# BANK
## REPORT ANALYSIS

Hello Folks

My name is **Amit**. I am Excited To share my latest Project on **Bank Report Analysis Using SQL**.
Through This Project i was able to uncover trends and insights within the data ,

I hope you find this Analysis as insights full as i did .

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# QUESTIONS I HAVE SOLVED THROUGHOUT THE PROJECT

- What is the average interest rate for all loans?
- What is the month-to-date average interest rate for loans issued in December?
- What was the month-to-date average interest rate for loans issued in November 2021?
- What is the average debt-to-income (DTI) ratio for all loans?
- What is the month-to-date average debt-to-income (DTI) ratio for loans issued in December?
- What was the previous month-to-date average debt-to-income (DTI) ratio for loans issued in November 2021?
- What percentage of loans are classified as 'Good Loans' (Fully Paid or Current)?
- How many loan applications are classified as 'Good Loans'?
- What is the total funded amount for 'Good Loans'?
- What is the total amount received by the bank from customers for 'Good Loans'?
- What percentage of loans are classified as 'Bad Loans' (Charged Off)?
- How many loan applications are classified as 'Bad Loans'?
- What is the total funded amount for 'Bad Loans'?

- What is the total amount received by the bank from customers for 'Bad Loans'?
- What is the month-to-date total amount received and total funded amount by loan status?
- What was the previous month-to-date total amount received and total funded amount by loan status in November 2021?
- What are the monthly trends by issue date in terms of total loan applications, total funded amount, and total amount received?
- What are the monthly trends by issue date and grade 'A' in terms of total loan applications, total funded amount, and total amount received?
- What is the regional distribution of loan applications, total funded amount, total amount received, and average interest rate by state?
- . What is the loan term distribution in terms of total loan applications, total funded amount, total amount received, and average interest rate?
- What is the employee length distribution in terms of total loan applications, total funded amount, and total amount received?
- What is the loan purpose breakdown in terms of total loan applications, total funded amount, and total amount received?
- What is the home ownership distribution in terms of total loan applications, total funded amount, and total amount received?

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# Total Loan Applications

```sql
SELECT COUNT(id) AS Total_application
FROM financial_loan
```

| | Total_application |
|---|---|
| 1 | 38576 |

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**What is the month-to-date average interest rate for loans issued in December?**

```sql
SELECT
    COUNT(id) AS total_mtd_application
FROM
    financial_loan
WHERE
    MONTH(issue_date) = 12
```

| total_mtd_application |
|---|
| 4314 |

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## What was the month-to-date average interest rate for loans issued in November 2021?

```sql
SELECT
    COUNT(id) AS total_pmtd_application
FROM
    financial_loan
WHERE
    MONTH(issue_date) = 11
        AND YEAR(issue_date) = 2021
```

| total_pmtd_application |
| --- |
| 4035 |

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# Total funded amount by bank

```sql
SELECT
    SUM(loan_amount) AS total_funded_amount
FROM
    financial_loan
```

| total_funded_amount |
| --- |
| 435757075 |

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# Total funded amount by month to date And Year

```sql
SELECT
    SUM(loan_amount) AS MTD_total_funded_amount
FROM
    financial_loan
WHERE
    MONTH(issue_date) = 12
        AND YEAR(issue_date) = 2021
```

| MTD_total_funded_amount |
| --- |
| 53981425 |

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## Total recieved amount by bank from customer

```
SELECT
    SUM(total_payment) AS Total_recieved_Amount
FROM
    financial_loan
```

| Total_recieved_Amount |
| --- |
| 473070933 |

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# Current month data of Total recieved amount by bank from customer

```sql
SELECT
    SUM(total_payment) AS Total_recieved_Amount_of_current_month
FROM
    financial_loan
WHERE
    MONTH(issue_date) = 12
```

| Total_recieved_Amount_of_current_month |
|---|
| 58074380 |

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## Previous month data of Total recieved amount by bank from customer

```
SELECT
    SUM(total_payment) AS Total_recieved_Amount_of_previous_month
FROM
    financial_loan
WHERE
    MONTH(issue_date) = 11
        AND YEAR(issue_date) = 2021
```

