**Report – 1**

**Summary**

This retrieves all data from the bank\_loan\_data table

1. select \* from bank\_loan\_data -- You will see data

Open the Problem Statement and start solving it

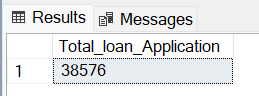
**Summary Report**

**KPI's**

**1) Total Loan Applications:** We need to calculate the total number of loan applications received during a specified period. Additionally, monitoring the Month-to-Date (MTD) Loan Applications and tracking changes Month-over-Month (MoM) is essential.

**Month to Date Total\_loan\_Application**

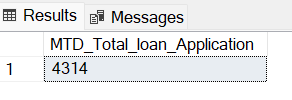
1) SELECT count(id) AS Total\_loan\_Application from bank\_loan\_data



**Month to Date Total\_loan\_Application**

1. SELECT count(id) AS MTD\_Total\_loan\_Application from bank\_loan\_data

WHERE MONTH(issue\_date) = 12 AND YEAR (issue\_date) = 2021

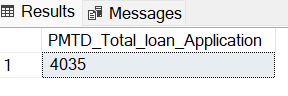


**Previous Month to Date Total\_loan\_Application**

SELECT count(id) AS PMTD\_Total\_loan\_Application

FROM bank\_loan\_data

WHERE MONTH(issue\_date) = 11 AND YEAR(issue\_date) = 2021



**Month on Month** = (MTD – PMTD) / PMTD

**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**.**

**Total Funded amount**

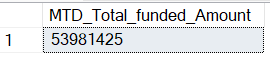
SELECT SUM(loan\_amount) AS Total\_funded\_Amount FROM bank\_loan\_data



**Month to Date Total Funded Amount**

SELECT SUM(loan\_amount) AS MTD\_Total\_funded\_Amount FROM bank\_loan\_data

where month(issue\_date) = 12 AND YEAR(issue\_date) = 2021

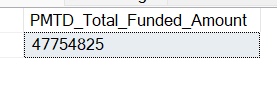


**Previous Month to Date Total Funded Amount**

SELECT SUM(loan\_amount) AS PMTD\_Total\_Funded\_Amount

FROM bank\_loan\_data

WHERE MONTH(issue\_date) = 11 AND YEAR(issue\_date)=2021

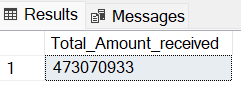


**Month on Month** = (MTD – PMTD) / PMTD

**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.

**Total Amount Received**

SELECT SUM(total\_payment) As Total\_Amount\_received FROM bank\_loan\_data

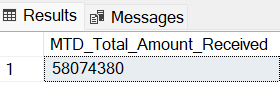


**Month to Date Total Amount Received**

SELECT SUM(total\_Payment) AS MTD\_Total\_Amount\_Received

FROM bank\_loan\_data

WHERE MONTH(issue\_date) = 12 AND YEAR(issue\_date) =2021

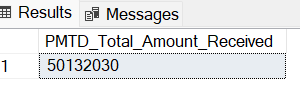


**Previous Month to Date Total Amount Received**

SELECT SUM(total\_payment) AS PMTD\_Total\_Amount\_Received

FROM bank\_loan\_data

WHERE Month(issue\_date) = 11 AND YEAR(issue\_date) = 2021

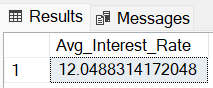


**Month on Month** = (MTD – PMTD) / PMTD

1. **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**.**

**Average Interest Rate**

SELECT ROUND(AVG(int\_rate), 4) \* 100 AS Avg\_Interest\_Rate FROM bank\_loan\_data

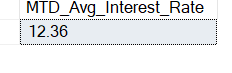


**Month to Date Avg Interest Rate**

SELECT ROUND(AVG(int\_rate), 4) \* 100 AS MTD\_Avg\_Interest\_Rate

FROM bank\_loan\_data

WHERE MONTH(issue\_date) = 12 AND YEAR(issue\_date) = 2021

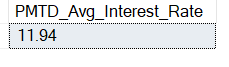


**Previous Month Avg Interest Rate**

SELECT ROUND(AVG(int\_rate), 4) \* 100 AS PMTD\_Avg\_Interest\_Rate

FROM bank\_loan\_data

WHERE MONTH(issue\_date) = 11 AND YEAR(issue\_date) = 2021

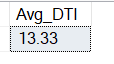


**Month on Month** = (MTD – PMTD) / PMTD

1. **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.

