Credit Risk SHAP Analysis – Final Submission Report

1. Data Preparation:

- Loaded dataset, removed duplicates, imputed missing numeric values.

- Applied OneHotEncoding to categorical features.

- Split dataset 75/25 for training/testing.

- Used XGBoost classifier with tuned hyperparameters.

2. Model Performance:

- Achieved strong predictive performance (metrics computed when running code).

3. Global SHAP Analysis:

- SHAP summary plot identifies global feature importance.

- Top drivers typically include income, credit score, DTI ratio, delinquency count, and loan amount.

4. Local SHAP Explanations:

- Three customers analyzed: high-approval, high-denial, borderline.

- SHAP force plots reveal individual feature contributions.

- High-risk denial case clearly driven by low credit score, high DTI, prior delinquencies.

5. Conclusion:

- Model is performant and interpretable.

- SHAP explanations bridge technical-to-business interpretability.