PROJECT REPORT FOR BANK LOAN

By

Tableau and SQL

BANK

Lets start.......

Summary:

➢ To effectively monitor and evaluate our bank's lending performance, we aim to develop a comprehensive Bank Loan Report.

➢ This report will deliver valuable insights into key loan metrics and their trends over time, enabling data-driven decision-making.

➢ By assessing the health of our loan portfolio and identifying critical patterns, this report will support strategic enhancements to our lending practices.

Total Loan Applications: This metric captures the total number of loan applications received within a specified period. It includes Month-to-Date (MTD) counts and Month-over-Month (MoM) comparisons to track application trends over time.

```sql
-----------Total Loan Applications------------

select COUNT(*) as [Total Loan Applications] from financial_loan


-----------Total MTD Loan Applications------------

select COUNT(*) as [MTD Loan Applications] from financial_loan
where Month(issue_date) = 12 and year(issue_date) = 2021


-----------Total PMTD Loan Applications------------

select COUNT(*) as [PMTD Loan Applications] from financial_loan
where Month(issue_date) = 11 and year(issue_date) = 2021
```
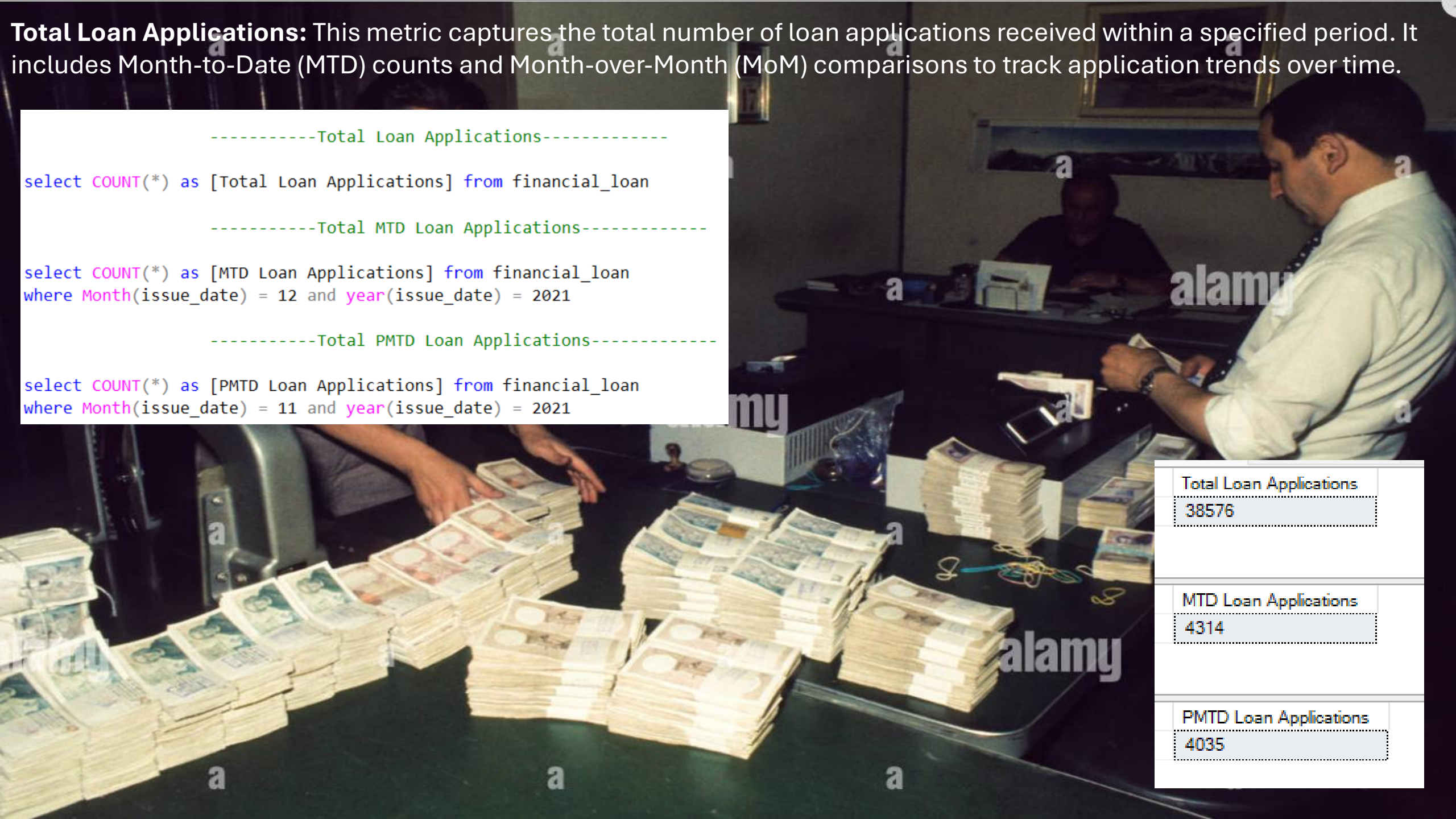
Total Loan Applications
38576

