Project Initialization and Planning Phase

Date	24 June 2024
Team ID	SWTID1749708868
Project Title	Revolutionizing Liver Care : Predicting Liver Cirrhosis Using Advanced Machine Learning Techniques
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) template

This project proposes the development of a machine learning model that supports the early identification of liver cirrhosis risk based on patient data, including clinical history, lab results, and lifestyle factors. The goal is to assist healthcare professionals in making more informed, timely decisions by providing predictive insights into disease progression. The system is designed to be practical, data-driven, and adaptable for integration with healthcare workflows—supporting better patient management and more efficient use of clinical resources.

Project Overview	
Objective	To build a machine learning model that predicts the risk of liver cirrhosis based on patient health data.
Scope	The project includes data preprocessing, model training, evaluation, and deployment as a web-based tool for clinical use.
Problem Statement	
Description	The system analyzes patient records—like lab values, history, and lifestyle inputs—to identify cirrhosis risk through regression algorithms.
Impact	It enables earlier diagnosis, supports personalized treatment planning, and helps optimize healthcare resources.
Proposed Solution	
Approach	The project follows a stepwise pipeline—data cleaning, exploratory analysis, model selection, optimization, and Flask web app deployment.
Key Features	Interactive web interface, real-time prediction output, regression-based modeling, and support for clinical decision-making.

Resource Requirements

Resource Type	Description	Specification/Allocation
Hardware		
Computing Resources	CPU/GPU specifications, number of cores	NVIDIA T4 GPUs
Memory	RAM specifications	8 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, Google Collab, Visual Studio
Data		
Data	Source, size, format	Kaggle dataset