Project Initialization and Planning Phase

Date	25th June 2025
Team ID	LTVIP2025TMID36224
Project Title	Revolutionizing Liver Care: Predicting Liver Cirrhosis Using Advanced Machine Learning Techniques.
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) template

The proposal report aims to revolutionize liver care by leveraging advanced machine learning techniques to predict liver cirrhosis, improving early detection and patient outcomes. It addresses the limitations of current diagnostic methods, promising enhanced accuracy, proactive patient management, and optimized healthcare resource utilization. Key features include a predictive model analyzing patient data and real-time risk assessment.

Project Overview	
Objective	The primary objective is to enhance the early detection and management of liver cirrhosis by implementing advanced machine learning techniques, ensuring timely and accurate predictions.
Scope	The project aims to comprehensively assess and improve the liver cirrhosis diagnosis process by incorporating machine learning for a more accurate and efficient healthcare system.
Problem Statement	
Description	Current methods often identify liver cirrhosis at later stages or rely on general symptoms, which adversely affects early intervention and patient care.
Impact	Addressing these issues will result in improved early detection, better patient outcomes, and optimized use of healthcare resources, contributing to enhanced patient satisfaction and healthcare efficiency.
Proposed Solution	
Approach	Employing machine learning techniques to analyze and predict the risk of liver cirrhosis, creating a proactive and precise healthcare system.

Key Features	• Implementation of a machine learning-based predictive model for liver cirrhosis. • Real-time risk assessment for early detection. • Continuous learning to adapt to evolving healthcare data.

Resource Requirements

Resource Type	Description	Specification/Allocation
Hardware		
Computing Resources	CPU/GPU specifications, number of cores	T4 GPU
Memory	RAM specifications	16 GB
Storage	Disk space for data, models, and logs	1 TB SSD
Software		
Frameworks	Python frameworks	Flask
Libraries	Additional libraries	scikit-learn, pandas, numpy, matplotlib, seaborn
Development Environment	IDE, version control	Jupyter Notebook, Git, VS Code
Data		
Data	Source, size, format	Kaggle dataset, 950 data entries, xls,csv dataset