Project Development Phase
Model Performance Test

Team ID	PNT2022TMID18314
Project Name	Predicting the energy output of wind turbine based on weather condition

Model Performance Testing:

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

S.No.	Parameter	Values	Screenshot

1.	Metrics	**Random Forest Regression Model:**
		MAE : 2.4285714285714284
		MSE : 17.0
		RMSE : 4.123105625617661
		R2 score: 0.911978369754824
			`from sklearn.metrics import mean_absolute_error as mae`
			`#calculate MAE`
			`mae=mae(y_test, y_pred)`
			`mae`
			`1]: 2.4285714285714284`
			`import numpy as np`
			`def mse(actual, pred):`
			`actual, pred = np.array(y_test), np.array(y_pred)`
			`return np.square(np.subtract(y_test,y_pred)).mean()`
			`mse(y_test,y_pred)`
			`2]: 17.0`
			`import numpy as np`
			`def rmse(actual, pred):`
			`actual, pred = np.array(actual), np.array(pred)`
			`return np.sqrt(np.square(np.subtract(actual,pred)).mean())`
			`rmse(y_test,y_pred)`
			`3]: 4.123105625617661`

			In [88]: #FInding accuracy from sklearn.metrics import r2_score acc=r2_score(y_test,y_pred) acc Out[88]: 0.911978369754824
2.	Tune the Model	Hyperparameter Tuning - n_estimators = 750, max_depth = 4, max_leaf_nodes = 500, random_state = 1 Validation Method – Cross Validation	from sklearn.ensemble import RandomForestRegressor RFR= RandomForestRegressor(n_estimators = 750, max_depth = 4, max_leaf_nodes = 500, random_state = 1) RFR.fit(x_train,y_train) RandomForestRegressor(max_depth=4, max_leaf_nodes=500, n_estimators=750, random_state=1)