Project Design Phase
Problem – Solution Fit

Date	29-06-2025
Team ID	LTVIP2025TMID39531
Project Name	Revolutionizing Liver Care: Predicting Liver Cirrhosis using Advanced Machine Learning Techniques
Maximum Marks	2 Marks

Problem – Solution Fit :

The Problem-Solution Fit simply means that you have found a problem with your customer and that the solution you have realized for it actually solves the customer's problem. It helps entrepreneurs, marketers and corporate innovators identify behavioral patterns and recognize what would work and why.

Purpose:

- Solve complex problems in a way that fits the state of your customers (patients and doctors).

- Succeed faster and increase your solution adoption by tapping into healthcare data and diagnostic behavior.

- Sharpen your communication and marketing strategy with the right triggers and messaging toward early diagnosis. - Increase touch-points with your solution by solving frequent, life-threatening, and costly health issues. - Understand the existing situation in order to improve clinical outcomes using AI/ML.

Problem:

Liver cirrhosis is often diagnosed in advanced stages due to its silent progression, leading to delayed treatment and higher mortality rates. Current diagnostic methods are invasive, costly, or require specialized lab equipment not accessible in all regions.

Solution:

We propose a Machine Learning-based liver cirrhosis prediction system that analyzes standard clinical and laboratory parameters to detect early signs of the disease. The solution leverages supervised learning algorithms trained on medical datasets to provide accurate, non-invasive, and timely predictions, allowing for early intervention and improved patient outcomes.

Target Users / Customers:

- Primary care physicians and hepatologists

- Patients with chronic liver conditions

- Diagnostic centers and healthcare institutions

Behavioral Patterns:

- Patients usually seek care only after symptoms worsen.

- Doctors rely on lab tests that may not always show early-stage cirrhosis.

- A growing interest in predictive health technologies and digital diagnostics.