

# Bank Loan Dashboard Summary

## Problem Statement

### Dashboard 1

This Analysis provides a comprehensive view of the bank loan distribution, offering insights into various aspects such as loan amounts, verification status, loan purposes, and customer credit profiles. It is designed to help bank stakeholders make informed decisions regarding lending strategies, risk management, and resource allocation.

### Key Performance Indicators (KPIs) Requirements:

- **Total Loan Applications:** It's important to determine the overall number of loan applications received within a specific time frame. We should also track the Month-to-Date (MTD) Loan Applications and monitor Month-over-Month (MoM) changes to assess trends.
- **Total Funded Amount:** Monitoring the total amount disbursed in loans is vital. Additionally, we want to track the MTD Funded Amount and analyze Month-over-Month (MoM) fluctuations in this figure for better financial planning.
- **Total Amount Received:** Keeping track of the total repayments made by borrowers is essential for understanding cash flow and loan recovery. We should review the Month-to-Date (MTD) Total Amount Received and observe Month-over-Month (MoM) changes in repayments.
- **Average Interest Rate:** Calculating the average interest rate across all loans and tracking it for the MTD will offer valuable insight into our loan portfolio. Monitoring Month-over-Month (MoM) changes in interest rates is also crucial for assessing lending costs.
- **Average Debt-to-Income (DTI) Ratio:** Assessing the average DTI of borrowers helps us evaluate their financial stability. We need to calculate the average DTI for all loans, including MTD, and track Month-over-Month (MoM) variations to identify any shifts in borrower risk.

## Good Loan vs. Bad Loan KPIs

To assess the effectiveness of our lending practices and measure the quality of our loan portfolio, a detailed report is required that differentiates between 'Good Loans' and 'Bad Loans' based on specific loan status criteria.

### Good Loan KPIs:

1. **Good Loan Application Percentage:** Calculate the percentage of loan applications classified as 'Good Loans,' which include loans with statuses such as 'Fully Paid' and 'Current.'
2. **Total Good Loan Applications:** Determine the total number of loan applications that fall under the 'Good Loan' category, based on loans with a status of 'Fully Paid' or 'Current.'
3. **Good Loan Funded Amount:** Calculate the total funds disbursed for 'Good Loans,' focusing on the principal amounts of loans with statuses of 'Fully Paid' and 'Current.'
4. **Good Loan Total Received Amount:** Track the total repayments received for 'Good Loans,' covering all payments made for loans in 'Fully Paid' and 'Current' status.

### Bad Loan KPIs:

1. **Bad Loan Application Percentage:** Determine the percentage of loan applications categorized as 'Bad Loans,' which specifically refers to loans with a 'Charged Off' status.
2. **Total Bad Loan Applications:** Calculate the total number of loan applications that are classified as 'Bad Loans,' focusing on those with a 'Charged Off' status.
3. **Bad Loan Funded Amount:** Calculate the total amount disbursed for 'Bad Loans,' specifically the principal amounts of loans that have been 'Charged Off.'
4. **Bad Loan Total Received Amount:** Track the total repayments made for 'Bad Loans,' which includes any payments received for loans that have been 'Charged Off.'

### Loan Status Grid View:

To get a holistic overview of the lending operations, a grid view report categorized by loan status will be developed. This report will offer insights into key metrics like 'Total Loan Applications,' 'Total Funded Amount,' 'Total Amount Received,' 'Month-to-Date (MTD) Funded Amount,' 'MTD Amount Received,' 'Average Interest Rate,' and 'Average Debt-to-Income Ratio (DTI).' This grid view will empower decision-makers by providing a comprehensive view of loan performance across different statuses.

## DASHBOARD 2: OVERVIEW

In our **Bank Loan Report Project**, we aim to create visual representations of critical loan-related metrics using various chart types. These visuals will make it easier to understand key loan trends and insights, supporting data-driven decisions.

### 1. Monthly Trends by Issue Date (Line Chart):

- **Chart Type:** Line Chart
- **Metrics:** 'Total Loan Applications,' 'Total Funded Amount,' and 'Total Amount Received'
- **X-Axis:** Month (derived from 'Issue Date')
- **Y-Axis:** Metric Values
- **Objective:** This chart will highlight changes in loan applications, disbursements, and receipts over time, helping identify seasonal patterns and long-term trends.

### 2. Regional Analysis by State (Filled Map):

- **Chart Type:** Filled Map
- **Metrics:** 'Total Loan Applications,' 'Total Funded Amount,' and 'Total Amount Received'
- **Geography:** States
- **Objective:** This map will visually show lending activity across states, making it easy to spot regional variations in loan metrics.

### 3. Loan Term Analysis (Donut Chart):

- **Chart Type:** Donut Chart
- **Metrics:** 'Total Loan Applications,' 'Total Funded Amount,' and 'Total Amount Received'
- **Segments:** Loan Terms (e.g., 36 months, 60 months)
- **Objective:** The donut chart will show how loans are distributed across different term lengths, providing insights into borrower preferences.

### 4. Employee Length Analysis (Bar Chart):

- **Chart Type:** Bar Chart
- **Metrics:** 'Total Loan Applications,' 'Total Funded Amount,' and 'Total Amount Received'
- **X-Axis:** Employment Length Categories (e.g., 1 year, 5 years, 10+ years)
- **Y-Axis:** Metric Values
- **Objective:** This bar chart will highlight the distribution of loans across borrowers with varying employment lengths, helping us analyze the impact of job stability on loan approvals.

## 5. Loan Purpose Breakdown (Bar Chart):

- **Chart Type:** Bar Chart
- **Metrics:** 'Total Loan Applications,' 'Total Funded Amount,' and 'Total Amount Received'
- **X-Axis:** Loan Purpose Categories (e.g., debt consolidation, credit card refinancing)
- **Y-Axis:** Metric Values
- **Objective:** This chart will provide insights into the reasons borrowers seek loans, helping the bank understand which purposes drive lending activity.

## 6. Home Ownership Analysis (Tree Map):

- **Chart Type:** Tree Map
- **Metrics:** 'Total Loan Applications,' 'Total Funded Amount,' and 'Total Amount Received'
- **Hierarchy:** Home Ownership Categories (e.g., own, rent, mortgage)
- **Objective:** The tree map will offer a hierarchical view of loan metrics by home ownership status, showing how property ownership influences loan activities.

These charts will collectively improve our ability to visualize and interpret loan data, supporting informed decisions and enhancing strategic planning within the bank's lending operations.

## DASHBOARD 3: DETAILS

For our **Bank Loan Report Project**, we plan to create a **Details Dashboard** to provide an all-in-one view of essential loan data.

**Objective:** The main goal of this dashboard is to offer a user-friendly interface that consolidates critical loan metrics, borrower profiles, and loan performance indicators. This will allow users to easily access and analyze the health of the loan portfolio, making it a valuable tool for tracking and decision-making.