MTD Loan Applications
4314

PMTD Loan Applications
4035

Total Funded Amount: This metric reflects the total value of funds disbursed as loans within a given period. Tracking the Month-to-Date (MTD) funded amount and analyzing Month-over-Month (MoM) changes provide insights into funding trends and lending growth.

```
------Total funded amount-------

select sum(loan_amount) as [Total Funded Amount] from financial_loan

------Total MTD funded amount-------

select sum(loan_amount) as [MTD Total Funded Amount] from financial_loan
where Month(issue_date) = 12 and year(issue_date) = 2021

------Total PMTD funded amount-------

select sum(loan_amount) as [PMTD Total Funded Amount] from financial_loan
where Month(issue_date) = 11 and year(issue_date) = 2021
```
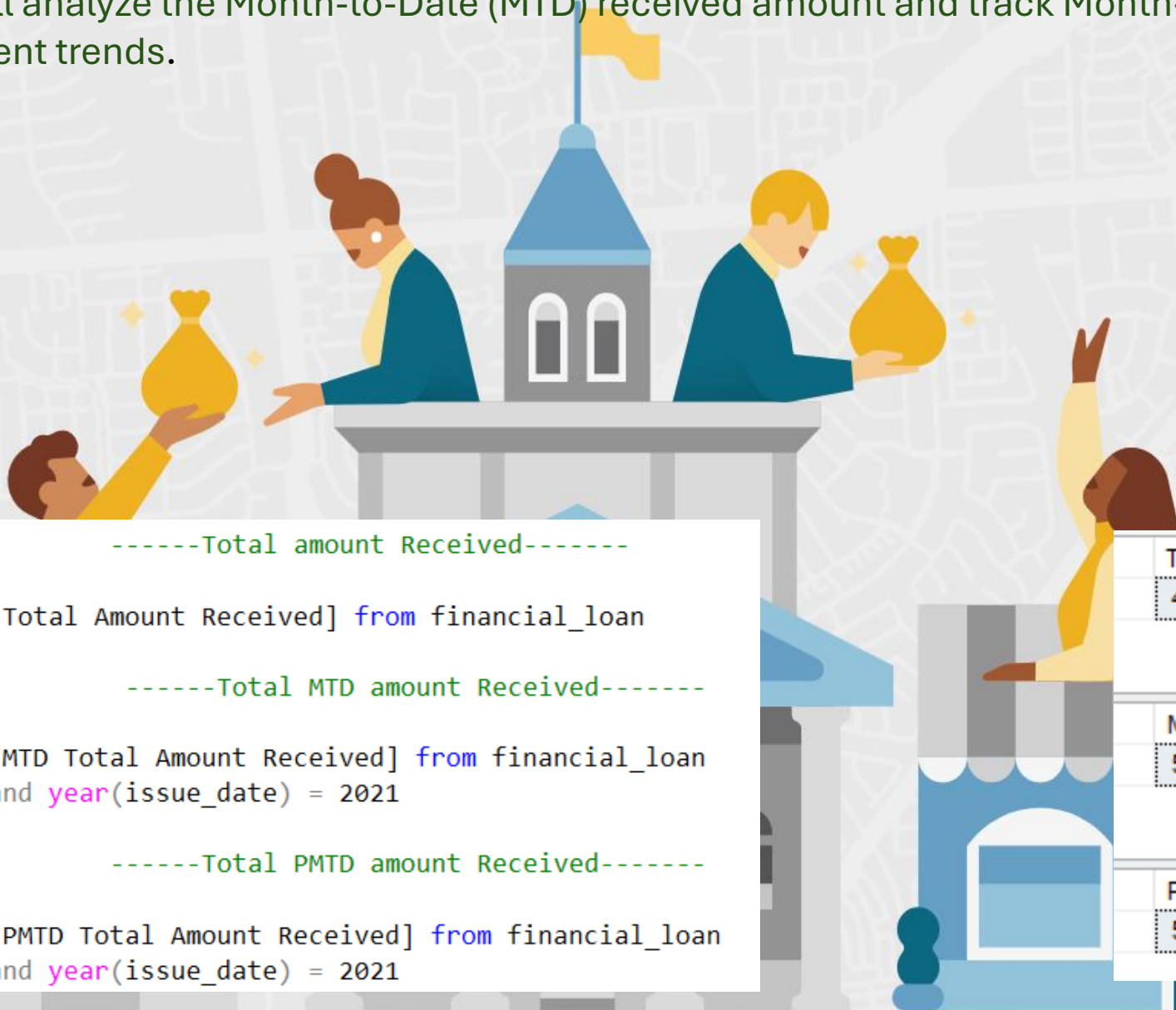
Total Funded Amount
435757075