**The Avg Depth to Income Ratio**

SELECT ROUND(AVG(dti) , 4) \* 100 AS Avg\_DTI FROM bank\_loan\_data

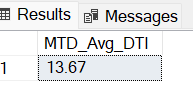


**Month to Date DTI Ratio**

SELECT ROUND(AVG(dti) , 4) \* 100 AS MTD\_Avg\_DTI

FROM bank\_loan\_data

WHERE MONTH(issue\_date) = 12 AND YEAR(issue\_date) = 2021

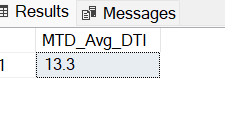


**Previous Month DTI Ratio**

SELECT ROUND(AVG(dti) , 4) \* 100 AS MTD\_Avg\_DTI

FROM bank\_loan\_data

WHERE MONTH(issue\_date) = 11 AND YEAR(issue\_date) = 2021

****

**Good Loan Vs Bad Loans**

**Good Loan Application Percentage**

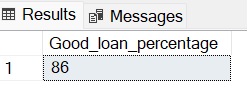
SELECT

(COUNT(CASE WHEN loan\_status ='Fully Paid ' or loan\_status ='Current' THEN id END ) \* 100 )

/

COUNT(id) AS Good\_loan\_percentage

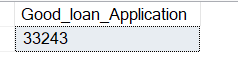
FROM bank\_loan\_data



**Good Loan Application**

SELECT count(id)AS Good\_loan\_Application FROM bank\_loan\_data

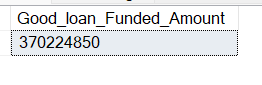
WHERE loan\_status = 'Fully Paid' OR Loan\_status = 'Current'



**Good Loan Funded Amount**

SELECT SUM(loan\_amount) AS Good\_loan\_Funded\_Amount FROM bank\_loan\_data

WHERE loan\_status = 'Fully Paid' OR loan\_status ='Current'



**Good Loan Received Amount**

SELECT SUM(total\_payment) AS Good\_Loan\_Received\_Amount FROM bank\_loan\_data

WHERE loan\_status ='Fully Paid' OR loan\_status = 'Current'



**BAD LOAN PERCENTAGE**

SELECT

(COUNT(CASE WHEN loan\_status = 'Charged Off' THEN id END ) \* 100.0) / COUNT(id) AS Bad\_Loan\_Percentage

FROM bank\_loan\_data



**Total Bad Loan Application**

SELECT COUNT(id) AS Bad\_Loan\_Applications FROM bank\_loan\_data

WHERE loan\_status = 'Charged Off'



**Total Bad Loan Amount**

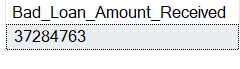
SELECT SUM(loan\_amount) AS Bad\_Loan\_Amount FROM bank\_loan\_data WHERE loan\_status = 'Charged Off'



**Total Bad Loan Amount Received**

SELECT sum(total\_payment) AS Bad\_Loan\_Amount\_Received FROM bank\_loan\_data

WHERE loan\_status = 'Charged Off'



**Loan Status Grid View**

SELECT

loan\_status,

COUNT(id) AS Total\_loan\_Applications,

SUM(total\_payment) AS Total\_Amount\_Received,

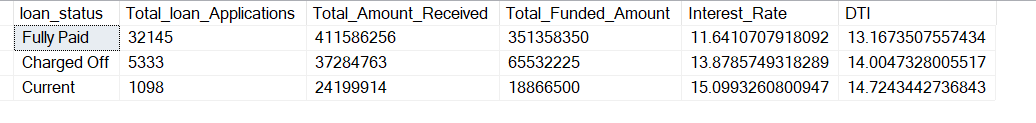
SUM(loan\_amount) AS Total\_Funded\_Amount,

AVG(int\_rate \* 100) AS Interest\_Rate,

AVG(dti \* 100) AS DTI

FROM bank\_loan\_data

GROUP BY loan\_status



SELECT

loan\_status,

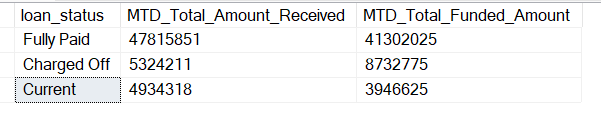
SUM(total\_payment) AS MTD\_Total\_Amount\_Received,

