A Mini Project Synopsis on

Share Price Prediction

S.E. - I.T Engineering

Submitted By

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CERTIFICATE

This to certify that the Mini Project report on **Share Price Prediction** has been submitted by Atharv Sathe (20104054), Mihir Shrivas (20104081), JayeshSingh (20104101) and Harsh Yadavade (20104077) who are the students of A. P. Shah Institute of Technology, Thane, Mumbai, as a partial fulfilment of the requirement for the degree in Information Technology, during the academic year 2021-2022 in the satisfactory manner as per the curriculum laid down by Universityof Mumbai.

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Date

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Introduction:

Stock Price prediction is the act of determining the future value of a company stocker other financial instrument traded on an exchange. The successful prediction of a stock's future price could yield significant profit to the investors.

With the development of the stock market, people are interested in forecasting stock price.

Ability to predict directions of stock prices accurately is crucial for market dealers or investors to maximize their profits.

Stock Price Variation uses - Demand & Supply strategy.

Prediction of share markets is challenging task. Because, its randomness in nature. The share price movement over a long period of time usually develops a linear curve. People tend to buy those stocks whose prices are expected to rise in the near future

LSTM:

LSTMs are very powerful in sequence prediction problems because they're able to store past information.
This is important in our case because the previous price of a stock is crucial in predicting its future price.

We'll kick off by importing NumPy for scientific computation, Matplotlib for plotting graphs, and Pandas to loading and manipulating our datasets

1.1 Purpose:

- Our focus will be on the technical analysis and visualization part, which consist of graphs and statistical figures.
- We propose an online learning algorithm for predicting the end-of-day price of a given stock withthe help of Long Short-Term Memory (LSTM), a type of Recurrent Neural Network (RNN).

- For this project we will be using Long Short Term Memory networks usually justcalled "LSTMs" to predict the closing price using a dataset of pastprices.

1.2 Objectives:

- In the current emerging competitive market, predicting the stock returns as well as the company'sfinancial status in advance will provide more benefits for the investors in order to invest confidently.
- The primary objective is to predict an approximate value of shareprice.
- The project target is to create an application that analyses previous stock data of companies andimplement values using LSTM to determine the value that particular stock will have in near future with suitable accuracy.
- This project is intended to solve the economic dilemma created in individuals that wants to investin stock market.
- To provide analysis for users through web application
- Through this application users can identify the factors affecting the price of the share market.

This application generates the pattern from large set of data of stock market for prediction of BSE & NSE

1.3 Scope:

- The main aim is to build an application in such a way that it will provide a platform where a stock price prediction of all the companies under BSE&NSE will display.
- Analysis of stocks using LSTM will be useful for new investors to invest in stock market based on various factors considered by the software.
- This application comparatively analyzes the effectiveness of prediction algorithms on stock price prediction and get general insight on this data through visualization to predict future stock behavior and value at risk for each stock
- This application will use LSTM method to predict future stock returns based on past.

Chapter 2

2. Problem Definition:

Investors requires graphs and statistical figures to identify the trends in the stock market**.** The aim of the project is to examine a number of different forecasting techniques to predict future stockreturns based on past returns to construct a portfolio of multiple stocks in order to diversity the risk.

We do this by applying LSTM for stock price forecasting by interpreting the seemingly chaoticmarket data. The challenge of this project is to predict the future closing value of a given stock across a givenperiod of time.

Goals:

- Explore stock prices.
- Implement basic model using linear regression
- Implement LSTM using Keras library

Chapter 3

Proposed System:

3.1 Features & Functionality:

- Authentication for different investors

  As keeping the Security our top priority , we have tried to provide separate authentication for each user. As this will help us to maintain proper security and provide better service to us users.

- Providing Personalized Watchlist

  A watchlist is a set of securities that an investor monitors for potential trading or investing opportunities. A well-organized watchlist can help identify trading opportunities, track portfolio performance, or monitor hot or popular stocks.

- Latest Updates on Prices of BSE & NSE

  Our app basically provides the latest Updates on prices of BSE and NSE which help the users to stay up to date .

- History of Stocks records in database

  There are many sites to get historical stock prices but accessing them may be a bit more difficult. So we have decided to provide our database which keep all the record perfectly well managed .

