

Instructions:

❖ If running with Python 2.7.6 (Virtual Box), install the following:

- 1) sudo apt-get update
- 2) sudo apt-get -y install python-pip (install pip)
- 3) install yahoo-finance1.2.1 : sudo pip install yahoo-finance
- 4) install statsmodels : sudo easy-install -U statsmodels
- 5) Download scikits.statsmodels 0.3.1 from <https://pypi.python.org/pypi/scikits.statsmodels/>, extract files and go into the file to install scikits.statsmodels 0.3.1: “ sudo python setup.py install”
- 6) install scikit-learn: “sudo pip install -U scikit-learn”
- 7) Install ImageTk :” sudo apt-get install python-imaging-tk”

run the program by:

python main.py

Since this version doesn't do well in the GUI setup, we can only use the GUI input page, and user can check the console and the saved figures for results.

When a GUI window pops up, please enter the stock symbol, start date, and end date. Please note that the program needs at least 2 months data in order to make prediction, so the difference between a start date and end date cannot be less than 60 - 62 days. Input validation is handled in GUI.

❖ If running with Python 2.7.10 on OS X system (using PyCharm):

- 1) Install PyCharm
- 2) Follow the [working_envior_setup_instruction.pdf](#) to install the required packages in the final-project-documentation.pdf

run the program by:

python main.py

Final Project

FORECASTING STOCK PRICE USING ARIMA MODEL

Please input the ticker of the stock you are interested in, then input the start date and end date (for example: 2010-10-30). The end date can be TODAY since we will import the most updated data from Yahoo Finance API. (Please enter the start date first, then enter the end date)

Ticker Name:	Start Date:	End Date:
<input type="text" value="YHO"/>	<input type="text" value="yyyy-mm-dd"/>	<input type="text" value="2015-12-24"/>

Invalid End Date

Examples when running with 2.7.10:

Start Date = 2013-11-11

End Date = 2015-12-24

Stock = YHOO

Submit is not available is Ticker Name, Start Date, and End Date are invalid.

Final Project

FORECASTING STOCK PRICE USING ARIMA MODEL

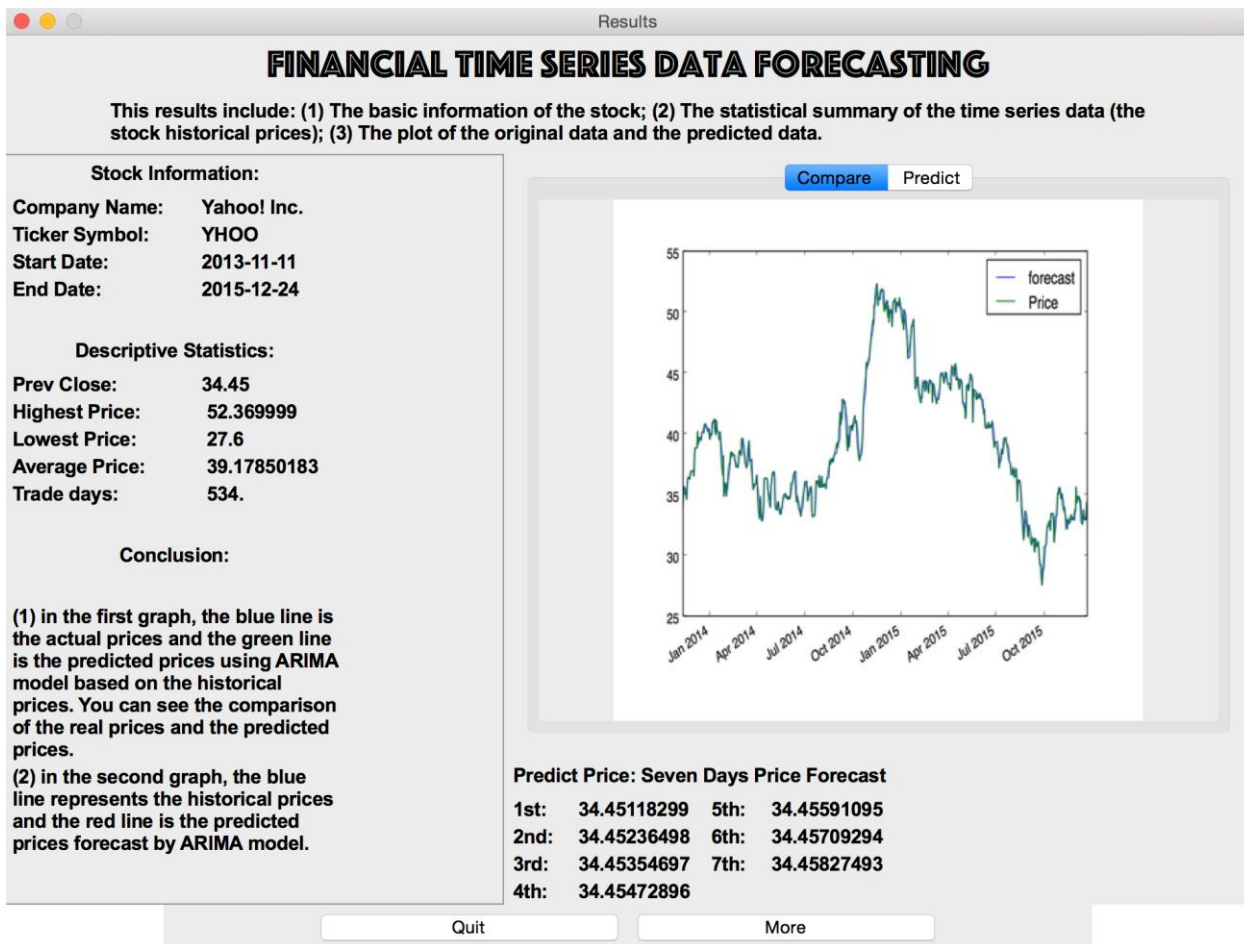
Please input the ticker of the stock you are interested in, then input the start date and end date (for example: 2010-10-30). The end date can be TODAY since we will import the most updated data from Yahoo Finance API. (Please enter the start date first, then enter the end date)