MTD Total Funded Amount
53981425

PMTD Total Funded Amount
47754825

Total Amount Received: Monitoring the total payments from borrowers is crucial for evaluating cash flow and loan repayment progress. We will analyze the Month-to-Date (MTD) received amount and track Month-over-Month (MoM) changes to identify repayment trends.

```
------Total amount Received-------

select sum(total_payment) as [Total Amount Received] from financial_loan


            ------Total MTD amount Received-------

select sum(total_payment) as [MTD Total Amount Received] from financial_loan
where month(issue_date) = 12 and year(issue_date) = 2021


            ------Total PMTD amount Received-------

select sum(total_payment) as [PMTD Total Amount Received] from financial_loan
where month(issue_date) = 11 and year(issue_date) = 2021
```

Total Amount Received
473070933

MTD Total Amount Received
58074380

PMTD Total Amount Received
50132030

Average Interest Rate: Calculating the average interest rate for all loans, both month-to-date (MTD) and tracking month-over-month (MoM) variations, will offer insights into the overall cost of our lending portfolio and help assess pricing trends.

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Banks in India

```
------Average Interest Rate-------

select round(avg(int_rate), 4) * 100 as [Average Interest Rate] from financial_loan


------Average MTD Interest Rate-------

select round(avg(int_rate), 4) * 100 as [MTD Average Interest Rate] from financial_loan
where MONTH(issue_date) = 12 and year(issue_date) = 2021


------Average PMTD Interest Rate-------

select round(avg(int_rate), 4) * 100 as [PMTD Average Interest Rate] from financial_loan
where MONTH(issue_date) = 11 and year(issue_date) = 2021
```

Average Interest Rate
12.05

MTD Average Interest Rate
12.36

PMTD Average Interest Rate
11.94

Average Debt-to-Income Ratio (DTI): **Calculating the average DTI for borrowers allows us to assess their financial stability. This metric will be computed for all loans on a month-to-date (MTD) basis and monitored for Month-over-Month (MoM) fluctuations.**

------Average DTI Rate-------

```sql
select round(avg(dti), 4) * 100 as [Average Dti] from financial_loan
```

Average Dti
13.33

------Average MTD DTI Rate------

```sql
select round(avg(dti), 4) * 100 as [MTD Average Dti] from financial_loan
where month(issue_date) = 12 and year(issue_date) = 2021
```

MTD Average Dti
13.67

------Average PMTD DTI Rate-----

```sql
select round(avg(dti), 4) * 100 as [PMTD Average Dti] from financial_loan
where month(issue_date) = 11 and year(issue_date) = 2021
```

PMTD Average Dti
13.3

Good Loan Application %: This metric calculates the proportion of loan applications classified as 'Good Loans,' which includes loans marked as 'Fully Paid' or 'Current.' It provides insight into the quality and performance of our loan portfolio

```
                              ------Good loan percentage-------
select
(count(case when loan_status = 'Fully Paid' or loan_status = 'Current' then id end) * 100)
/count(id) as [Good Loan %] from financial_loan
```

Good Loan %
86

Good Loan Applications: Identifying the total number of loan applications categorized as 'Good Loans,' defined by loans with a 'Fully Paid' or 'Current' status.

```
                              ------Good loan Applications---
select count(id) as [Good Loan Applications] from financial_loan
where loan_status = 'Fully Paid' or loan_status = 'Current'
```

Good Loan Applications
33243

Good Loan Funded Amount: Calculating the total disbursed funds for 'Good Loans,' including principal amounts for loans with a 'Fully Paid' or 'Current' status.

```
                                      ------Good loan Funded Amount--
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

Good Loan Total Received Amount: Tracking the total payments received from borrowers on 'Good Loans,' including all payments for loans marked as 'Fully Paid' or 'Current.'"

