Model Development Phase Template

Date	20 july 2024
Team ID	Team-739649
Project Title	Predicting the energy output of wind turbine based on weather conditions.
Maximum Marks	10 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 a summary and training and validation performance metrics for multiple models, presented through respective screenshots.

Initial Model Training Code (5 marks):

```
[45]
x = df.drop("Output_Energy",axis=1)
y = df["Output_Energy"]
```

```
[46]
print(x.shape, y.shape)
```

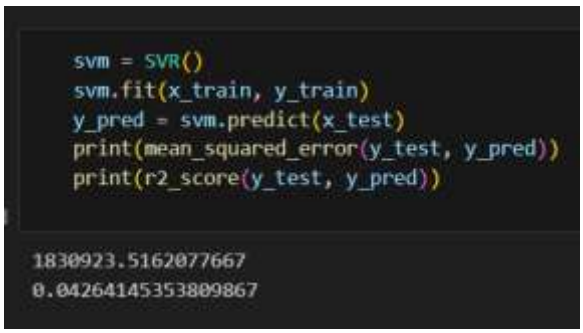
```
(4447, 5) (4447,)
```

```
[47]
x_train, x_test, y_train, y_test = train_test_split(x, y, test_size=0.2, random_state=42)

linreg = LinearRegression()
linreg.fit(x_train, y_train)
linreg_y_pred = linreg.predict(x_test)
print("Mean Squared Error:",mean_squared_error(y_test, linreg_y_pred))
print("R2 Score:",r2_score(y_test, linreg_y_pred))
```

```
Mean Squared Error: 360119.0424705109
R2 Score: 0.8116999208318117
```

Model Validation and Evaluation Report (5 marks):

Model	Summary	Training and Validation Performance Metrics
Randomforest		
GradientBoostingRegression