***SBI Stock Analysis***

*Approach :*

* *Collected sbi stock historical price of 3years from yahoo finance*
* *Read the data set into python notebook*
* *Performed data cleaning and preprocessing*
* *Calculated daily returns percentage of the closed price values*
* *Assumed daily returns as the target variable*
* *Performed Descriptive statistics and Exploratory data analysis of the target variable(‘Returns’)*
* *Identified anomalies in the data by using box plot*
* *Calculated simple moving averages of data with 1day,3days and 5days windows*
* *Performed ETS (error trend seasonality) to check the pattern in data*
* *Checked for the stationarity of data by using augmented dickey fulluer test*
* *Tried to find best model for forecasting ARIMA ,SARIMAX and LSTM to see the best model for the time series forecasting*

*Findings:*

* *Predicted values for one month for returns , 1day, 3day and 5day simple moving averages of data by using ARIMA and SARIMAX*
* *Found that Arima is not able to forecast the model which inferred that data contained seasonality.*
* *Hence used SARIMAX model to predict the data which preformed better for simple moving average of 5days*
* *LSTM model was fitted but in generalized the model which showed the overfitting of model for small dataset*