**BANK LOAN CASE STUDY**

**Problem Statement**

**The client, a consumer finance company, needs to analyze loan applicants to predict whether they will default on their loans. This analysis is crucial for:**

* **Approving loans for applicants likely to repay.**
* **Rejecting loans for applicants likely to default.**

**Objectives**

1. **Exploratory Data Analysis (EDA):**
   * **Identify Missing Data: Find and handle missing data.**
   * **Identify Outliers: Detect and explain outliers.**
   * **Data Imbalance: Check for imbalances in loan approval status.**
   * **Conduct Analyses:**
     + **Univariate and bivariate analyses to understand risk factors.**
     + **Correlation analysis to find key influencing factors.**
   * **Visualizations: Create charts and graphs to highlight key insights.**
2. **Machine Learning Model:**
   * **Data Preparation: Clean and preprocess data.**
   * **Feature Engineering: Develop important features.**
   * **Model Selection: Choose the best algorithms for prediction.**
   * **Model Training and Evaluation: Train and evaluate model performance.**
   * **Deployment: Implement the model for predicting loan defaults.**

**Deliverables**

* **EDA Report: Summary of key findings and insights.**
* **Predictive Model: A model to classify applicants as likely to default or repay.**