

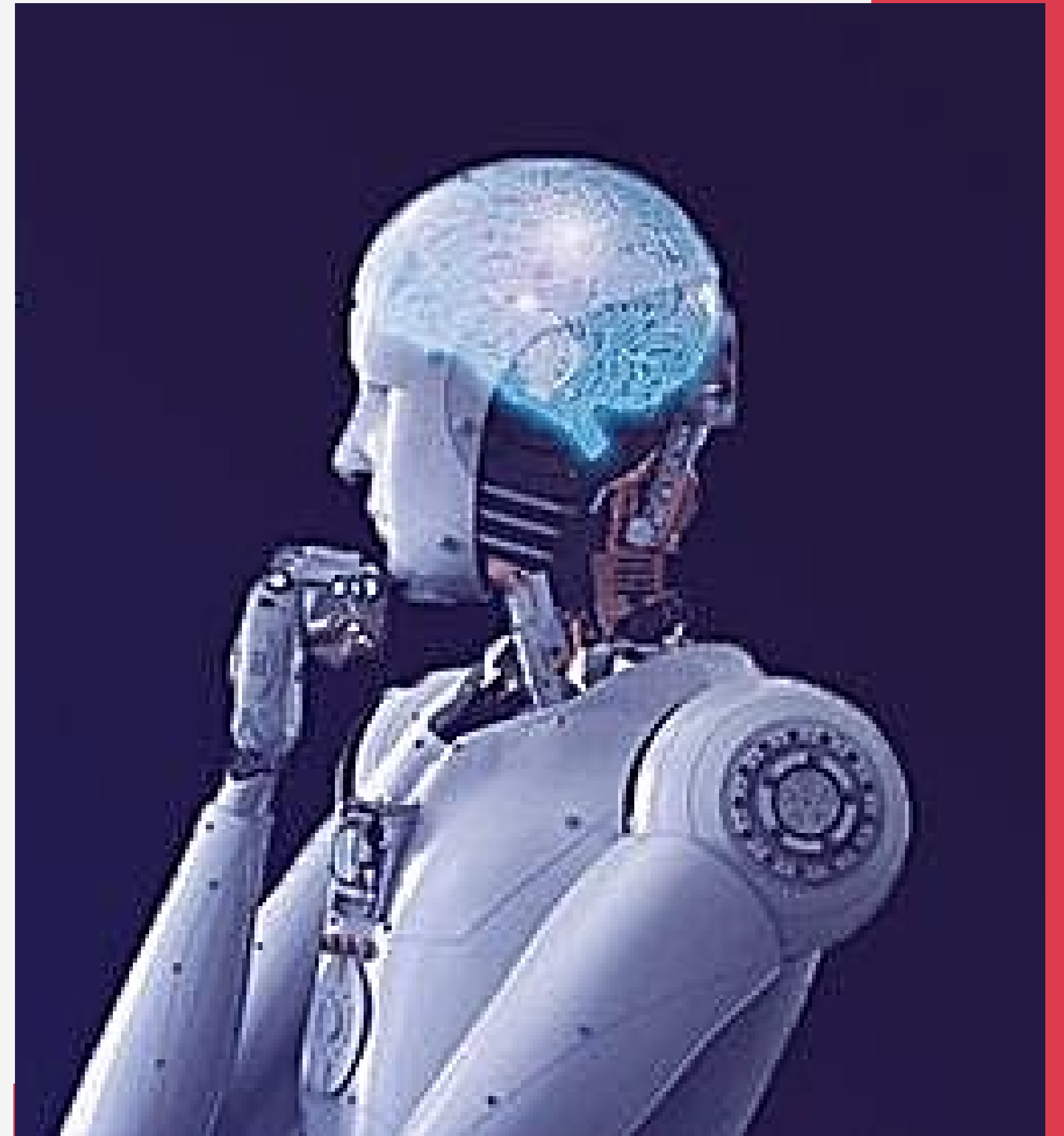
Predict Future Stock Prices

A PROJECT FOR FINTECH BOOTCAMP 2022
BY TECH UP TEAM



Presentation Outline

- Overview Project
- Benefits of Project
- Project to Saudi Vision 2030
- System Design
- Implementation
- Results
- Why Our Project?
- Future Enhancement
- Conclusion



