Project Design Phase-I

Proposed Solution

Date	11 October 2022
Team ID	PNT2022TMID32540
Project Name	Project – 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)	Liver-related disease accounts for 70% of deaths worldwide. Chronic Liver Disease is a major concern for the global health care system. People with CLD must focus on implementing proven, cost-effective therapies to as many people as possible while taking into consideration restricted needs, human and financial resources. Chronic Liver disease (CLD) is now wreaking havoc on society and is spreading at an alarming rate. Various efforts have been undertaken to advance early therapy to prevent the condition from progressing to chronic Liver disease.The high negative outcomes and impact can be avoided with early identification and treatment.

2.	Idea / Solution description	The existing system of diagnosis is based on the examination urinalysis, complete blood count (CBC), and comprehensive metabolic panel (CMP). Tests, such as a CMP and biopsy, can be conducted to diagnose all forms of liver disease.The proposed technique includes thethe application of statistical machine learning techniques to CLP results for the extraction of information for a clinician might be helpful for diagnosis .Exploratory data analysis methods are extremely important in healthcare; they can predict patterns across data sets to facilitate the determination of risk or diagnostic factors for disease with more speed and accuracy. The use of these methods can allow for earlier detection and potentially prevent many cases of liver disease from progressing to the point of needing biopsy or complex treatment.

3.	Novelty / Uniqueness	Only certain attributes are selected using feature analysis and the proposed solution uses ensemble methods for analysis. Down staging (increasing the proportion of CLD detected at an early stage) is achieved.
4.	Social Impact / Customer Satisfaction	Gradual loss of the Liver function can lead to cirrhosis in CLD patients, precipitating the need for biopsy and liver transplant. Timely intervention in those CLD patients who have a high risk of cirrhosis, may not only improve these patient's quality of life by delaying the disease progression, but also reduce the morbidity, mortality and healthcare costs resulting from Liver disease.
5.	Business Model (Revenue Model)	Can generate revenue through direct customers and can collaborate with care sector and generate revenue from their customers.
6.	Scalability of the Solution	An automated virtual system to classify CLD is still not entirely convincing or decisive to the vast majority of doctors and medical personal. But with more data, efficiency, and more accuracy, a future of automated artificial medical assistant can become a reality. In the future, the information-driven approach may be used to remove uncertainty as a legal system based on expertise.