Parshvanath Charitable Trust's
A. P. SHAH INSTITUTE OF TECHNOLOGY, THANE
(All Programs Accredited by NBA)
Department of Information Technology

Stock Price Prediction

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Project Guide
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Contents

What is Stock Market ?

Introduction

- Stock Price prediction is the act of determining the future value of a company stock or 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.

- **Problem Identified :**

  - The challenge of this project is to predict the future closing value of a given stock across a given period of time .
  - Investors requires graphs and statistical figures to identify the trends in the stock market.

- **Solution Proposed:**

  - 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 with the 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 just called “LSTMs” to predict the closing price using a dataset of past prices.

Objectives

- In the current emerging competitive market, predicting the stock returns as well as the company's financial 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 share price.
- The project target is to create an application that analyses previous stock data of companies and implement 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 invest in 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 generate the pattern from large set of data of stock market for prediction od BSE & NSE.

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 such as Exchange Rates , Interest Rates, etc…..considered by the software.
- This application comparatively analyze 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 uses LSTM method to predict future stock returns based on past return.

Features

- **Feature 1: Authentication for different investors**
- **Feature 2: Providing Personalized Watchlist**
- **Feature 3:Latest Updates on Prices of BSE & NSE**
- **Feature 4: History of Stocks records in database**

Outcomes of Project

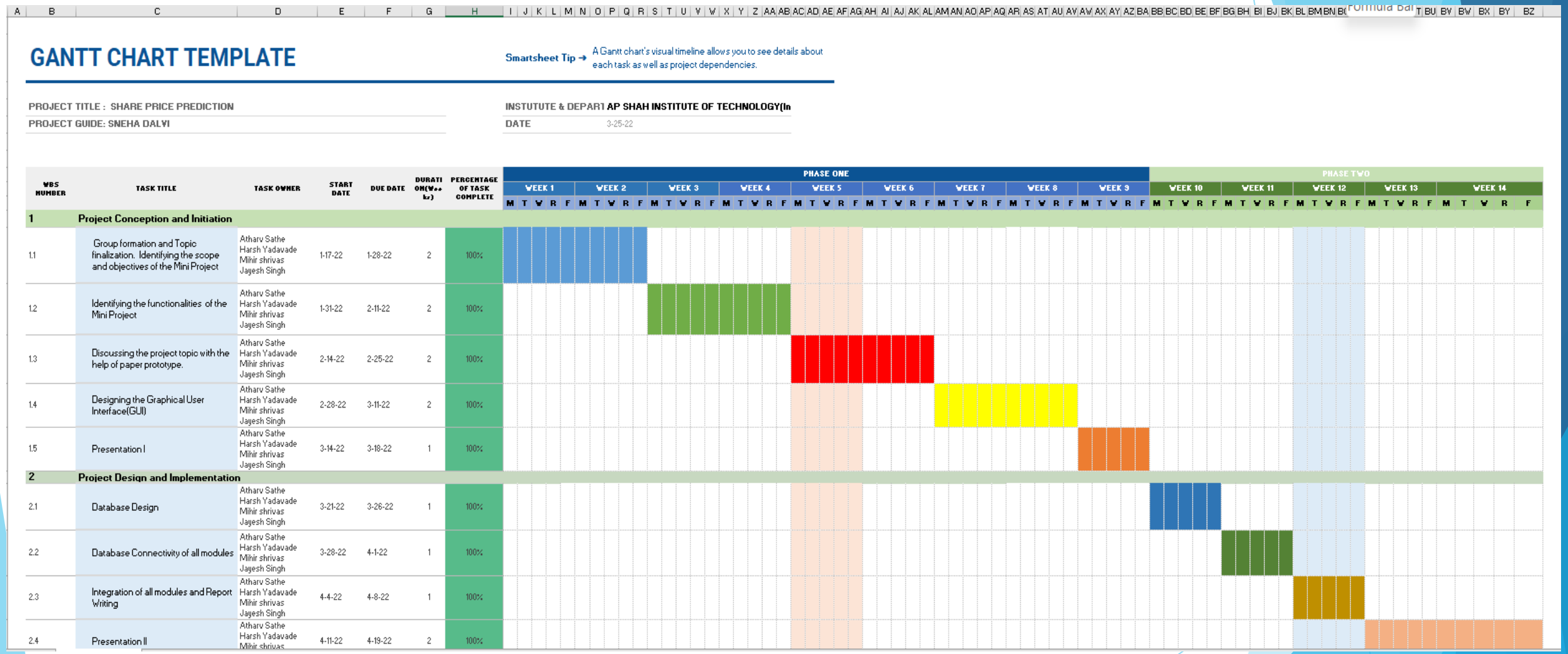
- Determining the Stock market forecast is always been challenging work for analyst.
- The Opening Value of the stock, the Highest and Lowest values of that stock on the same days, as well as the Closing Value at the end of the day, are all indicated for each date through scrapping.
- Predicting the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