Introduction



About Project:

Find out how we can predict future stock prices, as we know accurate prediction of stock market returns is a very challenging task due to depends on various factors such as:

- Geopolitics
- Global Economy
- Company Financial Reports, and Performance

Project Method:

Machine learning by using Python to work with historical data about the stock prices of a publicly listed company. We implemented a mix of machine learning algorithms to predict the future stock price of this company. Starting with simple algorithms, and then move on to advanced techniques by using neural network.

Benefits of Project:

- It aims to provide the opportunity to invest in a semi-secure way by predicting the future price that the market will close on.
- It gives a future outlook, the most investment, the largest return, and the guarantee in the financial market for beginners
- Not limited to forecasting the shares of companies, but also included forecasting the price of the digital currency Bitcoin.
- Not linked to a specific time and days, because the application is keen to give a future prediction of the best share price.

Saudi Arabia Vision 2030

Aims to Developing Saudi Financial Market to Become **An Advanced Capital Market**

QUOTED FROM THE FINANCIAL SECTOR DEVELOPMENT PROGRAM





Project to Saudi vision 2030

SOME OF THE ASPIRATIONS:

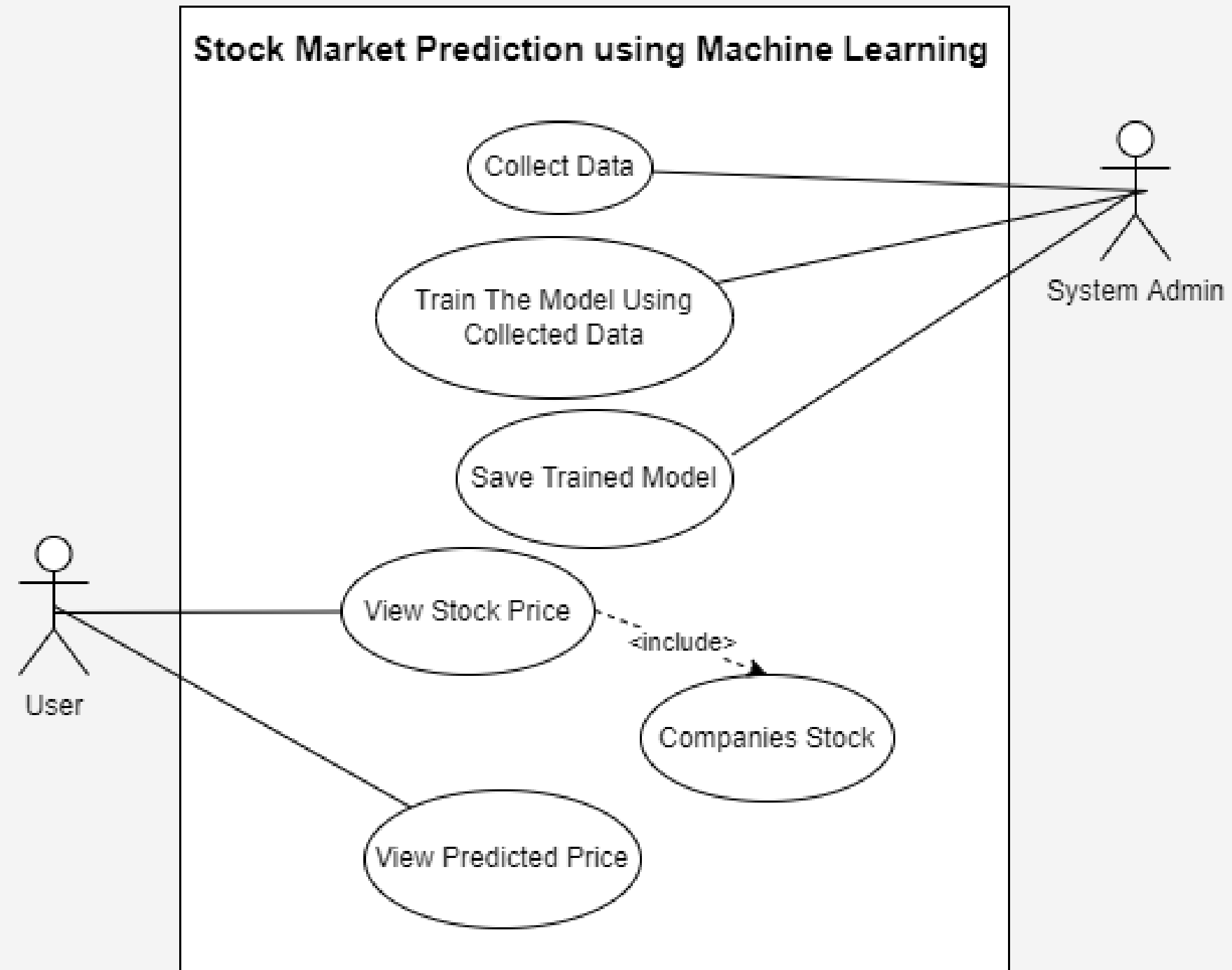
- Increase the market value of stock market as percentage of GDP 80.8% (ex. Aramco).
- Emerging companies (such as financial technology companies) will be enabled to drive innovate and competitions by 2025.

