Machine learing, supervisied, classification

A client's requirement is they wanted to predict the CKD

Stage 1- Machine Learning (age, bp,rbc,etc)

Stage 2 - Requirements (Client wants to predict CKD, the requirement is very clear)

stage3 - classification (output is in yes or no)

Machine Learning, supervised classification.

1.Machine Learning supervised classification

2.400 rows and 25 coloumns

3.Preprocessing The process of converting strings into nominal data involves assigning a unique numerical value to each category. This process is also known as label encoding or integer encoding.There are few row are with string like, rbc,pc,pcc,ba,htn hence I have convereted it into a numerical data to proceed further

Random forest

	mean_fit_time	std_fit_time	mean_score_time	std_score_time	param_criterion	param_max_features	param_n_estimators	params	split0_test_score	s
0	0.053570	0.011070	0.016630	0.004933	gini	sqrt	10	{'criterion': 'gini', 'max_features': 'sqrt', ...	0.964572	
1	0.230751	0.023500	0.025973	0.001543	gini	sqrt	100	{'criterion': 'gini', 'max_features': 'sqrt', ...	1.000000	
2	0.230842	0.016347	0.023755	0.001938	gini	sqrt	100	{'criterion': 'gini', 'max_features': 'sqrt', ...	0.982051	
3	0.035288	0.006334	0.014214	0.004060	gini	log2	10	{'criterion': 'gini', 'max_features': 'log2', ...	0.982221	
4	0.217711	0.009146	0.025508	0.002215	gini	log2	100	{'criterion': 'gini', 'max_features': 'log2', ...	1.000000	
5	0.215784	0.008807	0.024500	0.002590	gini	log2	100	{'criterion': 'gini', 'max_features': 'log2', ...	1.000000	
6	0.028395	0.004014	0.012995	0.001573	entropy	sqrt	10	{'criterion': 'entropy', 'max_features': 'sqrt...	0.982221	
7	0.215173	0.010975	0.025004	0.001859	entropy	sqrt	100	{'criterion': 'entropy', 'max_features': 'sqrt...	0.982051	
8	0.214964	0.010000	0.025910	0.002418	entropy	sqrt	100	{'criterion': 'entropy', 'max_features': 'sqrt...	1.000000	
								{'criterion':		

Random forest best model entrophy,sqrt,max features =1.0000

Decision tree

	mean_fit_time	std_fit_time	mean_score_time	std_score_time	param_criterion	param_max_features	param_splitter	params	split0_test_score	split1_t
0	0.000000	0.000000	0.015632	0.000019	gini	sqrt	best	{'criterion': 'gini', 'max_features': 'sqrt', ...	0.964286	
1	0.006249	0.007653	0.009374	0.007653	gini	sqrt	random	{'criterion': 'gini', 'max_features': 'sqrt', ...	0.911692	
2	0.000000	0.000000	0.016324	0.001406	gini	log2	best	{'criterion': 'gini', 'max_features': 'log2', ...	0.910254	
3	0.000000	0.000000	0.006278	0.007690	gini	log2	random	{'criterion': 'gini', 'max_features': 'log2', ...	0.982221	
4	0.003155	0.006309	0.014473	0.002232	entropy	sqrt	best	{'criterion': 'entropy', 'max_features': 'sqrt...	0.982221	
5	0.007111	0.006145	0.003307	0.002701	entropy	sqrt	random	{'criterion': 'entropy', 'max_features': 'sqrt...	0.982221	
6	0.000000	0.000000	0.012504	0.006252	entropy	log2	best	{'criterion': 'entropy', 'max_features': 'log2...	0.982221	
7	0.006252	0.007657	0.006252	0.007657	entropy	log2	random	{'criterion': 'entropy', 'max_features': 'log2...	1.000000	
8	0.000000	0.000000	0.006249	0.007653	log_loss	sqrt	best	{'criterion': 'log_loss', 'max_features': 'sqr...	0.927778	
								{'criterion':		

SVM

	mean_fit_time	std_fit_time	mean_score_time	std_score_time	param_C	param_kernel	params	split0_test_score	split1_test_score	split2_test_score	split
0	0.011514	0.005918	0.020933	3.481691e-03	10	rbf	{'C': 10, 'kernel': 'rbf'}	0.982221	1.000000	0.982051	
1	0.019665	0.004861	0.011125	5.950675e-03	10	poly	{'C': 10, 'kernel': 'poly'}	1.000000	0.982051	0.964286	
2	0.013936	0.002652	0.008687	5.007860e-03	10	sigmoid	{'C': 10, 'kernel': 'sigmoid'}	0.982221	1.000000	0.946663	
3	0.012912	0.006629	0.012967	4.437333e-03	10	linear	{'C': 10, 'kernel': 'linear'}	0.982221	0.946663	0.982221	
4	0.012760	0.004088	0.012043	3.756027e-03	100	rbf	{'C': 100, 'kernel': 'rbf'}	0.982221	1.000000	0.982051	
5	0.017343	0.003223	0.008709	1.514492e-03	100	poly	{'C': 100, 'kernel': 'poly'}	0.964572	1.000000	0.982051	
6	0.002993	0.003679	0.013332	7.751600e-03	100	sigmoid	{'C': 100, 'kernel': 'sigmoid'}	0.982221	0.946663	0.964572	
7	0.006004	0.007353	0.011261	5.397364e-03	100	linear	{'C': 100, 'kernel': 'linear'}	0.982221	0.946663	0.982221	
8	0.012525	0.006262	0.003124	6.247902e-03	1000	rbf	{'C': 1000, 'kernel': 'rbf'}	0.982221	1.000000	0.982051	
							{'C':				