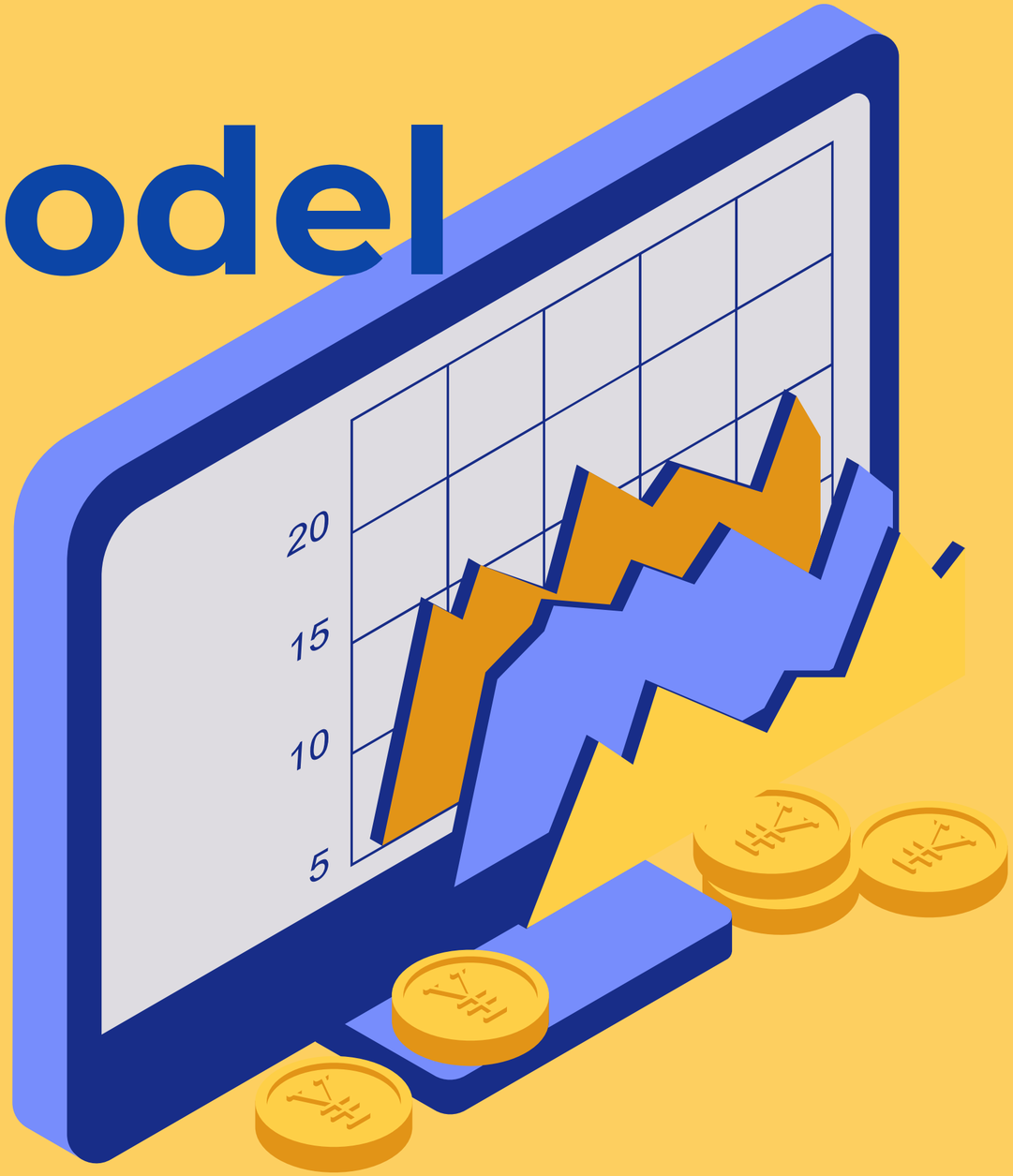
Stock Price Prediction Model



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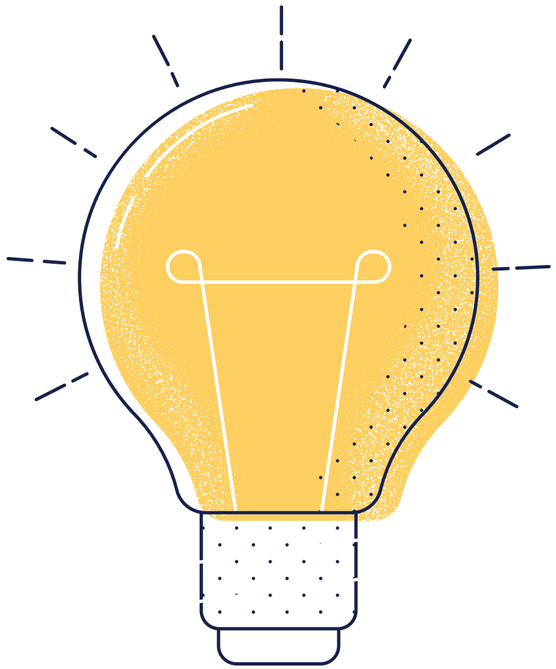
Introduction

- As the name suggests, this project predicts the price of the stocks for the future so that the user can decide whether to invest in the stock or not.

- This model uses the concepts of deep learning and neural networks for its prediction.



The Idea

The user has the freedom to select the time slot in which they want to check the pattern of the stock prices, then using the same dataset our model will predict the future prices of the stocks of the same corporation.