WE CAN CONTRIBUTE TO ACHIEVING THIS VISION THROUGH:

To be one of emerging companies (FinTech) that provide an automated system for who have a lack of financial literacy to be comfortable in investing in the financial market that would enable financial institutions to increase GDP, and reducing risks by predict the future price.

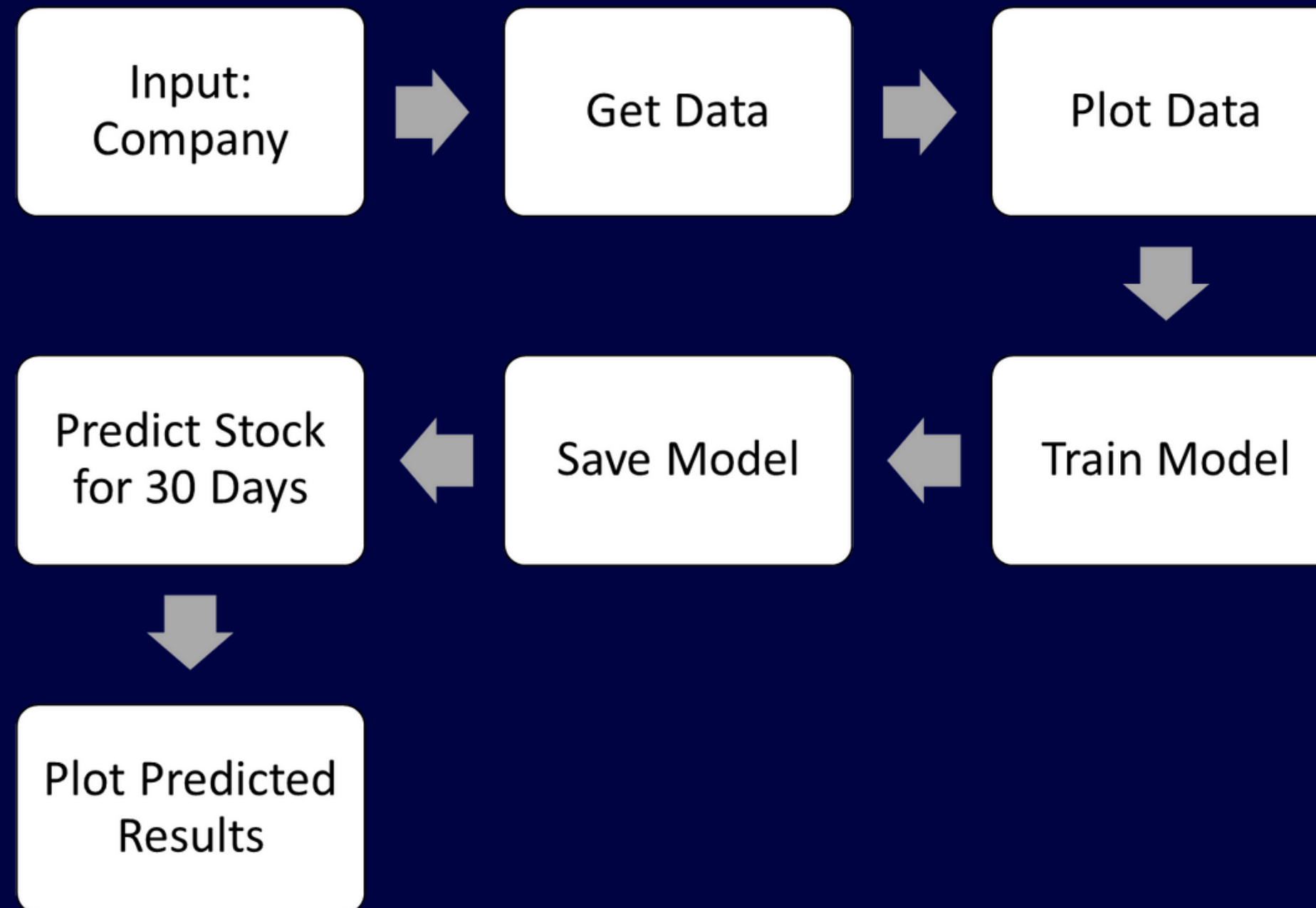
ARCHITECTURE

SYSTEM DESIGN



ARCHITECTURE

DATA FLOW DIAGRAM



Implementation

Build Machine Learning Model (Apple)

```
[11]: #Build the LSTM model
Apple_model=Sequential()
#add the layer to the model
Apple_model.add(LSTM(50,return_sequences=True,input_shape=(x_train_A.shape[1],1)))
Apple_model.add(LSTM(50,return_sequences=False))
Apple_model.add(Dense(25))
Apple_model.add(Dense(1))

[12]: #Compile the model
Apple_model.compile(optimizer='adam',loss='mean_squared_error')

[13]: #Train the model
Apple_model.fit(x_train_A,y_train_A,batch_size=1,epochs=1)

2155/2155 [=====] - 35s 15ms/step - loss: 1.6192e-04
[13]: <keras.callbacks.History at 0x1c07a902b50>
```

Save The Model (Apple)

```
[14]: Apple_model.save("Saved_LSTM_Model_Apple")
```

Implementation

Root Mean Squared Error(RMSE) (Apple)

```
[20]: #Get the root mean squared error(RMSE)
      Apple_rese= np.sqrt(np.mean(Apple_predictions - y_test_A)**2)
      Apple_rese
```