Chapter 4:

4. Project Outcomes:

- Determining the Stock market forecast is always been challenging work for analyst.
- The Opening Value of the stock, the Highest and Lowest values of that stock on the same days, aswell as the Closing Value at the end of the day, are all indicated for each date through scrapping.
- Predicting the stock market was atime-consuming and laborious procedure a few years or even a decadeago. However, with the application of LSTM for stock price prediction forecasts, the procedure has become much simpler.

Chapter 5: Software Stack:

1) Development: VS Code
2) GUI Development: PYQT5
3) Frontend: Python
4) Backend: PostgreSQL

Project Architecture:

Fig A: - Project Architecture

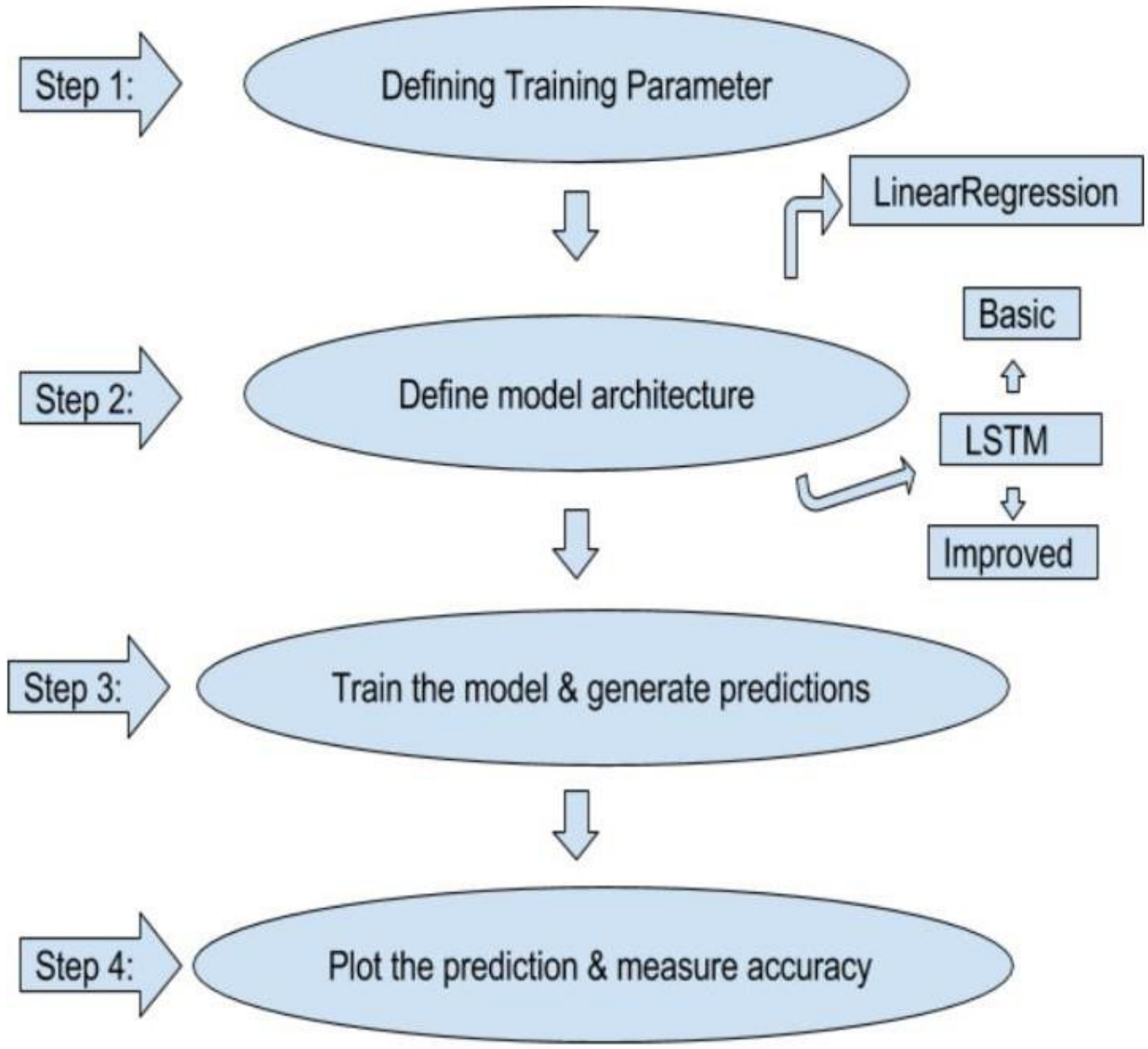

Fig B:- Working of LSTM (Sequential Model)

