**BANK LOAN PROJECT QUERY DOC**

**BANK LOAN REPORT: SUMMARY**

**KPI’s**

**Total loan applications**

Calculate the total number of loan applications received during a specific period. Customer ID is a unique identifying factor; the customer ID count = the number of loan applications

SELECT COUNT(id) AS total\_loan\_applications

FROM financial\_loan\_data

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Purpose: Loan ID is a unique identifier assigned to each loan application or loan account. It serves as a primary key for tracking and managing individual loans. Use for Banks: Banks use Loan IDs to efficiently manage and track loans throughout their lifecycle. It aids in organizing loan records, monitoring repayments, and addressing customer inquiries.

**PMTD loan applications**

Monitor the month to date (MTD) loan applications to track the MoM (month-over-month) changes. Previous MTD (PMTD) applications tells us how man applications were received during the previous month (November).

SELECT COUNT(id) AS total\_applications

FROM financial\_loan\_data

WHERE MONTH(issue\_date) = 11

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**Total funded amount**

Understand the total amount of funds disbursed as loans. Monitor the MTD total funded amount and analyze the MoM changes.

SELECT SUM(loan\_amount) AS total\_funded\_amount

FROM financial\_loan\_data

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**MTD funded amount**

Analyze month-to-date (MTD) total amount received and observe the MoM changes using PMTD.

SELECT SUM(loan\_amount) AS total\_funded\_amount

FROM financial\_loan\_data

WHERE MONTH(issue\_date) = 12

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**PMTD funded amount**

SELECT SUM(loan\_amount) AS previous\_total\_funded\_amount

FROM financial\_loan\_data

WHERE MONTH(issue\_date) = 11

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**Total amount received**

Track the total amount received from the borrowers (assess the bank’s cash flow and loan repayment). Analyze month-to-date (MTD) total amount received and observe the MoM changes.

SELECT SUM(total\_payment) AS total\_amount\_received

FROM financial\_loan\_data

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**MTD amount received**

SELECT SUM(total\_payment) AS MTD\_total\_amount\_received

FROM financial\_loan\_data

WHERE MONTH(issue\_date) = 12

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**PMTD amount received**

SELECT SUM(total\_payment) AS PMTD\_total\_amount\_received

FROM financial\_loan\_data

WHERE MONTH(issue\_date) = 11

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**Average interest rate across loans**

Calculate average interest rates cross all loans, MTD, and MoM variations in interest rates (provides insights into overall cost of lending portfolio).

SELECT ROUND(AVG(int\_rate), 4) \* 100 AS avg\_interest\_rate

FROM financial\_loan\_data

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Purpose: Interest Rate represents the annual cost of borrowing expressed as a percentage. It determines the loan's cost. Use for Banks: Banks use interest rates to price loans, manage profit margins, and attract investors.

**MTD average interest rate**

SELECT ROUND(AVG(int\_rate), 4) \* 100 AS MTD\_avg\_interest\_rate

FROM financial\_loan\_data

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

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**PMTD average interest rate**

SELECT ROUND(AVG(int\_rate), 4) \* 100 AS PMTD\_avg\_interest\_rate

FROM financial\_loan\_data

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

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**Average DTI across loans**

Evaluate the average DTI for borrowers to gauge their financial health. Calculate average DTI for all loans, MTD, and track MoM fluctuations.

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

FROM financial\_loan\_data

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Purpose: DTI measures the borrower's debt burden relative to income. It gauges the borrower's capacity to take on additional debt. Use for Banks: Banks use DTI to assess a borrower's ability to handle loan payments and make responsible lending decisions.

**MTD average DTI across loans**

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

FROM financial\_loan\_data

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

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**PMTD average DTI across loans**

SELECT ROUND(AVG(dti), 4) \* 100 AS PMTD\_avg\_DTI

FROM financial\_loan\_data

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

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**GOOD LOANS ISSUED -** refers to loans that are current and fully paid.

**Percentage of good loans issued**

SELECT

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

/

COUNT(id) AS good\_loan\_percentage

FROM financial\_loan\_data

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**Percentage of good loan applications**

SELECT COUNT(id) AS good\_loan\_applications

FROM financial\_loan\_data

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

**A close-up of a credit card

Description automatically generated**

**Good loan funded amount**

SELECT SUM(loan\_amount) AS good\_loan\_funded\_amount

FROM financial\_loan\_data

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

**A close-up of a bank check

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**Total good loan amount received**

SELECT SUM(total\_payment) AS good\_loan\_amount\_received

FROM financial\_loan\_data

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

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**Percentage of bad loans issued**

SELECT

(COUNT(CASE WHEN loan\_status = 'Charged Off' THEN id END) \* 100)

