CELEBAL WEEK 7

Project Overview

The **Loan Approval Prediction Web App** is a machine learning-based system built using **Python**, **Scikit-learn**, and **Streamlit**. It allows users to input applicant details and receive an instant prediction on whether the loan will be approved or not. The app aims to simplify preliminary credit assessment for loan applicants through an interactive web interface.

Live App URL

https://loan-approval-predictor-s.streamlit.app/

Technology Used

- Python
- Pandas & NumPy – Data handling
- Scikit-learn – Machine Learning (Model training, prediction)
- Streamlit – Web UI deployment
- Jupyter Notebook – Model development
- Pickle – Saving/loading the ML model

Dataset Overview

The dataset contains the following features:

- Gender
- Married
- Dependents
- Education
- Self_Employed
- ApplicantIncome
- CoapplicantIncome
- LoanAmount
- Loan_Amount_Term
- Credit_History
- Property_Area
- Loan_Status *(Target: Y = Approved, N = Not Approved)*
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Model Training & Evaluation

- Model Used: Support Vector Machine
- Steps:
  - Data Cleaning
  - Model Training
  - Accuracy and Model Metrics
  - Saving Model with pickle

Streamlit App – Features

- **Sidebar for User Input:** Users can enter details like income, education, credit history, and more.
- **Predict Button:** Triggers model inference to predict loan approval status.
- **Result Output:** Clearly indicates whether the loan will likely be approved or not.
- **Design:** Clean and user-friendly layout with intuitive interaction using Streamlit components.

Conclusion

This Loan Approval Prediction app can serve as a preliminary tool for both financial institutions and applicants to quickly estimate loan eligibility. It demonstrates how machine learning can be applied in fintech scenarios to enhance decision-making.