🏦 Loan Eligibility Prediction System

Smart Insights with Real-Time Data Analytics

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📌 Project Overview

- Objective:
- Predict loan eligibility using ML and visualize insights.

- Target Users:
- - Financial analysts
- - Loan officers
- - Lending institutions

! Problem Statement

- Manual loan approval is slow and error-prone.

- Needs:
- - Quick, accurate eligibility prediction
- - Data-driven decisions
- - Visual monitoring of trends

💼 Dataset Overview

- Source: Sample loan dataset (CSV)

- Key Features:
- - Applicant Income
- - Credit History
- - Property Area
- - Loan Amount, EMI
- - Prediction: Y/N

⚙ Methodology

- 1. Data Preprocessing: Clean, normalize, engineer features
- 2. Model Building: Logistic Regression / Decision Tree
- 3. Dashboard: Streamlit + Plotly + Power Bi

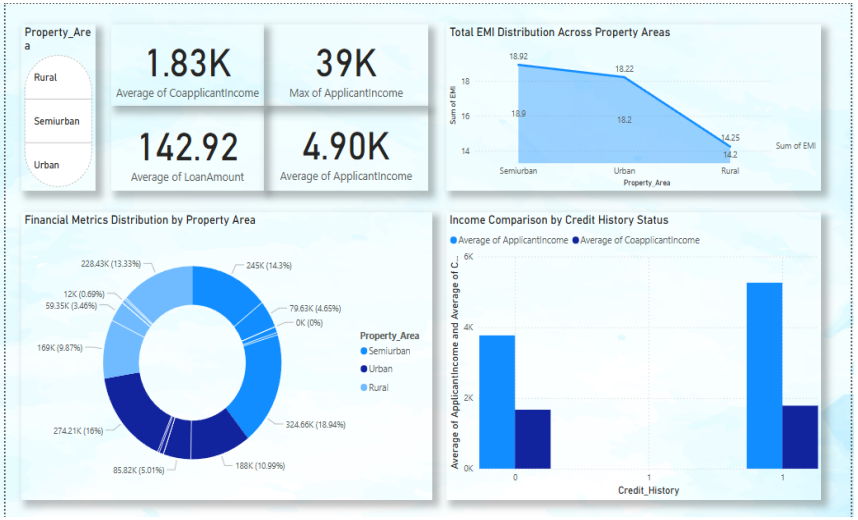
✨ Key Dashboard Features

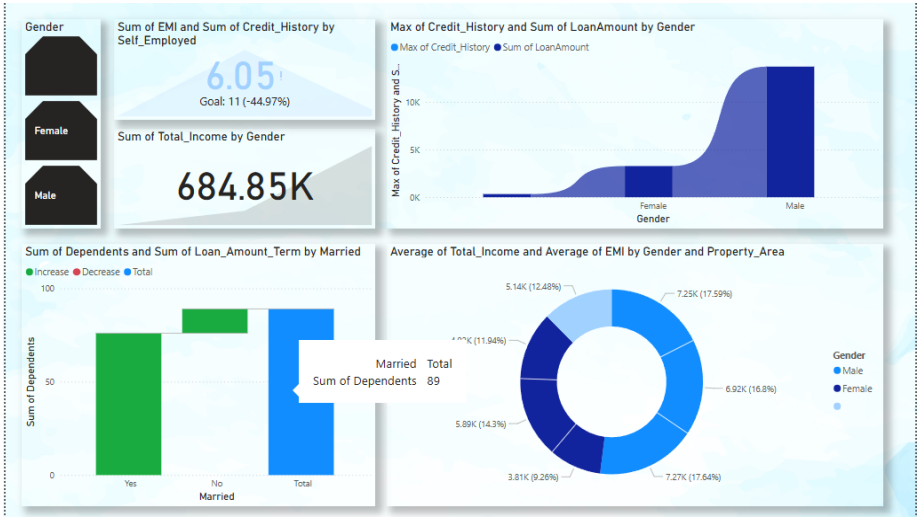
- - CSV Upload & Filter
- - Approval Metrics
- - Histograms, Violin & Pie Charts
- - Correlation Heatmap
- - Interactive Table
- - Export as CSV

🧰 Tech Stack

- Language: Python 3.11+
- Libraries: pandas, plotly, streamlit
- Extras: streamlit-extras, CSS
- Tools: Jupyter / VS Code

Sample Dashboard Visualizations





🚧 Challenges & Solutions

- Challenge: Missing data → Solution: dropna(), preprocessing
- Challenge: Inconsistent predictions → Feature tuning
- Challenge: UI layout → Custom CSS

Results

- - Approval accuracy: ~XX%
- - Fast, visual filtering
- - Transparent decision-making
- - User-friendly analytics

Future Improvements

- - Connect to live databases
- - Add user login system
- - Cloud deploy (e.g., AWS)
- - Add explainability with SHAP

✓ Conclusion

- - ML-backed Streamlit dashboard
- - Smart loan eligibility predictions
- - Ready for deployment & scaling
- - Power bi dashboard

Thank You!