**Project Overview**

This project focuses on analyzing a bank loan dataset to uncover insights into lending activities, portfolio performance, and borrower behavior using Tableau. The primary objective was to design a comprehensive Bank Loan Report that helps financial institutions monitor their loan portfolio, track key performance indicators (KPIs), and reduce the risk of defaults.

The dataset (financial\_loan.csv) contained detailed information on loan applications, disbursed amounts, repayment behavior, borrower demographics, and loan purposes. My task was to transform this raw dataset into actionable insights through a set of interactive dashboards.

**Problem Statement :-**

Banks face challenges in:

**1.Tracking loan applications, disbursed amounts, and repayments in real time**  
Banks often struggle to get a consolidated view of how many loan applications they receive, how much has been disbursed, and how much has been repaid at any given time. Without this visibility, it becomes difficult to assess portfolio performance and cash flow. Using Tableau, I built a Summary Dashboard that provides an at-a-glance view of these metrics, including Month-to-Date (MTD) and Month-over-Month (MoM) trends. This enables stakeholders to monitor lending activity in real time, ensuring timely interventions and informed decision-making.

**2. Monitoring KPIs such as interest rate, debt-to-income ratio (DTI), and repayment behavior**  
Loan performance is heavily influenced by borrower profiles. High interest rates may discourage repayment, while high DTI ratios often indicate financial stress. By calculating and visualizing these KPIs, I was able to highlight patterns where repayment behavior was weaker. For example, borrowers with higher DTIs showed a stronger correlation with defaults. The dashboards allow management to monitor these KPIs across the portfolio and spot risk early, enabling better credit policy adjustments.

**3. Identifying drivers of defaults and reducing bad loan proportions**  
One of the core challenges was to understand why certain loans were defaulting (“Bad Loans”). Through segmentation, I identified that defaults were more common among borrowers with shorter employment histories, higher DTIs, and in specific loan purposes (such as small business loans). These insights informed strategic recommendations, such as tightening eligibility checks, prioritizing low-risk borrower segments, and implementing region-specific strategies. This approach doesn’t just explain past performance but provides actionable steps to reduce the proportion of bad loans going forward.

**My Approach :-**

* Cleaned and prepared the dataset using Excel.
* Designed 3 Tableau dashboards for monitoring, insights, and drill-down analysis:
  + Summary Dashboard → KPIs (applications, funded/received amounts, interest rate, DTI, Good vs Bad loans).
  + Overview Dashboard → Trends by issue date, region, loan purpose, loan term, home ownership, and employment length.
  + Details Dashboard → Loan status grid view and borrower-level drill-down.
* Segmented loans into Good vs Bad categories to highlight portfolio risks.

**Key Insights :-**

Good Loans dominated the portfolio (majority of loans were fully paid or current).

Bad Loans (Charged-Off) showed higher concentrations in:

* Certain loan purposes (e.g., small business financing).
* Higher debt-to-income ratios.
* Borrowers with shorter employment histories.

Regional differences in lending trends highlighted geographies with higher risk.

**Recommendations:-**

Based on the findings, I proposed strategies for reducing bad loans:

**1. Strengthen eligibility checks for high-risk loan purposes**  
From the analysis, I found that certain loan purposes, such as small business loans, had a higher tendency to default compared to categories like debt consolidation. Strengthening eligibility checks for these high-risk purposes—through more stringent income verification, credit history review, and collateral requirements—can reduce the likelihood of funding loans that may end up in default.

**2. Prioritize borrowers with stable employment and lower DTI ratios**  
Borrowers with steady employment histories and lower debt-to-income (DTI) ratios showed a significantly higher probability of being classified as “Good Loans.” By prioritizing such borrowers during loan approvals and offering them favorable terms, the bank can lower its overall default risk and improve the profitability of its lending portfolio.

**3. Deploy region-focused lending strategies in high-default areas**  
The regional analysis revealed geographic disparities in loan performance, with some states or areas showing a higher proportion of bad loans. Implementing region-specific strategies—such as adjusting approval criteria, requiring additional documentation, or introducing targeted financial literacy programs—can help the bank mitigate risks in these areas while continuing to grow responsibly.

**4. Implement early-warning systems to flag at-risk borrowers**  
A proactive monitoring system can use real-time repayment patterns to flag borrowers who are likely to fall behind. By setting up alerts for late payments, rising DTI ratios, or sudden employment gaps, the bank can intervene early—through reminders, counseling, or temporary restructuring—before a loan becomes unmanageable and is charged-off.

**5. Introduce refinancing or restructuring to recover from potential defaults**  
Instead of immediately writing off struggling loans as losses, offering refinancing or restructuring options gives borrowers a chance to manage their repayments more effectively. For example, extending loan terms or slightly reducing interest rates can turn a potential default into a recoverable loan, improving both customer retention and the bank’s financial performance.

**Impact :-**

This project demonstrates how data visualization and analysis with Tableau can:

* Provide a clear view of loan portfolio health.
* Help reduce bad loan ratios through data-driven recommendations.
* Support strategic decision-making in financial institutions.

**Tools & Skills Highlighted :-**

* **Excel** → Data cleaning & preprocessing
* **Tableau** → Dashboard creation & storytelling
* **Data Analysis** → KPI design, segmentation, and insights
* **Business Understanding** → Risk analysis and strategy recommendations