

Loan Portfolio Performance Analysis

Power BI & SQL Project

Visualizing Lending Trends, Risk Segmentation, and Portfolio Health

Prepared by:

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Specializing in Fraud Detection, BI Automation, and Strategic Risk Modeling

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Tools Used: Power BI · SQL · DAX · Excel

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Project Overview:

A data-driven analysis designed to monitor loan performance, uncover risk patterns, and optimize lending portfolio health. Built using Power BI and SQL for real-time insights, dynamic segmentation, and data-backed financial decision-making.

Loan Report | Summary

Summary

Overview

Details

State

All

Grade

All

Purpose

All

Total Loan Application

38.6K

MTD

MoM

4.3K

6.9%

Total Funded Amount

\$435.8M

MTD

MoM

\$54.0M

13.0%

Total Amount Received

\$473.1M

MTD

MoM

\$58.1M

15.8%

Average Interest Rate

12.0%

MTD

MoM

12.4%

3.5%

Average DTI

13.3%

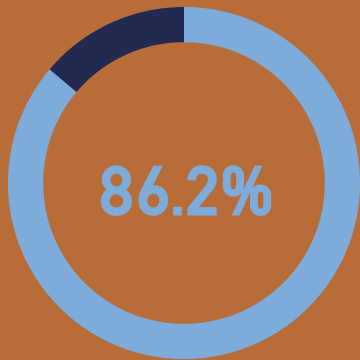
MTD

MoM

13.7%

2.7%

Good Loan Issued



Good Loan Application

33K

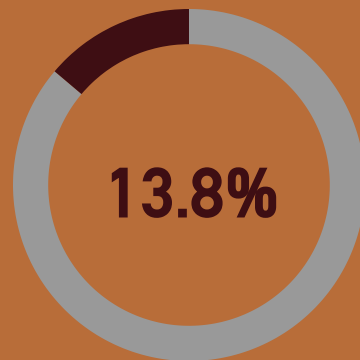
Good Loan Funded Amount

\$370.2M

Good Loan Received Amount

\$435.8M

Bad Loan Issued



Bad Loan Application

5.333K

Bad Loan Funded Amount

\$65.5M

Bad Loan Amount received

\$37.3M

Loan Status

loan_status	Total Loan Applications	Total Funded Amount	Total Amount Received	MTD_AmtReceived	MTD_FundedAmt	Avg_INT_Rate	Avg_DTI
Current	1098	\$1,88,66,500	\$2,41,99,914	\$49,34,318	\$39,46,625	15.10%	14.72%
Charged Off	5333	\$6,55,32,225	\$3,72,84,763	\$53,24,211	\$87,32,775	13.88%	14.00%
Fully Paid	32145	\$35,13,58,350	\$41,15,86,256	\$4,78,15,851	\$4,13,02,025	11.64%	13.17%
Grand Total	38576	\$43,57,57,075	\$47,30,70,933	\$5,80,74,380	\$5,39,81,425	12.05%	13.33%