Libraries and Packages used

- Pandas
- Python Numpy
- Pandas DataReader
- Keras
- Matplotlib
- Sklearn

Pandas

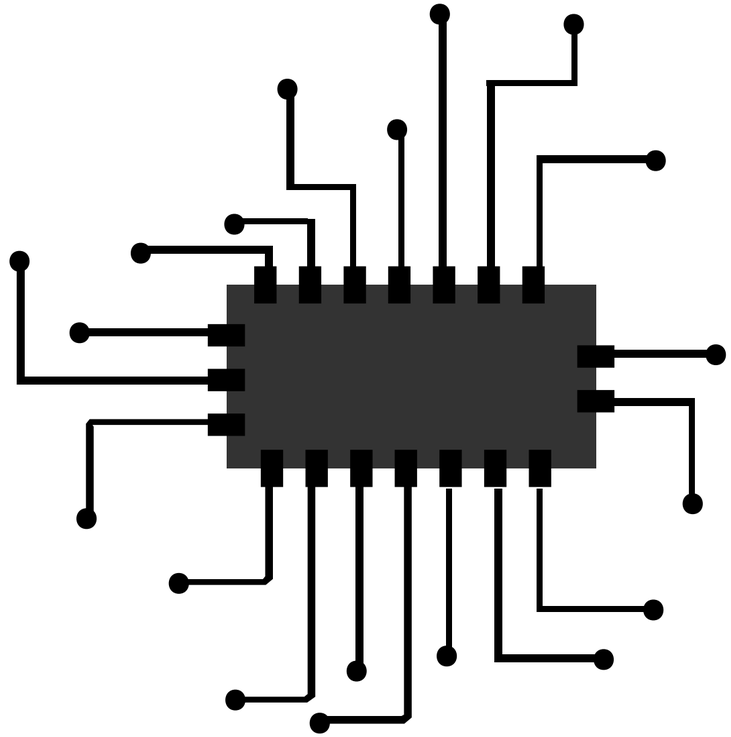
Pandas is a software library written for Python language that helps in data manipulation and analysis.

Python Numpy

NumPy is a Python library used for working with arrays. Numpy helps us work with numbers in our program.

Pandas DataReader

The Pandas DataReader is a sub package that allows us to create a data frame from various internet datasources.

