# Continuous Assessment 3

cm17521

1) (5 points) Plot the predicted and true stock price on a test set and describe your observations from this plot with moving average (MA).

Chart, bar chart, histogram

Description automatically generated

The first step is to apply the autocorrelation function to the data and plot the results. From the plot we can tell that appropriate q values are 0 up to 12. Then we make a model for each q value up to 12 and find the lowest RMSE.

Next, we identify a moving average model of an appropriate order (q value).

A picture containing graphical user interface

Description automatically generated

Make a Moving Average model to predict the stock price on a test set of the AMZN stock price.

Graphical user interface, text

Description automatically generated2) above means suggest what may be causing the fluctuations. Support observations that I make with some suggestions

2) (5 points) Summaries of the process of augmented dickey-fuller test. Use this theory to test and analyze the stationarity of this dataset.

Graphical user interface, text, application, email

Description automatically generatedreference below for CA2 answer:

* Explanations along with key words (1) required.
* (2) must give reasons to back up answer. Yan used window slides, i.e he wanted us to use analysis techique

3) (10 points) Summaries of the research idea development from AR to MA and from MA to ARIMA. Based on your summary, please recognize the weakness of the ARIMA model and give indications to overcome such weaknesses. Requirements: You need to use theoretical math equations and literature to support your arguments.

4) (10 points) Plot the predicted volatility based on the estimated GRACH model from 01/Dec/2021 to 30/Dec/2021 and show estimation steps, observations and analysis.