Project Design Phase I

Proposed Solution

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Team id	PNT2022TMID17480
Project Title	Early Detection of Chronic Kidney Disease using Machine Learning
Team Leader	Krishna Veni. B
Team Members	Harini Krishnaveni. M Lavanya. S Pavithra. V

Proposed Solution

SI NO	Parameter	Description
1.	Problem Statement (Problem to be solved)	CKD is a condition in which the kidneys are damaged and cannot filter blood as well as they should. Because of this, excess fluid and waste from blood remain in the body and may cause other health problems, such as heart disease and stroke.
2.	Idea / Solution description	By using the wrapper method,a feature reduction analysis has been performed to find the attributes that detect this disease

		with high accuracy. By considering: albumin, specific gravity, diabetes mellitus, hemoglobin, and hypertension as features, they can predict the CKD with .98F1 and 0.11RMSE
3.	Novelty / Uniqueness	To predict the early onset of CKD, three machine learning techniques are used: Decision Tree, Random forest, and support vector machines. Each algorithms effectiveness is evaluated. This study developed an algorithm for predicting CKD at an early stage.
4.	Social Impact / Customer Satisfaction	Psychosocial factors including depression, anxiety and lower social support or common in patients with CKD. However the influence of these potentially modifiable risk factors on morbidity and mortality in this renal population is unknown.
5.	Business Model (Revenue Model)	CKD is a type of kidney disease in which there is gradual loss of kidney function over a period of months to years later symptoms may include leg swelling, Felling tired, vomiting, loss of appetite, and confusion. Complications include am increased risk of heart disease, high blood pressure, bone disease, and anaemia.
6.	Scalability of the Solution	The proposed model for early revealing of chronic kidney disease was built using neural network. The accuracy of proposed model is 97.8%. This model outperforms on the other models existed in the previous works in terms of the accuracy and precision recall and F1 score.