Literature Survey

YEAR	AUTHOR	ALGORITHIM	OUTCOMES
2014	Tavish	ANN	• Firstly, it helps us understand the impact of increasing / decreasing the dataset vertically or horizontally on computational time. • Secondly, it helps us understand the situations or cases where the model fits best. • ANN fail to capture correlation between stock prices in the form of long-term temporal dependencies
2016	Raimi Karim	RNN	• Recurrent Neural Networks (RNNs) are a class of Artificial Neural Networks which are often used with sequential data. • Recurrent neural network is even used with convolutional layers to extend the effective pixel neighbourhood. • Training an RNN is a very Difficult Task.
2018	Sumit Saha	CNN	• Very High accuracy in image recognition problems. • Automatically detects the important features without any human supervision. • CNN does not encode the position and orientation of objects. • Lack of ability to be spatially invariant to the input data.
2019	Jen-Zhung Chien	DNN	• Deep neural networks (DNNs) are improved versions of the conventional ANN with multiple layers. • It requires very large amount of data in order to perform better than other techniques. • It's extremely expensive to train due to complex data models.
2019	Pranj	LSTM	• The principal advantage of LSTM over ANN, CNN is that LSTM can model a collection of records (i.e. time collection) so that each pattern can be assumed to be dependent on previous ones. • LSTM (RNN) are even used with convolutional layers to extend the powerful pixel neighbourhood. • LSTMs are explicitly designed to avoid the long-term dependency problem. Remembering information for long periods of me is practically their default

Figure a :- Literature Survey Table

GANTT CHART



GANTT CHART TEMPLATE

Smartsheet Tip → A Gantt chart's visual timeline allows you to see details about each task as well as project dependencies.

PROJECT TITLE : SHARE PRICE PREDICTION

PROJECT GUIDE: SNEHA DALVI

INSTUTUTE & DEPART AP SHAH INSTITUTE OF TECHNOLOGY(In

DATE 3-25-22

WBS NUMBER	TASK TITLE	TASK OWNER	START DATE	DUE DATE	DURATION(Wks)	PERCENTAGE OF TASK COMPLETE
1	**Project Conception and Initiation**					
1.1	Group formation and Topic finalization. Identifying the scope and objectives of the Mini Project	Atharv Sathe Harsh Yadavade Mihir shrivas Jayesh Singh	1-17-22	1-28-22	2	100%
1.2	Identifying the functionalities of the Mini Project	Atharv Sathe Harsh Yadavade Mihir shrivas Jayesh Singh	1-31-22	2-11-22	2	100%
1.3	Discussing the project topic with the help of paper prototype.	Atharv Sathe Harsh Yadavade Mihir shrivas Jayesh Singh	2-14-22	2-25-22	2	100%
1.4	Designing the Graphical User Interface(GUI)	Atharv Sathe Harsh Yadavade Mihir shrivas Jayesh Singh	2-28-22	3-11-22	2	100%
1.5	Presentation I	Atharv Sathe Harsh Yadavade Mihir shrivas Jayesh Singh	3-14-22	3-18-22	1	100%
2	**Project Design and Implementation**					
2.1	Database Design	Atharv Sathe Harsh Yadavade Mihir shrivas Jayesh Singh	3-21-22	3-26-22	1	100%
2.2	Database Connectivity of all modules	Atharv Sathe Harsh Yadavade Mihir shrivas Jayesh Singh	3-28-22	4-1-22	1	100%
2.3	Integration of all modules and Report Writing	Atharv Sathe Harsh Yadavade Mihir shrivas Jayesh Singh	4-4-22	4-8-22	1	100%
2.4	Presentation II	Atharv Sathe Harsh Yadavade Mihir shrivas	4-11-22	4-19-22	2	100%