Chapter 6:

Project Design:

This project will be implemented through the keras flow library using LSTM NeuralNetworks. Development workflow will follow the below sequence:

1) Set Up Infrastructure

- VS Code
- Incorporate required Libraries (Keras, Pandas, Matplotlib, NumPy)

2) Prepare Dataset

- Process the requested data into pandas Dataframe
- Develop function for normalizing data

3) Develop Basic LSTM Model

- Set up basic LSTM model with Keras utilizing some parameters

4) Improve LSTM Model

- Develop, document, and Compare results using additional labels for the LSTM model.

Flowchart:

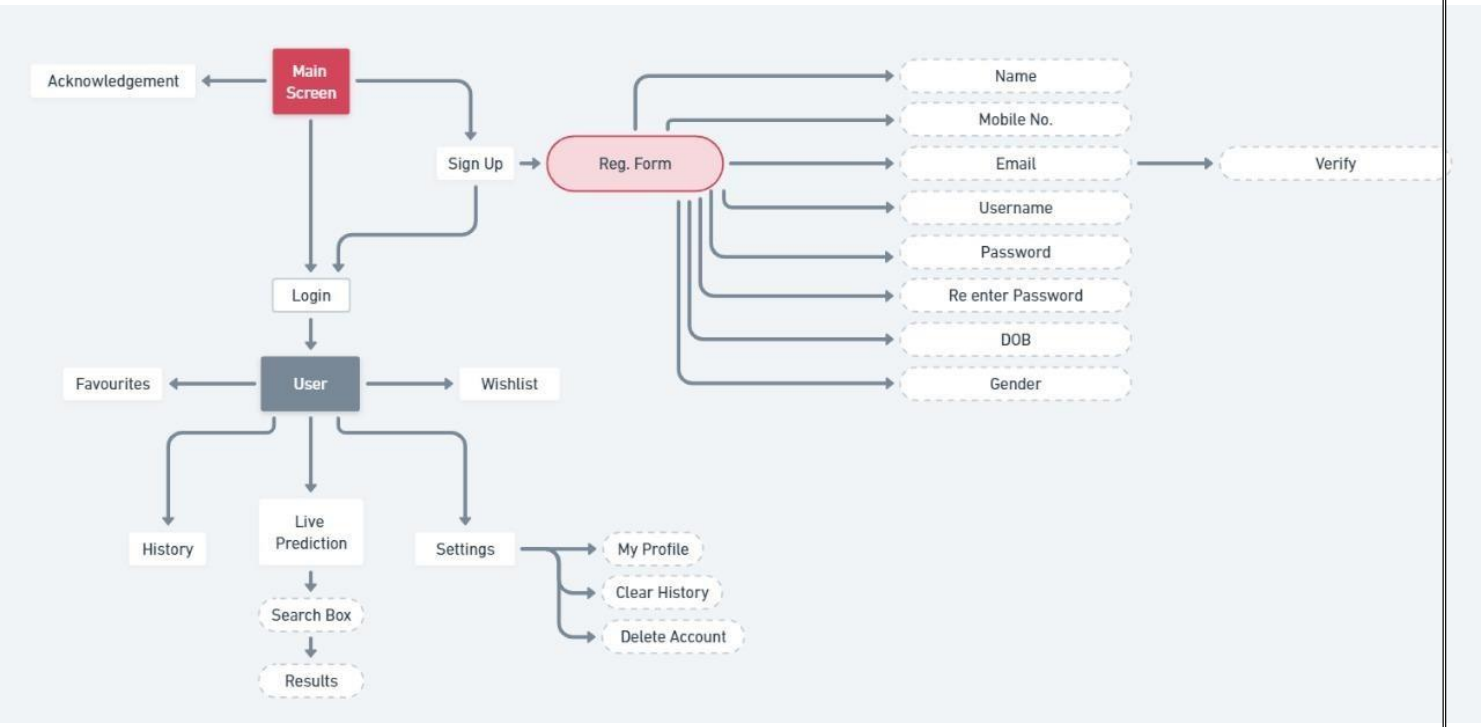

Fig B:- Flowchart of Project

Chapter No: -7

Project Scheduling

All the work was done by all Four, with use of tools like Any desk

Date	Week	Contents
11/02/2022 TO 15/02/2022	1	Group formation and Topic finalization. Identifying the scope and objectives of theMini Project
20/02/2022 TO 27/02/2022	2	Identifying the functionalities of the Mini Project
01/03/2022 TO 06/03/2022	3	Discussing the project topic with the help ofpaper prototype.
18/03/2022 TO 31/03/2022	4	Designing the Graphical User Interface (GUI)
01/04/2022 TO 03/04/2022	5	Database Design
14/03/2022 To 16/03/2022	6	Review 1 Presentations
