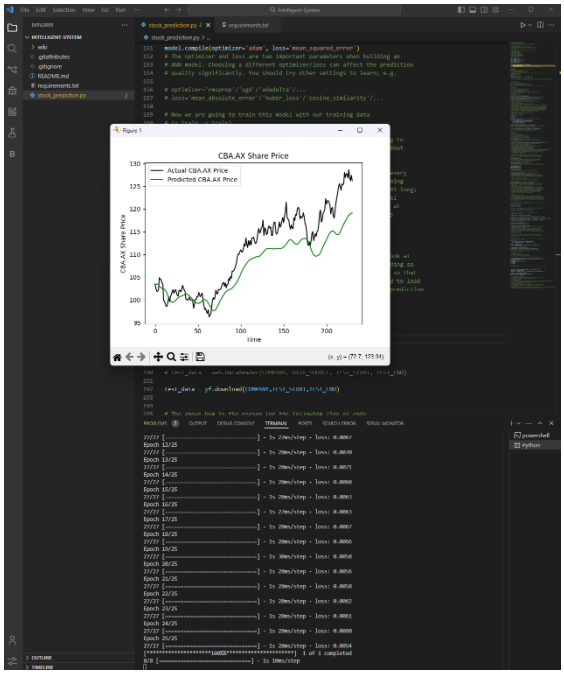
Project B – Task 1: Setup

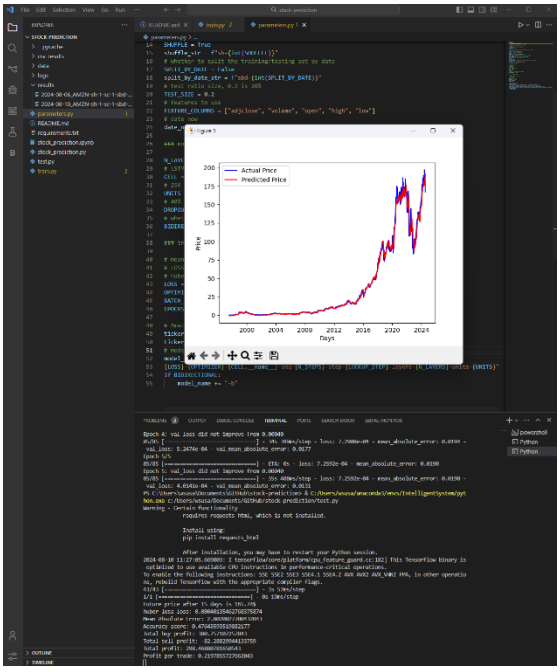
In this task it's mostly about setting up the environment for the project. I started by downloading the starter code that has been provided for the project and created a python virtual environment. I chose to use python 3.11 for this project. Then, I installed all the required libraries with the correct versions and created a `requirement.txt` file. I have attached the requirements file below

`Requirements.txt`

```
scikit-learn
tensorflow==2.14.0
matplotlib
numpy==1.26.4
pandas
requests
pandas_datareader
yfinance
```

Next, I ran both codes **v0.1** and **P1** to test out if the codes are working, and here are the screenshots to show the code running.





The screenshot on the left is the code **v0.1** and the code on the right is the code **P1**.

After understanding the code I could summarized the initial code **v0.1** started with loading the data using the `yfinance`, it uses the closing price of each day. Then it pre-process the data by

using the `MinMaxScaler()` function. Then it creates the training and testing data, the training data is the closing price of the day before the testing data.

After the pre-processing is completed, a sequential model would be created, it started LSTM with 50 neurons, followed with a dropout layer, then another 50 neurons LSTM and another dropout layer, and another 50 neurons LSTM followed by another drop layer. Then finally there is a dense layer with 1 output that will be the prediction of the next closing value of the stock price.

The model will then be trained with 25 epoch and a batch size of 32, then the test data will be created to compare the accuracy of the predicted prices and the actual prices. Finally, it uses the matplotlib library to plot the data in a graph form.