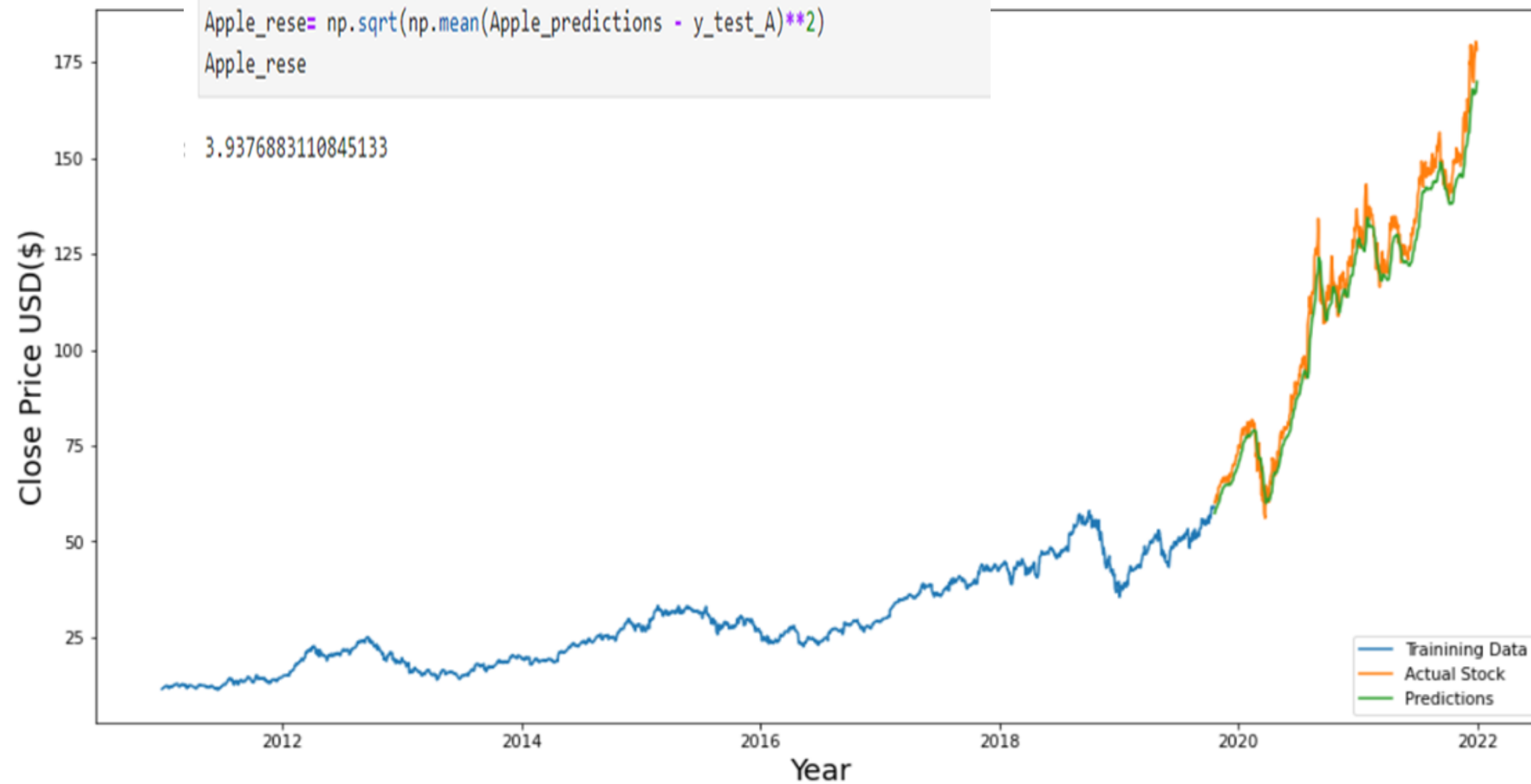
```
[20]: 3.9376883110845133
```

Results of Testing Model for (Apple)