PHASE ONE: WEEK 1 | WEEK 2 | WEEK 3 | WEEK 4 | WEEK 5 | WEEK 6 | WEEK 7 | WEEK 8 | WEEK 9

PHASE TWO: WEEK 10 | WEEK 11 | WEEK 12 | WEEK 13 | WEEK 14

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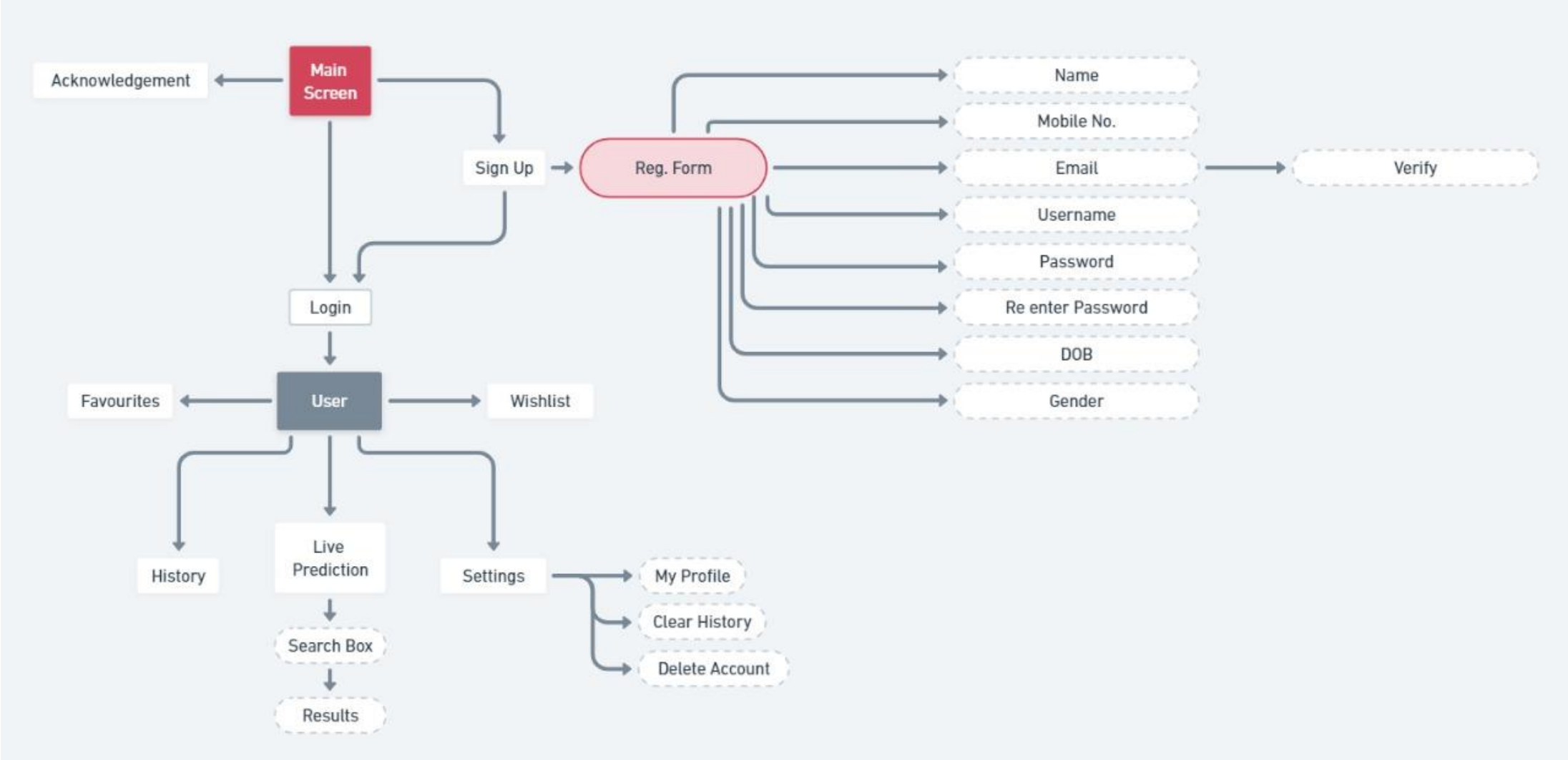
Flow Chart