Ticker Name:	Start Date:	End Date:
<input type="text" value="YHOO"/>	<input type="text" value="2013-11-11"/>	<input type="text" value="2015-12-24"/>

Ready to Submit!

Once every input is valid, it is ready to submit, and the Submit button now is good to click.

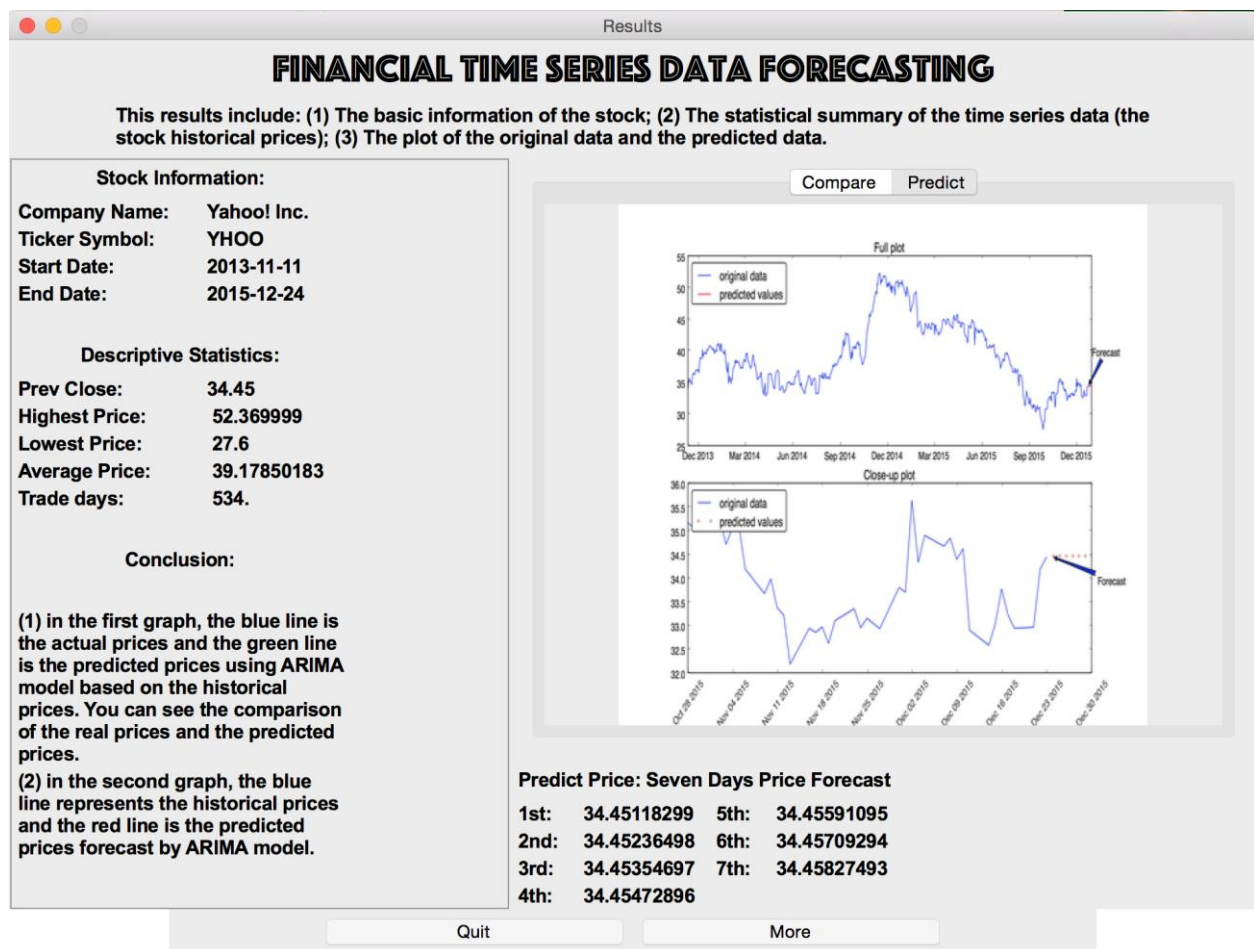
For this example, the outcome is:



