Stock Market Prediction System

Submitted by,

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Introduction

Predicting stock prices is a cumbersome task as it does not follow any specific pattern. Changes in the stock prices are purely based on supply and demand during a period of time. In order to learn the specific characteristics of a stock price, we can use algorithms to identify these patterns through machine learning. One of the most well-known networks for series forecasting is LSTM (long short-term memory) which is a Recurrent Neural Network (RNN) that is able to remember information over a long period of time, thus making it extremely useful for predicting stock prices. RNNs are well-suited to time series data and they are able to process the data step-by-step, maintaining an internal state where they cache the information they have seen so far in a summarized version. The successful prediction of a stock's future price could yield a significant profit.

Aim

To predict stock prices according to real-time data values fetched from API.

Objective

The main objective of this project is to develop a web application that can predict stock price based on real-time data.

Project Scope

The project has a wide scope, as it is not intended for a particular organization. This project is going to develop generic software, which can be applied by any business organization. Moreover it provides facilities to its users. Also the software is going to provide a huge amount of summary data.

Deployment:

Link for online repository: https://github.com/Kumar-laxmi/Stock-Prediction-System-Application

Link for hosted application: https://stock-prediction-system.herokuapp.com/

Technology used:

Languages:

- HTML
- CSS
- JavaScript
- Python

Frameworks:

- Django
- Bootstrap

Deployed/hosted on:

- Heroku

ML Algorithm used:

- Linear Regression

Database:

- SQLite

Packages used for ML:

- Numpy
- Pandas
- sklearn

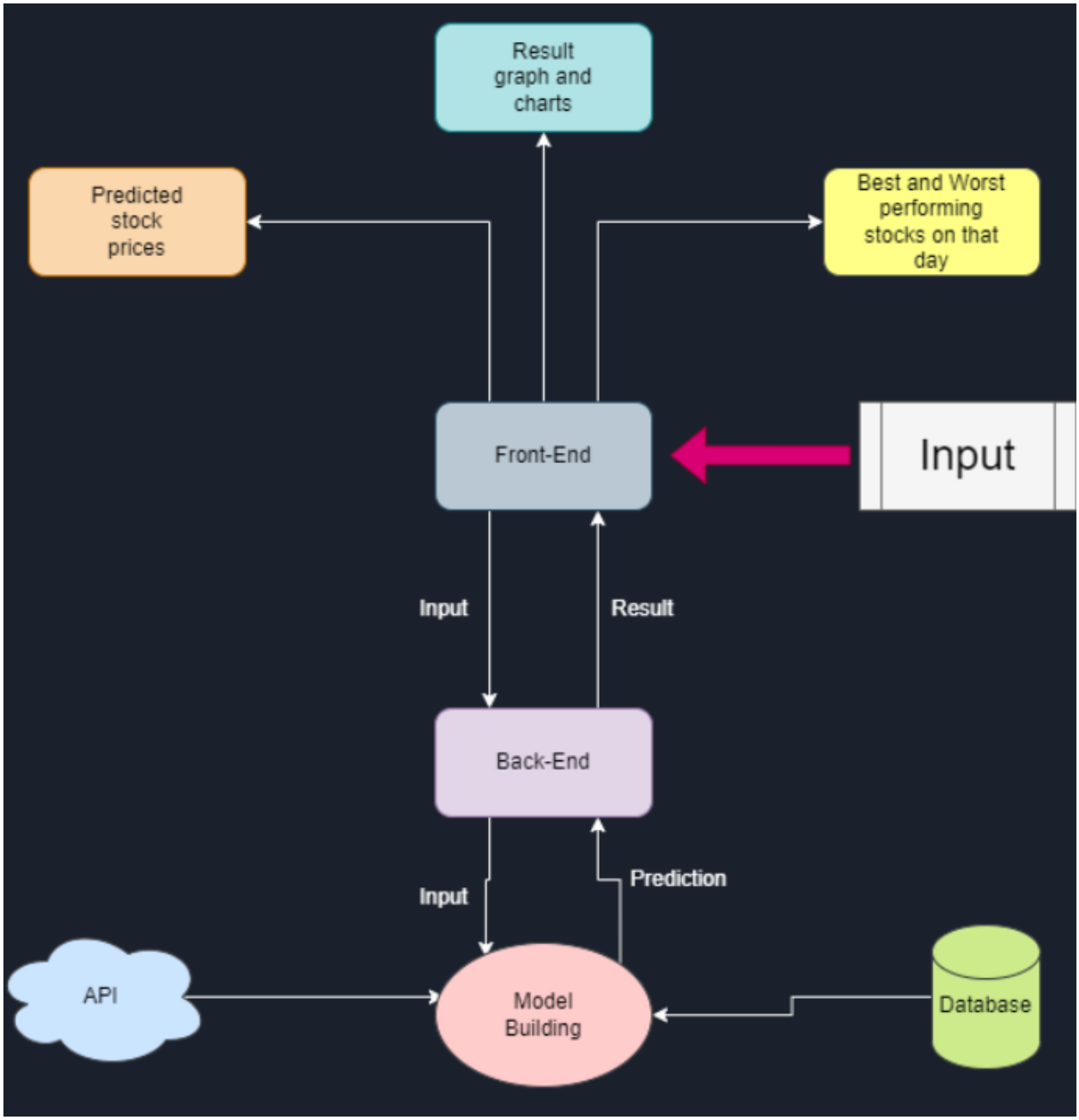
API used:

