BANK LOAN REPORT QUERY DOCUMENT

The main purupose of Sql queries execution is for the confirmation of data that is visualized and analysed using tableau matches with exact count or the data we have been provided. Tableau and power bi are garbage in and garbage out.

**Implemented SQL queries to ensure data accuracy, reliability and consistency in the dashboards**.

Unleashing Loan Insights: A Data Analyst's Deep Dive into Bank Performance  
I'm thrilled to share my recent data analytics project focused on bank loan analysis. Leveraging SQL's robust functionalities, I delved into the world of loan applications, funded amounts, repayments, and borrower profiles to extract valuable insights for informed decision-making.  
  
Key Performance Indicators (KPIs) Uncovered:  
  
Loan Application Dynamics: I calculated the total loan applications, tracked month-to-date (MTD) trends, and analyzed month-over-month (MoM) changes to understand loan demand fluctuations.  
Funding Efficiency: I explored the total funded amount, monitored MTD disbursement, and analyzed MoM variations to assess loan approval and funding effectiveness.  
Repayment Performance: I tracked the total amount received, analyzed MTD repayments, and assessed MoM trends to evaluate borrower behavior and bank cash flow health.  
Portfolio Cost Analysis: I calculated the average interest rate across all loans, analyzed MTD interest rates, and monitored MoM variations to gain insights into the overall cost of the lending portfolio.  
Borrower Risk Assessment: I calculated the average debt-to-income (DTI) ratio for all loans, analyzed MTD DTI, and tracked MoM changes to understand borrower financial health and creditworthiness.  
SQL Skills Highlighted:  
  
Database & Table Creation  
Data Manipulation: SELECT, DATENAME, DATEPART, CAST, DECIMAL, MONTH, HOUR, QUARTER, DAY  
Data Aggregation: GROUP BY, ORDER BY, COUNT, DISTINCT  
Advanced Techniques: CTE, PARTITION  
Impact & Future Exploration:  
  
This project empowered the bank to gain a deeper understanding of loan application patterns, borrower risk profiles, and overall lending portfolio performance. These insights can be used for optimizing loan approval processes, pricing strategies, and risk management initiatives.  
  
Going forward, I'm eager to explore predictive modeling techniques to forecast loan demand, identify potential defaults, and ultimately enhance the bank's lending efficiency and profitability.

A. BANK LOAN REPORT | SUMMARY

KPI’S:

Total Loan Applications:

select count(id) as Total\_loan\_applications from bank\_loan\_data



Month to Date(MTD) Loan applications:

select count(id) as MTD\_Total\_loan\_applications from bank\_loan\_data

where month(issue\_date) = 12 and year(issue\_date) = 2021



Previous month to date(PMTD) Loan Applications:

select count(id) as PMTD\_Total\_loan\_applications from bank\_loan\_data

where month(issue\_date) = 11



Total funded amount:

select sum(loan\_amount) as Total\_funded\_amount from bank\_loan\_data



MTD 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



PMTD funded amount:

select sum(loan\_amount) as MTD\_Total\_funded\_amount from bank\_loan\_data

where month(issue\_date) = 11 and year(issue\_date) = 2021



Total Amount Received:

SELECT SUM(total\_payment) AS Total\_Amount\_Collected FROM bank\_loan\_data



MTD Total Amount Received:

SELECT SUM(total\_payment) AS Total\_Amount\_Collected FROM bank\_loan\_data

WHERE MONTH(issue\_date) = 12



PMTD Total Amount Received:

SELECT SUM(total\_payment) AS Total\_Amount\_Collected FROM bank\_loan\_data

WHERE MONTH(issue\_date) = 11



Average Interest rate:

select round(avg(int\_rate),4) \* 100 as Average\_interest\_rate from bank\_loan\_data