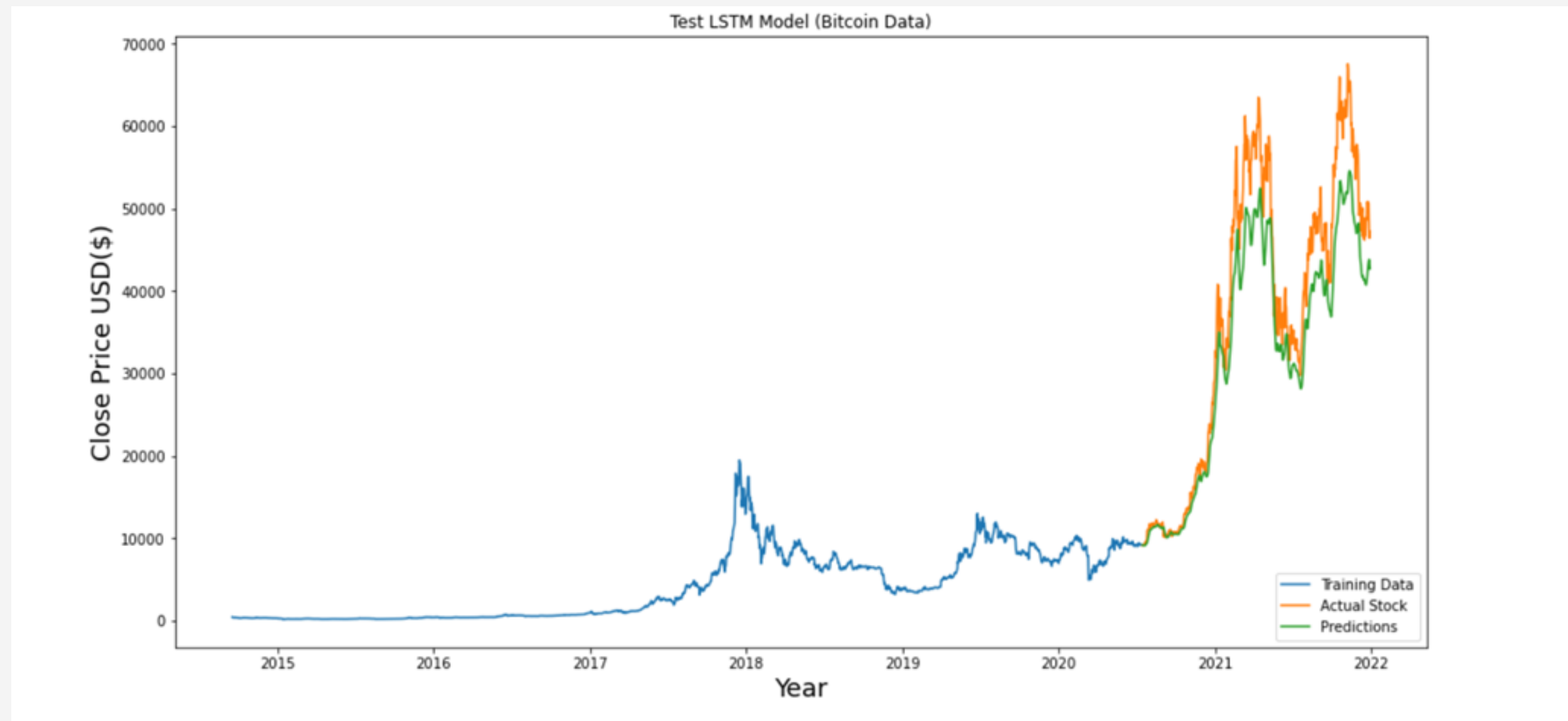
Root Mean Squared Error(RMSE) (Apple)