- Yahoo Finance API

Designed using:

- Adobe XD
- Figma

Workflow diagram:

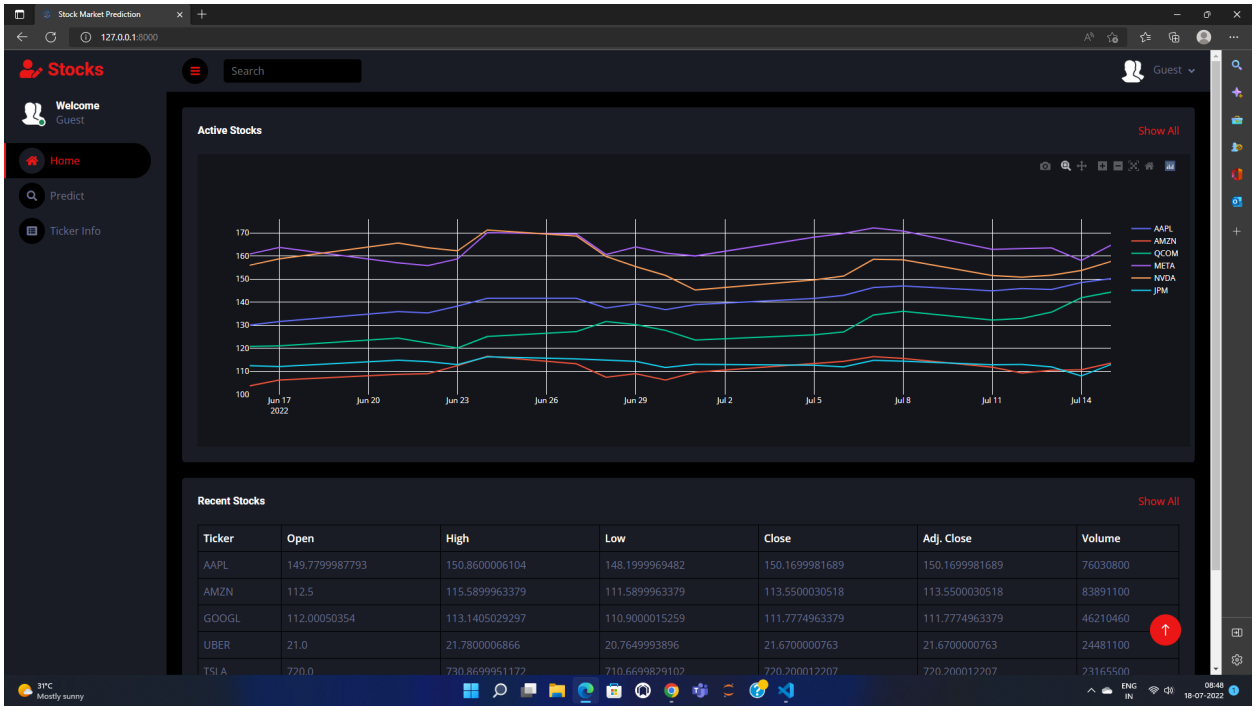


Walk through video demonstration:

