**ASSIGNMENT-CLASSIFICATION**

A requirement from the Hospital, Management asked us to create a predictive model which will predict the Chronic Kidney Disease (CKD) based on the several parameters. The Client has provided the dataset of the same

**1.Problem statement:**

**Stage1**: Since the dataset is in numerical form we are going to use **Machine learning Algorithm** for prediction.

**Stage2:** The requirements from the client are very clear having the dataset with clear input and output values. Hence it falls under **Supervised Learning**

**Stage3:** The output is in Categorical form. So that we are going to use **Classification Algorithm**

**2. Basic Information**

The dataset contains 399 rows × 25 columns

**3.Data-Pre Processing**

The dataset contains two columns of categorical data (**Nominal data**).Since python couldn’t process categorical data, all the categorical data has to be converted into numerical values using **One Hot Encoding Method** and then moved to further calculation

**4.Hyper Tuning Parameters**

In order to get the optimized parameters,the dataset preceded with GridSearchCV for getting the Hyper-Tuning Parameters.

The optimized value for SVM classifier for this Data using GridSearchCV is

{**'C': 10, 'gamma': 'scale', 'kernel': 'poly'**} which resulted 100%Accuracy in roc\_auc\_score, Recall, Precision,f1\_score,macro average, weighted average

**5.Final Model**

**Support Vector Machine-Classifier** algorithm model gives the maximum prediction value of **100%** of accuracy while checking with standardization technique as well as with hyper-tuned parameters.