Machine Learning - Classification Assignment

 ${\bf 1.}\ {\bf Identify}\ {\bf your}\ {\bf problem}\ {\bf statement}$

Goal : CHRONIC KIDNEY DISEASE PREDICTION

3 Stages : Machine Learning (number based data)

Supervised Learning (Input & Output present)

Classification Algorithms Used - Logistic Resgression, K Nearest Neighbors, Naive Bayes(Gaussian, Bernoulli, Multinomial), Support Vector Machinee, Decision Tree & Random Forest

2. No of rows & columns : 399 rows 25 columns

3. Pre-processing method : Categorical data - Nominal - One Hot Encoding Method (pandas function - get_dummies)

Support Vector Machine :

Confusion Matrix

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Classification Report

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ROC_AUC_SCORE

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Decision Tree :

Confusion Matrix

Classification Report

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ROC_AUC_SCORE

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Random Forest:

Confusion Matrix

Classification Report

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ROC_AUC_SCORE

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Confusion Matrix

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Classification Report

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ROC_AUC_SCORE

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KNN:

Confusion Matrix 1

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Classification Report

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ROC_AUC_SCORE

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Naive Bayes: 1. Guassian NB

Confusion Matrix

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Classification Report

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ROC_AUC_SCORE

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Naive Bayes : 2. Bernoulli NB

Confusion Matrix

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Classification Report

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ROC_AUC_SCORE

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Naive Bayes : 2. Multinomial NB



Result:

- 1. For this given dataset "Random Forest Classifier Algorithm" predicts the better model (99% Accuracy) compared to others.
- 2. Accuracy, Recall, Precision, F1 Score, Macro Average & Weighted Average values of all the algorithms mentioned above.
- $3.\ ROC_AUC_SCORE: Here \ SVM, Random \ Forest, Logistic Regression, Gaussian \ \& \ Bernoulli \ results in better classification Perfomance.$