

Classification Assignment

Given data is Healthcare Domain and to predict a Chronic Kidney Disease(CKD).

1. The given data has 399 Rows and 25 Columns.
2. The given dataset has categorical and numerical values. And has to convert to numerical data to create a perfect model. So I used the One Hot encoding technique which is used to convert categorical values to numerical values.
And also I dropped the Two columns has no details for the required prediction. The dropped columns are "pcc" and "ba".

4.Results

1.Result of Grid search for SVM model.

```
print("The report:\n",clf_report)
```

The report:

	precision	recall	f1-score	support
0	0.98	1.00	0.99	51
1	1.00	0.99	0.99	82
accuracy			0.99	133
macro avg	0.99	0.99	0.99	133
weighted avg	0.99	0.99	0.99	133

Accuracy of this model is = 0.99

2.Result of Grid Search for Logistic Regression

```
print("The report:\n",clf_report)
```

The report:

	precision	recall	f1-score	support
0	0.98	1.00	0.99	51
1	1.00	0.99	0.99	82
accuracy			0.99	133
macro avg	0.99	0.99	0.99	133
weighted avg	0.99	0.99	0.99	133

Accuracy of this model is = 0.99

3.Result of Grid Search for Decision Tree Classification

```
print("The report:\n",clf_report)
```

The report:

	precision	recall	f1-score	support
0	0.91	0.96	0.93	51
1	0.97	0.94	0.96	82
accuracy			0.95	133
macro avg	0.94	0.95	0.94	133
weighted avg	0.95	0.95	0.95	133

Accuracy of this model is = 0.95

4.Result of Grid Search for Random Forest

```
print("The report:\n",clf_report)
```

The report:

	precision	recall	f1-score	support
0	1.00	1.00	1.00	51
1	1.00	1.00	1.00	82
accuracy			1.00	133
macro avg	1.00	1.00	1.00	133
weighted avg	1.00	1.00	1.00	133

Accuracy of this model is = 1.00

Result:

The best model is "Random Forest Classification"
The model Accuracy = 1