**Bank Loan Report**

**1.PROJECT OVERVIEW**

Title: Bank Loan Report

**Abstract**

This Project aims to create a comprehensive bank loan report to monitor and access bank’s lending activities and performance. By analysing key loan-related metrics and their changes over time, this report helps in making data-driven decisions.

**Objectives**

* Calculate and monitor key performance indicators (KPIs) related to loan applications, funded amounts, received amounts, interest rates, and debt-to-income ratios.
* Distinguish between 'Good Loans' and 'Bad Loans' based on specific loan status criteria.
* Visualize critical loan-related metrics and trends using various chart types.
* Provide a detailed dashboard offering a holistic view of key loan-related metrics and data points.

**2.PROBLEM STATEMENT**

**Dashboard 1 – SUMMARY**

**Key Performance Indicators (KPIs) Requirements:**

**1.Total Loan Applications:** We need to calculate total number of applications received during a specific period. Additionally, it is essential to monitor Month-To-Date (MTD) loan applications and track changes Month-over-month (MOM).

**2.Total Funded Amount:** We have to analyse total amount of funds disbursed as loan, MTD total funded amount and also changes in MOM metrics.

**3.Total Received Amount:** Tracking total amount received from borrower is essential. We should analyse MTD received amount and observe MOM changes.

**4.Average Interest Rate:** Calculating average interest rate across all loans, MTD and monitoring MOM changes.

**5.Average Debt-to-income ratio:** Evaluating average DTI for all our borrowershelps us gauge their financial health. We need to compute average DTI for all loans, MTD, and track MOM changes.

**Good Loan vs Bad Loan KPI’s**

In order to evaluate the performance of our lending activities and assess the quality of our loan portfolio, we need to create a comprehensive report that distinguishes between 'Good Loans' and 'Bad Loans' based on specific loan status criteria

**Good Loan KPIs:**

**1.Good Loan Application Percentage:** We need to calculate the percentage of loan applications classified as 'Good Loans.' This category includes loans with a loan status of 'Fully Paid' and 'Current.'

**2.Good Loan Applications:** Identifying the total number of loan applications falling under the 'Good Loan' category, which consists of loans with a loan status of 'Fully Paid' and 'Current.'

**3.Good Loan Funded Amount:** Determining the total amount of funds disbursed as 'Good Loans.' This includes the principal amounts of loans with a loan status of 'Fully Paid' and 'Current.'

**4.Good Loan Total Received Amount:** Tracking the total amount received from borrowers for 'Good Loans,' which encompasses all payments made on loans with a loan status of 'Fully Paid' and 'Current.'

**Bad Loan KPIs:**

**1.Bad Loan Application Percentage:** Calculating the percentage of loan applications categorized as 'Bad Loans.' This category specifically includes loans with a loan status of 'Charged Off.'

**2.Bad Loan Applications:** Identifying the total number of loan applications categorized as 'Bad Loans,' which consists of loans with a loan status of 'Charged Off.'

**3.Bad Loan Funded Amount:** Determining the total amount of funds disbursed as 'Bad Loans.' This comprises the principal amounts of loans with a loan status of 'Charged Off.'

**4.Bad Loan Total Received Amount:** Tracking the total amount received from borrowers for 'Bad Loans,' which includes all payments made on loans with a loan status of 'Charged Off.'

**Loan Status Grid View:**

In order to gain a comprehensive overview of our lending operations and monitor the performance of loans, we aim to create a grid view report categorized by 'Loan Status.' This report will serve as a valuable tool for analysing and understanding the key indicators associated with different loan statuses. By providing insights into metrics such as '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 us to make data-driven decisions and assess the health of our loan portfolio.

**Dashboard 2: OVERVIEW**

In our Bank Loan Report project, we aim to visually represent critical loan-related metrics and trends using a variety of chart types. These charts will provide a clear and insightful view of our lending operations, facilitating data-driven decision-making and enabling us to gain valuable insights into various loan parameters. Below are the specific chart requirements:

**1.Monthly Trends by Issue date (Line Chart):**

Chart Type: Line Chart

X-Axis: Month (Issue Date)

Y-Axis: Values

**2.Regional Analysis by State (Map):**

Chart Type: Filled Map

Geographic Regions: States

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

Chart Type: Donut Chart

Segments: Terms

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

Chart Type: Bar Chart

X-Axis: Employee Length

Y-Axis: Values

**5.Loan Purpose Breakdown (Bar chart):**

Chart Type: Bar Chart

X-Axis: Loan Purpose

Y-Axis: Values

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

Chart Type: Tree Map

Segments: Home Ownership Categories

**Dashboard 3: DETAILS**

In our Bank Loan Report project, we recognize the need for a comprehensive 'Details Dashboard' that provides a consolidated view of all the essential information within our loan data. This Details Dashboard aims to offer a holistic snapshot of key loan-related metrics and data points, enabling users to access critical information efficiently.

**3.DATA DESCRIPTION**

|  |
| --- |
| **Field**  **Description** |
| ID Identification Number |
| Address State State where customer is located |
| Home Ownership Whether customer have own house or rented |
| Issue Date Date when loan was disbursed |
| Loan Status Status of loan |
| Purpose Purpose of loan |
| DTI Debt to Income |
| Int Rate Rate of Interest |
| Loan Amount Total Amount of loan Approved |
| Total Payment Total Amount to repay |

**4.DATA PRE-PROCESSING**

**1.Data Analysis:** Worked on Exploratory Data Analysis in SQL Server to check data

**2.Data Transformation:** Categorised loan status into good loan and bad loan based on whether loan is “Fully-Paid”, “Charged Off” and “Current”

**3.Tools Used:**

EDA:SQL Server,

Data Analysis,Visualization : MS Excel

**5.OUTCOMES**

**1.Total Loan Applications:**

Total Loan Applications: 38,576

MTD Loan Applications: 4314

Total Good Loan Applications: 33243

Total Bad Loan Applications: 5333

**2.Total Funded Amount:**

Total Funded Amount: $435.8M

MTD Funded Amount: $54M

Good Loan Funded Amount: $370.2M

Bad Loan Funded Amount: $65.5M

**3.Total Received Amount:**

Total Received Amount: $473.1M

MTD Received Amount: $58.1M

Good Loan Received Amount: $435.8M

Bad Loan Received Amount: $37.3M

**4**.**Average Interest Rate:**

Average Interest Rate: 12%

MTD Average Interest Rate: 12.35%

**5.Average DTI:**

Average DTI: 13.32%

MTD Average DTI: 13.66%

**CONCLUSION**

In conclusion**,** The Bank Loan Report provides comprehensive insights into the bank's lending activities, helping in strategic decision-making and portfolio management.