Loan Report | Summary

Summary

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Select Measure

Total Funded Amount

State

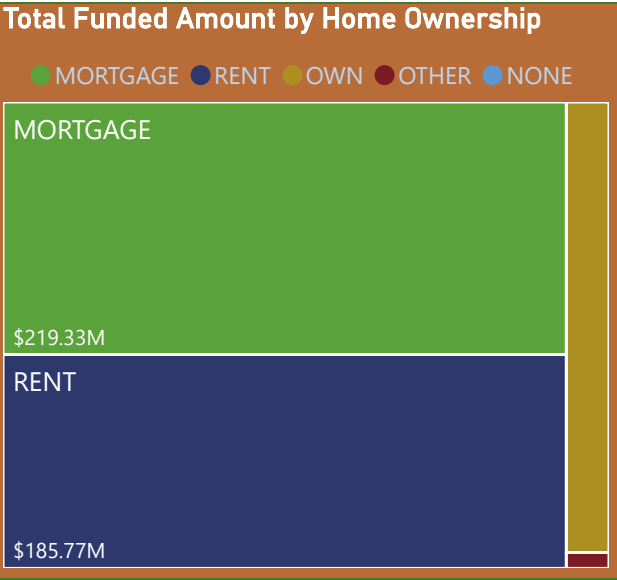
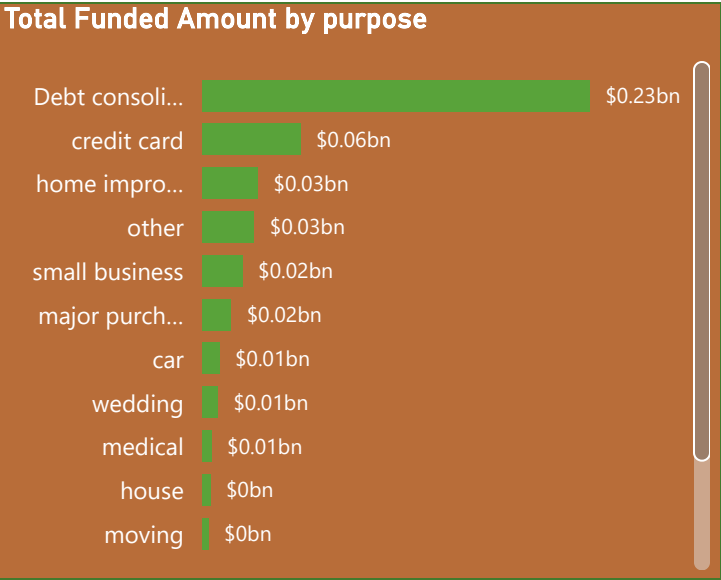
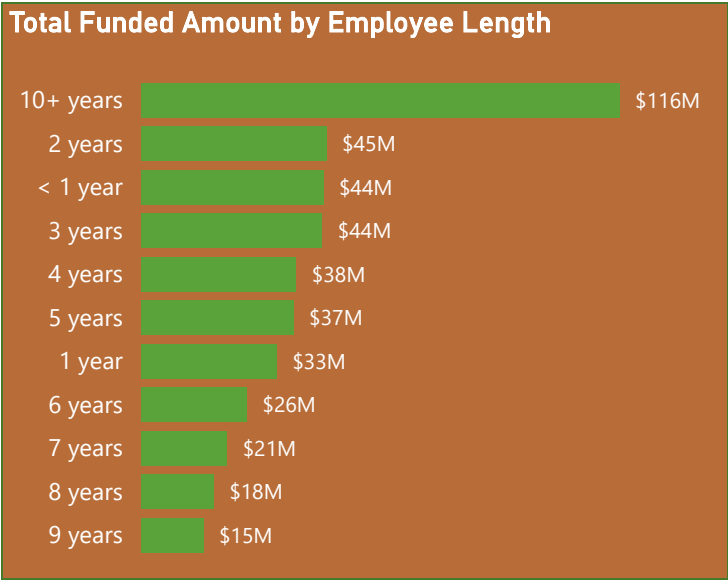
