**Full Name** : Sultan Baimukhanov

**Student ID** : 201570797

I consider two approaches to make predictions for 11 companies: linear regression and LSTM. As a result, I consider different projects that use them. However, LSTM is preferable technology to machine learning. So, I choose LSTM to make market price predictions and Python with Jupyter notebook due to the ability to use the different libraries (also, Python has become preferable in data statistics due to the existence of many libraries). Next, I list the step that I did to make a price prediction:

1. Launch jupyter notebook (install all required libraries)
2. Import libraries
3. In project used Data reader (library) that allow to connect and get all data from Yahoo finance without downloading data (cool feature) also df function show the complete table with beginning and finished date.
4. The plot (librabry) give ability to draw a figure (chart) to see the behavior of our company in determine period (start 2022-01-04 – 2022-04-01 (do not take 2022-04-02 because weekend market do not work)).
5. After considering graph create a new dataframe with only the 'Close column’ after convert it to numpy array and check the data length (number of row) in dataset training preparation.
6. So, after creating training dataset need to spit it into X\_train, y\_train with 60 timestamps
7. Now dataset start to train I chose batch size (128) because the length 305 it allows to use less memory and epoch 256(twice more than batch) I choose this because these number give more accurate prediction price.
8. Train dataset
9. Test dataset and show graph with price period and prediction price
10. Show the table with market price prediction
11. Take the result 😊

You can run all 11 companies or open and look at the result.

* AMT = 253.816605
* AMZN = 3226.299561
* BA = 194.303040
* DD =75.224800
* DUK = 111.873810
* FB = 226.034546
* JPM =136.774994
* KO= 61.810280
* MSFT = 311.119812
* PFE = 51.623753
* XOM = 81.773621