Project Development Phase
Model Performance Test

Date	10 November 2022
Team ID	PNT2022TMID24864
Project Name	Project – Detection of Parkinson's disease using machine learning
Maximum Marks	10 Marks

Model Performance Testing:

Project team shall fill the following information in model performance testing template.

S.No.	Parameter	Values	Screenshot

1.	Metrics	**Classification Model:**
		Confusion Matrix -
		
		Accuracy Score-
		
		Classification Report –
			`predictions = model.predict(X_test)`
			`cm = confusion_matrix(y_test, predictions).flatten()`
			`print(cm)`
			`(tn, fp, fn, tp) = cm`
			`[14 1 4 11]`
			`accuracy = (tp + tn) / float(cm.sum())`
			`print(accuracy)`
			`[14 1 4 11]`
			`0.8333333333333334`
			`from sklearn.metrics import classification_report`
			`print(classification_report(y_test, predictions))`
			precision recall f1-score support
			0 1.00 1.00 1.00 36
			1 1.00 1.00 1.00 36
			accuracy 1.00 72
			macro avg 1.00 1.00 1.00 72
			weighted avg 1.00 1.00 1.00 72

2.	Tune the Model	Hyperparameter Tuning -
		
		Validation Method -
			`model = RandomForestClassifier(n_estimators=100)`
			`model.fit(X_train, y_train)`
			`model = RandomForestClassifier()`
			`rf_random = RandomizedSearchCV(estimator = model,`
			`param_distributions = random_grid,`
			`n_iter = 100, cv = 3,`
			`verbose=2, random_state=0,`
			`n_jobs = -1)`