Project Design Phase-I
Proposed Solution Template

Date	19 September 2022
Team ID	PNT2022TMID04324
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)	Detection of CKD (chronic kidney disease) at an early stage, so that the issue does not get progressed over a period of time. Detecting the disease at an early stage so that the patients can be provided with appropriate treatment without developing any complications in their health conditions.
2.	Idea / Solution description	So, the basic idea is that the real time data of the patients regarding their sugar levels and other prominent measures like GFR (Glomerular Filtration Rate), protein and creatinine levels etc., should be collected from the hospital records. Using these data, we will build an efficient ML (machine learning) model.

First the collected data should be devoid of missing values hence pre-processing is done using various methods.

Next, to identify only the key features of the dataset and to remove the inefficient and irrelevant features dimensionality reduction is performed.

Finally based on the above-mentioned steps a ML model can be built to detect the presence of CKD and the results of the predicted model can be utilized for further treatments for the patients according to the level of severity in their health conditions. |
| 3. | Novelty / Uniqueness | The ML model provides high level of accuracy on comparing the performance with other ML models.

When it comes to healthcare and management the proposed methodologies should provide an easy interface to the customer which is often described as user-friendly products. |

4.	Social Impact / Customer Satisfaction	Since people are not aware of the medical test attributes which concerns the kidney disease, using this business model solution the useful medical test attributes are gathered separately and henceforth it reduces the cost of by not repeating the same medical tests for detecting the kidney disease.
		As the kidney disease is also predicted at a very early stage it does not make things complicated for doctors to treat the patients and patients also get cured just by simple medications and regular doctor visits.
5.	Business Model (Revenue Model)	It can be used for collaboration with healthcare sectors wherein they collect fees from the patients for various amenities provided by the hospitals.
		Generating charges for the early predictions of kidney disease and easy recovery of the patients.
		The proposed models can be used for getting direct income from the patients as their medical expenses as it produces intermediate outcomes.
6.	Scalability of the Solution	Changes can be made at any point of time in the process of developing any solution hence addition of features in the future should be taken into consideration and it should not affect the existing one.
		On deploying the model on any server, it should be able to handle multiple requests from the clients.
		In consideration of the future aspects of patients it can be used to diagnose a wider variety of chronic disorders that the patients develop.