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Technology Stack

Tech Stack

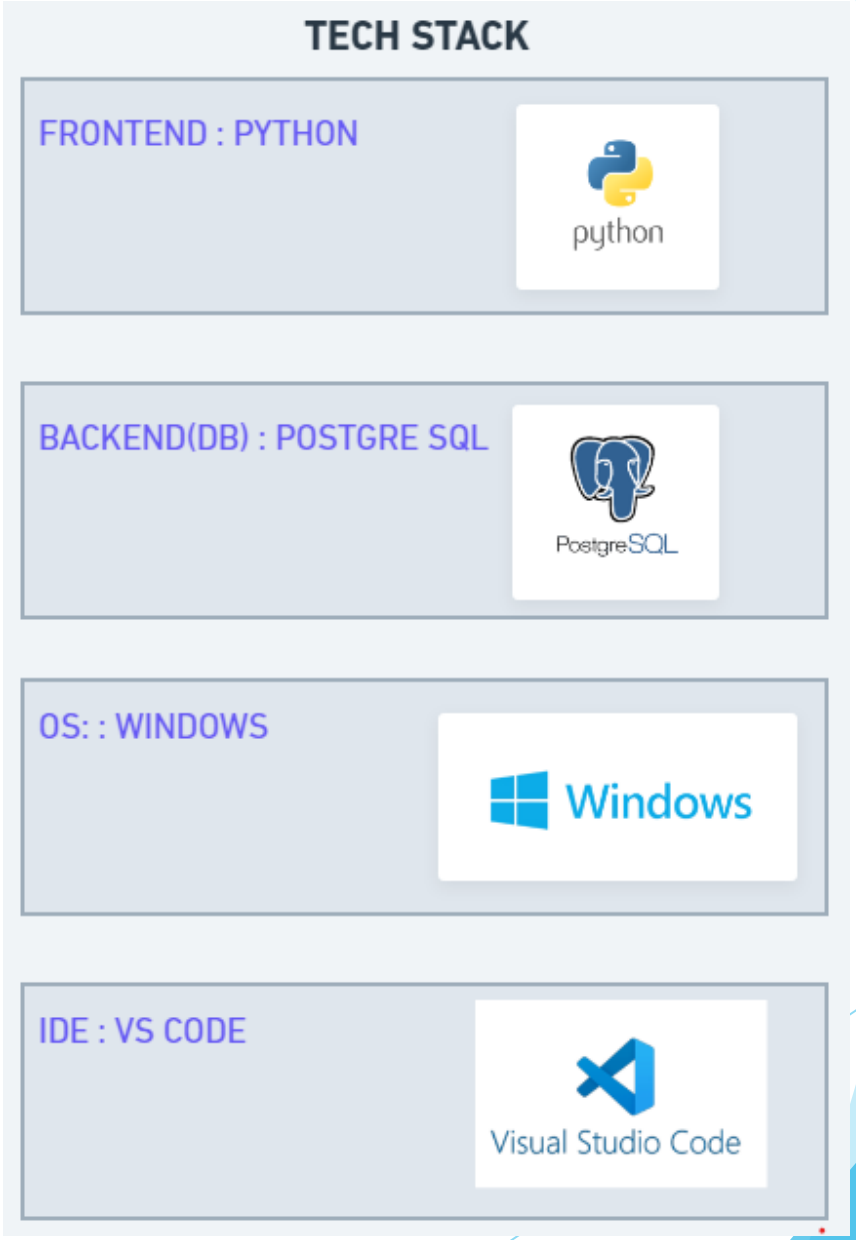

