Project Design Phase-I
Proposed Solution Template

Date	24 September 2022
Team ID	PNT2022TMID14240
Project Name	Project – Early Detection of Chronic Kidney Disease Using Machine Learning
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)	The primary cause of premature death is non-communicable disease, and CKD is the most prevalent one. The worldwide health care system is extremely concerned about chronic kidney disease. Individuals with CKD must concentrate on providing as many people as possible with effective, cost-proven medicines while taking into account their limited needs, human, and financial resources. The rise of chronic kidney disease (CKD), which is currently wreaking havoc on society, is frightening. Numerous initiatives have been made to develop early therapy in an effort to stop the problem from turning into a chronic disease. With early detection and treatment, some of the detrimental effects can be prevented.
2.	Idea / Solution description	The current diagnostic method relies on the analysis of urine with the aid of serum creatinine levels. This is accomplished using a variety of medical techniques, including ultrasonography and screening. Patients who have hypertension, a history of cardiovascular disease, a current illness, or who have had renal disease in a family member are all screened during the screening process. The suggested method includes measuring the urine albumin-to-creatinine ratio and estimating GFR from serum creatinine levels (ACR). In order to increase prediction accuracy, this research focuses on machine learning approaches such ACO, SVM, and ensemble methods by reducing the features and choosing the best features.
3.	Novelty / Uniqueness	The suggested solution uses ensemble methods for analysis and restricts the selection of attributes to a subset utilising feature analysis. It is accomplished to downstage (increase the percentage of CKD recognised at an early stage).

4.	Social Impact / Customer Satisfaction	Patients with CKD who gradually lose kidney function may develop end-stage kidney disease (ESKD), necessitating kidney replacement therapy (KRT). The quality of life for CKD patients with a high risk of developing ESKD may be improved with prompt management, which may also lower morbidity, mortality, and healthcare expenditures associated with KRT.
5.	Business Model (Revenue Model)	Can make money from direct customers and can work with the care industry to make money from their clients.
6.	Scalability of the Solution	The vast majority of physicians and other medical professionals still do not find an automated virtual approach to define CKD to be totally compelling or conclusive. A future of automated artificial medical assistants, however, may become a reality with more data, greater effectiveness, and greater accuracy. As a system of law built on expertise, the information-driven approach may be employed in the future to eliminate uncertainty.