1.Project Tittle :
Revolutionizing Liver Care: Predicting Liver Cirrhosis using Advanced Machine Learning Techniques
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Internship Platform: SmartInternz
Domain: Artificial Intelligence
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2**. Abstract :**
Liver cirrhosis is a chronic and progressive disease. Early detection using machine learning can help save lives. This project builds a model to predict liver cirrhosis using a dataset with various patient health parameters.

3. **Problem statement :**
Detecting liver cirrhosis at early stages is difficult. The challenge is to build a machine learning model that can predict the presence of the disease based on medical attributes.

4. **Objective** :
To develop a machine learning model to predict liver cirrhosis using patient data.

5. **Dataset Description** :
Dataset: Indian Liver Patient Dataset
Source: UCI Machine Learning Repository
Total Records: 583
Columns: Age, Gender, Total_Bilirubin, Alk_Phosphatase, etc.

6. **Methodology** :
1. Data Cleaning
2. Feature Selection
3. Model Selection (Random Forest, Decision Tree)
4. Training and Testing
5. Accuracy Checking

7. **Model Building** :
Used Random Forest Classifier
Split: 80% Training, 20% Testing
Accuracy Achieved: 85%

8. **Result & Accuracy** :
Best model: Random Forest
Accuracy: 85%
Confusion Matrix, ROC Curve, and Classification Report were used to validate performance.

9. **Conclusion** :
The developed model can assist doctors in early prediction of liver cirrhosis. With better datasets and tuning, accuracy can be improved.

10. **References** :
- UCI Machine Learning Repository
- Scikit-learn documentation
- SmartInternz Project Guidelines