Project Design Phase
Proposed Solution Template

Date	10 June 2025
Team ID	LTVIP2025TMID38618
Project Name	Revolutionizing Liver Care : Predicting Liver Cirrhosis using Advanced Machine Learning Techniques
Maximum Marks	2 Marks

Proposed Solution Template:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Early diagnosis of liver cirrhosis is difficult due to vague symptoms and dependency on invasive methods. Delays in detection reduce chances of effective treatment.
2.	Idea / Solution description	Our ML-based solution predicts the presence of liver cirrhosis using clinical parameters like hemoglobin, platelet count, SGOT/AST, bilirubin, and alcohol consumption. It enables early detection through a web-based tool accessible to both doctors and patients.
3.	Novelty / Uniqueness	Uses non-invasive clinical data and multiple machine learning algorithms (Naive Bayes, SVM, KNN, Logistic Regression, Random Forest) to deliver accurate predictions. Custom-tuned models ensure high precision and recall.
4.	Social Impact / Customer Satisfaction	Helps in saving lives by promoting early detection and timely intervention. Reduces cost and time compared to traditional diagnosis. Improves confidence and satisfaction for both patients and healthcare providers.
5.	Business Model (Revenue Model)	Freemium model for individuals, subscription model for hospitals/clinics. Potential integration with diagnostic labs and EMR systems.
6.	Scalability of the Solution	Can be expanded to include predictions for other liver conditions, deployed as a cloud-based API, integrated into hospital portals or mobile apps for wider access.