Assignment on Time series prediction with Machine Learning

Task: You have to create a prediction model that can take last five business days' closing price (CP) of any stock exchange company as input feature and provide the CP of next business day as output. You will use at least five different Machine Learning (regression) models and compute Mean Squared Error (MSE) or Root-Mean Squared Error (RMSE) for each model. Finally, you will comment on which model suits better for your dataset. Write the code on either Python or MATLAB. You will finish writing the code in such a way that when the run button is pressed it will ask for the last five business days' CP and after supplied so it will show the prediction of next business day's CP.

Data Collection: You can collect historical data for the stock exchange closing prices from https://finance.yahoo.com/ or https://www.dse.com.bd/index.php

Here is a sample dataset for Apple Inc. (AAPL). Focus on the column 'E' only labeled as 'Close'. There are hundreds of datasets available in these two sites. Therefore, it is encouraged not to download data of same company for any two students.

Submission directions:

Deadline: 03 March 2023, Friday at 11.59 PM

Submission link: https://forms.office.com/r/APZjEuvnsu

Submit the followings –

i. Python or MATLAB Code
ii. Dataset in an excel file
iii. Short Report which will contain the followings.
    a. Name of the Company
    b. Name and brief discussion of the machine learning models you have used
    c. Discussion on how you are training and testing your model.
    d. Comments on how you are dealing with overfitting and underfitting.
    e. Discuss your result(s) based on MSE or RMSE value.
    f. Conclusion and future directions