SMARTBRIDGE
Let's Bridge the Gap
a **V**eranda Enterprise

Model Development Phase Template

Date	12 March 2024
Team ID	739864
Project Title	Online payments fraud detection using ML
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:

```python
from sklearn.model_selection import train_test_split
x_train,x_test,y_train,y_test=train_test_split(x,y,test_size=0.2,random_state=0)
```

Model Validation and Evaluation Report:

Model	Classification Report	Accuracy
| Random forest classifier | ```
print(classification_report(y_test,y_test_predict1))

              precision  recall  f1-score  support

    is Fraud       0.98    0.79      0.87     1641
is not Fraud       1.00    1.00      1.00  1270883

    accuracy                         1.00  1272524
   macro avg       0.99    0.89      0.94  1272524
weighted avg       1.00    1.00      1.00  1272524
``` | ```
test_accuracy=accuracy_score(y_test,y_test_predict1)
print(test_accuracy)
``` |
| Decision Tree classifier | ```
print(classification_report(y_test,y_test_predict2))

              precision  recall  f1-score  support

    is Fraud       0.88    0.87      0.87     1641
is not Fraud       1.00    1.00      1.00  1270883

    accuracy                         1.00  1272524
   macro avg       0.94    0.93      0.94  1272524
weighted avg       1.00    1.00      1.00  1272524
``` | ```
test_accuracy=accuracy_score(y_test,y_test_predict2)
test_accuracy
```
0.9996785915236176 |

| Extra Tree classifier | ```
print(classification_report(y_test,y_test_predict3))

                precision    recall  f1-score   support

     is Fraud       1.00      0.71      0.83      1641
 is not Fraud       1.00      1.00      1.00   1270883

     accuracy                           1.00   1272524
    macro avg       1.00      0.86      0.92   1272524
 weighted avg       1.00      1.00      1.00   1272524
``` | ```
test_accuracy=accuracy_score(y_test,y_test_predict3)
test_accuracy

0.999628297776702
``` |