIONS-ANALYSIS-DASHBOARD-IN-PYTHON-F340461101C6
DESIGN {SYSTEM DESIGN DIAGRAM}	**Machine Learning algorithm used is LSTM:** Long Short Term Memory, usually just called "LSTMs"- are a special kind of Recurrent neural network which is capable of learning long-term dependencies i.e remembering information for long periods of time. ***How can we use LSTM to predict the Stock Prices in the future?*** LSTMs are very powerful in sequence prediction problems because they're ready to store past information. In our case the previous price of a stock is crucial in predicting its future price so this part is very important to understand. ***In this project, we will use the last 30 days' stocks Close price to predict the close price for the next day.***
PROJECT SOURCE CODE LINK (GITHUB/ GOOGLE DRIVE)	**GITHUB:**HTTPS://GITHUB.COM/ABHIWALIA15/AI-FOR-FINANCE-STOCKS-REAL-TIME-ANALYSIS-
CONCLUSION /FUTURE ENHANCEMENT	*THERE ARE MANY EXTERNAL FACTORS TO CONSIDER TO UNDERSTAND WHETHER THE PRICE OF A STOCK WILL GO UP OR WILL FALL IN THE FUTURE. WE CAN MAKE OUR MODEL UNDERSTAND THESE EXTERNAL FACTOS TO PREDICT.*

UI SCREENSHOTS OF SAMPLE RESULTS







	Symbol	Series	Prev Close	Open	High	Low	Last	Close	VWAP	Volume
2020-04-30	RELIANCE	EQ	1,426.9500	1,453.9500	1,494.9500	1,438.0500	1464	1466	1,467.8800	32617901
2020-05-04	RELIANCE	EQ	1466	1440	1465	1,417.4500	1435	1,435.2000	1,442.9400	24439240
2020-05-05	RELIANCE	EQ	1,435.2000	1,453.7000	1479	1,447.2000	1,462.6500	1,460.6500	1,464.2300	20528706
2020-05-06	RELIANCE	EQ	1,460.6500	1464	1,484.9500	1,445.5000	1,461.5000	1,460.7500	1,468.5400	18510304
2020-05-07	RELIANCE	EQ	1,460.7500	1455	1,513.6500	1445	1512	1,506.9500	1,484.8600	22871529

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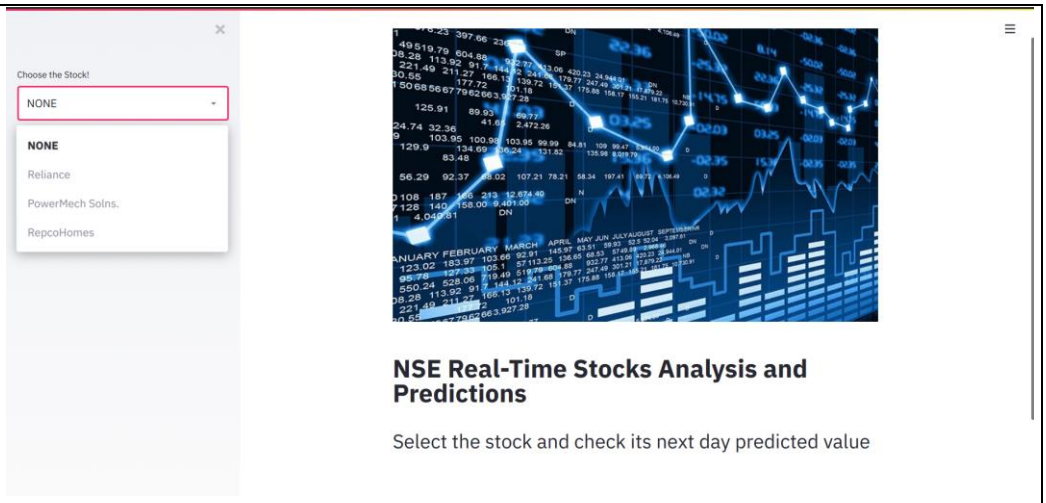
<td> 
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https://nsepy.readthedocs.io/en/latest/
https://colab.research.google.com/

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