SUM(loan\_amount) AS MTD\_Total\_Funded\_Amount

FROM bank\_loan\_data

WHERE MONTH(issue\_date) = 12

GROUP BY loan\_status



REPORT - 2

OVERVIEW

1. **Monthly Trends by Issue Date (Line Chart):**  To identify seasonality and long-term trends in lending activities

SELECT

MONTH(issue\_date) AS Month\_Number,

DATENAME(MONTH,issue\_date) AS Month\_Name,

COUNT(id) AS Total\_Loan\_Applications,

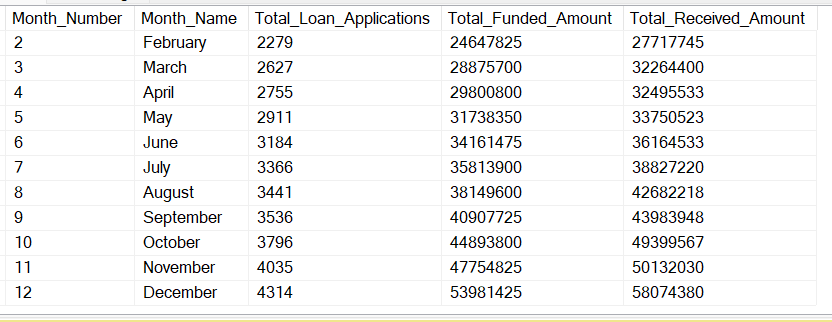
SUM(loan\_amount) AS Total\_Funded\_Amount,

SUM(total\_payment) AS Total\_Received\_Amount

FROM bank\_loan\_data

GROUP BY MONTH(issue\_date), DATENAME(MONTH , issue\_date)

ORDER BY MONTH(issue\_date)





1. **Regional Analysis by State (Filled Map):** To identify regions with significant lending activity and assess regional disparities

SELECT address\_state,

Count(id) AS Total\_Loan\_Applications,

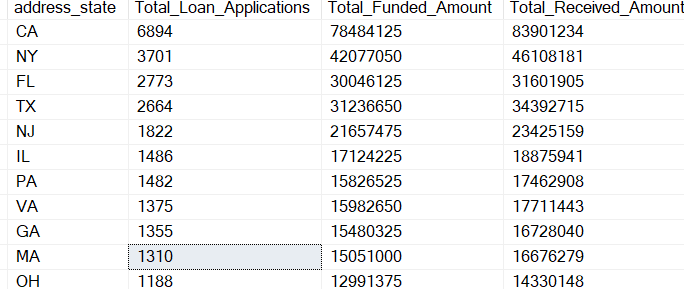
SUM(loan\_amount) AS Total\_Funded\_Amount,

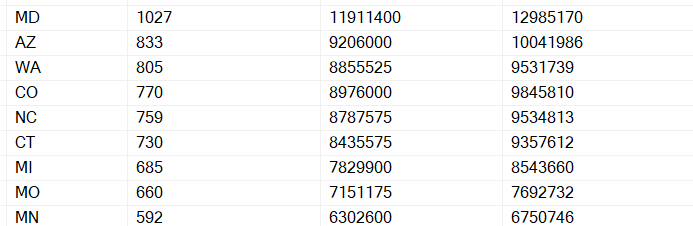
SUM(total\_payment) AS Total\_Received\_Amount

