Model Development Phase Template

Date	6 July 2024
Team ID	SWTID1720082525
Project Title	Early Prediction of Chronic Kidney Disease Using Machine Learning
Maximum Marks	5 Marks

Feature Selection Report Template

In the forthcoming update, each feature will be accompanied by a brief description. Users will indicate whether it's selected or not, providing reasoning for their decision. This process will streamline decision-making and enhance transparency in feature selection.

Feature	Description	Selected (Yes/No)	Reasoning
ID	Unique identifier for each policyholder	No	Not directly related to kidney function.
Age	Strong predictor of CKD risk as it increases with age.	Yes	To contextualize results and assess age-related health risks.
Blood Pressure	High blood pressure can damage kidneys.	No	High blood pressure can be a cause or result of CKD but isn't specific to it.

Specific Gravity	Specific gravity in urine indicates kidney function.	No	Can be affected by hydration status, not exclusively indicative of CKD.
Albumin	High albumin in urine can be a sign of kidney damage.	Yes	To detect kidney damage or disease.
Sugar	Presence of sugar in urine might indicate diabetes, a CKD risk factor.	Yes	To screen for diabetes or monitor blood sugar control.
Red Blood Cells	Red blood cells in urine can suggest kidney problems.	No	Can indicate various urinary tract issues, not kidney problems.
Pus Cell	Pus cells in urine can indicate infection, potentially affecting kidneys.	No	More indicative of urinary tract infections than CKD.
Puss Cell Clumps	Pus cell clumps might suggest a more severe urinary tract infection.	No	Primarily indicates infection, not kidney disease.
Bacteria	Presence of bacteria in urine indicates infection,	No	Indicates infection, not directly related to kidney function.

	stressing kidneys.		
Blood Glucose Random	Random blood sugar level can help identify diabetes, a CKD risk factor.	Yes	To diagnose or monitor diabetes.
Blood Urea	Blood urea level reflects kidney function.	Yes	To evaluate kidney function and waste elimination.
Serum Creatinine	Serum creatinine level is a key measure of kidney function.	Yes	To assess kidney function and estimate glomerular filtration rate.
Sodium	Sodium level imbalance can be associated with kidney issues.	No	Can be affected by diet and medications, not exclusively by kidney issues.
Potassium	Potassium level imbalance can be caused by kidney problems.	No	Can be influenced by various factors beyond kidney function.
Haemoglobin	Hemoglobin level can be affected by CKD-related anemia.	Yes	To diagnose anemia and evaluate oxygen-carrying capacity.
Packed Cell Volume	Packed cell volume (red blood cell	Yes	To assess blood thickness and screen for anemia or polycythemia.

	concentration) can be impacted by CKD anemia.		
White Blood Cell Count	White blood cell count can indicate infection, potentially affecting kidneys.	Yes	To detect infections, inflammation, or blood disorders.
Red Blood Cell Count	Red blood cell count can be affected by CKD anemia.	No	Can be affected by various conditions, not specific to CKD.
Hypertension	Existing hypertension diagnosis is a major CKD risk factor.	Yes	To identify cardiovascular risk factors.
Diabetes Mellitus	Existing diabetes mellitus diagnosis is a major CKD risk factor.	No	While a risk factor, diabetes doesn't necessarily mean CKD is present.
Coronary Artery Disease	Existing coronary artery disease diagnosis might be linked to CKD.	No	Not directly related to kidney function.
Appetite	Appetite loss can be a symptom of CKD.	No	Can be affected by numerous conditions, not specific to CKD.

Pedal Edema	Pedal edema (swelling in feet) can be a sign of kidney problems.	No	Can be caused by various conditions, not just kidney problems.
Anemia	Existing anemia diagnosis can be caused by or contribute to CKD.	No	Can have multiple causes beyond kidney disease.
Class	The target variable indicating presence or absence of CKD.	Yes	To categorize overall health status based on test results.