

Bank Loan Report

Problem Statement

To monitor and assess the bank's lending operations, this project focuses on building a comprehensive Bank Loan Report using SQL and Power BI. The objective is to track critical loan metrics, evaluate portfolio performance, and uncover trends that support strategic, data-driven decisions.

Dashboard 1: Summary

This dashboard provides a high-level overview of the bank's key performance indicators (KPIs) related to loan applications, funding, repayments, and borrower financials. All KPIs are analyzed for overall totals, Month-to-Date (MTD), and Month-over-Month (MoM) trends.

Core KPIs

1. Total Loan Applications
 - Track the total number of loan applications received within a given period.
 - Analyze MTD applications and changes compared to the previous month.
2. Total Funded Amount
 - Total amount disbursed as loans.
 - Includes MTD funding and MoM comparison.
3. Total Amount Received
 - Total repayments received from borrowers.
 - Evaluated monthly to monitor cash inflow.
4. Average Interest Rate
 - Average interest charged across all loans.
 - Assessed monthly to observe cost trends.
5. Average Debt-to-Income (DTI) Ratio
 - Gauges borrower financial health.
 - Monthly tracking to monitor risk exposure.

Good Loan vs. Bad Loan KPIs

Loans are segmented based on Loan Status:

- Good Loans: Fully Paid, Current
- Bad Loans: Charged Off

Good Loan KPIs

1. Good Loan Application % – Percentage of applications classified as good loans
2. Good Loan Applications – Count of applications marked as Fully Paid or Current
3. Good Loan Funded Amount – Total principal funded under good loans
4. Good Loan Total Received Amount – Total repayments from good loans

Bad Loan KPIs

1. Bad Loan Application % – Percentage of applications classified as bad loans
2. Bad Loan Applications – Count of applications marked as Charged Off
3. Bad Loan Funded Amount – Total principal funded under bad loans
4. Bad Loan Total Received Amount – Total repayments from bad loans

Loan Status Grid View

A detailed grid view summarizes loan performance across different statuses. Metrics include:

- Total Applications
- Total Funded Amount
- Total Amount Received
- MTD Funded Amount
- MTD Amount Received
- Average Interest Rate
- Average DTI

This view allows stakeholders to assess the overall health and distribution of the loan portfolio.

Dashboard 2: Overview

This dashboard presents a series of visualizations to analyze loan metrics across time, geography, and borrower demographics.

Visualizations

1. Monthly Trends (Line Chart)
 - Metrics: Applications, Funded Amount, Amount Received
 - X-Axis: Month (based on Issue Date)
 - Helps identify seasonality and long-term lending trends.
 2. Regional Distribution (Filled Map)
 - Metrics by U.S. state
 - Reveals geographic concentration of loan activity.
 3. Loan Term Analysis (Donut Chart)
 - Segments loan data by term duration (e.g., 36 vs. 60 months)
 - Highlights distribution of lending periods.
 4. Employee Length Analysis (Bar Chart)
 - Breaks down metrics by borrower employment duration
 - Useful for assessing employment stability's impact on loans.
 5. Loan Purpose Breakdown (Bar Chart)
 - Metrics grouped by loan purpose (e.g., debt consolidation, credit cards)
 - Clarifies borrower intentions and high-demand use cases.
 6. Home Ownership Status (Tree Map)
 - Displays metrics by home ownership category (e.g., own, rent, mortgage)
 - Helps assess the effect of housing status on loan behavior.
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Dashboard 3: Details

The Details Dashboard provides a comprehensive, tabular view of all relevant loan records. It acts as a central reference for reviewing borrower and loan data.

Objective

To offer a user-friendly, consolidated interface that enables stakeholders to:

- Review borrower profiles
 - Track individual loan performance
 - Access all key fields in one place for further analysis
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