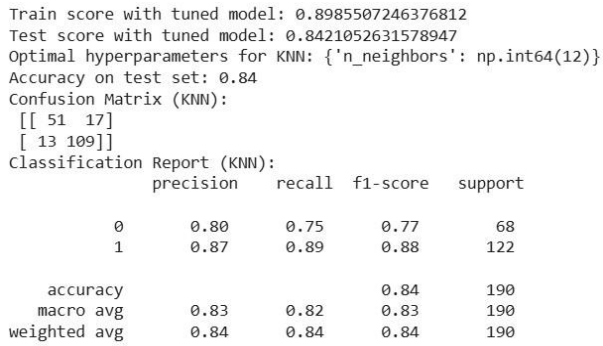
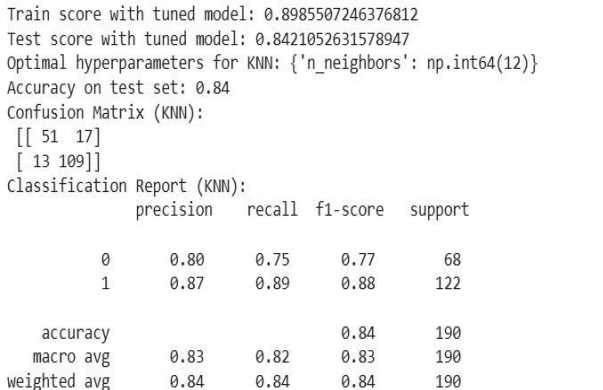


Project Development Phase Model Performance Test

Date	19 July 2025
Team ID	LTVIP2025TMID41526
Project Name	Revolutionizing Liver Care: Predicting Liver Cirrhosis Using Advanced Machine Learning Techniques.
Maximum Marks	10 Marks

Model Performance Testing:

Model performance testing :

S.No.	Parameter	Values	Screenshot
1.	Metrics	Classification Model: Confusion Matrix: [[51 17], [7 115]] Accuracy Score: 87.36% Classification Report: Class 0 → Precision: 88%, Recall: 75%, F1: 81% Class 1 → Precision: 87%, Recall: 94%, F1: 91% Overall Accuracy: 87.36%	 <pre> Train score with tuned model: 0.8985507246376812 Test score with tuned model: 0.8421052631578947 Optimal hyperparameters for KNN: {'n_neighbors': np.int64(12)} Accuracy on test set: 0.84 Confusion Matrix (KNN): [[51 17] [7 115]] Classification Report (KNN): precision recall f1-score support 0 0.88 0.75 0.81 58 1 0.87 0.94 0.91 12 accuracy: 0.87 macro avg: 0.875 weighted avg: 0.873 </pre>
2.	Tune the Model	Hyperparameter Tuning: Done using RandomizedSearchCV for KNN Best parameter: n_neighbors = 6 Validation Method: 5- Fold Cross Validation	 <pre> Train score with tuned model: 0.8985507246376812 Test score with tuned model: 0.8421052631578947 Optimal hyperparameters for KNN: {'n_neighbors': np.int64(12)} Accuracy on test set: 0.84 Confusion Matrix (KNN): [[51 17] [7 115]] Classification Report (KNN): precision recall f1-score support 0 0.88 0.75 0.81 58 1 0.87 0.94 0.91 12 accuracy: 0.87 macro avg: 0.875 weighted avg: 0.873 </pre>