Fig : Technology Stack

Implementation

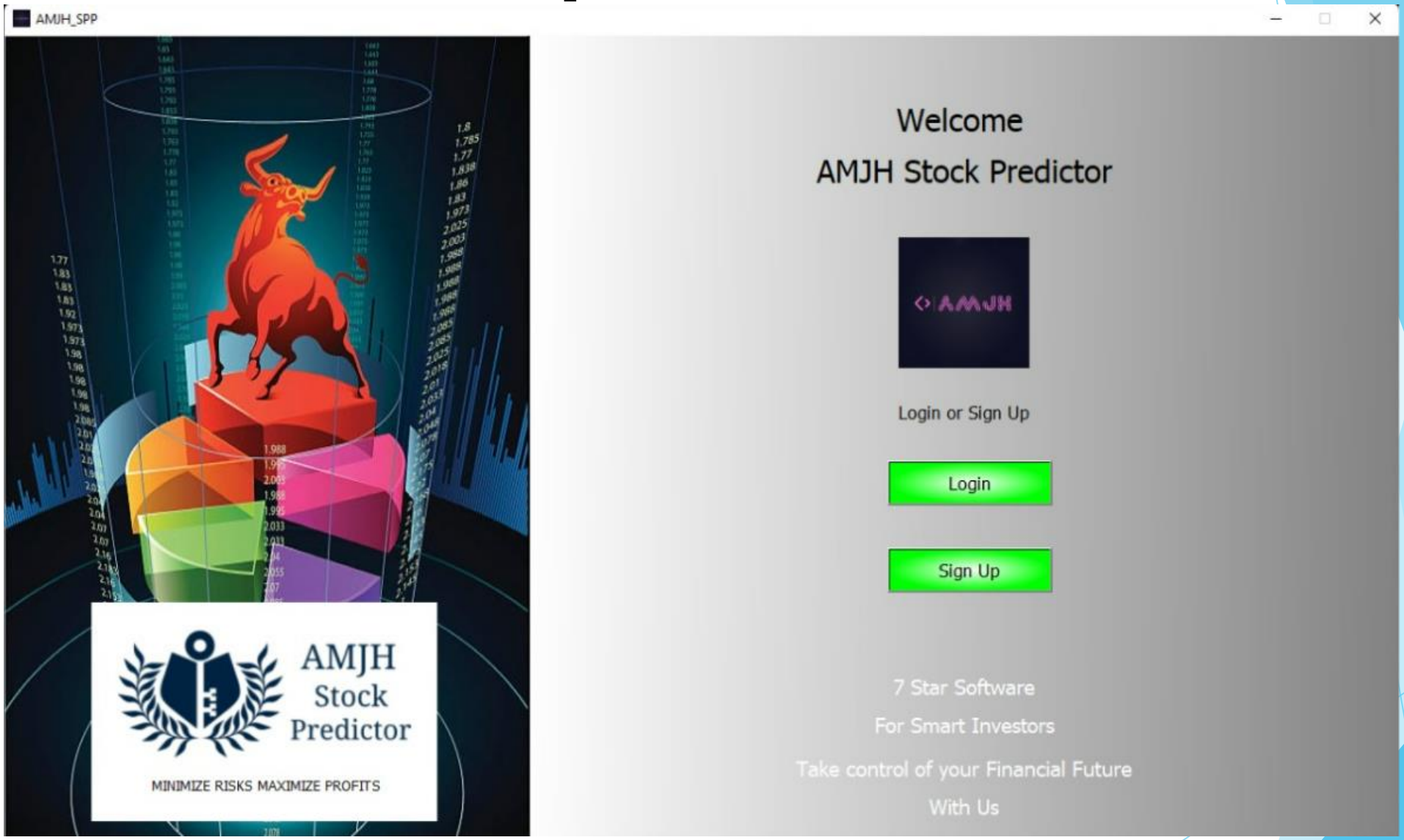

Figure1: Welcome Screen Page

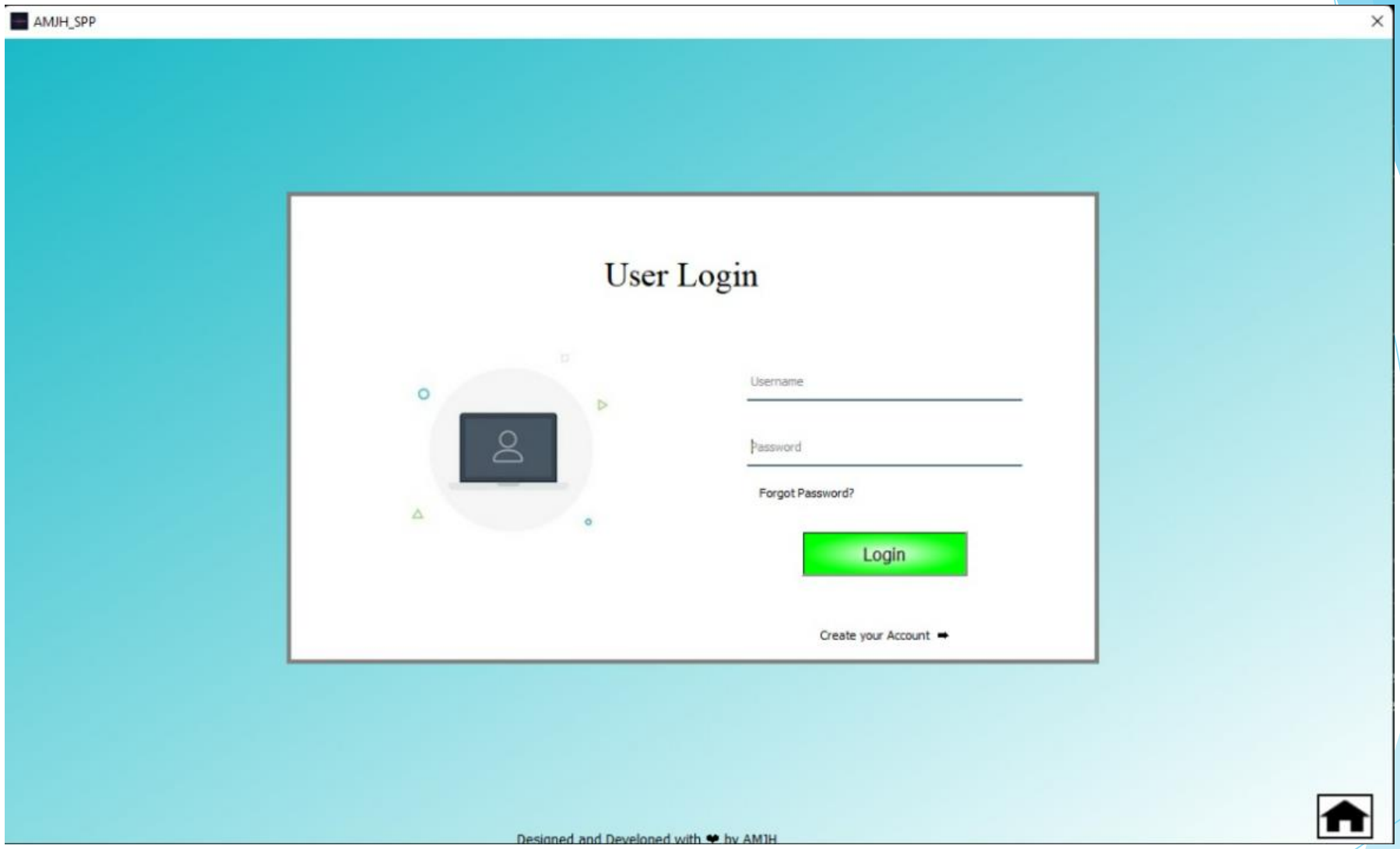

