

Model Development Phase Template

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| Date | 12 March 2024 |
| Team ID | 740090 |
| 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 1.00 1272524 macro avg 0.99 0.89 0.94 1272524 weighted avg 1.00 1.00 1.00 1272524</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 1.00 1.00 1.00 1272524</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 1272524 macro avg 1.00 0.86 0.92 1272524 weighted avg 1.00 1.00 1.00 1272524</pre> | <pre>test_accuracy=accuracy_score(y_test,y_test_predict3) test_accuracy</pre> <p>0.999628297776702</p> |

