

## Model Development Phase Template

Date	12 March 2024
Team ID	739730
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:

```
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	<pre>print(classification_report(y_test,y_test_predict1))</pre> <pre> 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      0.99      0.89      0.94      1272524  macro avg     1.00      1.00      1.00      1272524  weighted avg</pre>	<pre>test_accuracy=accuracy_score(y_test,y_test_predict1) print(test_accuracy)</pre>
Decision Tree classifier	<pre>print(classification_report(y_test,y_test_predict2))</pre> <pre> 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      0.94      0.93      0.94      1272524  macro avg     1.00      1.00      1.00      1272524  weighted avg</pre>	<pre>test_accuracy=accuracy_score(y_test,y_test_predict2) test_accuracy</pre> <p>0.9996785915236176</p>
Extra Tree classifier	<pre>print(classification_report(y_test,y_test_predict3))</pre> <pre> 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      0.86      0.92      1272524  macro avg     1.00      1.00      1.00      1272524  weighted avg</pre>	<pre>test_accuracy=accuracy_score(y_test,y_test_predict3) test_accuracy</pre> <p>0.999628297776702</p>

