Model Development Phase Template

Date	8 July 2024
Team ID	SWTID1720195303
Project Title	Predictive Modeling For Fleet Fuel Management Using Machine Learning
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.model_selection import train_test_split
from sklearn.linear_model import LinearRegression
l=LinearRegression()
x_train,x_test,y_train,y_test=train_test_split(x1,y1,test_size=0.3,random_state=42)
```

```
l.fit(x_train,y_train)
```

```
▾ LinearRegression
LinearRegression()
```

```
y_pred_1=l.predict(x_test)
print(y_pred_1)
```

```
from sklearn import metrics
print(np.sqrt(metrics.mean_squared_error(y_test,y_pred_1)))
```

```
0.8646934069540179
```

```
x_train.shape
```

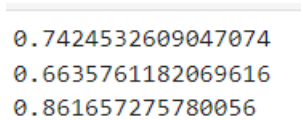
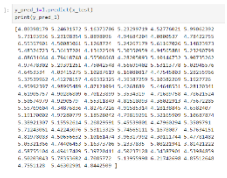
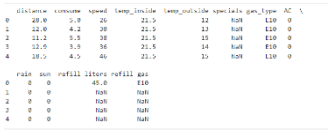
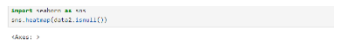
```
(271, 9)
```

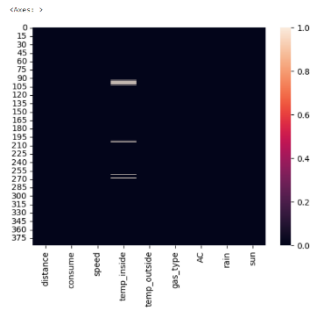
```
x_train[0]
```

```
array([12.3, 62, 21.5, 6, 0, 0, 0, True, False], dtype=object)
```

```
import joblib
joblib.dump(1,'model3.save')
```

Model Validation and Evaluation Report:

Model	Classification Report	Accuracy	Confusion Matrix
Random Forest		85%	
Decision Tree		89%	
KNN		75%	

Gradient Boosting		79%	``` temp_inside_mean=np.mean(data2['temp_inside']) print(temp_inside_mean) ``` 21.929521276595743