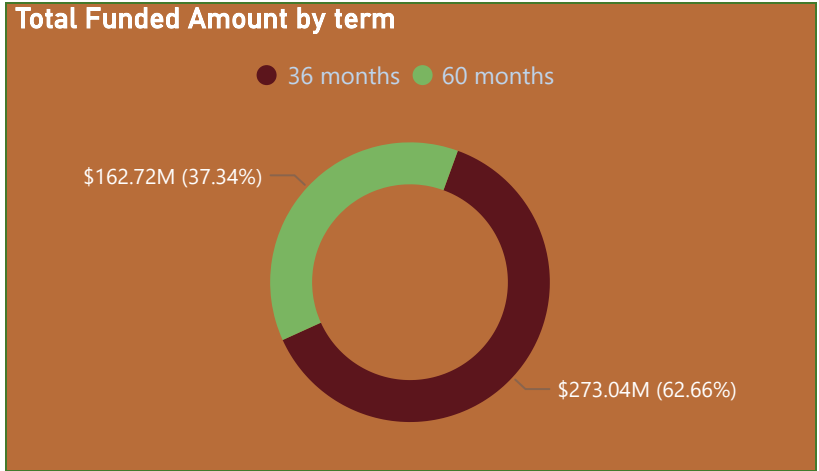
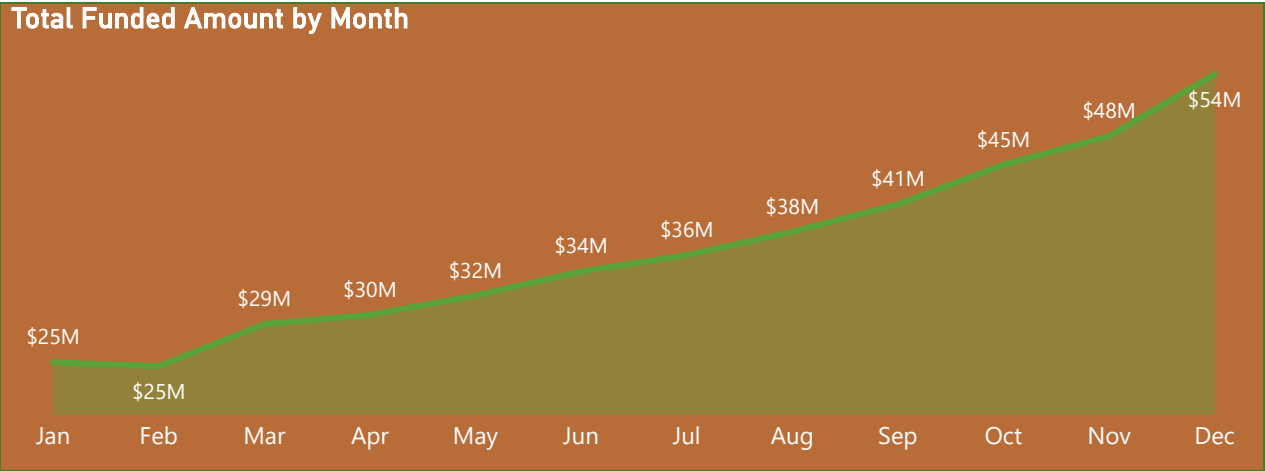
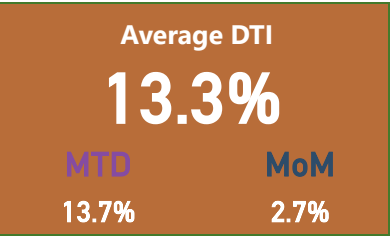
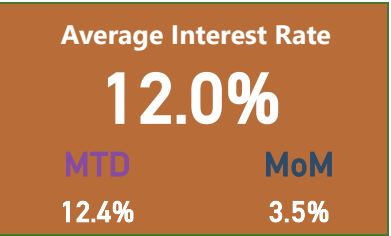
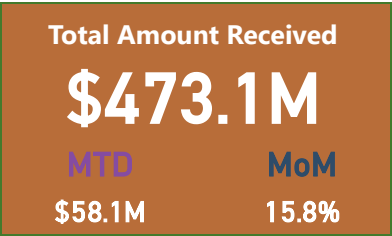
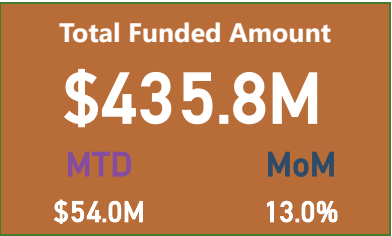
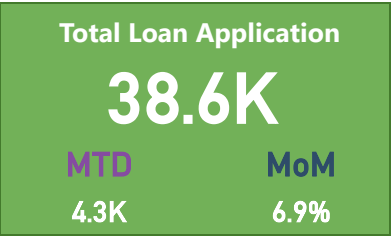
All

