**PROBLEM STATEMENT DEFINITION**

**Date** : 16 Nov 2022

**Project Name** : Early Detection Of Chronic Kidney Disease Using Machine Learning

**Team ID** : PNT2022TMID20701

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There are many people in the world who get affected by kidney-related diseases. Our country, India, ranks first in terms of people getting affected by kidney-related disease .Though population plays a major factor in it, the fact that China, which has a higher population than us, is actually ranking in a much lower place than us in terms of people getting affected by kidney-related disease. Generally, kidney diseases are caused by the abnormal physiological functionalities of the human kidney. Therefore, the characteristic symptoms are generated based on the differentiation between normal physiological functionalities and abnormal physiological functionalities of the kidney. The difference in the functionality of kidney is mainly due to the lifestyle and the food preference people have in their life. So the reason we were doing this project is to find the symptoms of kidney-related diseases for the users and alert them before the disease becomes fatal for the patient. The main motive of this project is to find the symptom and its cure as soon as possible.

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| **Who does the problem effect?** | Persons who are more than 50 years old or persons who live in a place which has large number of radioactive particles like Japan and those who have hereditary transaction of CKD in their family. |
| **What are the boundaries of the problem?** | Persons who are severely affected and ill health due to CKD are more prone to death. |
| **What is the issue?** | When a person is affected by CKD, his/her kidneys loss the capability to filter waste from the body which leads to serious sickness and even death. |
| **When does the issue occur?** | Diabetes is the most common cause of kidney disease. Heart disease and obesity can also contribute to the damage that causes kidneys to fail. Urinary tract issues and inflammation in different parts of the kidney can also lead to long-term functional decline. |
| **Where does the issue occur?** | This issue occurs in the kidneys of a person. |
| **Why is it important that we fix the problem?** | Since this issue at the later stages affects the health of a person seriously and may even result in death, it is necessary to detect the presence of disease at its early stages. |
| **What solution to solve this issue?** | An automated system is introduced to identify different diseases in the kidney by checking the symptoms shown by the person and the different tests taken by the person. |
| **What methodology used to solve the Issue?** | Machine learning techniques are used to identify the diseases and suggest the precautions that can be taken for those diseases. |

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| **Problem Statement (PS)** | **I am (Customer)** | **I’m trying to** | **But** | **Because** | **Which makes me feel** |
| PS-1 | Patient | Get cured from CKD | It is not possible at later stages. | It can't applicable for elderly people. | Disappointed |
| PS-2 | Medical Executive | treat CKD | It is not possible at later stages. | It will be a risky process. | Disappointed |