| Total_recieved_Amount_of_previous_month |
|---|
| 50132030 |

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## Average interest rate

```sql
SELECT
    ROUND(AVG(int_rate), 4) * 100 AS avg_interest_rate
FROM
    financial_loan
```

| avg_interest_rate |
| --- |
| 12.05 |

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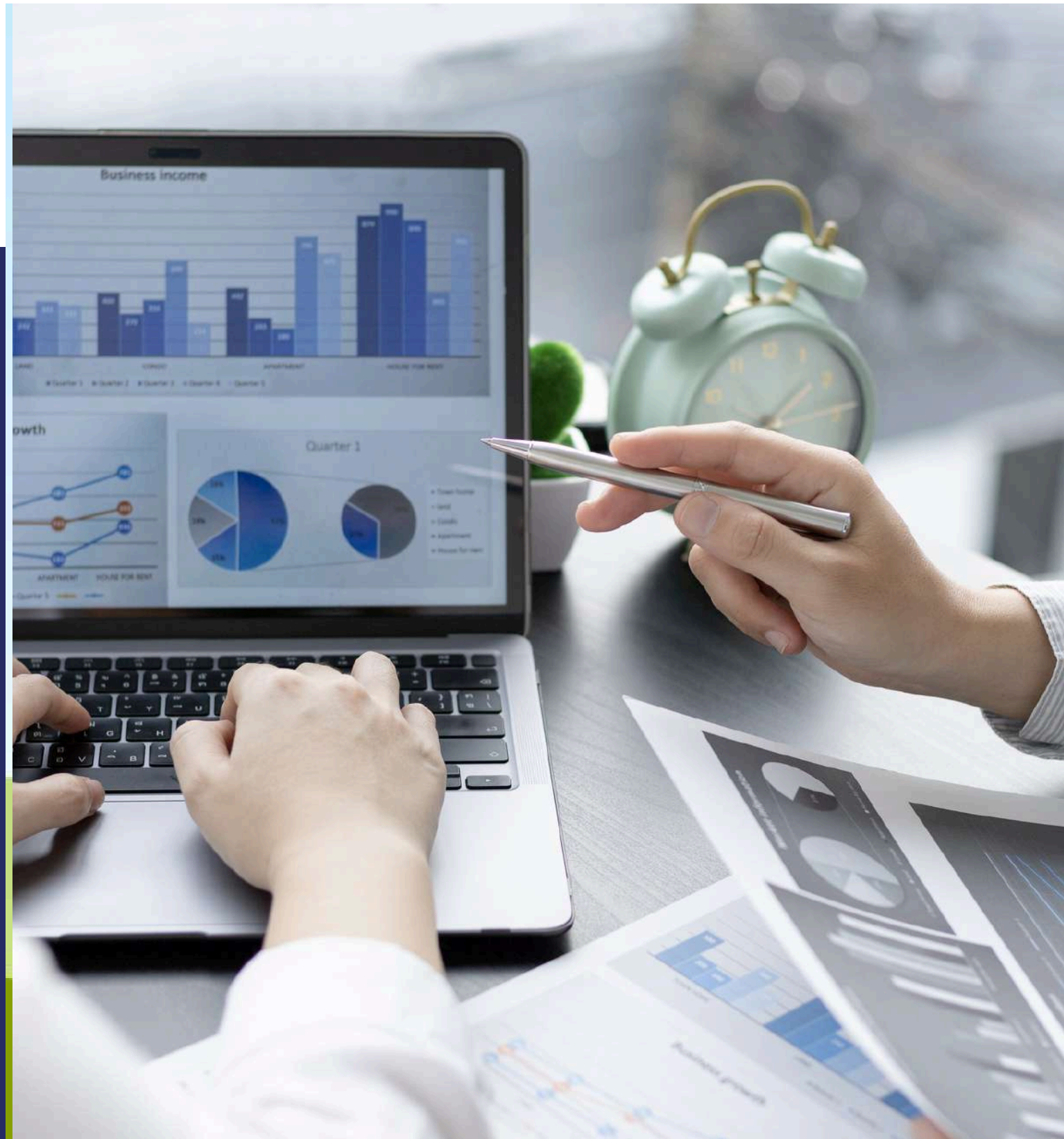
# Month to date average interest rate

```sql
SELECT
    ROUND(AVG(int_rate), 4) * 100 AS month_to_date_avg_interest_rate
FROM
    financial_loan
WHERE
    MONTH(issue_date) = 12
```

