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**Assignment**

**#1 - Loan Default Risk Scoring (Credit Risk)**

* **Objective:** Predict whether a loan applicant will default within 12 months.
* **Synthetic Data Features:**
  + Loan amount, interest rate, tenure
  + Customer credit score, income, employment type
  + Debt-to-income ratio, collateral value
  + Historical repayment patterns (late payments, missed EMI count)
  + Target: Default = Yes/No
* **Challenge:** Compare linear vs. tree-based models and **explain decisions** with SHAP or feature importance.
* **Goal:** Build a risk scoring system that helps balance **profitability** (approving more loans) and **risk management** (avoiding defaults).