Model Development Phase Template

Date	18 July 2024
Team ID	xxxxxx
Project Title	Predicting The Energy Output Of Wind Turbine Based On Weather Condition
Maximum Marks	4 Marks

Initial Model Training Code, Model Validation and Evaluation Report

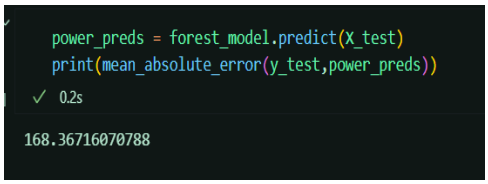
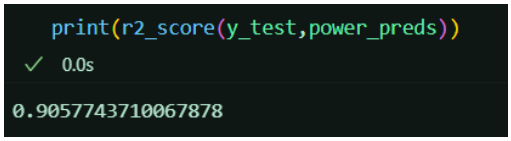
The initial model training code will be showcased in the future through a screenshot. The model validation and evaluation report will include classification reports, accuracy, and confusion matrices for multiple models, presented through respective screenshots.

Initial Model Training Code:

```
from sklearn.ensemble import RandomForestRegressor
from sklearn.metrics import mean_absolute_error,r2_score

def RFR(X_train, X_test, y_train, y_test):
    forest_model = RandomForestRegressor(n_estimators=750,max_depth=4,max_leaf_nodes=500,random_state=42)
    forest_model.fit(X_train,y_train)
    power_preds = forest_model.predict(X_test)
    print(mean_absolute_error(y_test,power_preds))
    print(r2_score(y_test,power_preds))
    return forest_model

forest_model = RFR(X_train,X_test,y_train,y_test)
```

```
from sklearn.linear_model import LinearRegression
from sklearn.metrics import mean_absolute_error,r2_score

def LR(X_train, X_test, y_train, y_test):
    from sklearn.linear_model import LinearRegression
    linear_model = LinearRegression()
    linear_model.fit(X_train,y_train)
    print(linear_model.coef_)
    print(linear_model.intercept_)
    y_preds = linear_model.predict(X_test)
    print(mean_absolute_error(y_test,y_preds))
    print(r2_score(y_test,y_preds))
    return linear_model


linear_model = LR(X_train,X_test,y_train,y_test)
✓ 0.0s
```

Model Validation and Evaluation Report:

Model	Mean Absolute Error	R2 Score
Random Forest Regressor		
Linear Regression