| month_to_date_avg_interest_rate |
|---|
| 12.36 |

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# Average dept to income ratio

```sql
SELECT
    ROUND(AVG(dti), 4) * 100 AS Avg_Dti
FROM
    financial_loan
```

| Avg_Dti |
| --- |
| 13.33 |

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# Month to date Average dept to income ratio

```sql
SELECT
    ROUND(AVG(dti), 4) * 100 AS Avg_Dti
FROM
    financial_loan
WHERE
    MONTH(issue_date) = 12
```

| MTD_Avg_Dti |
|-------------|
| 13.67 |

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# Good loan percentage

```
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
```

| Good_loan_percentage |
| --- |
| 86 |

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# Month to date average interest rate

```sql
SELECT
    ROUND(AVG(int_rate), 4) * 100 AS month_to_date_avg_interest_rate
FROM
    financial_loan
WHERE
    MONTH(issue_date) = 12
```

| month_to_date_avg_interest_rate |
| --- |
| 12.36 |

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**How many loan applications are classified as 'Good Loans'?**

```sql
SELECT
    COUNT(id) AS Good_loan_Application
FROM
    financial_loan
WHERE
    loan_status = 'Fully Paid'
        OR loan_status = 'Current'
```

| Good_loan_Application |
| --- |
| 33243 |

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## What is the total funded amount for 'Good Loans'?

```sql
SELECT
    SUM(loan_amount) AS Good_loan_Funded_Amount
FROM
    financial_loan
WHERE
    loan_status = 'Fully Paid'
        OR loan_status = 'Current'
```

| Good_loan_Funded_Amount |
| --- |
| 370224850 |

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**How many loan applications are classified as 'Bad Loans'?**

```sql
SELECT
    COUNT(id) AS Bad_loan_Application
FROM
    financial_loan
WHERE
    loan_status = 'Charged off'
```

| Bad_loan_Application |
| --- |
| 5333 |

What percentage of loans are classified as 'Bad Loans' (Charged Off)?

```
SELECT
    (COUNT(CASE
        WHEN loan_status = 'Charged off' THEN id
    END) * 100.0) / COUNT(id) AS Bad_loan_percentage
FROM
    financial_loan
```

Bad_loan_percentage
13.824657818332

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## What is the total funded amount for 'Bad Loans'?

```sql
SELECT
    SUM(loan_amount) AS Bad_loan_Funded_Amount
FROM
    financial_loan
WHERE
    loan_status = 'Charged off'
```

| Bad_loan_Funded_Amount |
|---|
| 65532225 |

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**What is the total amount received by the bank from customers for 'Bad Loans'?**

```sql
SELECT
    SUM(total_payment) AS Bad_loan_Recieved_Amount_From_Customer
FROM
    financial_loan
WHERE
    loan_status = 'Charged off'
```

| Bad_loan_Recieved_Amount_From_Customer |
| --- |
| 37284763 |

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**loan status distribution along with total loan applications, total amount received, total funded amount, average interest rate, and average debt-to-income ratio?**

```sql
SELECT
    loan_status,
    COUNT(id) AS Total_loan_Application,
    SUM(total_payment) AS Total_Amount_Recived,
    SUM(loan_amount) AS total_funded_amount,
    AVG(int_rate) * 100 AS interest_rate,
    AVG(dti * 100) AS DTI
FROM
    financial_loan
GROUP BY loan_status
```

| loan_status | Total_loan_Application | Total_Amount_Recived | total_funded_amount | interest_rate | DTI |
|---|---|---|---|---|---|
| Fully Paid | 32145 | 411586256 | 351358350 | 11.6410707918092 | 13.167350755743 |
| Current | 1098 | 24199914 | 18866500 | 15.0993260800947 | 14.724344273684 |
| Charged Off | 5333 | 37284763 | 65532225 | 13.8785749318289 | 14.004732800551 |

