Project Design Phase
Problem – Solution Fit Template

Date	26 June 2025
Team ID	LTVIP2025TMID39531
Project Name	**Revolutionizing Liver Care : Predicting Liver Cirrhosis using Advanced Machine Learning Techniques**
Maximum Marks	2 Marks

Problem – Solution Fit Template:

Section	Details
Identified Problem	Liver cirrhosis is often diagnosed at advanced stages due to the absence of early symptoms and limited access to affordable diagnostic tools. Late diagnosis leads to poor treatment outcomes and high healthcare costs.
Target Audience / Affected Group	Patients with liver disorders, general physicians, hepatologists, diagnostic centers, and public healthcare organizations.
Customer/End-User Behavior	Patients often rely on manual check-ups and liver function tests that require specialist interpretation. Doctors face challenges in early detection due to overlapping symptoms with other diseases.
Solution Provided	Developed a machine learning-based predictive model using clinical and laboratory data to detect liver cirrhosis early. Integrated into a user-friendly Flask web app for real-time prediction and easy access by healthcare professionals.
How It Solves the Problem	Enables early and affordable detection of liver cirrhosis without invasive procedures. Assists doctors with decision-making by providing immediate insights based on historical patient data.
Why It Fits	The model leverages widely available clinical parameters and is accessible through a lightweight web interface. It fits seamlessly into existing hospital systems or clinics with minimal technical setup.

Purpose:

✅ **Solve complex healthcare problems** like delayed liver cirrhosis detection by leveraging predictive technology.

✅ **Succeed faster** by using already existing data points (lab reports) to provide accurate predictions.

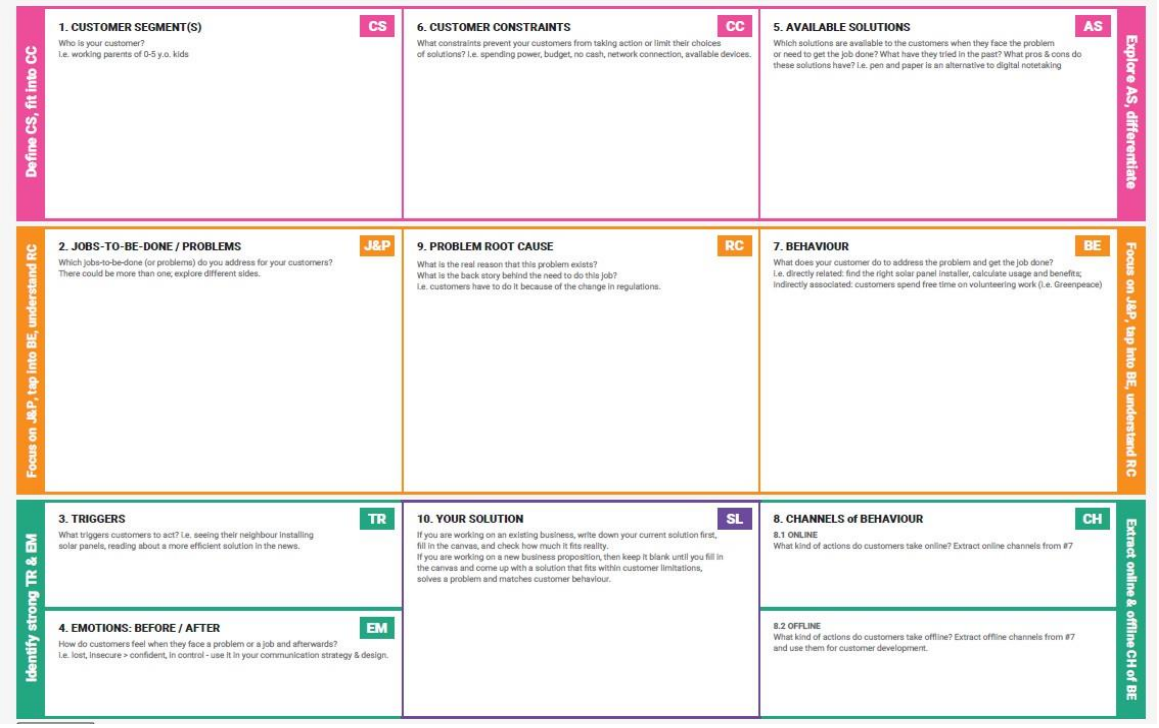
✅ **Sharpen communication** between patient and doctor by presenting risks clearly through a simple UI.

✅ **Build trust** through non-invasive and early-stage detection capabilities, helping reduce panic and delayed treatments.

✅ **Understand the healthcare workflow** and create a digital tool that integrates easily with how doctors already operate.

❑

Template:



References:

1. https://www.javatpoint.com/supervised-machine-learning