**Model Development Phase Template**

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| Date | 15 July 2024 |
| Team ID | 740061 |
| Project Title | Early Prediction Of Chronic Kidney Disease |
| 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.

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| **Feature** | **Description** | **Selected (Yes/No)** | **Reasoning** |
| Age | Age refers to the length of time that a person has lived or a thing has existed. | Yes | As people age, they experience physiological changes and are more likely to develop conditions that contribute to CKD. |
| Blood Pressure | Blood pressure is the force exerted by circulating blood against the walls of blood vessels. | Yes | As high blood pressure can damage the kidney's blood vessels. |
| Glucose | Glucose, a simple sugar, is a primary source of energy for the body's cells. | Yes | In the context of Chronic Kidney Disease (CKD) and general health, glucose levels are critically important. |
| Edema | Edema is the medical term for swelling caused by excess fluid trapped in the body's tissues. | Yes | CKD can lead to fluid retention due to the kidneys' inability to remove excess fluid and waste products efficiently. |
| Anemia | Anemia is a condition characterized by a deficiency of red blood cells or hemoglobin in the blood, leading to reduced oxygen transport to the body’s tissues. | Yes | Reduced production of erythropoietin by the kidneys leads to a lower red blood cell count. |
| Pus cell | Pus cells, also known as white blood cells (WBCs), are an essential part of the immune system. They play a critical role in fighting infections and responding to inflammation. | Yes | In the context of Chronic Kidney Disease (CKD), the presence of pus cells in urine can indicate secondary complications such as infections. |
| Diabetics | Diabetes is a chronic medical condition that occurs when the body cannot properly regulate blood sugar levels. | Yes | Leading cause of CKD due to damage to the blood vessels in the kidneys. |
| Coronary Artery Disease | Coronary Artery Disease (CAD), also known as ischemic heart disease or coronary heart disease, is a condition characterized by the narrowing or blockage of the coronary arteries due to the buildup of atherosclerotic plaques. | Yes | Chronic Kidney Disease (CKD) can significantly impact the cardiovascular system, including the development and progression of Coronary Artery Disease (CAD). |
| Specific gravity | Specific gravity (SG) of urine is a measure of the concentration of solutes in the urine. | No | The above we get the required, so we don’t need to consider this. |
| Albumin | Albumin is a type of protein made by the liver and is found in blood plasma. | No | The above we get the required, so we don’t need to consider this. |
| Red blood cell | Red blood cells (RBCs), also known as erythrocytes, are essential components of the blood. | No | The above we get the required, so we don’t need to consider this. |
| Pus cell clumps | Pus cell clumps, also known as white blood cell (WBC) clumps, are aggregations of white blood cells typically seen in the urine. | No | The above we get the required, so we don’t need to consider this. |
| Bacteria | Bacteria in the urine, also known as bacteriuria, is a common finding that can indicate a urinary tract infection (UTI) or other urinary system issues. | No | The above we get the required, so we don’t need to consider this. |
| Sugar | Sugar, specifically glucose, in the urine (glycosuria) can be an important diagnostic marker. | No | The above we get the required, so we don’t need to consider this. |
| Blood urea | Urea is a waste product formed in the liver as a result of protein metabolism and is normally excreted by the kidneys. | No | The above we get the required, so we don’t need to consider this. |
| Serum Creatinine | It is a waste product produced from the normal metabolism of muscle cells and is usually excreted by the kidneys. | No | The above we get the required, so we don’t need to consider this. |
| Sodium | Sodium is an essential electrolyte that plays several crucial role. | No | The above we get the required, so we don’t need to consider this. |
| Potassium | Potassium is a vital mineral and electrolyte in the human body. | No | The above we get the required, so we don’t need to consider this. |
| Hemoglobin | Hemoglobin is a protein in red blood cells responsible for transporting oxygen from the lungs to the rest of the body and returning carbon dioxide from the tissues back to the lungs. | No | The above we get the required, so we don’t need to consider this. |
| Packed cell volume | Packed Cell Volume (PCV), also known as Hematocrit, is a medical laboratory measurement that indicates the proportion of blood that is made up of red blood cells. | No | The above we get the required, so we don’t need to consider this. |
| White blood cell count | White Blood Cell Count (WBC) measures the number of white blood cells in a given volume of blood. | No | The above we get the required, so we don’t need to consider this. |
| Red blood cell count | **Red Blood Cell Count (RBC)** measures the number of red blood cells in a given volume of blood. | No | The above we get the required, so we don’t need to consider this. |
| Hypertension | Hypertension, or high blood pressure, is a chronic medical condition where the force of the blood against the artery walls is consistently too high. | No | The above we get the required, so we don’t need to consider this. |
| Appetite | Appetite refers to the natural desire to eat food. | No | The above we get the required, so we don’t need to consider this. |
| Pedal edema | Pedal Edema refers to the swelling of the feet and ankles due to the accumulation of fluid in the tissues. | No | The above we get the required, so we don’t need to consider this. |