

For task B1 my attempts to set up the environment was quite tricky. This was probably due to the type of code editor. I was using Visual Studio 2019 and was unsure on how to setup the virtual environment. However, after asking the tutor and looking for my specific code editor I was able to set up the virtual environment. There was also a problem with the requirements.txt file that needed to be downloaded from P1 where the pandas-datareader package was missing so I had to add it to the requirements file for the virtual environment to run.

P1 test:

```

# File: stock_prediction.py
# Author: Chung Hui and Ben Yu
# Date: 14/07/2021(v1); 19/07/2021 (v2)

# Code modified from:
# Title: Predicting Stock Prices with Python
# Youtube link: https://www.youtube.com/watch?v=Pa29p-afUw
# By: NeuralNine

# Need to install the following:
# pip install numpy
# pip install matplotlib
# pip install pandas
# pip install tensorflow
# pip install scikit-learn
# pip install pandas-datareader

import numpy as np
import matplotlib.pyplot as plt
import pandas as pd
import pandas_datareader as web
import datetime as dt

from sklearn.preprocessing import MinMaxScaler
from tensorflow.keras.models import Sequential
from tensorflow.keras.layers import Dense, LSTM

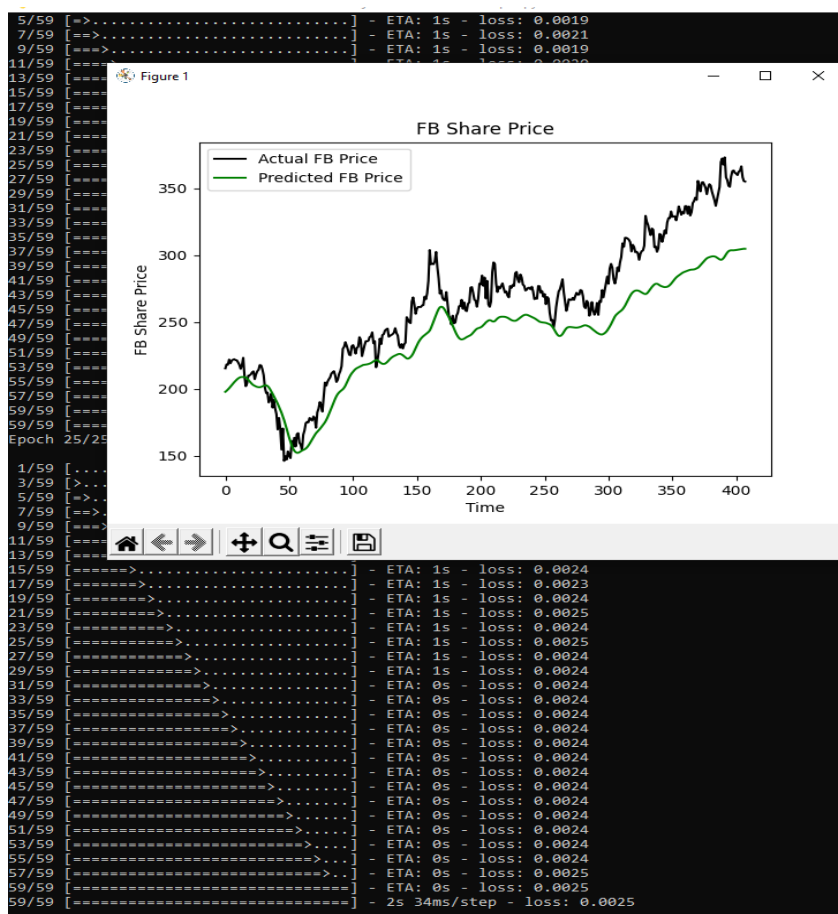
# Load data
# 1) Check if data has been saved before.
# If so, load the saved data
# If not, save the data into a directory
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```

v0.1 test:



```

7/59 [==>.....] - ETA: 1s - loss: 0.0021
9/59 [===>.....] - ETA: 1s - loss: 0.0019
11/59 [====>.....] - ETA: 1s - loss: 0.0020
13/59 [=====>.....] - ETA: 1s - loss: 0.0021
15/59 [=====>.....] - ETA: 1s - loss: 0.0023
17/59 [=====>.....] - ETA: 1s - loss: 0.0024
19/59 [=====>.....] - ETA: 1s - loss: 0.0024
21/59 [=====>.....] - ETA: 1s - loss: 0.0023
23/59 [=====>.....] - ETA: 1s - loss: 0.0023
25/59 [=====>.....] - ETA: 1s - loss: 0.0022
27/59 [=====>.....] - ETA: 1s - loss: 0.0022
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39/59 [=====>.....] - ETA: 0s - loss: 0.0022
41/59 [=====>.....] - ETA: 0s - loss: 0.0022
43/59 [=====>.....] - ETA: 0s - loss: 0.0022
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47/59 [=====>.....] - ETA: 0s - loss: 0.0021
49/59 [=====>.....] - ETA: 0s - loss: 0.0021
51/59 [=====>.....] - ETA: 0s - loss: 0.0021
53/59 [=====>....] - ETA: 0s - loss: 0.0021
55/59 [=====>...] - ETA: 0s - loss: 0.0021
57/59 [=====>..] - ETA: 0s - loss: 0.0021
59/59 [=====] - ETA: 0s - loss: 0.0021
59/59 [=====] - 2s 34ms/step - loss: 0.0021
Epoch 25/25

1/59 [.....] - ETA: 2s - loss: 0.0019
3/59 [>.....] - ETA: 1s - loss: 0.0025
5/59 [=>.....] - ETA: 1s - loss: 0.0024
7/59 [==>.....] - ETA: 1s - loss: 0.0026
9/59 [===>.....] - ETA: 1s - loss: 0.0026
11/59 [====>.....] - ETA: 1s - loss: 0.0025
13/59 [=====>.....] - ETA: 1s - loss: 0.0024
15/59 [=====>.....] - ETA: 1s - loss: 0.0024
17/59 [=====>.....] - ETA: 1s - loss: 0.0023
19/59 [=====>.....] - ETA: 1s - loss: 0.0024
21/59 [=====>.....] - ETA: 1s - loss: 0.0025
23/59 [=====>.....] - ETA: 1s - loss: 0.0024
25/59 [=====>.....] - ETA: 1s - loss: 0.0025
27/59 [=====>.....] - ETA: 1s - loss: 0.0024
29/59 [=====>.....] - ETA: 1s - loss: 0.0024
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53/59 [=====>....] - ETA: 0s - loss: 0.0024
55/59 [=====>...] - ETA: 0s - loss: 0.0024
57/59 [=====>..] - ETA: 0s - loss: 0.0025
59/59 [=====] - ETA: 0s - loss: 0.0025
59/59 [=====] - 2s 34ms/step - loss: 0.0025
Prediction: [[304.59366]]
Press any key to continue . . .

```

My understanding of the code base from v0.1 is that adding too many layers will cause more time training and possibly overfit if there are too many layers of sophistication. The model predicting lower than the actual than it actual is if there isn't too big of a difference is better than if it overestimates. The prediction given at the end is not a guarantee because it's only the machine's educated guess based on the last 60 days.