

CLASSIFICATION ASSIGNMENT

1)PROBLEM STATEMENT :

A requirement from the Hospital, Management asked us to create a predictive model which will predict the Chronic Kidney Disease (CKD) based on the several parameters. The Client has provided the dataset of the same.

Machine Learning -Supervised Learning -Classification

Name of the project :Chronic kidney disease prediction

2)DATASET

Total number of rows :25

Total number of columns :400

3) Nominal Data

converting String to number

4)

1)Decision Tree Classification

```
: print(cm)
```

```
[[49  2]
 [ 8 74]]
```

```
: from sklearn.metrics import classification_report
clf_report=classification_report(Y_test,y_pred)
```

```
: print(clf_report)
```

| | precision | recall | f1-score | support |
|--------------|-----------|--------|----------|---------|
| 0 | 0.86 | 0.96 | 0.91 | 51 |
| 1 | 0.97 | 0.90 | 0.94 | 82 |
| accuracy | | | 0.92 | 133 |
| macro avg | 0.92 | 0.93 | 0.92 | 133 |
| weighted avg | 0.93 | 0.92 | 0.93 | 133 |

2.LOGISTIC ALGORITHM

```
print(cm)
```

```
[[51  0]
 [ 2 80]]
```

```
from sklearn.metrics import classification_report
clf_report=classification_report(Y_test,y_pred)
```

```
print(clf_report)
```

| | precision | recall | f1-score | support |
|--------------|-----------|--------|----------|---------|
| 0 | 0.96 | 1.00 | 0.98 | 51 |
| 1 | 1.00 | 0.98 | 0.99 | 82 |
| accuracy | | | 0.98 | 133 |
| macro avg | 0.98 | 0.99 | 0.98 | 133 |
| weighted avg | 0.99 | 0.98 | 0.99 | 133 |

3.RANDOM FOREST CLASSIFICATION

```
: print(cm)
```

```
[[50  1]
 [ 1 81]]
```

```
: from sklearn.metrics import classification_report
clf_report=classification_report(Y_test,y_pred)
```

```
: print(clf_report)
```

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

SUPPORT VECTOR MACHINE

```
]: print(cm)
```

```
[[51  0]
 [ 1 81]]
```

```
]: from sklearn.metrics import classification_report
clf_report=classification_report(Y_test,y_pred)
```

```
]: print(clf_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 |

Support Vector Machine gives best Accuracy :0.99