

## Model Development Phase Template

Date	7 JULY 2024
Team ID	685476
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
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<p>LR&amp; XGB</p>	<pre>models=[]  models.append(('Linear Regression',LinearRegression())) models.append(('KNeighborsRegressor',KNeighborsRegressor())) models.append(('Support Vector Regression',SVR())) models.append(('Random Forest Regressor',RandomForestRegressor())) models.append(('XGB 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</pre>	<p>79%</p>	<pre>cluster_assignments.value_counts()</pre> <pre>0      4685 3       610 4       132 2         33 1         18 Name: count, dtype: int64</pre>
<p>KNR</p>	<pre>for name in d:     print(name,":",d[name] )  ✓ 0.0s</pre> <pre>Linear Regression : 99.9922 KNeighborsRegressor : 96.8536 Support Vector Regression : 58.0765 Random Forest Regressor : 99.0742 XGB Regressor : 99.85</pre>	<p>64%</p>	<pre>2.4538768184408024</pre>