Loan Approval Prediction using Machine Learning

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# Introduction

Loan approval is a critical task for financial institutions. This project aims to predict whether a loan will be approved based on applicant information using machine learning.

# Tools & Libraries

• Python (Pandas, NumPy, Scikit-learn, Matplotlib)  
• Algorithm: Random Forest Classifier

# Dataset

• Source: Kaggle (Loan Prediction Dataset)  
• Features: Gender, Education, Credit History, Loan Amount, etc.  
• Target: Loan\_Status (Approved or Not)

# Methodology

• Preprocessing (handling missing values, encoding)  
• Train-Test split (80-20)  
• Random Forest for classification  
• Feature importance for insights

# Results

• Accuracy Achieved: ~85–90%  
• Top Influencing Features:  
 1. Credit History  
 2. Applicant Income  
 3. Loan Amount

# Conclusion

The model can help automate and streamline the loan approval process, reducing human error and improving decision-making efficiency.