**1. Problem Statement: Predicting Credit Risk for Loan Applicants**  
  
**Background**:Financial institutions face significant challenges in assessing the creditworthiness of loan applicants. Accurate credit risk prediction is crucial for minimizing defaults and ensuring the stability of the lending system. The [German Credit dataset](https://www.kaggle.com/datasets/uciml/german-credit" \t "https://g91.tcsion.com/Surveys/" \l "/Surveys/_blank) provides a comprehensive set of features related to applicants' financial history, personal information, and loan details, making it an ideal resource for developing predictive models.  
**Objective:**Develop a machine learning model to predict the credit risk of loan applicants using the German Credit dataset. The model should classify applicants into two categories: good credit risk and bad credit risk. Additionally, provide insights into the key factors influencing credit risk and suggest strategies for improving the credit evaluation process. Requirements:

1. Data Exploration and Preprocessing:

* Analyze the dataset to understand the distribution of features and target variable.
* Handle missing values, outliers, and perform necessary data cleaning.
* Engineer new features that could enhance model performance.

1. Model Development:

* Select appropriate machine learning algorithms for classification.
* Train and validate the model using suitable evaluation metrics (e.g., accuracy, precision, recall, F1-score).
* Optimize the model through techniques such as hyperparameter tuning and cross-validation.

1. Model Interpretation and Insights:

* Interpret the model's predictions and identify the most influential features.
* Create visualizations to communicate findings effectively.
* Provide actionable insights and recommendations for improving the credit evaluation process.

1. Presentation:

* Prepare a comprehensive report detailing the methodology, results, and conclusions. Explain why the implemented approach was selected.

You may use streamlit for UI.Submit the recording of the demo with voice over of what has been achieved along with the code.