/

COUNT(id) AS good\_loan\_percentage

FROM financial\_loan\_data

**A close-up of a credit card

Description automatically generated**

**BAD LOANS ISSUED -** refers to loans that have been charged off.

**Percentage of bad loan applications**

SELECT COUNT(id) AS bad\_loan\_applications

FROM financial\_loan\_data

WHERE loan\_status = ‘Charged Off’

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**Bad loan funded amount**

SELECT SUM(loan\_amount) AS bad\_loan\_funded\_amount

FROM financial\_loan\_data

WHERE loan\_status = ‘Charged Off’

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**Total bad loan amount received**

SELECT SUM(total\_payment) AS bad\_loan\_amount\_received

FROM financial\_loan\_data

WHERE loan\_status = ‘Charged Off’

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**LOAN STATUS**

**Loan status**

SELECT

loan\_status,

COUNT(id) AS loan\_count,

SUM(total\_payment) AS total\_amount\_received,

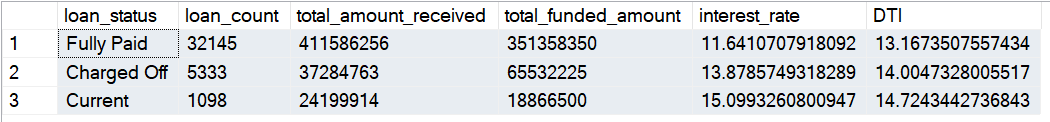
SUM(loan\_amount) AS total\_funded\_amount,

AVG(int\_rate \* 100) AS interest\_rate,

AVG(dti \* 100) AS DTI

FROM financial\_loan\_data

GROUP BY loan\_status

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**Loan status grid view**

Function: gain a comprehensive overview of lending operations and monitor the performance of loans by creating a grid view repot categorized by ‘loan status’. Metrics such as total loan applications, total funded amount, total amount received, MTD funded amount, MTD amount received, average interest rate, and average DTI ratio provide insight into the health of the loan portfolio and empowers us to make data-driven decisions

**BANK LOAN REPORT: OVERVIEW**

**Month**

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 financial\_loan\_data

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

ORDER BY MONTH(issue\_date)

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**State**

SELECT

address\_state,

COUNT(id) AS total\_loan\_applications,

SUM(loan\_amount) AS total\_funded\_amount,

SUM(total\_payment) AS total\_received\_amount

FROM financial\_loan\_data

GROUP BY address\_state

ORDER BY address\_state

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Purpose: Address State indicates the borrower's location. It helps in assessing regional risk factors, compliance with state regulations, and estimating default probabilities. Use for Banks: Banks use this information to identify regional trends in loan demand, adjust marketing strategies, and manage risk portfolios based on geographic regions.

**Term**

SELECT

term,

COUNT(id) AS total\_loan\_applications,

SUM(loan\_amount) AS total\_funded\_amount,

SUM(total\_payment) AS total\_received\_amount

FROM financial\_loan\_data

GROUP BY term

ORDER BY term

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Purpose: Term defines the duration of the loan in months. It sets the repayment period. Use for Banks: Banks use the term to structure loan agreements, calculate interest payments, and manage loan maturities.

**Employee Length**

SELECT

emp\_length,

COUNT(id) AS total\_loan\_applications,

SUM(loan\_amount) AS total\_funded\_amount,

SUM(total\_payment) AS total\_received\_amount

FROM financial\_loan\_data

GROUP BY emp\_length

ORDER BY emp\_length

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Purpose: Employee Length provides insights into the borrower's employment stability. Longer employment durations may indicate greater job security. Use for Banks: Banks consider employment length when assessing a borrower's ability to repay. Stable employment often translates to a lower default risk.

**Purpose**

SELECT

purpose,

COUNT(id) AS total\_loan\_applications,

SUM(loan\_amount) AS total\_funded\_amount,

SUM(total\_payment) AS total\_received\_amount

FROM financial\_loan\_data

GROUP BY purpose

ORDER BY COUNT(id) DESC

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**Home Ownership**

SELECT

home\_ownership,

COUNT(id) AS total\_loan\_applications,

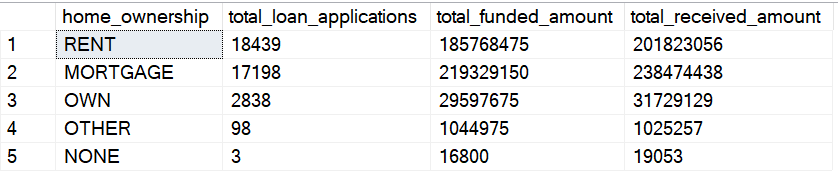
SUM(loan\_amount) AS total\_funded\_amount,

SUM(total\_payment) AS total\_received\_amount

FROM financial\_loan\_data

GROUP BY home\_ownership

ORDER BY COUNT(id) DESC

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Purpose: Home Ownership indicates the borrower's housing status. It offers insights into financial stability. Use for Banks: Banks use this field to assess collateral availability and borrower stability. Homeowners may have lower default rates.