

# MINOR PROJECT

Submitted by students of Btech cse (AIML) 2<sup>nd</sup> sem

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## ***About the Project***

Stock price prediction is a pivotal part of financial analytics. With accurate forecasts, investors and traders can make better-informed decisions, increasing potential returns. This project leverages Python, a powerful programming language, to analyze historical stock data and build predictive models using machine learning algorithms



```
[1] #yahoo finance as data source
#pip install yfinance
import yfinance as yf

Python

[101] #See the yahoo finance ticker for your stock symbol
stock_symbol = 'GAIL.NS'

Python

[102] #last 5 years data with interval of 1 day
data = yf.download(tickers=stock_symbol,period='5y',interval='1d')

Python

... [*****100%*****] 1 of 1 completed

[3] type(data)

Python

... pandas.core.frame.DataFrame

[4] data.head()

Python
```

```

... Train on 761 samples, validate on 269 samples
Epoch 1/100
761/761 [=====] - 13s 17ms/step - loss: 0.2048 - val_loss: 0.0253
Epoch 2/100
761/761 [=====] - 10s 13ms/step - loss: 0.0197 - val_loss: 0.0112
Epoch 3/100
761/761 [=====] - 10s 14ms/step - loss: 0.0088 - val_loss: 0.0101
Epoch 4/100
761/761 [=====] - 11s 14ms/step - loss: 0.0065 - val_loss: 0.0134
Epoch 5/100
761/761 [=====] - 10s 13ms/step - loss: 0.0051 - val_loss: 0.0083
Epoch 6/100
761/761 [=====] - 10s 13ms/step - loss: 0.0044 - val_loss: 0.0071
Epoch 7/100
761/761 [=====] - 10s 14ms/step - loss: 0.0039 - val_loss: 0.0065
Epoch 8/100
761/761 [=====] - 10s 13ms/step - loss: 0.0034 - val_loss: 0.0053
Epoch 9/100
761/761 [=====] - 10s 13ms/step - loss: 0.0031 - val_loss: 0.0047
Epoch 10/100
761/761 [=====] - 10s 13ms/step - loss: 0.0030 - val_loss: 0.0044
Epoch 11/100
761/761 [=====] - 10s 13ms/step - loss: 0.0029 - val_loss: 0.0042
Epoch 12/100
761/761 [=====] - 10s 13ms/step - loss: 0.0028 - val_loss: 0.0042
...
Epoch 99/100
761/761 [=====] - 10s 13ms/step - loss: 0.0012 - val_loss: 0.0017
Epoch 100/100
761/761 [=====] - 10s 13ms/step - loss: 0.0012 - val_loss: 0.0016
Output is truncated. View as a scrollable element or open in a text editor. Adjust cell output settings...

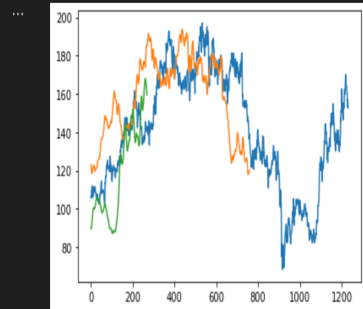
... <keras.callbacks.callbacks.History at 0x7fcb4faa690>

```

```

... [matplotlib.lines.Line2D at 0x7fcb5653b50>]

```



```

[45] type(train_predict)

```

Python

```

... numpy.ndarray

```

```

[46] test = np.vstack((train_predict,test_predict))

```

Python

```

[47] #Combining the predicted data to create uniform data visualization
plt.plot(normalizer.inverse_transform(ds_scaled))
plt.plot(test)

```

Python

```

... [matplotlib.lines.Line2D at 0x7fcb5572150>]

```