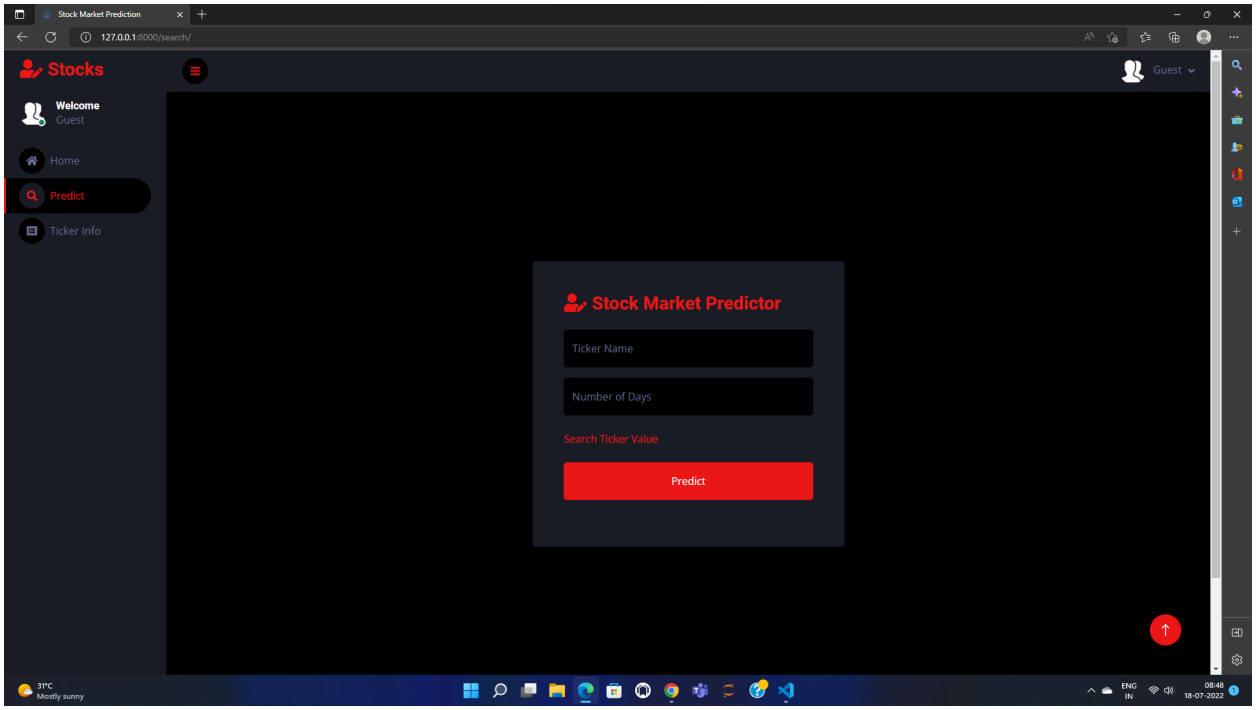
- Link: https://user-images.githubusercontent.com/76027425/179440037-bf73c742-c463-434b-a5f9-97b83e4ddb35.mp4

Output Screenshots:

