Project Development Phase
Model Performance Test

Date	21 June 2025
Team ID	LTVIP2025TMID41434
Project Name	Revolutionizing Liver Care : Predicting Liver Cirrhosis using Advanced Machine Learning Techniques
Maximum Marks	10 Marks

Model Performance Testing:

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

S.No.	Parameter	Values	Screenshot
1.	Metrics	Confusion Matrix (KNN): [[52 16] [10 112]] Classification Report (KNN): precision :0.88 recall :0.92 f1-score :0.90 support:122 Accuracy on test set: 0.86	Train score with tuned model: 0.9104084321475626 Test score with tuned model: 0.8631578947368421 Optimal hyperparameters for KNN: {'n_neighbors': np.int Accuracy on test set: 0.86 Confusion Matrix (KNN): [[52 16] [10 112]] Classification Report (KNN): precision recall f1-score support 0 0.84 0.76 0.80 68 1 0.88 0.92 0.90 122 accuracy 0.86 190 macro avg 0.86 0.84 0.85 190 weighted avg 0.86 0.86 0.86 190

2.	Tune the Model	Hyperparameter Tuning - Validation Method - To improve the performance of the **K-Nearest Neighbors (KNN)** model by finding the optimal value of the hyperparameter Knn	Train score with tuned model: 0.9169960474308301 Test score with tuned model: 0.8631578947368421 Optimal hyperparameters for KNN: {'n_neighbors': np.int64(5)} Accuracy on test set: 0.86 Confusion Matrix (KNN): [[49 19] [7 115]] Classification Report (KNN): precision recall f1-score support 0 0.88 0.72 0.79 68 1 0.86 0.94 0.90 122 accuracy 0.86 190 macro avg 0.87 0.83 0.84 190 weighted avg 0.86 0.86 0.86 190