Figure 2: Login Page

Figure 3: Signup Screen

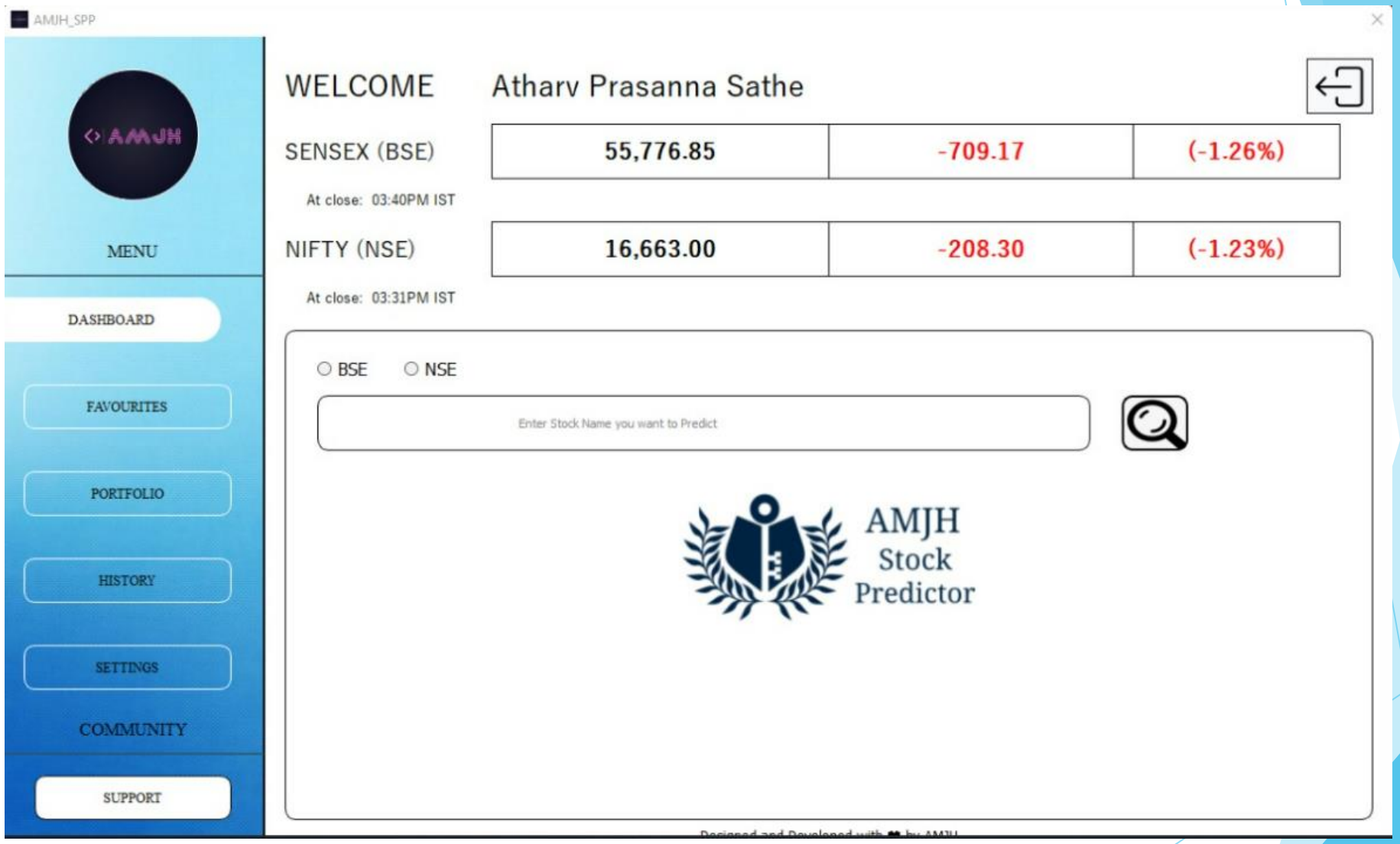

Figure 4: Dashboard (Main Page)

