PERFORMACE TESTING :

1️⃣ Selecting the Features and Target

- **X (Features):** Transaction inputs like amount, type, balances, etc.
- **y (Target):** Fraud label
    - 0 = Legitimate
    - 1 = Fraud

2️⃣ Splitting the Dataset

- Divide data into:
    - **Training set** (used to train the model)
    - **Testing set** (used to evaluate performance)
- Common split: **80% train, 20% test**

3️⃣ Choosing the ML Algorithm

Select a suitable model for fraud detection, such as:

- Decision Tree
- Random Forest
- Logistic Regression

4️⃣ Creating the Model

- Import the algorithm from sklearn
- Define the model object with parameters (example: max depth, random state)

5️⃣ Training the Model

- Train the model using the training dataset:
    - model.fit(X_train, y_train)
- During training, the model learns fraud patterns from transaction data.

6️⃣ Making Predictions

- Use the trained model to predict fraud on test data:
    - y_pred = model.predict(X_test)

7️⃣ Model Evaluation

Check model performance using:

- Accuracy score
- Confusion matrix
- Precision, Recall, F1-score

(Important in fraud detection because fraud data is imbalanced.)

8️⃣ Saving the Trained Model (Optional)

- Save the trained model using pickle for future use in Flask/web app:
    - model.pkl

If you want, I can also give this in **PPT bullet format** (very short).