Final model selection justification

Project overview:-In scam detection, **false negatives** (fraudulent transactions missed by the model) are far more critical than **false positives** (legitimate transactions flagged as fraud). A good model should therefore balance **high recall** (catching as many fraudulent transactions as possible) and **precision** (minimizing the number of legitimate transactions mistakenly flagged as fraudulent).

ROC-AUC and F1-Score: **ROC-AUC** measures the model's ability to distinguish between fraudulent and legitimate transactions across all thresholds. **F1-Score** balances precision and recall, which is essential for detecting fraud effectively without causing an overwhelming number of false positives. In the context of fraud detection, these metrics are more important than mere accuracy.

- **Computational Efficiency**: Real-time fraud detection systems need to process large volumes of transactions quickly, so models should be computationally efficient. This includes considering the time taken to make predictions and the resources needed to train and deploy the model.
- **Interpretability**: Especially in financial sectors like online payments, model transparency is important for explaining flagged transactions to users or regulatory authorities. Therefore, **interpretability** should be a consideration for model selection.