

Business Problem / Problem Statement

The bank wants to improve its understanding of loan performance, customer behavior, and risk exposure to make better lending decisions. Currently, loan applications are being received from multiple states, income groups, employment backgrounds, and loan purposes, but the bank lacks clear visibility into:

- Borrower repayment behavior
- Loan profitability
- Seasonal demand patterns
- High-risk and low-risk customer segments
- Operational performance KPIs

To address these challenges, the bank requires a detailed analysis of the loan portfolio across multiple key performance indicators (KPIs), borrower segments, loan types, and repayment patterns. The objective is to identify opportunities for improving underwriting decisions, reducing charge-offs, and strengthening financial performance.

BRD 1 — KPI Requirements

To monitor the health of the lending operations, the bank needs the following metrics:

1. Total Loan Applications

- Count of all loan applications in the selected period
- Month-to-Date (MTD) Loan Applications
- Helps track customer demand and pipeline strength

2. Total Funded Amount

- Total value of loans funded by the bank
- MTD Total Funded Amount
- Indicates capital deployment and funding trends

3. Total Amount Received

- Total repayments collected from borrowers
- MTD Total Amount Received
- Reflects cash inflow, portfolio performance, and repayment discipline

4. Average Interest Rate

- Average interest rate applied across all loans
- Helps understand the earning potential and pricing strategy

5. Average Debt-to-Income Ratio (DTI)

- Measures borrower financial health
- Helps assess overall risk level in the loan portfolio

BRD 1 — Good Loan vs. Bad Loan KPIs

The bank wants to categorize loans based on repayment outcomes:

Good Loans (Fully Paid)

- Good Loan Application Percentage
- Number of Good Loan Applications
- Total Funded Amount for Good Loans
- Total Amount Received from Good Loans

Bad Loans (Charged Off / Defaulted)

- Bad Loan Application Percentage
- Number of Bad Loan Applications
- Total Funded Amount for Bad Loans
- Total Amount Received from Bad Loans

This classification will help the bank identify the quality of its portfolio and determine which borrower groups contribute to higher losses.

BRD 2 — Visualization Requirements

The bank requires visual dashboards to track key trends and segment-level behaviors:

1. Monthly Trends by Issue Date (Line/Area Chart)

- Shows seasonality in loan applications, funding, and repayments
- Helps forecast demand and budget allocation

2. Regional Analysis by State (Bar Chart)

- Identifies top-performing and underperforming states
- Highlights regional disparities in lending activity

3. Loan Term Analysis (Donut Chart)

- Shows distribution between 36-month and 60-month terms
- Helps evaluate borrower preferences and repayment risk

4. Employee Length Analysis (Bar Chart)

- Reveals how employment stability affects loan applications and repayments
- Useful for underwriting risk assessment

5. Loan Purpose Breakdown (Bar Chart)

- Shows why customers are borrowing
- Helps understand high-demand segments like debt consolidation

6. Home Ownership Analysis (Tree Map / Heat Map)

- Shows how home ownership type affects loan funding and repayment
- Helps identify reliable borrower groups (e.g., mortgage owners)