Readme:

Overview

The AI Financial Forecaster is a software that provides forecasts of Closing Price or Daily-adjusted Closing Price for “Stocks of certain Companies” that are showing on “Nasdaq (stock data is available using a free API) or Yahoo Finance (stock data is available using Pandas Datareader)”.

Installation:

Hardware Prerequisites:

1. Laptop/Desktop Computer with GPU (preferably NVIDIA)

Software Prerequisites:

1. OS: Windows 10 or macOS 10.14 (Compatibility with other versions of WindowsOS and macOS is probable but needs testing)
2. Python IDE (choose latest version): Spyder with Ananconda, Google Colab, Jupyter Notebook

Instructions:

1. Open Main.py in a Python IDE along with the other Program Files in the “Program Files (with Readme)” Directory
2. In the Python IDE Terminal run the following commands one by one in any order:
   2.1. **pip install nasdaq-data-link** OR **pip3 install nasdaq-data-link** (choose using this link: https://github.com/Nasdaq/data-link-python)
   2.2. **pip install tensorflow**
   2.3. **pip install pandas-datareader** (using this link for troubleshooting: https://pandas-datareader.readthedocs.io/en/latest/)
3. Run Main.py in the Python IDE
4. Install additional Python Packages or Libraries as prompted by the Python IDE and then attempt reruns of Main.py as needed
5. Enter User Input based on the possible choices offered in the Python IDE Terminal

Trial Run

Note: User Input is in bold.

Choose source of Stock Market Dataset (Device Storage/ Nasdaq API/ Yahoo Finance): **Nasdaq API**

Provide the DataBase Name from Nasdaq Data Link API (e.g. WIKI): **WIKI**

Provide the Company Ticker from Nasdaq Data Link API (e.g. AAPL/MSFT): **AAPL**

Provide Temporal Data for the Stock Market Dataset:

Please mention the Start Date (YYYY-MM-DD): **2007-01-01**

Please mention the End Date (YYYY-MM-DD): **2020-01-01**

Please mention the Interval between Timesteps (daily/monthly/annual). Note: Only chose daily for now: **daily**

Stock Market Dataset named AAPL.csv is saved

Are Plots of CLose Price and Technical Analysis Indicators Required (Yes/No): Yes

Univariate LSTM is the Baseline ML Model.

Name the ML Model (e.g. MLP/uni_LSTM): **MLP**

Name the Mode of Operation of the ML Model (e.g. Train/Predict): **Train**

Note: Train and Predict using an ML Model in the same run as Model Parameters are not being saved or loaded in the Project Program.