```
                                      ---------Good Loan Total Amount Received-
select sum(total_payment) as [Good Loan Total Amount Received] from financial_loan
where loan_status = 'Fully Paid' or loan_status = 'Current'
```

Good Loan Total Amount Received
435786170

Bad Loan %: Calculates the proportion of loan applications categorized as 'Bad Loans,' specifically those marked as 'Charged Off.'

```sql
select (count(case when loan_status = 'Charged Off' then id end) * 100)
/count(id) as [Bad Loan %] from financial_loan
```

Bad Loan %
13

Bad Loan Applications: Identifies the total number of loan applications designated as 'Bad Loans,' including those with a 'Charged Off' status.

```sql
select count(id) as [Bad Loan Applications] from financial_loan
where loan_status = 'Charged Off'
```

Bad Loan Applications
5333

Bad Loan Funded Amount: Determines the total disbursed amount for 'Bad Loans,' representing the principal of loans marked as 'Charged Off.'

```sql
select sum(loan_amount) as [Bad loan Funded Amount] from financial_loan
where loan_status = 'Charged Off'
```

Bad loan Funded Amount
65532225

Bad Loan Total Received Amount: Tracks the total payments received from borrowers on 'Bad Loans,' which includes all repayments for loans classified as 'Charged Off.'

```sql
select sum(total_payment) as [Bad Loan Total Amount Received] from financial_loan
where loan_status = 'Charged Off'
```

Bad Loan Total Amount Received
37284763

The Loan Status View will provide a comprehensive overview of our lending operations by categorizing loans based on their status. This report will offer key metrics, including loan applications, funded amounts, received payments, average interest rates, and debt-to-income ratios, enabling data-driven decisions and a clear assessment of our loan portfolio's performance

```sql
select loan_status as [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) as [Interest Rate],
avg(dti * 100) as [DTI]
from financial_loan group by loan_status
```

Loan Status	Total Loan Applications	Total Amount Received	Total Funded Amount	Interest Rate	DTI
Fully Paid	32145	411586256	351358350	0.116410707918092	13.1673507557434
Charged Off	5333	37284763	65532225	0.138785749318289	14.0047328005517
Current	1098	24199914	18866500	0.150993260800947	14.7243442736843

Monthly Trend Analysis by Issue Date for Bank Project

```sql
select
month(issue_date) as [Month Number],
datename(month, issue_date) as [Month Name],
count(id) as [Total Loan Applications],
sum(total_payment) as [MTD Total Amount Received],
 sum(loan_amount) as [MTD Total Funded Amount]
from financial_loan
group by month(issue_date), datename(month, issue_date)
order by month(issue_date)
```

Month Number	Month Name	Total Loan Applications	MTD Total Amount Received	MTD Total Funded Amount
1	January	2332	27578836	25031650
2	February	2279	27717745	24647825
3	March	2627	32264400	28875700
4	April	2755	32495533	29800800
5	May	2911	33750523	31738350
6	June	3184	36164533	34161475
7	July	3366	38827220	35813900
8	August	3441	42682218	38149600
9	September	3536	43983948	40907725
10	October	3796	49399567	44893800
11	November	4035	50132030	47754825
12	December	4314	58074380	53981425

State-Level Regional Analysis for Banking Operations

Region	Total Loan Applications	Total Amount Received	Total Funded Amount
CA	6894	83901234	78484125
NY	3701	46108181	42077050
FL	2773	31601905	30046125
TX	2664	34392715	31236650
NJ	1822	23425159	21657475
IL	1486	18875941	17124225
PA	1482	17462908	15826525
VA	1375	17711443	15982650
GA	1355	16728040	15480325
MA	1310	16676279	15051000
OH	1188	14330148	12991375
MD	1027	12985170	11911400
AZ	833	10041986	9206000
WA	805	9531739	8855525
CO	770	9845810	8976000
NC	759	9534813	8787575
CT	730	9357612	8435575
MI	685	8543660	7829900
MO	660	7692732	7151175
MN	592	6750746	6302600
NV	482	5451443	5307375
SC	464	5462458	5080475
WI	446	5485161	5070450
OR	436	4966903	4720150
AL	432	5492272	4949225
LA	426	5001160	4498900
KY	320	3792530	3504100
OK	293	3712649	3365725
KS	260	3247394	2872325
UT	252	2952412	2849225
AR	236	2777875	2529700
DC	214	2921854	2652350
RI	196	2001774	1883025
NM	183	2084485	1916775
HI	170	2080184	1850525
WV	167	1991936	1830525
NH	161	2101386	1917900
DE	110	1269136	1138100
WY	79	1046050	890750
MT	79	892047	829525
AK	78	1108570	1031800
SD	63	656514	606150
VT	54	534973	504100
MS	19	149342	139125
TN	17	141522	162175
IN	9	85521	86225
ID	6	65329	59750
NE	5	24542	31700
IA	5	64482	56450
ME	3	10808	9200

