

# **Loan Approval Prediction using Artificial Intelligence**

## **Internship Project Report**

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### **Abstract**

This project aims to develop an Artificial Intelligence-based system to predict loan approval status. The system analyzes applicant information such as income, credit history, marital status, and loan amount to determine whether a loan should be approved or rejected. Machine learning algorithms are used to automate decision-making and improve accuracy in the loan approval process.

### **Introduction**

Banks receive many loan applications daily. Manually verifying applications is time-consuming and may lead to errors. Artificial Intelligence helps automate this process by analyzing historical data and predicting loan approval status.

### **Problem Statement**

Manual loan approval processes are slow and inefficient. There is a need for an AI-based system that can automatically predict whether a loan should be approved based on applicant details.

### **Objectives**

- Analyze the loan dataset
- Preprocess and clean data
- Apply Machine Learning algorithms
- Predict loan approval status
- Evaluate model performance

### **Dataset Description**

The dataset contains applicant details such as Gender, Married, Dependents, Education, Income, Loan Amount, Credit History, Property Area, and Loan Status (Target Variable).

### **Methodology**

- Import dataset
- Handle missing values

- Encode categorical variables
- Split data into training and testing sets
- Apply Logistic Regression algorithm
- Evaluate model accuracy

## **Results**

The model successfully predicts loan approval status with good accuracy. It helps automate the loan approval process and reduces manual effort.

## **Conclusion**

The Loan Approval Prediction system demonstrates how Artificial Intelligence can improve financial decision-making. It ensures faster and more accurate loan approval predictions.

## **Future Scope**

- Use advanced algorithms like Random Forest or Neural Networks
- Deploy as a web application
- Improve accuracy using larger datasets