Project Development Phase
Model Performance Test

Date	10 November 2022
Team ID	PNT2022TMID36186
Project Name	Project - Statistical Machine Learning Approaches to Liver Disease Prediction
Maximum Marks	10 Marks

Model Performance Testing:

Project team shall fill the following information in model performance testing template.

Synod.	Parameter	Values	Screenshot
1.	Metrics	**Regression Model:** SVM – 0.7606837606837606, KNN -0.6495726495726496, KNN ACCURACY- 0.6495046495726496, **Classification Model:** Confusion Matrix – array([[77,22],[12,6]] Accuracy Score- 0.6495046495726496 & Classification Report – refer screenshot	ATTACHED BELOW
2.	Tune the Model	Hyper parameter Tuning - Validation Method -	ATTACHED BELOW

1. METRICS:

Model Evaluation: ACCURACY SCORE OF SVM

```
# Checking for accuracy score from actual data and predicted data
SVMaccuracy=accuracy_score(SVMpred, ytest)
SVMaccuracy
```

```
0.7606837606837606
```

ACCURACY_SCORE OF RANDOM FOREST CLASSIFICATION:

```
# K-Nearest Neighbors Model
from sklearn.neighbors import KNeighborsClassifier
KNN = KNeighborsClassifier()
```

```
# train the data with K-Nearest Neighbors Model
KNN.fit(xtrain, ytrain)
```

```
KNeighborsClassifier()
```

```
KNNpred=KNN.predict(xtest)
```

```
# Checking for accuracy score from actual data and predicted data
KNNaccuracy=accuracy_score(KNNpred, ytest)
KNNaccuracy
```

```
0.6495726495726496
```

```
# showing the confusion matrix
KNNcm=confusion_matrix(KNNpred, ytest)
KNNcm
```

```
array([[70, 22],
       [19,  6]], dtype=int64)
```

ACCURACY_SCORE OF KNN CL ASSIFICATION:

```
# K-Nearest Neighbors Model
from sklearn.neighbors import KNeighborsClassifier
KNN = KNeighborsClassifier()
```

```
# train the data with K-Nearest Neighbors Model
KNN.fit(xtrain, ytrain)
```

```
KNeighborsClassifier()
```

```
KNNpred=KNN.predict(xtest)
```

```
# Checking for accuracy score from actual data and predicted data
KNNaccuracy=accuracy_score(KNNpred, ytest)
KNNaccuracy
```

```
0.6495726495726496
```

```
# showing the confusion matrix
KNNcm=confusion_matrix(KNNpred, ytest)
KNNcm
```

```
array([[70, 22],
       [19,  6]], dtype=int64)
```