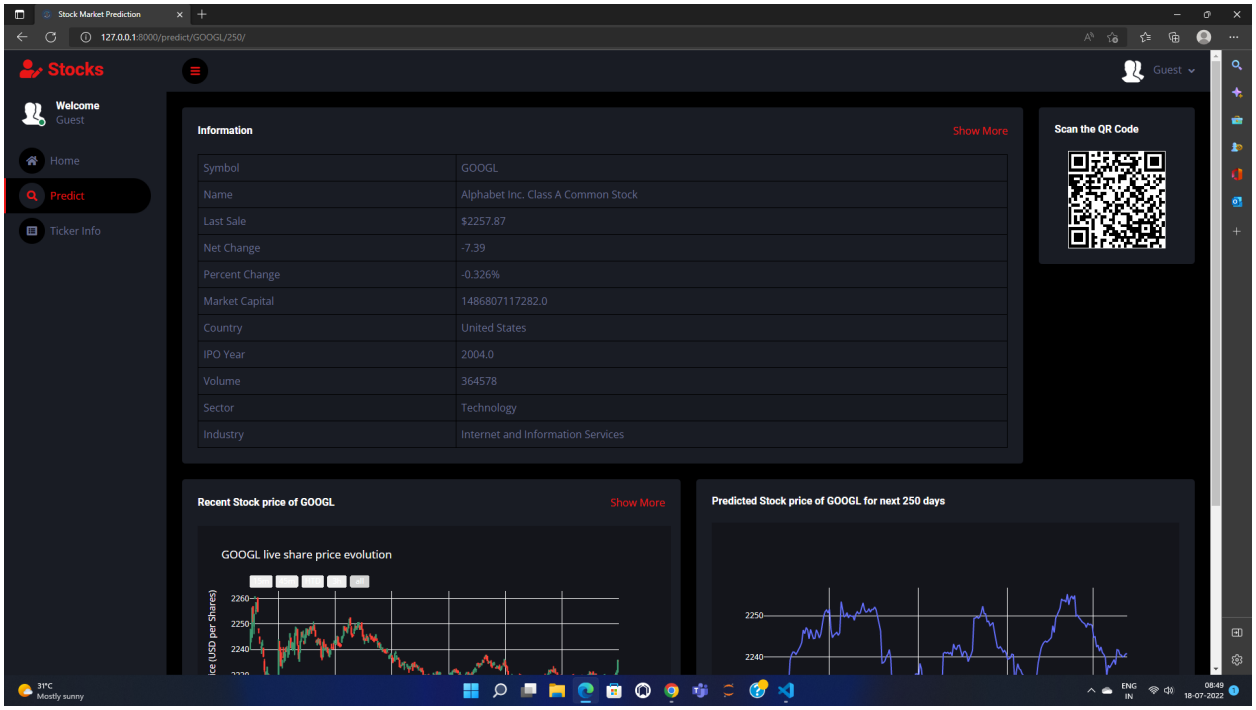
The Home page of the application that displays real time data of stock prices.



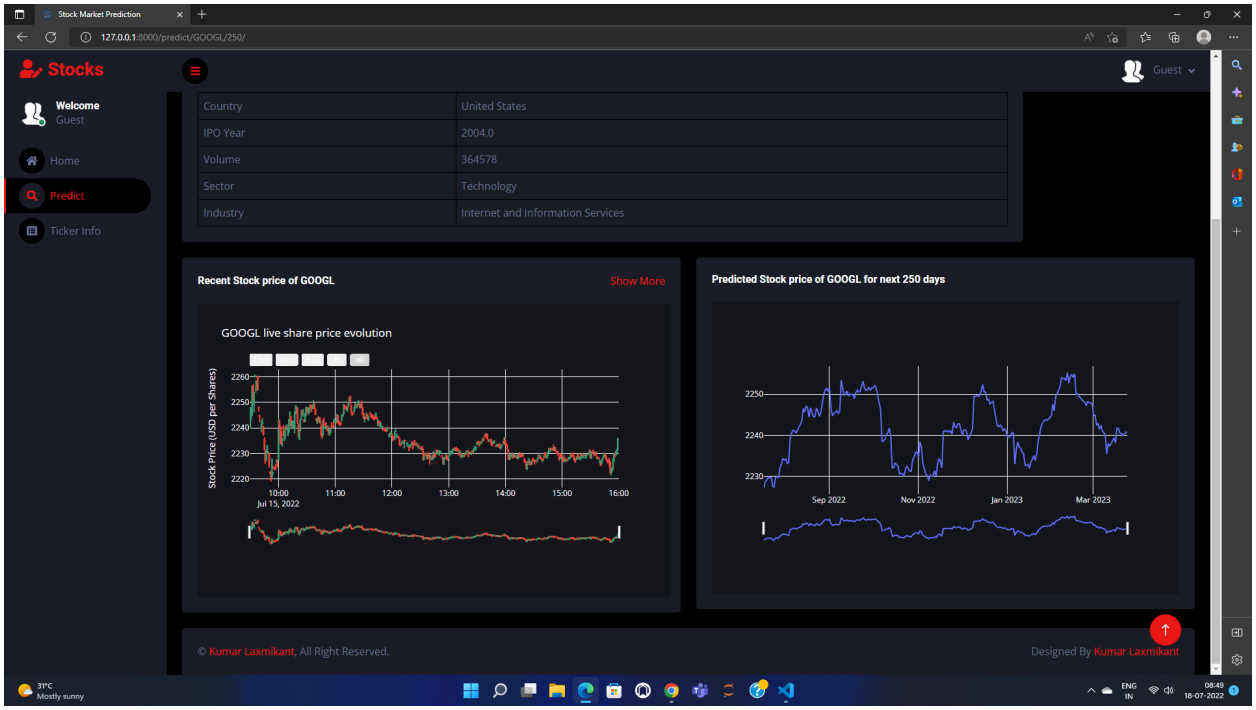
To Predict stock price we move onto prediction page where we need to enter valid ticker value and number of days and click predict button.