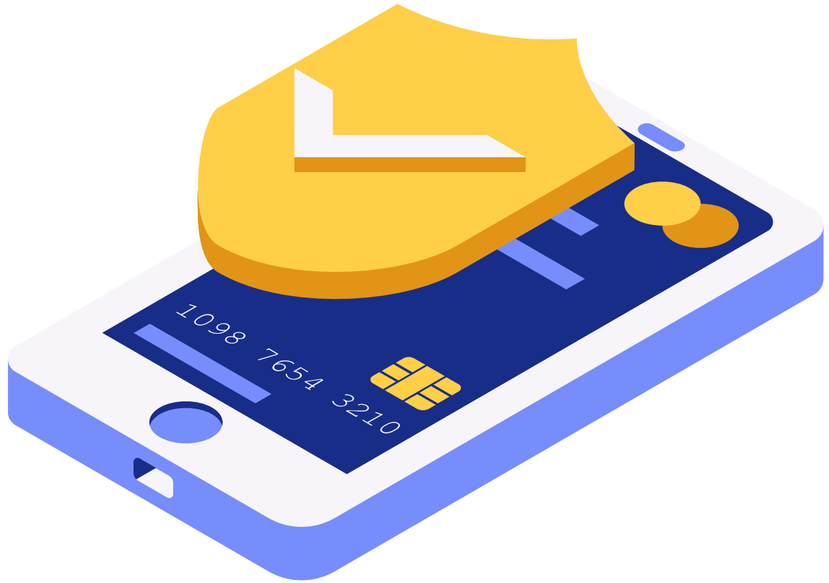


Keras

It is a Python library for deep learning. It is used to implement deep learning models as fast and easily as possible.

Matplotlib

Matplotlib library is used for creating static, animated, and interactive visualizations in python.



Sklearn

Sklearn is a very useful library as it contains tools for machine learning and statistical modelling.

Google COLAB

Google Colaboratory or 'Colab' is a wonderful product from the Google research team as it allows programmers to run Python codes on the browser directly without worrying about the installation of packages and libraries onto their personal systems.

It is mostly used for machine learning programs, data analysis, and educational purposes.

We have made this project using Google Colaboratory as it made it very easy for us to use different libraries and packages that we needed for this project..

LSTM

Long short-term memory is an artificial recurrent neural network architecture used in the field of deep learning. Unlike standard feedforward neural networks, LSTM has feedback connections. It can not only process single data points, but also entire sequences of data

TRAINING AND PREDICTION

- First, the model is provided with the stock quote using DataReader.

- Then using Matplotlib, the data is visualized.

- A new data frame is created with only the closing stock prices.

- The data frame is converted to a numpy array.

- Total number of rows are obtained to train the model.

- The Data is then scaled using MinMaxScaler to bring it within the range of zero to one.

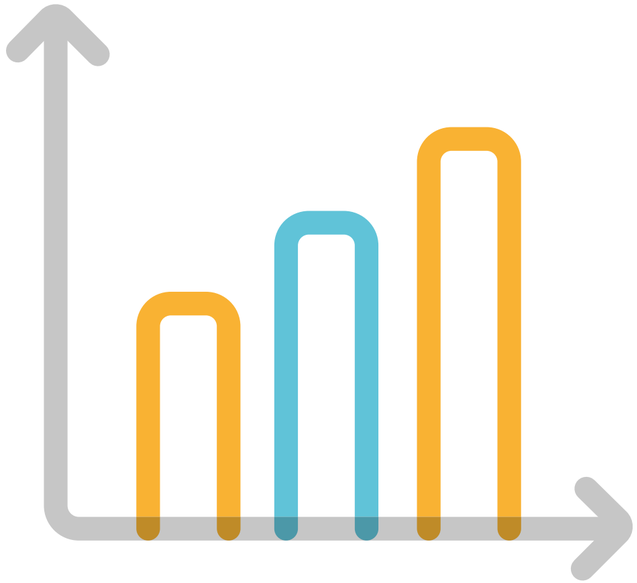
- A test data set is created for training purposes.

- The data set is reshaped into a 3d array.

- LSTM model is built, compiled, and trained on the test data set.

- After converting and reshaping the data, the model is made to predict the stock prices.

- The data is then again visualized using Matplotlib.



THANK YOU