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Apple_rese= np.sqrt(np.mean(Apple_predictions - y_test_A)**2)
Apple_rese
```

3.9376883110845133



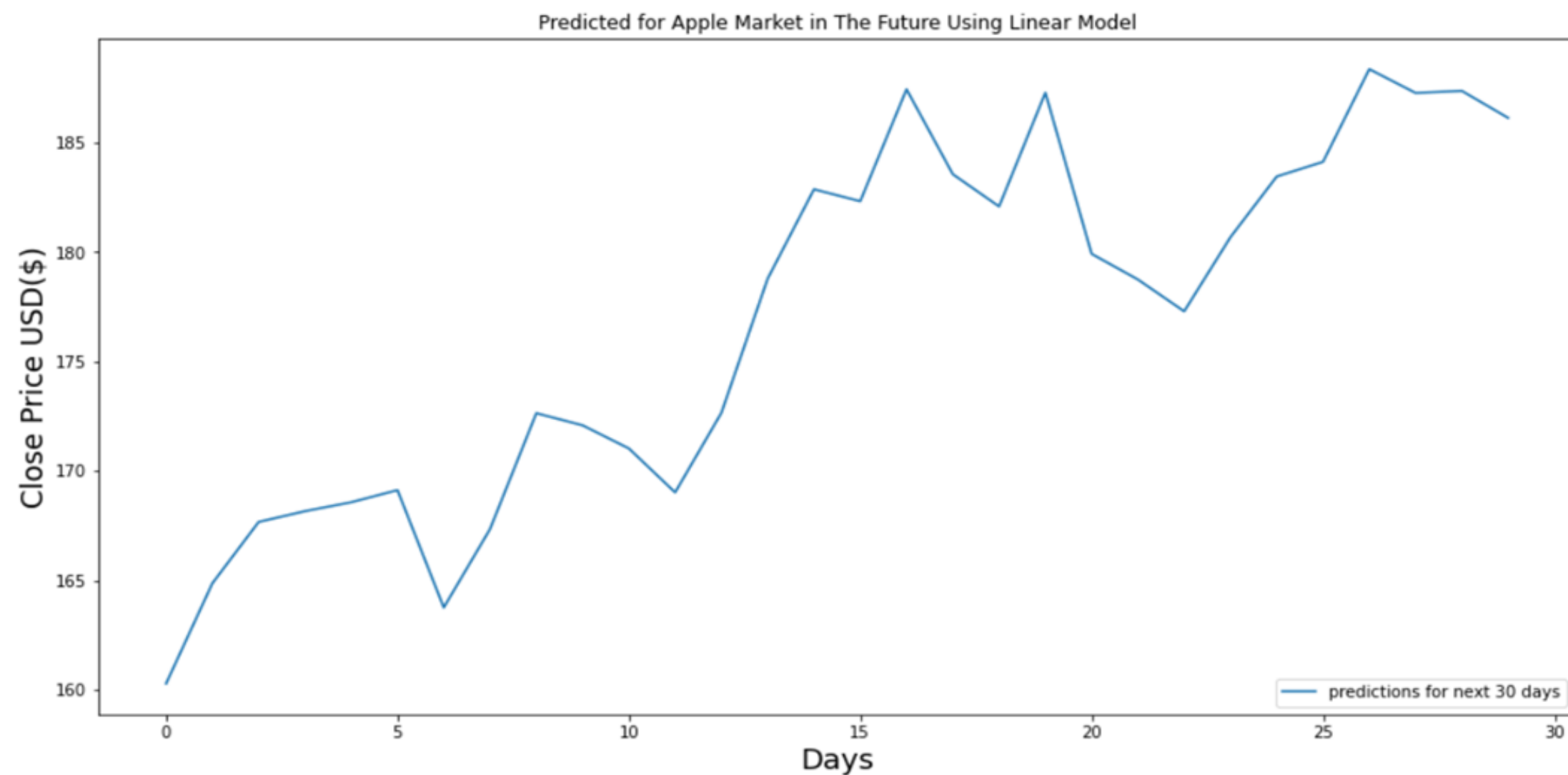
Results of Testing Model for (Bitcoin)



Results of Predict Stock for 30 Days

Predicted for Stock Market in The Future (Apple)

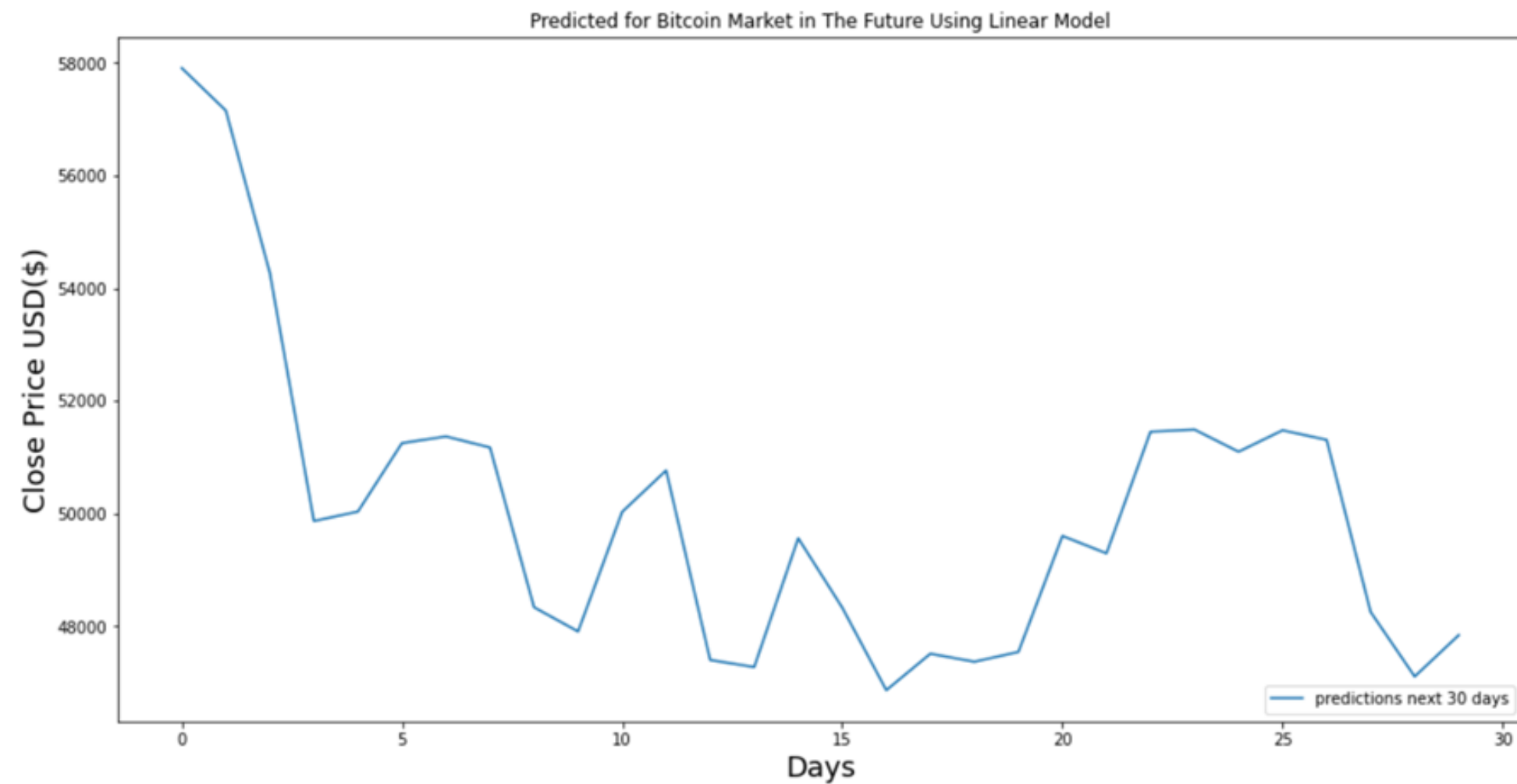
```
[50]: Fut_App_projection=30  
FutA_df=Apple_df.copy()  
FutA_df['Projection']= FutA_df[['Close']].shift(-Fut_App_projection)
```



Results of Predict Stock for 30 Days

Predicted for Bitcoin in The Future

```
[62]: Fut_BTC_projection=30  
Fut_bt=BTC_df.copy()  
Fut_bt['Projection']=Fut_bt[['Close']].shift(-Fut_BTC_projection)
```



THE DASH APP



Why Our Project?

A hub where investment can be safe

ABOUT OUR PROJECT APPLICATION

We plan to follow a passive indexing strategy that will lead to higher returns with a long-term investment.

SERVICE STRATEGY:

Our investment strategy based on the mutual benefit of the investors to give them the best closing price for the company to be invested in.

SERVICE FEES:

To obtain the service of predicting the future prices of shares, investors must open an investment portfolio with us.



Future Enhancement

INCREASE CUSTOMER SATISFACTION:

- Optimizing solutions in managing portfolios more efficiently.
- Customizable digital wealth management tool that converts dormant savings into profitable investment assets.
- Upgrading the application and turning it into a robot advisor to gives more features in terms of financial advisory.

Conclusion

If you want to enter the stock arenas

Our application is the best in this field
to not fall into a huge loss



THANK YOU

Team Member

- BASMA ALDAMEGH
- EITHAR ALAHMADI
- MONA ALOMARI
- SHEHANH ALOTAIBI
- ZAINAB ALJOHANI