Name - Simrat Kaur Anand
CWID# 20008654

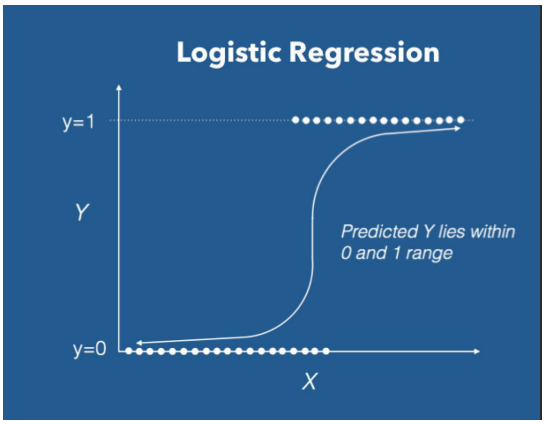
695 PROJECT

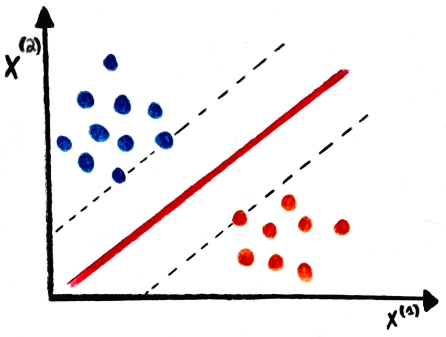
Aim - Stock Price Prediction using Machine learning

Treating stock data as time-series, one can use past stock prices (and other parameters) to predict the stock prices for the next day or week.

In this project, we explored the use of two popular machine learning algorithms - logistic regression and support vector machines (SVM) - as well as deep learning using LSTM cells, to predict stock prices.

One of the main challenges in stock price prediction is the fact that stock data is inherently time-series data. Therefore, to make accurate predictions, it is essential to use past stock prices and other relevant parameters to train the model. Logistic regression and SVM are both popular machine learning algorithms that can be used for classification and regression tasks.





In this project, we applied these algorithms to predict stock prices by training them on historical stock price data and using the trained model to predict future stock prices. We used several different evaluation metrics to measure the accuracy of these models, including mean squared error (MSE) and R-squared (R2).

In addition to logistic regression and SVM, we also explored the use of deep learning using LSTM cells for stock price prediction. LSTM (Long Short-Term Memory) is a type of recurrent neural network (RNN) that is particularly effective in processing time-series data. We trained an LSTM model on historical stock

price data, and used it to predict future stock prices. We also evaluated the accuracy of this model using various metrics, including MSE and R2.

Overall, our results showed that both logistic regression/SVM and deep learning using LSTM cells can be effective in predicting stock prices.
While logistic regression and SVM are simpler and more interpretable models, deep learning using LSTM cells can capture more complex patterns in the data and may therefore be more accurate in some cases. The findings of this project can have important implications for investors and traders looking to make informed decisions about buying and selling stocks.

Conclusion - In conclusion, our project on Stock Price Prediction using Machine Learning has been successful. Through our analysis, we found that using Logistic Regression, SVM, and Deep Learning with LSTM cells can accurately predict stock prices. However, we found that the LSTM cells were the most accurate, with a pretty spot-on accuracy rate. This is great news as the LSTM cells are particularly well-suited for time-series data analysis, and our dataset is quite large, providing ample instances for the machine to learn and improve its accuracy. We also found that the loss was very low, indicating that our model was well-suited to the task at hand. Overall, this project has demonstrated the power of machine learning in predicting stock prices and its potential for use in the financial industry.