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# BY MTD how much recieved and how much funded

```sql
SELECT
    loan_status,
    COUNT(id) AS Total_loan_Application,
    SUM(total_payment) AS MTD_Total_Amount_Recived,
    SUM(loan_amount) AS MTD_TOTAL_funded_amount
FROM
    financial_loan
WHERE
    MONTH(issue_date) = 12
GROUP BY loan_status
```

| | loan_status | Total_loan_Application | MTD_Total_Amount_Recived | MTD_TOTAL_funded_amount |
|---|---|---|---|---|
| 1 | Fully Paid | 3452 | 47815851 | 41302025 |
| 2 | Current | 213 | 4934318 | 3946625 |
| 3 | Charged Off | 649 | 5324211 | 8732775 |

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**What are the monthly trends by issue date in terms of total loan applications, total funded amount, and total amount received?**

```sql
SELECT
    MONTH(issue_date) AS month_number,
    DATENAME(month, issue_date) AS month_names,
    COUNT(id) AS total_loan_application,
    SUM(loan_amount) AS total_funded_amount,
    SUM(total_payment) AS total_recieved_amount
FROM
    financial_loan
GROUP BY MONTH(issue_date) , DATENAME(month, issue_date)
ORDER BY MONTH(issue_date)
```

| | month_number | month_names | total_loan_application | total_funded_amount | total_recieved_amount |
|---|---|---|---|---|---|
| 1 | 1 | January | 2332 | 25031650 | 27578836 |
| 2 | 2 | February | 2279 | 24647825 | 27717745 |
| 3 | 3 | March | 2627 | 28875700 | 32264400 |
| 4 | 4 | April | 2755 | 29800800 | 32495533 |
| 5 | 5 | May | 2911 | 31738350 | 33750523 |
| 6 | 6 | June | 3184 | 34161475 | 36164533 |
| 7 | 7 | July | 3366 | 35813900 | 38827220 |
| 8 | 8 | August | 3441 | 38149600 | 42682218 |
| 9 | 9 | September | 3536 | 40907725 | 43983948 |
| 10 | 10 | October | 3796 | 44893800 | 49399567 |
| 11 | 11 | November | 4035 | 47754825 | 50132030 |
| 12 | 12 | December | 4314 | 53981425 | 58074380 |

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**What are the monthly trends by issue date and grade in terms of total loan applications, total funded amount, and total amount received?**

```sql
SELECT
    MONTH(issue_date) AS month_number,
    DATENAME(month, issue_date) AS month_names,
    COUNT(id) AS total_loan_application,
    SUM(loan_amount) AS total_funded_amount,
    SUM(total_payment) AS total_recieved_amount
FROM
    financial_loan
WHERE
    grade = 'A'
GROUP BY MONTH(issue_date) , DATENAME(month, issue_date)
ORDER BY MONTH(issue_date)
```

| | month_number | month_names | total_loan_application | total_funded_amount | total_recieved_amount |
|---|---|---|---|---|---|
| 1 | 1 | January | 687 | 7406100 | 8099188 |
| 2 | 2 | February | 692 | 7145000 | 7962320 |
| 3 | 3 | March | 758 | 7716750 | 8485379 |
| 4 | 4 | April | 875 | 9821550 | 10613838 |
| 5 | 5 | May | 848 | 9192950 | 9835454 |
| 6 | 6 | June | 952 | 10016975 | 10538531 |
| 7 | 7 | July | 1021 | 10784450 | 11597386 |
| 8 | 8 | August | 1037 | 11165625 | 12341815 |
| 9 | 9 | September | 1115 | 13452125 | 14264263 |
| 10 | 10 | October | 1117 | 13655925 | 14945089 |
| 11 | 11 | November | 1246 | 14654375 | 15319394 |
| 12 | 12 | December | 1326 | 15692150 | 16772358 |