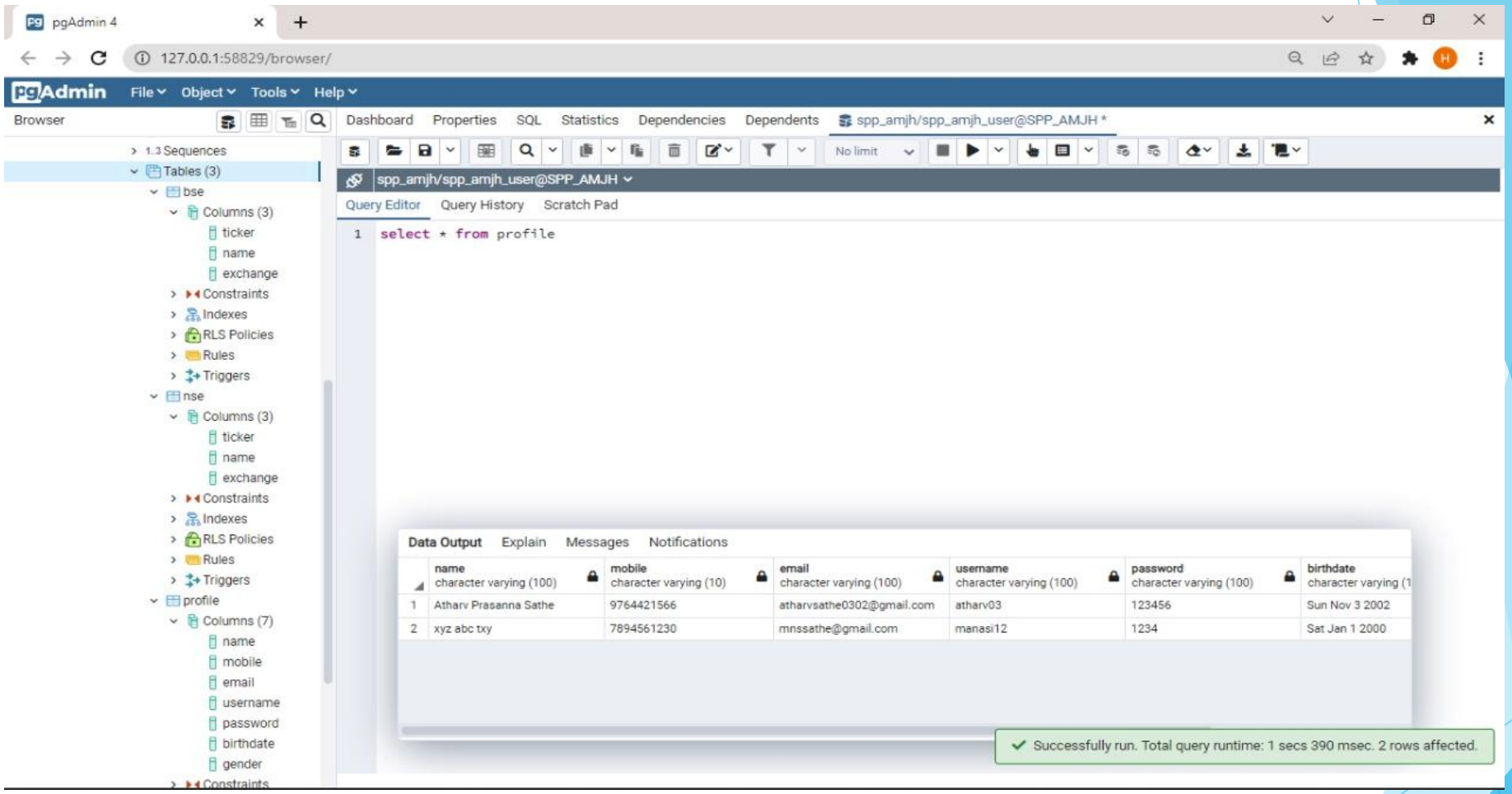

Figure 5: Database Login Table

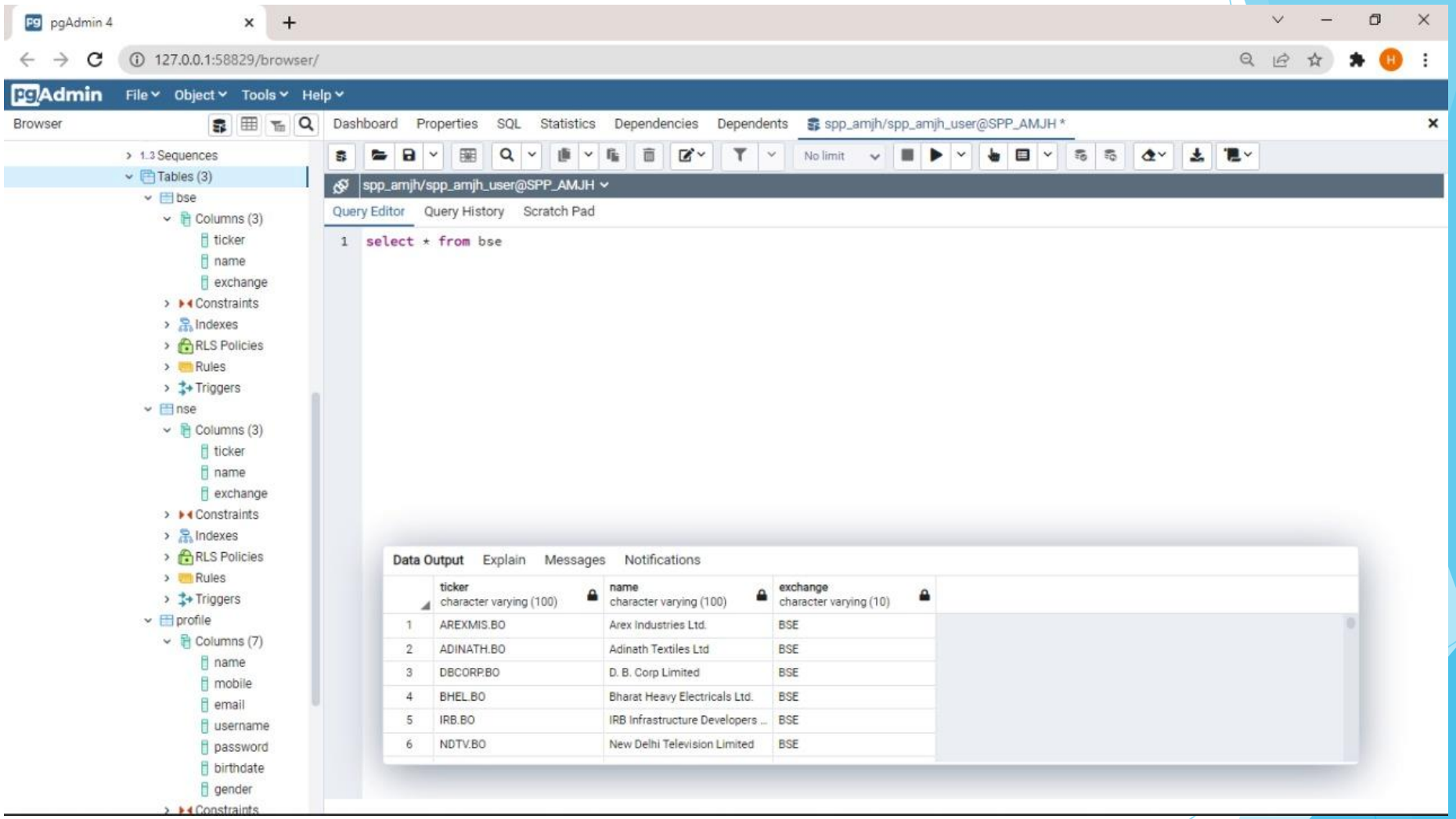

Figure 6: Database Tickers Table (BSE)

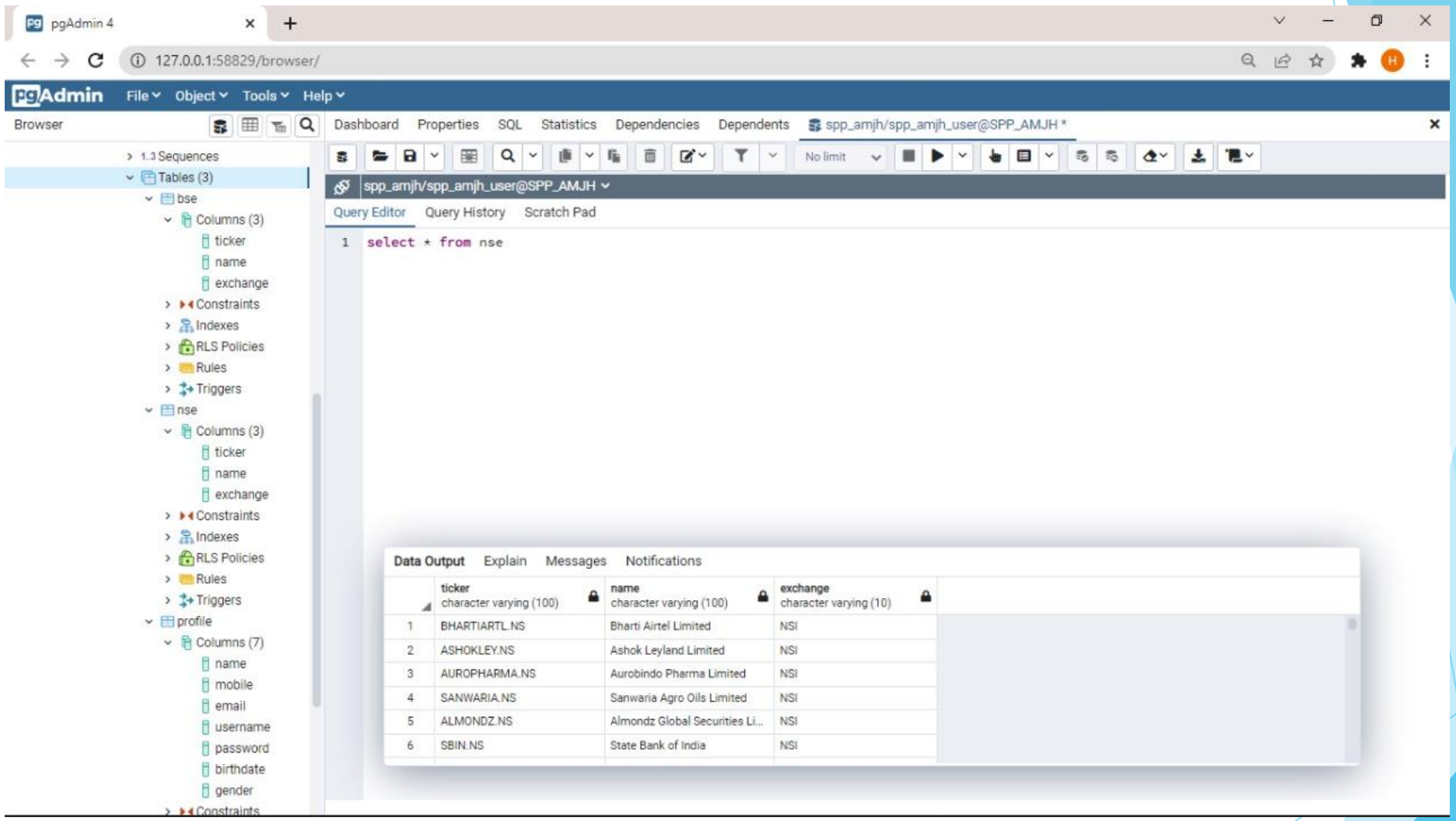

Figure 7: Database Tickers Table

(NSE)

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 GUI along with database connectivity with PostgreSQL.
- The Project is based on the Sequential machine learning model to predict the prices which we have achieved using LSTM (Long-Short-Term-Memory) for prediction of Shares.
- Based on predicted value graphs has been plotted using Matplotlib Library.

References

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THANK YOU!!!!