**Project-Report**

The problem statement was to classify a given species using Iris data set.

Since this is a classification problem we have different Ml algorithms namely Logistic Regression, SVM, Decession tree to solve the given problem statement.

The given dataset is balanced and there are no null values as well as missing values.

The accuracy score is 93% for SVM, 97.7% for Logistic Regression and 95.5% for decession tree.

From the obtained accuracy score we can infer that model is performing well on logistic regression compared to SVM and Decession tree, this is because generally logistic regression performs well on a smaller datasets compared to svm and decession tree as decession tree performs well on more complex datasets.

From the confusion metrics of Logistic regression classifier we can infer that the model out of 15 species belonging to Iris sertosa it predicted all 15 correctly

And it predicted 14 out 15 correctly for Iris versicolor and all 15 correctly predicted for Iris Verginica.

When we check the classification report of our model we can see for :-

Iris sertosa: precession:-1.0

Recall:- 1.0

F1 score:-1.0

Iris Versicolor: precession:-0.8

Recall:-0.93

F1 score:- 0.90

Iris virginica: precesision:1

Recall:1, accuracy:1

From the above classification report we can infer that the model predicted all the positive results correctly for iris sertosa and verginica and 80 percentage of positive value iris versicolor using the precesion score

Since the data set is balanced we use harmonic mean of precession vs recall i.e F1 score as an evaluation metrics.

F1 score that we obtained is 1 i.e 100% accurate for iris sertosa and iris virginica which means that model correctly predicted all positive and negative values and 0.90 for iris versicolor