Grade

All

Good Vs Bad Loan

All



Loan Report | Summary

Total Loan Application

38.6K

MTD **MoM**

4.3K **6.9%**

MTD

MoM

6.9%

Total Funded Amount
\$435.8M
 MTD MoM
 \$54.0M 13.0%

MoM

13.0%

Total Amount Received

\$473.1M

MTD **MoM**

\$58.1M **15.8%**

MoM

15.8%

Average Interest Rate

12.0%

MTD **MoM**

12.4% **3.5%**

MoM

3.5%

Average DTI

13.3%

MTD **MoM**

13.7% **2.7%**

MoM

2.7%

Summary

Overview

Details

All

All

All

id	Purpose	Home Ownership	Grade	Sub Grade	Issue Date	Funded Amount	Interest Rate	Installments	Amount Received
54734	Debt consolidation	RENT	B	B4	09 August 2021	\$25,000	0.12	829.10	\$29,330
55742	credit card	RENT	B	B5	08 May 2021	\$7,000	0.11	228.22	\$8,216
57245	Debt consolidation	OWN	C	C2	10 March 2021	\$1,200	0.13	40.50	\$1,458
57416	Debt consolidation	RENT	C	C3	09 November 2021	\$10,800	0.14	366.86	\$13,208
58915	Debt consolidation	RENT	B	B3	08 April 2021	\$7,500	0.10	162.34	\$5,844
59006	credit card	MORTGAGE	C	C5	09 September 2021	\$3,000	0.14	102.92	\$3,705
61390	credit card	MORTGAGE	A	A5	10 February 2021	\$4,000	0.08	125.13	\$4,452
61419	Debt consolidation	RENT	D	D2	10 February 2021	\$5,600	0.15	194.02	\$6,475
62102	Debt consolidation	RENT	B	B1	10 April 2021	\$3,200	0.10	103.08	\$3,414
65426	car	MORTGAGE	B	B1	09 August 2021	\$4,000	0.11	131.22	\$2,755
65640	home improvement	MORTGAGE	C	C2	08 May 2021	\$5,000	0.11	87.19	\$3,154
66431	Debt consolidation	RENT	B	B5	09 February 2021	\$2,525	0.12	84.12	\$3,028
66749	Debt consolidation	MORTGAGE	C	C4	08 December 2021	\$10,625	0.13	360.43	\$12,975
66943	Debt consolidation	RENT	B	B4	10 August 2021	\$2,800	0.11	61.57	\$3,144
66964	Debt consolidation	MORTGAGE	D	D3	08 June 2021	\$7,500	0.13	253.58	\$9,129
67503	Debt consolidation	MORTGAGE	A	A4	09 October 2021	\$10,000	0.09	316.11	\$11,280
68163	small business	MORTGAGE	A	A3	10 February 2021	\$3,000	0.07	92.82	\$3,342
68381	Debt consolidation	RENT	A	A5	08 March 2021	\$6,625	0.09	209.54	\$7,542
68817	major purchase	MORTGAGE	C	C1	08 March 2021	\$10,000	0.11	327.53	\$11,709
68926	moving	RENT	D	D2	08 August 2021	\$2,300	0.13	77.69	\$2,797

A. Bank Loan Report || Summary

KPI's:

Total Loan Applications

select COUNT(id) Total_Loan_Application from Bank_Data

	Total_Loan_Application
1	38576

MTD Loan Application

select COUNT(id) MTD_Total_Loan_Application from Bank_Data
where month(issue_date) = 12;

	MTD_Total_Loan_Application
1	4314

PMTD Loan Application

select COUNT(id) PMTD_Total_Loan_Application from Bank_Data
where month(issue_date) = 11;

	PMTD_Total_Loan_Application
1	4035

Total Funded Amount

select Sum(loan_amount) MTD_Total_Funded_Amount from Bank_Data
where month(issue_date) = 12;

	Total_Funded_Amount
1	435757075

MTD Total Funded Amount

select Sum(loan_amount) Total_Funded_Amount from Bank_Data;

	MTD_Total_Funded_Amount
1	53981425

PMTD Total Funded Amount

select Sum(loan_amount) PMTD_Total_Funded_Amount from Bank_Data
where month(issue_date) = 11;

	PMTD_Total_Funded_Amount
1	47754825

Total Amount Received

select Sum(total_payment) Total_Amount_Received from Bank_Data;

	Total_Amount_Received
1	473070933

MTD Total Amount Received

select Sum(total_payment) MTD_Total_Amount_Received from Bank_Data
where month(issue_date) = 12;

	MTD_Total_Amount_Received
1	58074380

PMTD Total Amount Received

select Sum(total_payment) PMTD_Total_Amount_Received from Bank_Data
where month(issue_date) = 11;

	PMTD_Total_Amount_Received
1	50132030

Average Interest Rate

select AVG(int_rate)*100 Average_Interest_Rate from Bank_Data;

	Average_Interest_Rate
1	12.0488314172048

MTD Interest Rate

select AVG(int_rate)*100 MTD_Average_Interest_Rate from Bank_Data
where month(issue_date) = 12;

	MTD_Average_Interest_Rate
1	12.3560408676042

PMTD Interest Rate

select AVG(int_rate)*100 PMTD_Average_Interest_Rate from Bank_Data
where month(issue_date) = 11;

	PMTD_Average_Interest_Rate
1	11.9417175498261

Average DTI

select AVG(dti)*100 Average_DTI from Bank_Data;

	Average_DTI
1	13.3274331211432

MTD Average DTI

select AVG(dti)*100 MTD_Average_DTI from Bank_Data
where month(issue_date) = 12;

	MTD_Average_DTI
1	13.6655377880425

PMTD Average DTI

select AVG(dti)*100 PMTD_Average_DTI from Bank_Data
where month(issue_date) = 11;

	PMTD_Average_DTI
1	13.3027335836364

Good Loan Issues:

Good Loan Percentage

Select (count(Case when loan_status = 'Fully Paid' or loan_status = 'Current' then id end
) * 100.0) / count(id) Good_Loan_Percentage from Bank_Data

	Good_Loan_Percentage
1	86.175342181667

Good Loan Applications

Select count(ID) Total_Good_Loan_Application
from Bank_Data
where loan_status = 'Fully Paid' or loan_status = 'Current'

