Ideation Phase

Brainstorm & Idea Prioritization Template

Date	29-06-2025
Team ID	LTVIP2025TMID39531
-Project Name	Revolutionizing Liver Care: Predicting Liver Cirrhosis using Advanced Machine Learning Techniques
Maximum Marks	4 Marks

Brainstorm & Idea Prioritization Template:

To address the challenge of predicting liver cirrhosis using machine learning, we began by brainstorming a comprehensive list of potential strategies. These included data cleaning, feature selection, training various machine learning models, and developing a user-friendly web application for healthcare professionals.The key steps identified are data preparation, model development and evaluation, and the creation of an intuitive web application for making predictions. Additionally, we recognized the importance of addressing issues such as imbalanced datasets and providing explanations for predictions through feature importance analysis. These supplementary tasks will be pursued subsequently.This structured approach allows us to concentrate on the most critical components first, ultimately enhancing liver care through timely and accurate detection of cirrhosis.

Step 1: Team Gathering, Collaboration & Select the Problem Statement

Selected Problem Statement:

Early detection of liver cirrhosis using clinical data and machine learning, accessible via a userfriendly web application.

Step 2: Brainstorm, Idea Listing and Grouping

◇ Ideas	◇ Grouping Category
Use machine learning to predict liver cirrhosis from lab data AI/ML	
Create a web interface using Flask	Web Development
Store the model as a .pkl file and load in backend	Deployment
Add input validation to avoid bad data	Data Handling
Provide result as “No Cirrhosis” or “Cirrhosis Detected”	UX

Allow doctor to download PDF of result *(future idea)*	Features (optional)
Support for multiple diseases in future	Scalability
Visualizations of liver health risk	Data Visualization

Step 3: Idea Prioritization

Idea	Value (Impact)	Feasibility (Ease)	Priority
ML-based prediction	High	Medium	Must-Have
Flask web app	High	High	Must-Have
Input validation	High	High	Must-Have
Show prediction clearly	High	High	Must-Have
Save model as .pkl	Medium	High	Must-Have
Add PDF download	Medium	Medium	Nice to Have
Login System	Medium	Low	Future Scope
Visualization	Medium	Medium	Nice to Have
Multi-disease support	High	Low	Long-Term Goal

Final Prioritized Action Items:

Must-Have:

- ML Model + .pkl integration
- Flask Web App with HTML Forms
- Input validation & result display

Nice to Have:

- Graphical UI enhancements
- Result export option Future Scope:
- User login system
- Disease-wise dashboard
- Model explainability (SHAP, LIME)