```sql
select
address_state as [Region],
count(id) as [Total Loan Applications],
sum(total_payment) as [Total Amount Received],
sum(loan_amount) as [Total Funded Amount]
from financial_loan
group by address_state
order by count(id) desc
```

Loan Term Analysis: This analysis evaluates the distribution and trends of loan terms, providing insights into the duration of loans and their impact on repayment schedules and interest rates.
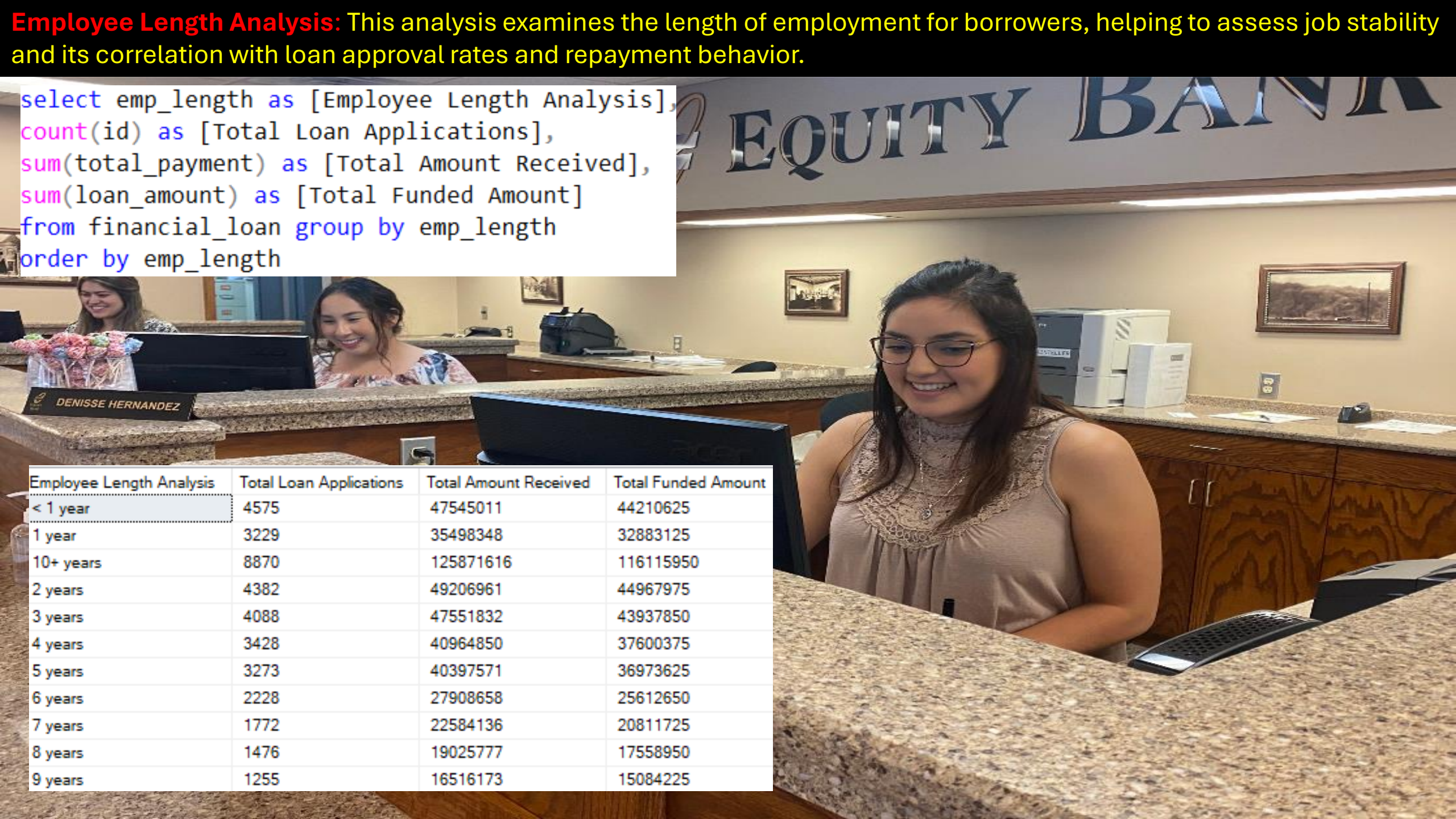
```sql
select term as [Term Analysis],
count(id) as [Total Loan Applications],
sum(total_payment) as [Total Amount Received],
sum(loan_amount) as [Total Funded Amount]
from financial_loan
group by term order by term desc
```

Term Analysis	Total Loan Applications	Total Amount Received	Total Funded Amount
60 months	10339	178361475	162715850
36 months	28237	294709458	273041225

Employee Length Analysis: This analysis examines the length of employment for borrowers, helping to assess job stability and its correlation with loan approval rates and repayment behavior.

