



Model Development Phase Template

Date	20 June 2024
Team ID	739807
Project Title	Customer Acquisition cost estimation using machine learning.
Maximum Marks	4 Marks

Initial Model Training Code, Model Validation and Evaluation Report

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.metrics import mean_squared_error, r2_score
from sklearn.model_selection import train_test_split
from sklearn import metrics
from sklearn.ensemble import RandomForestRegressor
rf = RandomForestRegressor()
rf.fit(train_X,train_y)
print('Attempting to fit Random Forest Regressor')
```

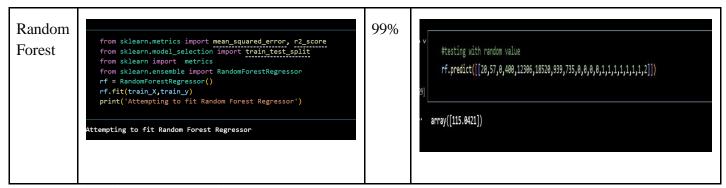




		F1 Scor e	
Model	Classification Report		Confusion Matrix







Model Validation and Evaluation Report:

Random Forest	from sklearn.metrics import mean_squared_error, r2_score from sklearn.model_selection import train_test_split from sklearn import metrics from sklearn.ensemble import RandomForestRegressor rf = RandomForestRegressor() rf.fit(train_X,train_y) print('Attempting to fit Random Forest Regressor') ttempting to fit Random Forest Regressor	99%	#testing with random value rf.predict([[20,57,0,400,12306,18520,939,735,0,0,0,0,1,1,1,1,1,1,1,1,1]) array([115.0421])
Linear Regression	y_pred_val_lr = lr.predict(val_X) print('MAE on Validation set :',metrics.mean_absolute_error(val_y, y_pred_val_lr)) print('MAE on Validation set :',metrics.mean_squared_error(val_y, y_pred_val_lr)) print('MASE on Validation set :',mp.sqrt(metrics.mean_absolute_error(val_y, y_pred_val_lr))) print('NASE on Validation set :',mp.sqrt(metrics.mean_absolute_error(val_y, y_pred_val_lr))) print('NASE score on Validation set :',metrics.r2_score(val_y, y_pred_val_lr)) print('Nase on Validation set : 25.212882223695512 MSE on Validation set : 862.7559482129169	20%	<pre>lr = LinearRegression() lr.fit(train_X,train_y) print('Attempting to fit Linear Regressor Attempting to fit Linear Regressor</pre>