MTD Average Interest rate:

select round(avg(int\_rate),4) \* 100 as MTD\_Average\_interest\_rate from bank\_loan\_data

where month(issue\_date) = 12 and year(issue\_date) = 2021



PMTD Average Interest rate:

select round(avg(int\_rate),4) \* 100 as PMTD\_Average\_interest\_rate from bank\_loan\_data

where month(issue\_date) = 11 and year



Average Debt\_to\_Income Ratio(DTI):

select round(avg(dti),4) \*100 as Average\_dti from bank\_loan\_data



MTD Average DTI:

select round(avg(dti),4) \* 100 as MTD\_Average\_dti from bank\_loan\_data

where month(issue\_date) = 12 and year(issue\_date) = 2021



PMTD average DTI:

select round(avg(dti),4) \* 100 as PMTD\_Average\_dti from bank\_loan\_data

where month(issue\_date) = 11 and year(issue\_date) = 2021



**GOOD LOAN ISSUED:**

Good Loan Percentage:

SELECT

(COUNT(CASE WHEN loan\_status = 'Fully Paid' OR loan\_status = 'Current' THEN id END) \* 100.0)

/

COUNT(id) AS Good\_Loan\_Percentage

FROM bank\_loan\_data

****

Good Loan Applications

SELECT COUNT(id) AS Good\_Loan\_Applications 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 Amount Received

SELECT SUM(total\_payment) AS Good\_Loan\_amount\_received FROM bank\_loan\_data

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

****

**BAD LOAN ISSUED**

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

****

Bad Loan Applications

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

WHERE loan\_status = 'Charged Off'

****

Bad Loan Funded Amount

SELECT SUM(loan\_amount) AS Bad\_Loan\_Funded\_amount FROM bank\_loan\_data

WHERE loan\_status = 'Charged Off'

****

Bad Loan Amount Received

SELECT SUM(total\_payment) AS Bad\_Loan\_amount\_received FROM bank\_loan\_data

WHERE loan\_status = 'Charged Off'

****

**LOAN STATUS**

SELECT

loan\_status,

COUNT(id) AS LoanCount,

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

****

B. BANK LOAN REPORT | OVERVIEW

**MONTH**

SELECT

MONTH(issue\_date) AS Month\_Munber,

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\_Amount\_Received

FROM bank\_loan\_data

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

ORDER BY MONTH(issue\_date)

****

**STATE**

SELECT

address\_state AS State,

COUNT(id) AS Total\_Loan\_Applications,

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

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

FROM bank\_loan\_data

GROUP BY address\_state

ORDER BY address\_state

****

**TERM**

SELECT

term AS Term,

COUNT(id) AS Total\_Loan\_Applications,

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

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

FROM bank\_loan\_data

GROUP BY term

ORDER BY term

****

**EMPLOYEE LENGTH**

SELECT

emp\_length AS Employee\_Length,

COUNT(id) AS Total\_Loan\_Applications,

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

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

FROM bank\_loan\_data

GROUP BY emp\_length

ORDER BY emp\_length

****

**PURPOSE**

SELECT

purpose AS PURPOSE,

COUNT(id) AS Total\_Loan\_Applications,

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

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

FROM bank\_loan\_data

GROUP BY purpose

ORDER BY purpose

****

**HOME OWNERSHIP**

SELECT

home\_ownership AS Home\_Ownership,

COUNT(id) AS Total\_Loan\_Applications,

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

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

FROM bank\_loan\_data

GROUP BY home\_ownership

ORDER BY home\_ownership

****

*Note: We have applied multiple Filters on all the dashboards. You can check the results for the filters as well by modifying the query and comparing the results.*

*For e.g*

*See the results when we hit the Grade A in the filters for dashboards.*

*SELECT*

*purpose AS PURPOSE,*

*COUNT(id) AS Total\_Loan\_Applications,*

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

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

*FROM bank\_loan\_data*

*WHERE grade = 'A'*

*GROUP BY purpose*

*ORDER BY purpose*