Project Design Phase-II
Solution Requirements (Functional & Non-functional)

Date	13 October 2022
Team ID	PNT2022TMID32429
Project Name	Project – EARLY DETECTION OF CHRONIC KIDNEY DISEASE USING MACHINE LEARNING
Maximum Marks	4 Marks

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Measuring blood creatinine	To estimate how much blood is being filtered by the kidneys
FR-2	Urine sample	To check whether there is protein in the urine
FR-3	Urine albumin	Type of protein that indicates that there is risk of having CKD
FR-4	Hematuresis	Urinary red blood cells>3/hp
FR-5	GFR	Estimated glomerular filtration rate<60mL/min
FR-6	Urinary microalbumin creatinine ratio	>30mg/g

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	Early detection of CKD enables patients to receive timely treatment to ameliorate the progression of disease. ML models can effectively aid clinicians achieve this goal due to their fast and accurate recognition performance.
NFR-2	**Security**	To prevent associated complications thus improving patient outcomes and reducing the impact of CKD on health care resources.
NFR-3	**Reliability**	Early and regular nephrology specialist care is associated with decreased morbidity and mortality.
NFR-4	**Performance**	Allows implementation of treatments and strategies that can influence both progression of kidney disease and cardiovascular detection and identification of CKD facilitates avoidance of drugs and situations that may cause worsening of kidney function.

NFR-5	**Availability**	Availability of effective interventions to delay CKD Progression and reduce cardiovascular risk.
NFR-6	**Scalability**	By detecting CKD earlier,number of CKD risk is reduced by giving appropriate treatments and thereby reduced mortality rate.