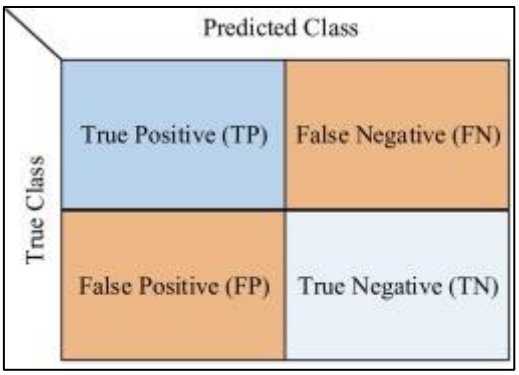
In comparison to all the other models “Logistic Regression” had the highest accuracy score compared to others. The table below showcases the type of classification model and their respective accuracies in descending order.

Rank (Highest to Lowest)	Classification ML Model	Accuracy Score
1	Logistic Regression	0.8014218009478673
2	SVM	0.7919431279620853
3	KNN	0.7516587677725118
4	Decision Tree	0.7355450236966825
5	Naive Bayes	0.6971563981042654

The confusion matrix used to evaluate the Logistic Regression model here and the given dataset had only two classes to predict “Yes” or ‘No” for the Churn target variable. “Yes” is encoded to 1 and “No” is encoded to 0 here.



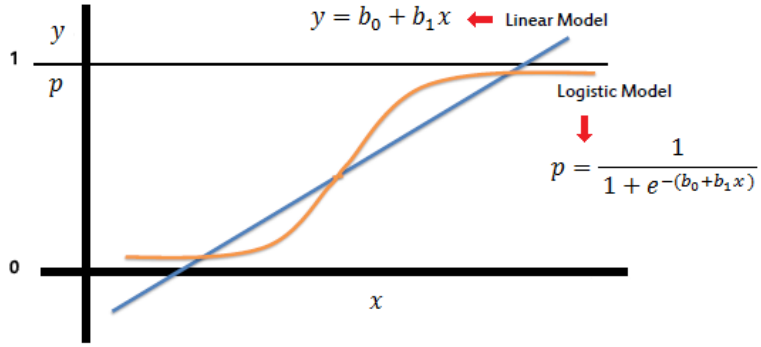
The values for our trained model of Logistic Regression are as follows:

[[TP: 1391, **FN:** 158**]**

[FP: 261, **TN:** 300**]]**

Interestingly Naive Bayes had higher True Negative value (464) and SVM had a higher True Positive value (1399) compared to Logistic Regression but Logistic Regression was much better than Naive Bayes in True Positive values and better than SVM in True Negative values, overall Logistic Regression was a better model in comparison to them.

Logistic Regression is a good model for binary classification type problems as we can see the importance each feature has in interpreting the probability to classify them i.e. the likelihood of occurrence of the event. Logistic Regression works better in data when there is a clear linear relationship between the features and the target variable, which concludes the “Telco-Customer-Churn.csv” dataset had good linear relationship with features while predicting the target variables “Yes” or “No” in the dataset. Decision Trees and SVM generally are better in non-linear relationship-based data which explains why Logistic Regression outperformed these two models.



Logistic regression is less prone to getting affected due to outliers as the values are scaled and probability is in between 0 and 1 for the sigmoid equation via which the logistic regression model is built upon. The class of “Yes” and “No” are balanced enough for the Logistic Regression Model to learn the patterns and relationships within the dataset. Thus, due to the above reasons Logistic Regression outperforms the other models in terms of accuracy.