# What is Time Series Forecasting

“... time-series forecasting is a technique that utilizes historical and current data to predict future values over a period of time or a specific point in the future. By analyzing data that we stored in the past, we can make informed decisions...”

Time series forecasting is useful for prediction of any sort of data that spans over a period of time. We used it for the case of stock prediction particularly to try and predict how NVIDIA stock would move over time. Hence the time series aspect of it.

Our particular model is called the ARIMA model and we achieved accuracy of up to 71% in some of our predictions.

# What is ARIMA

Auto-Regressive Integrated Moving Average (ARIMA) is a model that uses statistical data for time series forecasting. We use a couple of parameters when utilizing this particular model. We can call them, p, d , and q.

- P is the number of lag observations, a lag is a fixed period of time used for the model.
- D is the number of times that we draw the difference between raw data, this is also called the degree of difference.
- Q is the sliding window we use for the moving average.

With these values we create a model that can predict values over a time series.

We can obtain these values through the use of functions that take our data and analyze it for us or we can plot and analyze our data ourselves and attempt to plug in our own P, D and Q values for the model. What these amount to are the Auto Regressive (AR) and Moving Average (MA) parts of the model which are the largest parts of the models ability to predict. They are mission critical.