```sql
select emp_length as [Employee Length Analysis],
count(id) as [Total Loan Applications],
sum(total_payment) as [Total Amount Received],
sum(loan_amount) as [Total Funded Amount]
from financial_loan group by emp_length
order by emp_length
```

Employee Length Analysis	Total Loan Applications	Total Amount Received	Total Funded Amount
< 1 year	4575	47545011	44210625
1 year	3229	35498348	32883125
10+ years	8870	125871616	116115950
2 years	4382	49206961	44967975
3 years	4088	47551832	43937850
4 years	3428	40964850	37600375
5 years	3273	40397571	36973625
6 years	2228	27908658	25612650
7 years	1772	22584136	20811725
8 years	1476	19025777	17558950
9 years	1255	16516173	15084225

Home Ownership Analysis: This analysis explores the relationship between borrowers' homeownership status and their likelihood of loan approval, repayment success, and risk factors.

```sql
select home_ownership as [Home Ownership],
count(id) as [Total Loan Applications],
sum(total_payment) as [Total Amount Received],
sum(loan_amount) as [Total Funded Amount]
from financial_loan
group by home_ownership order by count(id) desc
```
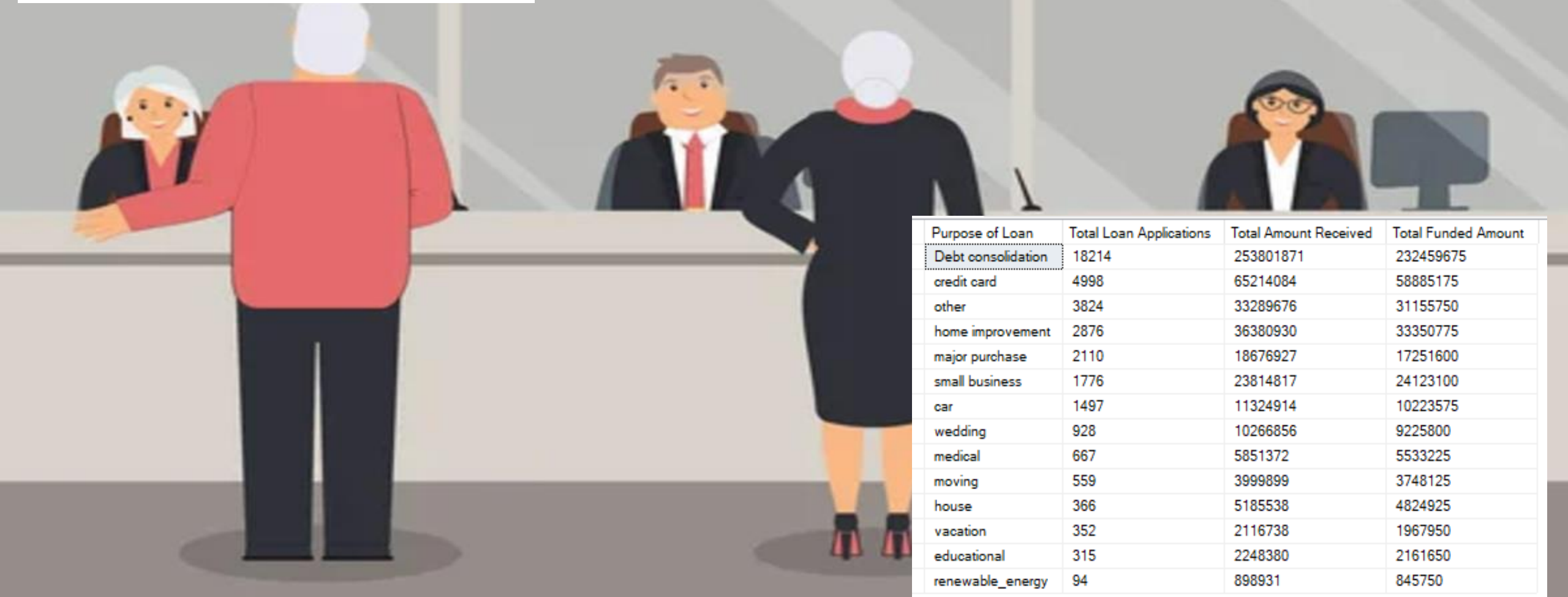
Home Ownership	Total Loan Applications	Total Amount Received	Total Funded Amount
RENT	18439	201823056	185768475
MORTGAGE	17198	238474438	219329150
OWN	2838	31729129	29597675
OTHER	98	1025257	1044975
NONE	3	19053	16800

Loan Purpose Breakdown: This analysis categorizes loans by purpose, offering a clear understanding of the reasons behind borrowing, which can inform lending strategies and risk assessments.

```sql
select purpose as [Purpose of Loan],
count(id) as [Total Loan Applications],
sum(total_payment) as [Total Amount Received],
sum(loan_amount) as [Total Funded Amount]
from financial_loan group by purpose
order by count(id) desc
```

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Purpose of Loan	Total Loan Applications	Total Amount Received	Total Funded Amount