04/04/2022 TO 08/04/2022	7	Database Connectivity of all modules
10/04/2022 TO 11/04/2022	8	Integration of all modules and Report Writing
11/14/2022 To 12/04/2022	9	Preparing Project presentation & Final reportfor allotted Project topic
12/04/2022 To 12/04/2022	10	Final report for allotted Project topic
12/04/2022 To 19/04/2022	11	Review 2 Presentations

Gantt Chart:

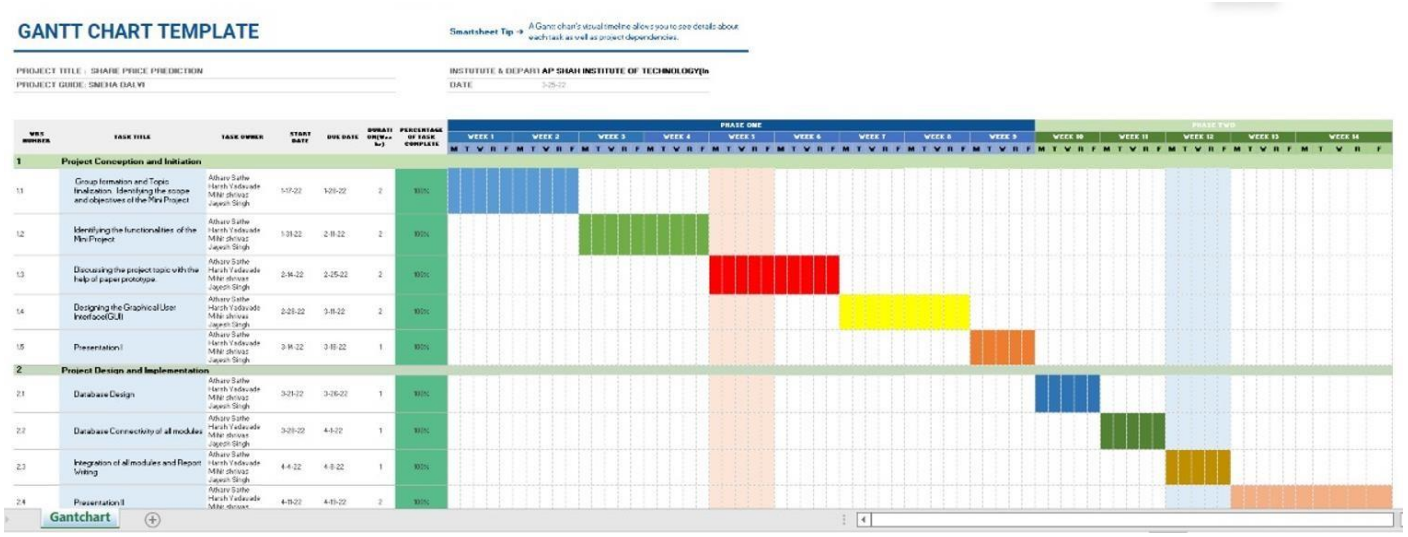

Fig C: Gantt-Chart of Project

Chapter 8

Conclusion:

This application helps investors to understand the idea of current market value and future stock behaviors. The project covers the successful development of a decent GUI along with database connectivity. Forfuture work, we are working on the machine learning model to predict the prices which is the prime objective of our project.

LSTM (Long-Short-Term-Memory) is the algorithm that will be used for prediction. Knowledge of stock price prediction movements by a fraction of a second can lead to high profitsinvestors can make which

makes stock market studies a major motivation for a researcher. Based on predicted value graphs has been plotted using Matplotlib Library

Chapter 9:

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Chapter 10:

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