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**What is the regional distribution of loan applications, total funded amount, total amount received, and average interest rate by state?**

```sql
SELECT
    address_state,
    COUNT(id) AS total_loan_application,
    SUM(loan_amount) AS total_funded_amount,
    SUM(total_payment) AS total_recieved_amount,
    ROUND(AVG(int_rate), 4) * 100 AS avg_interset_rate
FROM
    financial_loan
GROUP BY address_state
ORDER BY SUM(loan_amount) DESC
```

| | address_state | total_loan_application | total_funded_amount | total_recieved_amount | avg_interset_rate |
|---|---|---|---|---|---|
| 1 | CA | 6894 | 78484125 | 83901234 | 12.15 |
| 2 | NY | 3701 | 42077050 | 46108181 | 12.11 |
| 3 | TX | 2664 | 31236650 | 34392715 | 12.05 |
| 4 | FL | 2773 | 30046125 | 31601905 | 11.98 |
| 5 | NJ | 1822 | 21657475 | 23425159 | 12.24 |
| 6 | IL | 1486 | 17124225 | 18875941 | 12.05 |
| 7 | VA | 1375 | 15982650 | 17711443 | 12.22 |
| 8 | PA | 1482 | 15826525 | 17462908 | 11.69 |
| 9 | GA | 1355 | 15480325 | 16728040 | 11.96 |
| 10 | MA | 1310 | 15051000 | 16676279 | 11.87 |

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What is the loan term distribution in terms of total loan applications, total funded amount, total amount received, and average interest rate?

```sql
SELECT
    term,
    COUNT(id) AS total_loan_application,
    SUM(loan_amount) AS total_funded_amount,
    SUM(total_payment) AS total_recieved_amount,
    ROUND(AVG(int_rate), 4) * 100 AS avg_interset_rate
FROM
    financial_loan
GROUP BY term
ORDER BY term;
```

|   | term | total_loan_application | total_funded_amount | total_recieved_amount | avg_interset_rate |
|---|------|------------------------|---------------------|-----------------------|-------------------|
| 1 | 36 months | 28237 | 273041225 | 294709458 | 11.03 |
| 2 | 60 months | 10339 | 162715850 | 178361475 | 14.83 |

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What is the loan purpose breakdown in terms of total loan applications, total funded amount, and total amount received?

```sql
SELECT
    purpose,
    COUNT(id) AS total_loan_application,
    SUM(loan_amount) AS total_funded_amount,
    SUM(total_payment) AS total_recieved_amount
FROM
    financial_loan
GROUP BY purpose
ORDER BY COUNT(id) DESC
```

| | purpose | total_loan_application | total_funded_amount | total_recieved_amount |
|---|---|---|---|---|
| 1 | Debt consolidation | 18214 | 232459675 | 253801871 |
| 2 | credit card | 4998 | 58885175 | 65214084 |
| 3 | other | 3824 | 31155750 | 33289676 |
| 4 | home improvement | 2876 | 33350775 | 36380930 |
| 5 | major purchase | 2110 | 17251600 | 18676927 |
| 6 | small business | 1776 | 24123100 | 23814817 |
| 7 | car | 1497 | 10223575 | 11324914 |
| 8 | wedding | 928 | 9225800 | 10266856 |
| 9 | medical | 667 | 5533225 | 5851372 |
| 10 | moving | 559 | 3748125 | 3999899 |
| 11 | house | 366 | 4824925 | 5185538 |
| 12 | vacation | 352 | 1967950 | 2116738 |
| 13 | educational | 315 | 2161650 | 2248380 |
| 14 | renewable_energy | 94 | 845750 | 898931 |

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THANK YOU