INDIVIDUAL SELF ASSESSMENT:

SELF ASSESSMENT:

This 4-week project was a fruitful experience in terms of building team management, gaining knowledge and work and negotiate with different perspectives in order to meet the deadline of the project.

There were 5 team members in total including me, Ritwik Thakkar, Madiha Javed, Ghizol karim, Opeoluwa Ige. Most of us belonged to financial background so we chose the topic to work on “Stock Market Price Prediction using machine learning model with neural networks. We used Standard and Minmaxscaler both in order to find which one has more accuracy level.

We all divided work as per speciality of the member skill, so Ritwik came up with the topic and worked mostly on the machine learning model. Ghizol were assigned on exploratory analysis using the data from yahoo finance and Madiha was assigned with the flask work. Opeoluwa and I were assigned to work on HTML and dashboard and presentation slides work to get complete.

TEAM ASSESSMENT:

The communication among team members were used by slack and zoom call. But due to the availability of all full-time working team members created a confusion once with the zoom call meeting apart from that incident all were clearly stated since then and posted on group slack to meet and suggested to leave message if not able to make up for meeting or otherwise.

The strength of the team is able to manage to complete work within timeframe as we changed our topic after our first deliverable which eventually resulted the time frame shorter than usual. Time management and communication became more powerful means to complete the project.

SUMMARY OF THE PROJECT:

The topic addressed:

* The group has a shared interest of stock market, investment and finance.
* Stock Analysis is a hot topic and in high demand
* Has Machine Learning potential
* Data is gathered from yahoo finance and saved into csv file called constituents.csv
* constituents.csv dataset has three columns such as Symbol, Name & Sector. It also has 506 rows
* We used both stored and live data to conduct this research analysis
* Another source is to use finance using- pip install finance
* Exploratory Analysis is conducted and the details are in the folder with the same name

Questions to answer:

* What is the expected value of the customers' stocks based on their portfolio in the future? (prediction)
* What is the future value of the customers' stocks based on their current portfolio? (prediction)

Model Selection:

We selected the regression model to predict our results. The dependant variable for our regression will be the expected future values while the independant variable will be the values of the past. Due to the large volume of data that we have, which is prices for the past 10 years for the 500 components of the infamous S&P 500 index, we have decided to use deep learning & nural networks to do our predictions.

Result of Analysis:

* RMSE : The RMSE for the Stock prices tested in the min max scalar has a value of 171.01 while the RMSE for stock returns in the standard scalar has a value of 1.36
* Mean Absolute Error : The mean absloute error for the Stock Price prediction is 169.99 while the mean absloute error for stock returns is 0.91

Based on the RMSE and mean absolute error, we can say that the model predicts stock returns more accurately than it predicts the stock prices, hence reinforcing the fact that it is difficult to predict stock prices.