Debt consolidation	18214	253801871	232459675
credit card	4998	65214084	58885175
other	3824	33289676	31155750
home improvement	2876	36380930	33350775
major purchase	2110	18676927	17251600
small business	1776	23814817	24123100
car	1497	11324914	10223575
wedding	928	10266856	9225800
medical	667	5851372	5533225
moving	559	3999899	3748125
house	366	5185538	4824925
vacation	352	2116738	1967950
educational	315	2248380	2161650
renewable_energy	94	898931	845750

Grading: The grade reflects the applicant's creditworthiness based on factors such as credit score, income stability, debt-to-income ratio, and past repayment history

```sql
select grade as [Grading],
count(id) as [Total Loan Applications],
sum(total_payment) as [Total Amount Received],
sum(loan_amount) as [Total Funded Amount]
from financial_loan group by grade
order by grade
```

Grading	Total Loan Applications	Total Amount Received	Total Funded Amount
A	9689	88051563	84252225
B	11674	140775015	130703975
C	7904	95973518	87456450
D	5182	70823891	63920800
E	2786	49164151	44165100
F	1028	21016738	18910450
G	313	7266057	6348075

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Verification Status: It includes the status of background checks, identity verification, credit score validation, and income/employment verification. A positive verification status implies that applicant meets bank's requirements for loan approval.

```
select
verification_status as [Verification Status],
count(id) as [Total Loan Applications],
sum(total_payment) as [Total Amount Received],
sum(loan_amount) as [Total Funded Amount]
from financial_loan
group by verification_status
```

Verification Status	Total Loan Applications	Total Amount Received	Total Funded Amount
Source Verified	9777	107553441	99097575
Verified	12335	214606055	196962050
Not Verified	16464	150911437	139697450

THANK YOU

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