Project Design Phase

Proposed Solution Template

Date	26 June 2025
Team ID	LTVIP2025TMID59671
Project Name	Revolutionizing Liver Care: Predicting Liver Cirrhosis Using Machine learning
Maximum Marks	2 Marks

Proposed Solution Template:
Project team shall fill the following information in the proposed solution template.

S.No.	Parameter	Description
1	Problem Statement (Problem to be solved)	In healthcare, early detection of liver cirrhosis is critical for patient outcomes. Manual diagnosis is timeconsuming, inconsistent, and relies on extensive clinical data analysis, necessitating an effective system to accurately predict cirrhosis risk.
2	Idea / Solution description	Developing a web-based application using Flask and a Random Forest machine learning model to predict liver cirrhosis risk based on 18 clinical parameters (e.g., Bilirubin, Age, Status). The app provides a user-friendly interface for inputting patient data and delivers reliable predictions.
3	Novelty / Uniqueness	The proposed application offers rapid cirrhosis risk assessment with high accuracy, eliminating the need for extensive manual analysis. It integrates seamlessly into clinical workflows, providing instant results via a web interface.
4	Social Impact / Customer Satisfaction	Healthcare professionals can make faster, datadriven decisions, improving patient outcomes through early diagnosis. Patients benefit from timely risk assessments, enhancing trust in medical evaluations.
5	Business Model (Revenue Model)	The application can be licensed to hospitals and clinics for integration into electronic health systems, with potential subscription-based access for individual practitioners or research institutions.
6	Scalability of the Solution	The solution is highly scalable, capable of handling multiple simultaneous user inputs with low latency. It can be deployed on cloud platforms (e.g., AWS, Heroku) to support increased traffic and integrate with larger healthcare systems.