Project Design Phase-I
Proposed Solution

Date	24 September 2022
Team ID	PNT2022TMID08156
Project Name	Early Detection of Chronic Kidney Disease Using Machine Learning
Maximum Marks	2 Marks

Proposed Solution:

S.No	Parameter	Description
1.	**Problem Statement (Problem to be solved)**	• Chronic Kidney Disease is a major concern for the global health care system. People with CKD 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 kidney disease (CKD) 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 disease. Some of the negative outcomes can be avoided with early identification and treatment.
2.	**Idea / Solution description**	• The existing system of diagnosis is based on the examination of urine with the help of serum creatinine level. • The proposed technique includes the calculation of the estimated GFR from the serum creatinine level, and measurement of urine albumin-to-creatinine ratio (ACR). • This paper focuses on machine learning techniques like ACO, SVM and ensemble methods by minimizing the features and selecting best features to improve the accuracy of prediction.
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 CKD detected at an early stage) is achieved.
4.	**Social Impact / Customer Satisfaction**	• Gradual loss of the kidney function can lead to end stage kidney disease (ESKD) in CKD patients, precipitating the need for kidney replacement therapy (KRT).
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 CKD 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.