Ideation Phase
Define the Problem Statements

Date	19 September 2022
Team ID	PNT2022TMID08664
Project Name	Project – Early Detection of Chronic Kidney Disease using Machine Learning
Maximum Marks	2 Marks

Problem Statement:

Currently, there are many people who are suffering from chronic kidney diseases worldwide. Due to the several risk factors like food, environment and living standards many people get diseases suddenly. Diagnosing of chronic kidney diseases is generally invasive, costly, time consuming and often risky. That is why many patients reach latest age so fit without treatment, especially in those countries where there sources are limited. Therefore, the early detection strategy of the disease remains important, particularly in developing countries, where the diseases are generally diagnosed in later stages. Finding a solution for the abovementioned problems and riding out from disadvantages became a strong motive to conduct this study. Chronic Kidney Disease (CKD) is one of the types of kidney disease, which results in a gradual loss of kidney function. This phenomenon can be observed over a period of months or years due to several living conditions of patients. Kidney disease is broadly classified into acute kidney injury and chronic kidney disease. Acute kidney injury is sudden damage to the kidneys. In many cases it will be short term but, in some people, it may lead to long-term chronic kidney disease. Chronic kidney disease (CKD) means the kidneys are damaged and can't filter blood the way they should. The disease is called "chronic" because the damage to your kidneys happens slowly over a long period of time. The main causes are damaged blood vessels of the kidneys due to High Blood Pressure and Diabetes. The CKD is also called a chronic kidney failure where according current medical statistics the 10% of the population worldwide is affected by CKD. There were approximately 58 million deaths in the year of 2005 worldwide. According to the World Health Organization (WHO), 35 million attributed to chronic diseases. Currently it is estimated that one in five men, and one in four women aged 65 through 74 are going to be affected by CKD worldwide. Diagnosing CKD usually starts with clinical data, lab tests, imaging studies and finally biopsy. In this study, by using the machine learning techniques, we are proposing cheap, simple and non-invasive tests that can be performed easily. The data has been obtained from the dataset which is obtained from UCI machine learning repository for CKD patients. By this strategy, we hope to produce "down- staging" (increasing in the proportion of CKD detected at an early stage) of the disease to stages that are more amenable to curative treatment.

Problem Statement (PS)	I am (Customer)	I'm trying to	But	Because	Which makes me feel
PS-1	Patient	I'm trying to check whether I have kidney disease or not	I don't know what are the symptoms related to kidney disease	The accuracy of the results is not guaranteed	Depressed
PS-2	Medical Researcher	I'm trying to diagnose what is the cause of the problem	Difficulty in classifying and categorizing the dataset	There is no specific algorithms to handle such large number of data	Frustrated