Bank Loan Analysis - Insight Report

# Problem Statement

Financial institutions face challenges in monitoring loan portfolios, distinguishing between good and bad loans, and assessing repayment patterns. Without clear visibility into loan performance, lenders struggle to minimize risks, optimize interest rates, and make informed credit decisions.

# Dashboard Objective

The Power BI dashboard was designed to:  
- Track loan application trends over time.  
- Measure funded vs. received amounts.  
- Analyze borrower demographics (employment length, home ownership, purpose).  
- Compare good vs. bad loans and repayment performance.  
- Support decision-making through state-wise, grade-wise, and term-wise insights.

**Project Objectives**

1. Risk Assessment – Identify proportions of good vs. bad loans.
2. Performance Tracking – Measure funded vs. received amounts.
3. Demographic Insights – Understand repayment behavior by employment, purpose, and ownership.
4. Geographical Analysis – Map loan distribution across states.
5. Decision Support – Provide insights for credit policy and portfolio optimization.

# Key Insights

## 1. Loan Quality

- Good Loans form 86.2% of total applications (~33.2K).  
- Bad Loans account for 13.8% (~5.3K), highlighting potential risk exposure.

## 2. Financial Performance

- Total Funded Amount: $435.76M  
- Total Amount Received: $473.07M (higher recovery than disbursal, showing effective repayments).  
- Average Interest Rate: 12.05%  
- Average Debt-to-Income (DTI): 13.33%

## 3. Loan Status Analysis

- Fully Paid: ~83% of loans ($3.51B funded, $4.11B received).  
- Charged Off: $65.5M funded, only $37.3M recovered (major risk area).  
- Current: $188.6M funded, $242M expected recovery.

## 4. Demographic Insights

- Loan Purpose: Debt consolidation dominates ($0.23B received).  
- Home Ownership: Mortgage holders received the highest funds ($238M).  
- Tenure: 36-month loans are more popular (62.3% of total received).  
- Employment Length: Borrowers with 10+ years of experience contributed the highest repayments.

## 5. Geographical Trends

- States like CA, NY, TX, and FL contribute the largest loan volumes.

**Use Cases**

* Financial Risk Modeling
* Predictive Analytics on Loan Defaults
* Business Intelligence Dashboards (Power BI)
* Credit Policy Optimization
* Customer Segmentation

# Conclusion

The dashboard enables banks to:  
- Detect risk areas (charged-off loans).  
- Optimize loan terms & interest rates.  
- Target profitable customer segments (mortgage owners, long-tenure employees).  
- Drive data-backed lending strategies for sustainable growth.