



## **BANK LOAN - DATA ANALYSIS PROJECT**

### **(Bank Loan Report)**

**Problem Statement:** Create a database for bank loan data in MySQL and analyze the various parameters given in the following question. Use **financial\_loan.csv** for database creation and refer to other attached files for domain knowledge.

**Note:** Submission of sql script file is **mandatory** for evaluation.

#### **A. BANK LOAN REPORT | SUMMARY**

##### **1. KPI's:**

- 1) Number of Applications
  - a) Total Loan Applications
  - b) MTD Loan Applications(Month-To-Date i.e. Current Month)
  - c) PMTD Loan Applications(Previous Month)
- 2) Funded Amount (Total Loan Amount approved)
  - a) Total Funded Amount
  - b) MTD Total Funded Amount
  - c) PMTD Total Funded Amount
- 3) Amount Received(Loan Amount paid)
  - a) Total Amount Received
  - b) MTD Total Amount Received
  - c) PMTD Total Amount Received
- 4) Interest Rate
  - a) Average Interest Rate
  - b) MTD Average Interest
  - c) PMTD Average Interest



### 5) DTI (Debt to Income ratio)

- a) Avg DTI
- b) MTD Avg DTI
- c) PMTD Avg DTI

## 2. GOOD LOAN ISSUED

- 1. Good Loan Percentage
- 2. Good Loan Applications
- 3. Good Loan Funded Amount
- 4. Good Loan Amount Received

## 3. BAD LOAN ISSUED

- 1. Bad Loan Percentage
- 2. Bad Loan Applications
- 3. Bad Loan Funded Amount
- 4. Bad Loan Amount Received

## 4. LOAN STATUS

- 1. Complete Loan Status Summary
- 2. MTD Loan Status Summary

## B. BANK LOAN REPORT | OVERVIEW

Showcase total number of applications, total loan amount and total amount received for the following parameters.

- a. MONTH
- b. STATE



- c. TERM
- d. EMPLOYEE LENGTH
- e. PURPOSE
- f. HOME OWNERSHIP

## **C. Miscellaneous | OVERVIEW**

1. MoM Loan Application growth rate
2. Mom Loan Amount Disbursed growth rate
3. Interest rate for various subgrade and grade loan type



### **Detailed Requirements:**

"In order to monitor and assess our bank's lending activities and performance, we need to create a comprehensive Bank Loan Report. This report aims to provide insights into key loan-related metrics and their changes over time. The report will help us make data-driven decisions, track our loan portfolio's health, and identify trends that can inform our lending strategies.

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

1. **Total Loan Applications:** We need to calculate the total number of loan applications received during a specified period. Additionally, it is essential to monitor the Month-to-Date (MTD) Loan Applications and track changes Month-over-Month (MoM).
2. **Total Funded Amount:** Understanding the total amount of funds disbursed as loans is crucial. We also want to keep an eye on the MTD Total Funded Amount and analyse the Month-over-Month (MoM) changes in this metric.
3. **Total Amount Received:** Tracking the total amount received from borrowers is essential for assessing the bank's cash flow and loan repayment. We should analyse the Month-to-Date (MTD) Total Amount Received and observe the Month-over-Month (MoM) changes.
4. **Average Interest Rate:** Calculating the average interest rate across all loans, MTD, and monitoring the Month-over-Month (MoM) variations in interest rates will provide insights into our lending portfolio's overall cost.
5. **Average Debt-to-Income Ratio (DTI):** Evaluating the average DTI for our borrowers helps us gauge their financial health. We need to compute the average DTI for all loans, MTD, and track Month-over-Month (MoM) fluctuations.



### Good Loan v 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 Overview:

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.

#### **1. Monthly Trends by Issue Date:**

Metrics: 'Total Loan Applications,' 'Total Funded Amount,' and 'Total Amount Received'

*Objective: This will showcase how 'Total Loan Applications,' 'Total Funded Amount,' and 'Total Amount Received' vary over time, allowing us to identify seasonality and long-term trends in lending activities.*

#### **2. Regional Analysis by State:**

Metrics: 'Total Loan Applications,' 'Total Funded Amount,' and 'Total Amount Received'

*Objective: This will represent lending metrics categorized by state, enabling us to identify regions with significant lending activity and assess regional disparities.*





### 3. Loan Term Analysis:

Metrics: 'Total Loan Applications,' 'Total Funded Amount,' and 'Total Amount Received'

Segments: Loan Terms (e.g., 36 months, 60 months)

*Objective: This will depict loan statistics based on different loan terms, allowing us to understand the distribution of loans across various term lengths.*

### 4. Employee Length Analysis:

Metrics: 'Total Loan Applications,' 'Total Funded Amount,' and 'Total Amount Received'

*Objective: This will illustrate how lending metrics are distributed among borrowers with different employment lengths, helping us assess the impact of employment history on loan applications.*

### 5. Loan Purpose Breakdown:

Metrics: 'Total Loan Applications,' 'Total Funded Amount,' and 'Total Amount Received'

*Objective: This will provide a breakdown of loan metrics based on the stated purposes of loans, aiding in the understanding of the primary reasons borrowers seek financing.*

### 6. Home Ownership Analysis:

Metrics: 'Total Loan Applications,' 'Total Funded Amount,' and 'Total Amount Received'

Hierarchy: Home Ownership Categories (e.g., own, rent, mortgage)

\*\*\*\*\* The End \*\*\*\*\*