Project Design Phase-I
Proposed Solution Template

Date	26 September 2022
Team ID	PNT2022TMID53422
Project Name	Statistical Machine Learning Approaches to Liver Disease Prediction
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in proposed solution template.

S.No	Parameter	Description
1.	Problem Statement (Problem to be solved)	To detect disease, healthcare professionals need to collect samples from patients which can cost both time and money. Often, more than one kind of test or many samples are needed from the patient to accumulate all the necessary information for a better diagnosis. There is a need to find better ways to detect and diagnose liver disease with more accuracy.
2.	Idea / Solution description	Statistical machine learning algorithms based on specific problems can assist one to make decisions. Machine learning (ML), data-driven algorithms can be utilized to validate existing methods and help researchers to make potential new decisions.
3.	Novelty / Uniqueness	Various kinds of data sets, such as blood panels with liver function tests, histologically stained slide images, and the presence of specific molecular markers in blood or tissue samples, have been used to train classifier algorithms to predict liver disease with good accuracy.
4.	Social Impact / Customer Satisfaction	Application of the ML methods can help reduce the total burden of liver disease on public health worldwide by improving recognition of risk factors and diagnostic variables. More importantly, for chronic liver disease, detecting liver disease at earlier stages or in hidden cases by ML

		could decrease liver-related mortality, transplants, and/or hospitalizations.
5.	Business Model (Revenue Model)	The global liver disease diagnostics market size was valued at USD 29.3 billion in 2019 and is estimated to grow at a compound annual growth rate (CAGR) of 6.5% from 2020 to 2027. Rising prevalence of acute and chronic liver diseases is one of the major factors expected to drive the market for liver disease diagnostics
6.	Scalability of the Solution	The described ML methods can assist health sectors to achieve a better diagnosis providing effective results in identifying groups or levels within medical data to facilitate healthcare workers. The machine learning algorithms presented in this study can support medical experts but are not the alternative when making decisions from ML classifiers for diagnostic pathways.