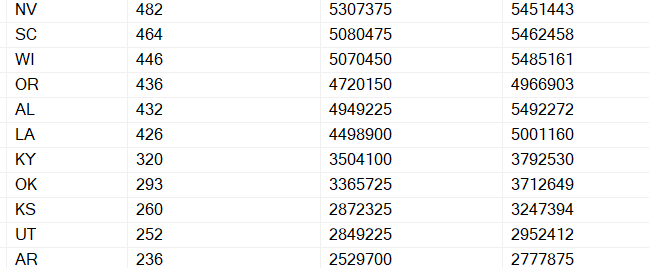
FROM bank\_loan\_data

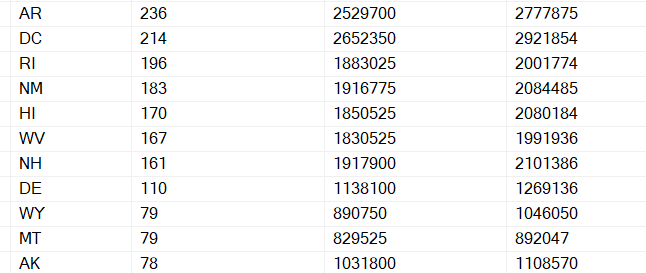
GROUP BY address\_state

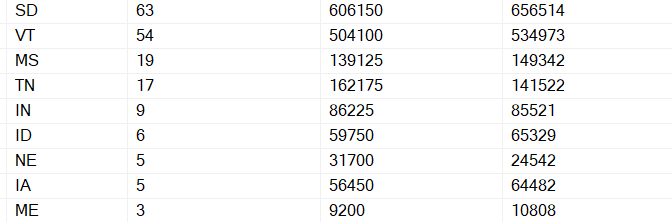
ORDER BY count(id) DESC











1. **Loan Term Analysis (Donut Chart):** To allow the client to understand the distribution of loans across various term lengths.

SELECT term,

COUNT(id) AS Total\_Loan\_Applications,

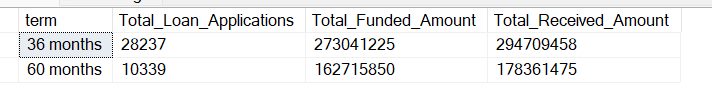
SUM(loan\_amount) AS Total\_Funded\_Amount,

SUM(total\_payment) AS Total\_Received\_Amount

FROM bank\_loan\_data

GROUP BY term

ORDER BY term



1. **Employee Length Analysis (Bar Chart):** How lending metrics are distributed among borrowers with different employment lengths, helping us assess the impact of employment history on loan applications.

SELECT emp\_length,

COUNT(id) AS Total\_Loan\_Applications,

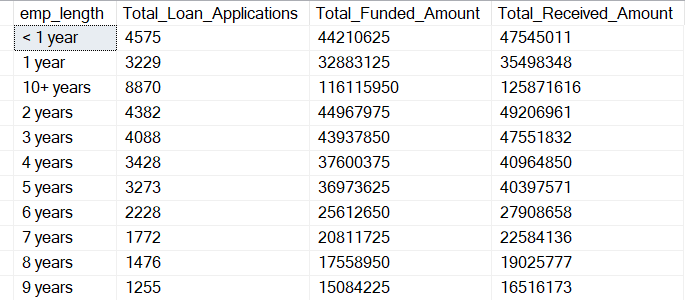
SUM(loan\_amount) AS Total\_Funded\_Amount,

SUM(total\_payment) AS Total\_Received\_Amount

FROM bank\_loan\_data

GROUP BY emp\_length

ORDER BY emp\_length



1. **Loan Purpose Breakdown (Bar Chart):** Will provide a visual breakdown of loan metrics based on the stated purposes of loans, aiding in the understanding of the primary reasons borrowers seek financing.

SELECT purpose,

COUNT(id) AS Total\_loan\_Applications,

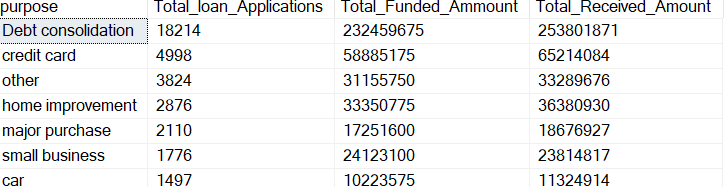
SUM(loan\_amount) AS Total\_Funded\_Ammount,

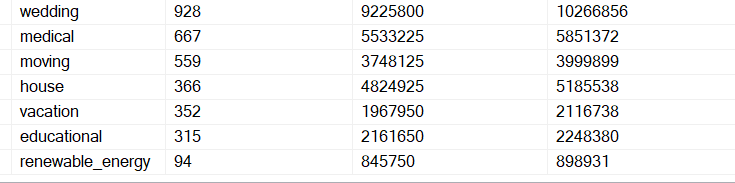
SUM(total\_payment) AS Total\_Received\_Amount

FROM bank\_loan\_data

GROUP BY purpose

ORDER BY count(id) DESC





1. **Home Ownership Analysis (Tree Map):** For a hierarchical view of how home ownership impacts loan applications and disbursements.

SELECT home\_ownership,

COUNT(id) AS Total\_Loan\_Applications,

SUM(loan\_amount) AS Total\_Funded\_Amount,

SUM(total\_payment) AS Total\_Received\_Amount

FROM bank\_loan\_data

GROUP BY home\_ownership

ORDER BY COUNT(id) DESC

