

Project Development Phase Model Performance Test

Date	
Team ID	LTVIP2026TMIDS40243
Project Name	Online Payments Fraud Detection
Maximum Marks	10 Marks

Model Performance Testing

S.No.	Parameter	Values
1.	Metrics: <ul style="list-style-type: none"> Decision Tree: <ul style="list-style-type: none"> Accuracy: 98.14% [1247242 23639] [112 1631] Precision: 0.06 Recall: 0.99 F1 Score: 0.12 	Decision Tree: <ul style="list-style-type: none"> Accuracy: 98.14% Confusion Matrix: [2639] [12] 1631] Precision: 0.06 Recall: 0.99 F1 Score: 0.87
2.	Tune the Model <ul style="list-style-type: none"> Hyperparameter Tuning: <ul style="list-style-type: none"> class_weight = 'balanced', max_depth = 8 Validation Method: TesTrain Split 	Decision Tree: <ul style="list-style-type: none"> Hyperparameter Tuning: <ul style="list-style-type: none"> n_estimators = 50 Validation Method: <ul style="list-style-type: none"> Test-Train Split

```

File Edit Selection View Go Run Terminal Help  online_payments_fraud_detection
EXPLORER
> OPEN EDITORS
  ONLINE_PAYMENTS_FRAUD_D...
    data
    PS_20174392719_14912...
    DOCUMENTATION
    EDA
    flask
    model
      decision_tree_model.pkl
    static\images
      1bg.jpeg
      2bg.jpeg
      3bg.png
    templates
      home.html
      predict.html
      submit.html
    app.py
    training
      data_info.py
      data_load.py
      model_save.py
      model_training.py
      preprocessing.py
      .gitignore
      Fraud vs Non-Fraud Trans...
      README.md
  OUTLINE
  TIMELINE
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\HP\OneDrive\Desktop\online_payments_fraud_detection> python training/model_training.py
>>
Data prepared for training
X shape: (6362620, 11)
y shape: (6362620,)
Train-test split completed

Decision Tree Results
Accuracy: 0.981414102995307

Confusion Matrix:
[[1247242  23639]
 [    12   1631]]

Classification Report:
              precision    recall  f1-score   support

      0       1.00      0.98      0.99      1270881
      1       0.06      0.99      0.12        1643

   accuracy          0.98      0.99      0.98      1272524
  macro avg          0.53      0.99      0.56      1272524

Random Forest Results
Accuracy: 0.9996998091980976

Confusion Matrix:
[[1270851    30]
 [   352   1291]]

Classification Report:
              precision    recall  f1-score   support

      0       1.00      1.00      1.00      1270881
      1       0.98      0.79      0.87        1643

   accuracy          1.00      0.89      1.00      1272524
  macro avg          0.99      0.89      0.94      1272524
 weighted avg          1.00      1.00      1.00      1272524

```