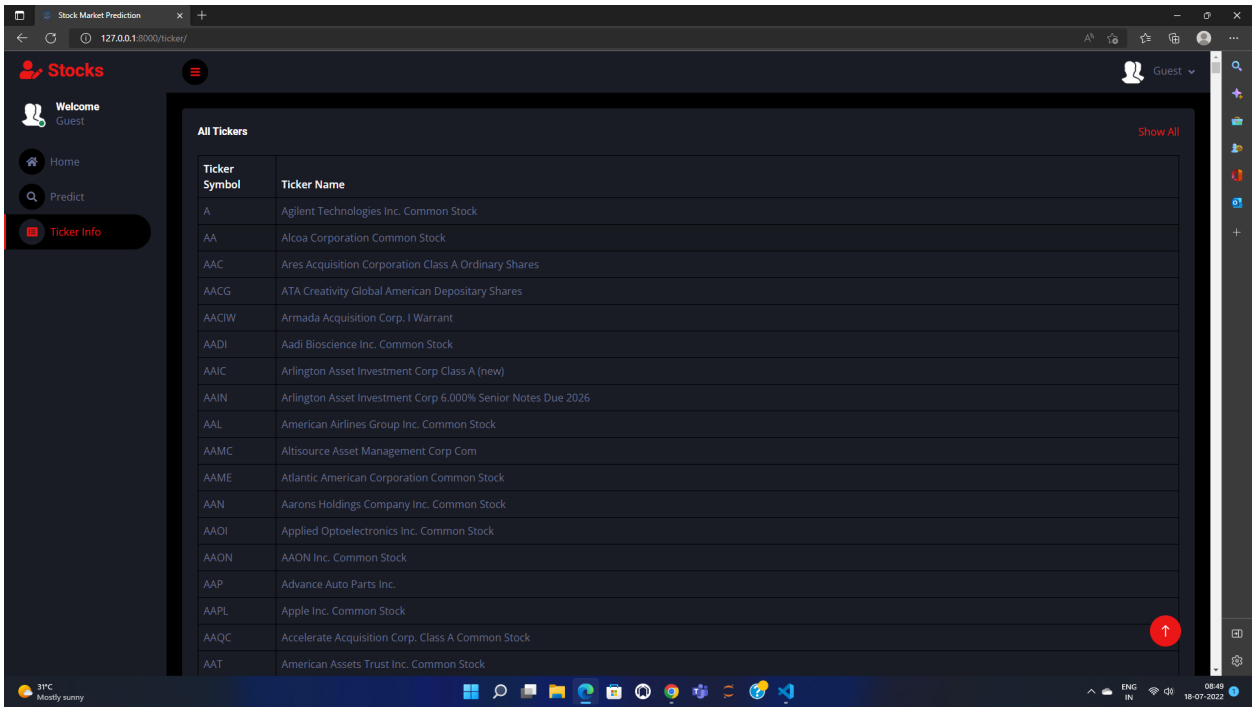
This page displays the predicted stock price along with searched ticker details and also generating unique QR Code to view the predicted result.



The Left Graph is the real time stock price of the searched ticker for the past 1day & the Right Graph is the predicted stock price for the number of days searched.



The Ticker Info page displays the details of all the valid tickers accepted by the application.



Result:

The maximum accuracy achieved by the ML model is 0.985.