from the GUI window, we can also click on **Predict**, **More**, and **Quit**.

Predict:

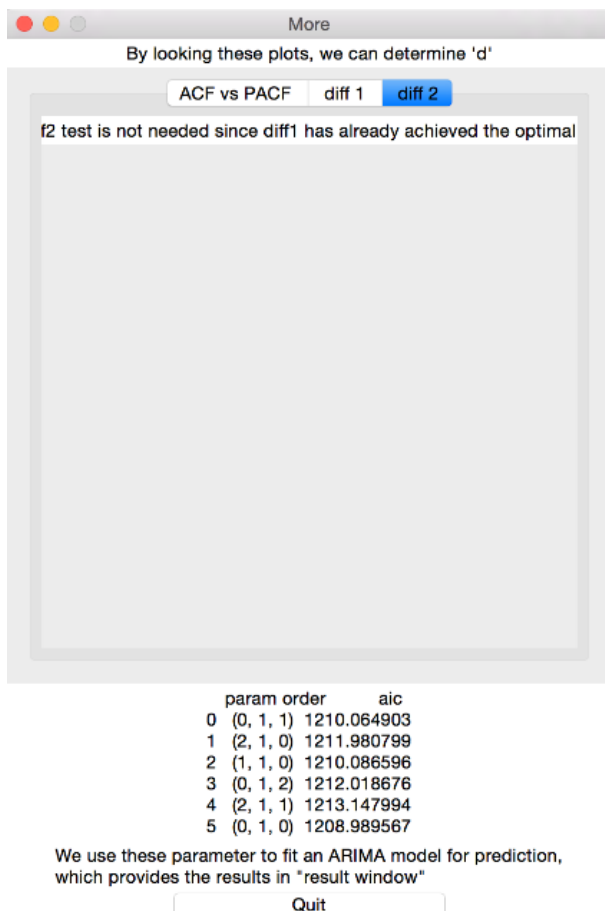
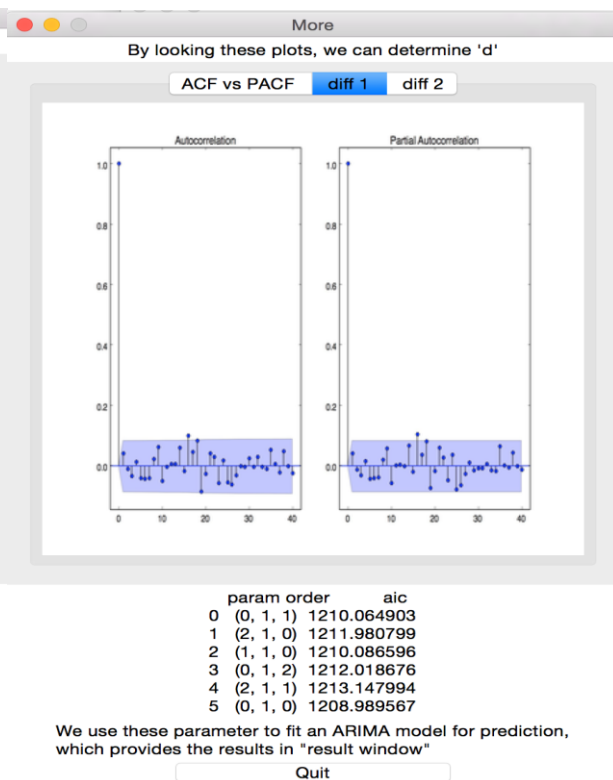
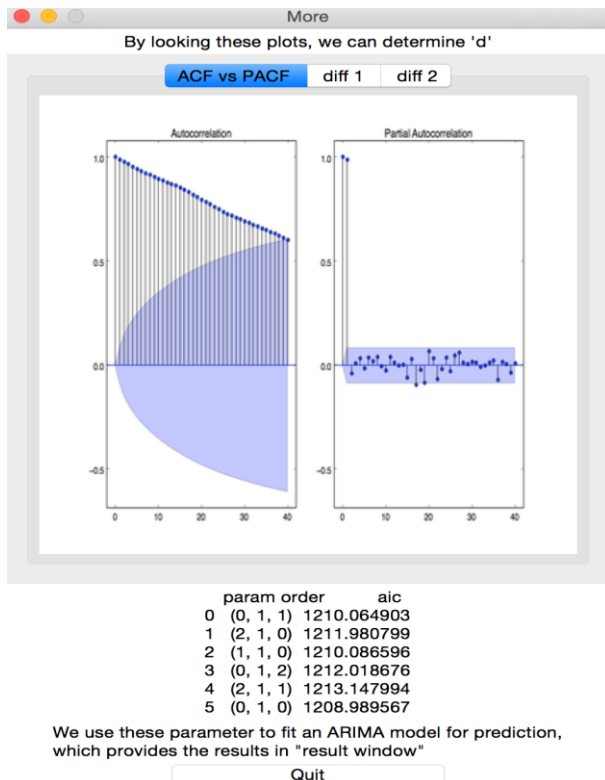
The first plot shows all the historical data from Start Date to End Date in blue, and the predicted values for the following seven days in red.



The second plot is just a close-up of the first one near the predicted values.

More:

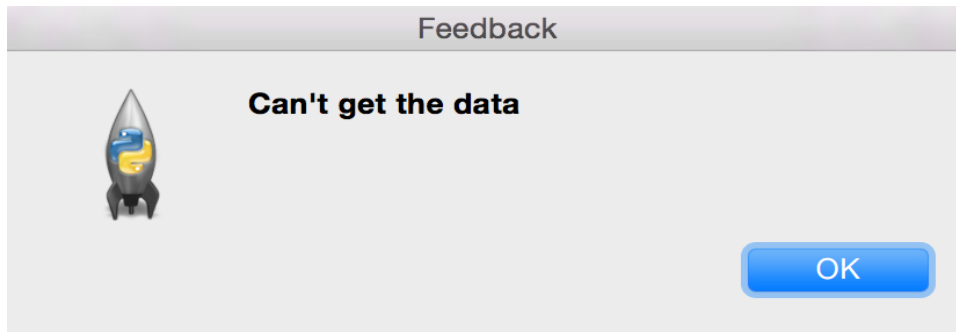
More is going to display the ACF vs. PACF plot at each difference stage. This shows how we choose an optimal parameter d.



Quit:

Exit the current window.

If there is no historical data (this api doesn't have all data for every single stock, for example, it doesn't have APPL data), say we have the same Start Date and End Date, but stock = APPL, then the program will show:



Unittest:

Unittest can be run by :

python unit_test.py

python unit_test2.py