1. **Problem Statement**
   To create a model to predict Chronic Kidney Disease.

2. **Basic Info About the Dataset**
   The dataset has 399 rows and 25 columns. It has the complete details about a patient to predict the Chronic Kidney Disease occurrence in future.

3. **Pre-Processing Method**
   The dataset has string data, so to convert the nominal data to ordinal data, **one-hot encoding** has been used in the dataset.

4. **Algorithms used:**

   - Decision Tree
   - Random Forest Classifier
   - SVC
   - Logistic Regression
   - KNNeighbors
   - Naive Bayes
   - GaussianNB
     - MultinomialNB
     - ComplementNB
     - BernoulliNB

5. **Algorithm values:**

Algorithm Name	confusion_matrix	classification_report	Best Parameter
Decision Tree	[[44 1] [0 75]]	precision recall f1-score support 0 1.00 0.98 0.99 45 1 0.99 1.00 0.99 75 accuracy 0.99 120 macro avg 0.99 0.99 0.99 120 weighted avg 0.99 0.99 0.99 120	{'criterion': 'gini', 'max_features': 'log2', 'n_estimators': 200}

Random Forest Classifier	[[44 1] [1 74]]	precision recall f1-score support 0 0.98 0.98 0.98 45 1 0.99 0.99 0.99 75 accuracy 0.98 120 macro avg 0.98 0.98 0.98 120 weighted avg 0.98 0.98 0.98 120	{'criterion': 'gini', 'max_features': 'log2', 'n_estimators': 500}
SVC	[[44 1] [4 71]]	precision recall f1-score support 0 0.92 0.98 0.95 45 1 0.99 0.95 0.97 75 accuracy 0.96 120 macro avg 0.95 0.96 0.96 120 weighted avg 0.96 0.96 0.96 120	kernel= 'linear', gamma ='scale',C = 10
Logistic Regression	[[43 2] [0 75]]	precision recall f1-score support 0 1.00 0.96 0.98 45 1 0.97 1.00 0.99 75 accuracy 0.98 120 macro avg 0.99 0.98 0.98 120 weighted avg 0.98 0.98 0.98 120	{'penalty': 'l2', 'solver': 'liblinear'}
KNNeighbors	[[41 4] [26 49]]	precision recall f1-score support 0 0.61 0.91 0.73 45 1 0.92 0.65 0.77 75 accuracy 0.75 120 macro avg 0.77 0.78 0.75 120 weighted avg 0.81 0.75 0.75 120	n_neighbors=5,metric= 'minkowski', p=2
Naive Bayes			
GaussianNB	[[45 0] [2 73]]	precision recall f1-score support 0 0.96 1.00 0.98 45 1 1.00 0.97 0.99 75 accuracy 0.98 120 macro avg 0.98 0.99 0.98 120 weighted avg 0.98 0.98 0.98 120	
MultinomialNB	[[44 1] [22 53]]	precision recall f1-score support 0 0.67 0.98 0.79 45 1 0.98 0.71 0.82 75 accuracy 0.81 120 macro avg 0.82 0.84 0.81 120 weighted avg 0.86 0.81 0.81 120	

ComplementNB	[[44 1] [22 53]]	precision recall f1-score support 0 0.67 0.98 0.79 45 1 0.98 0.71 0.82 75 accuracy 0.81 120 macro avg 0.82 0.84 0.81 120 weighted avg 0.86 0.81 0.81 120	
BernoulliNB	[[45 0] [8 67]]	precision recall f1-score support 0 0.85 1.00 0.92 45 1 1.00 0.89 0.94 75 accuracy 0.93 120 macro avg 0.92 0.95 0.93 120 weighted avg 0.94 0.93 0.93 120	
CategoricalNB	[[45 0] [1 74]]	precision recall f1-score support 0 0.98 1.00 0.99 45 1 1.00 0.99 0.99 75 accuracy 0.99 120 macro avg 0.99 0.99 0.99 120 weighted avg 0.99 0.99 0.99 120	

6. Final Model & Values

Algorithm	Decision Tree
Confusion Matrix	[[44 1] [0 75]]
Classification Report	precision recall f1-score support 0 1.00 0.98 0.99 45 1 0.99 1.00 0.99 75 accuracy 0.99 120 macro avg 0.99 0.99 0.99 120 weighted avg 0.99 0.99 0.99 120
Best Parameter	{'criterion': 'gini', 'max_features': 'log2', 'n_estimators': 200}

Reason for choosing Decision Tree as Best Algorithm for this dataset:

Accuracy is 99% and with 100% recall (no false negatives), high precision, and an excellent F1-score.