Model Development Phase Template

Date	7 july 2024
Team ID	739947
Project Title	Slop sense: utilising resort features for regression modelling
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:

```
!pip install scikit-learn
import pandas as pd
from sklearn.linear_model import LinearRegression
from sklearn.impute import SimpleImputer

imputer=SimpleImputer(strategy='mean')
x_train=imputer.fit_transform(x_train)
x_test=imputer.transform(x_test)

LR=LinearRegression()
LR.fit(x_train,y_train)
```

```
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Model Validation and Evaluation Report:

Model	Classification Report	F1 Score	Confusion Matrix

<table>
<tr>
<td>LR& XGB</td>
<td>

```
models=[]

models.append(('Linear Regression',LinearRegression()))
models.append(('KNeighborsRegressor',KNeighborsRegressor()))
models.append(('Support Vector Regression',SVR()))
models.append(('Random Forest Regressor',RandomForestRegressor()))
models.append(('XBG Regressor',XGBRegressor()))

d={}

for name,model in models:
    model.fit(X_train,y_train)
    score=round(model.score(X_test,y_test)*100,4)
    d[name]=score
```

✓ 4.1s</td>
<td>79%</td>
<td>

```
cluster_assignments.value_counts()
```

```
0    4685
3     610
4     132
2      33
1      18
Name: count, dtype: int64
```

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<tr>
<td>KNR</td>
<td>

```
for name in d:
    print(name,":",d[name] )
```

✓ 0.0s

```
Linear Regression : 99.9922
KNeighborsRegressor : 96.8536
Support Vector Regression : 50.0765
Random Forest Regressor : 99.0742
XBG Regressor : 99.05
```

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<td>64%</td>
<td>

```
2.4538768184408024
```

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