Project Development
PhaseModel Performance
Test

Date	18 November 2023
Team ID	PNT2023TMID592341
Project Name	Online Payments Fraud Detection Using Machine Learning
Maximum Marks	10 Marks

Model Performance Testing:

Project team shall fill the following information in model performance testing template.

S.No	Parameter	Values	Screenshot

1.	Model Summary	**Total number of data = 3286**	`pd.crosstab(y_test, y_test_predict5)`
			col_0 0 1
			isFraud
			0 1617 13
			1 5 1651
			
			`from sklearn.metrics import classification_report, confusion_matrix`
			`print(classification_report (y_test, y_test_predict5))`
			precision recall f1-score support
			0 1.00 0.99 0.99 1630
			1 0.99 1.00 0.99 1656
			accuracy 0.99 3286
			macro avg 0.99 0.99 0.99 3286
			weighted avg 0.99 0.99 0.99 3286

2.	Accuracy	Training accuracy –
		86.22%
		
		Testing accuracy –
		99.45%
			`# testing accuracy`
			`y_test_predict5 = xgb1.predict(x_test)`
			`test_accuracy = accuracy_score(y_test, y_test_predict5)`
			`test_accuracy`
			0.9945222154595252
			`# training accuracy`
			`y_train_predict5 = svc.predict(x_train)`
			`train_accuracy = accuracy_score(y_train, y_train_predict5)`
			`train_accuracy`
			0.8622526636225266

3.	Confidence Score (Only Yolo Projects)	Class Detected - NA Confidence Score - NA	Not Applicable

Screenshot:

Model Summary –

```
pd.crosstab(y_test, y_test_predict5)
```

```
col_0       0     1
isFraud
0        1617    13
1           5  1651
```

```
from sklearn.metrics import classification_report, confusion_matrix

print(classification_report (y_test, y_test_predict5))
```

```
              precision    recall  f1-score   support

           0       1.00      0.99      0.99      1630
           1       0.99      1.00      0.99      1656

    accuracy                           0.99      3286
   macro avg       0.99      0.99      0.99      3286
weighted avg       0.99      0.99      0.99      3286
```

Accuracy -

```
# testing accuracy

y_test_predict5 = xgb1.predict(x_test)
test_accuracy = accuracy_score(y_test, y_test_predict5)
test_accuracy
```

```
0.9945222154595252
```

```
# training accuracy

y_train_predict5 = svc.predict(x_train)
train_accuracy = accuracy_score(y_train, y_train_predict5)
train_accuracy
```

```
0.8622526636225266
```