Model Development Phase Template

Date	25 March 2025
Team ID	xxxxxx
Project Title	Early Prediction for Chronic Kidney Disease Detection: A Progressive Approach to Health Management
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
age	Age of the patient	Yes	Age is a CKD risk factor; minor model importance but retained for clinical relevance.
blood_pressure	Patient's blood pressure	No	Very low model importance; hypertension captures its effect better.
specific_gravity	Urine solute concentration	Yes	Strong model importance; reflects kidney concentrating ability.
albumin	Albumin in urine	Yes	High model importance; key marker of CKD.
sugar	Sugar in urine	No	Low model importance; diabetes risk already captured via blood glucose.
red_blood_cells	Red blood cells in urine	Yes	Moderate model importance; indicates kidney abnormalities.

pus_cell	Pus cells in urine	No	Low model contribution; not predictive in this dataset.
pus_cell_clumps	Pus cell clumps in urine	No	Low model importance; redundant with pus_cell.
bacteria	Bacteria in urine	No	No model contribution; not relevant in CKD prediction here.
blood_glucose_random	Random blood glucose level	Yes	Moderate model importance; reflects diabetes-related CKD risk.
blood_urea	Blood urea level	Yes	Strong model contribution; key kidney function marker.
serum_creatinine	Serum creatinine level	Yes	Strong model contribution; key CKD marker.
sodium	Serum sodium level	No	Low model importance; not a primary predictor.
potassium	Serum potassium level	No	Low model importance; not predictive in this model.
hemoglobin	Hemoglobin level	Yes	Top model feature; reflects CKD-related anemia.
packed_cell_volume	% blood volume of red cells	No	Low model importance; anemia effect captured by hemoglobin.
white_blood_cell_count	WBC count	No	No model contribution; weak link to CKD prediction.
red_blood_cell_count	RBC count	Yes	Moderate model importance; reflects anemia.
hypertension	Hypertension status	Yes	Important predictor; model contribution and domain relevance.
diabetes_mellitus	Diabetes status	No	Low model importance; diabetes effect covered via blood glucose.
coronary_artery_disease	CAD status	No	Low model importance; indirect CKD link.
appetite	Appetite status	No	Low model importance; minimal contribution.
pedal_edema	Edema presence	No	Low model importance; minimal contribution.
anemia	Anemia status	No	Low model importance; anemia effect captured by hemoglobin.