	Total_Good_Loan_Application
1	33243

Good Loan Funded Amount

Select SUM(loan_amount) Good_Loan_Funded_Amount
from Bank_Data
where loan_status = 'Fully Paid' or loan_status = 'Current'

	Good_Loan_Funded_Amount
1	370224850

Good Loan Amount Received

Select SUM(total_payment) Good_Loan_Amount_Received
from Bank_Data
where loan_status = 'Fully Paid' or loan_status = 'Current'

	Good_Loan_Amount_Received
1	435786170

Bad Loan Issues:

Bad Loan Percentage

Select (count(Case when loan_status = 'Charged Off' then id end)*100.0)/count(id)
Bad_Loan_Percentage from Bank_Data

	Bad_Loan_Percentage
1	13.824657818332

Bad Loan Applications

Select count(ID) Total_Bad_Loan_Application
from Bank_Data
where loan_status = 'Charged Off'

	Total_Bad_Loan_Application
1	5333

Bad Loan Funded Amount

Select SUM(loan_amount) Good_Bad_Funded_Amount
from Bank_Data
where loan_status = 'Charged Off'

	Good_Bad_Funded_Amount
1	65532225

Bad Loan Amount Received

```
Select SUM(total_payment) Good_Bad_Amount_Received
from Bank_Data
where loan_status = 'Charged Off'
```

	Good_Bad_Amount_Received
1	37284763

Loan Status:

Overall Loan Status

```
SELECT
    loan_status,
    COUNT(id) AS LoanCount,
    SUM(total_payment) AS Total_Amount_Received,
    SUM(loan_amount) AS Total_Funded_Amount,
    round(AVG(int_rate * 100),2) AS Interest_Rate,
    round(AVG(dti * 100),2) AS DTI
FROM Bank_Data
GROUP BY loan_status;
```

	loan_status	LoanCount	Total_Amount_Received	Total_Funded_Amount	Interest_Rate	DTI
1	Fully Paid	32145	411586256	351358350	11.64	13.17
2	Charged Off	5333	37284763	65532225	13.88	14
3	Current	1098	24199914	18866500	15.1	14.72

MTD Loan Status

```
SELECT
    loan_status,
    SUM(total_payment) AS MTD_Total_Amount_Received,
    SUM(loan_amount) AS MTD_Total_Funded_Amount
FROM bank_data
WHERE MONTH(issue_date) = 12
```

GROUP BY loan_status;

	loan_status	MTD_Total_Amount_Received	MTD_Total_Funded_Amount
1	Fully Paid	47815851	41302025
2	Charged Off	5324211	8732775
3	Current	4934318	3946625

B. 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_Amount_Received

FROM bank_data

GROUP BY MONTH(issue_date), DATENAME(MONTH, issue_date)

ORDER BY MONTH(issue_date)

	Month_number	Month_name	Total_Loan_Applications	Total_Funded_Amount	Total_Amount_Received
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

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_data

GROUP BY address_state

ORDER BY address_state

	State	Total_Loan_Applications	Total_Funded_Amount	Total_Amount_Received
15	IL	1486	17124225	18875941
16	IN	9	86225	85521
17	KS	260	2872325	3247394
18	KY	320	3504100	3792530
19	LA	426	4498900	5001160
20	MA	1310	15051000	16676279
21	MD	1027	11911400	12985170
22	ME	3	9200	10808
23	MI	685	7829900	8543660
24	MN	592	6302600	6750746
25	MO	660	7151175	7692732
26	MS	19	139125	149342
27	MT	79	829525	892047
28	NC	759	8787575	9534813
29	NE	5	31700	24542
30	NH	161	1917900	2101386
31	NJ	1822	21657475	23425159
32	NM	183	1916775	2084485
33	NV	482	5307375	5451443
34	NY	3701	42077050	46108181
35	OH	1188	12991375	14330148
36	OK	293	3365725	3712649
37	OR	436	4720150	4966903
38	PA	1482	15826525	17462908
39	RI	196	1883025	2001774
40	SC	464	5080475	5462458
41	SD	63	606150	656514
42	TN	17	162175	141522
43	TX	2664	31236650	34392715
44	UT	252	2849225	2952412
45	VA	1375	15982650	17711443
46	VT	54	504100	534973
47	WA	805	8855525	9531739
48	WI	446	5070450	5485161
49	WV	167	1830525	1991936
50	WY	79	890750	1046050

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_data
GROUP BY term
ORDER BY term

```

	Term	Total_Loan_Applications	Total_Funded_Amount	Total_Amount_Received
1	36 months	28237	273041225	294709458
2	60 months	10339	162715850	178361475

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_data
GROUP BY emp_length
ORDER BY emp_length

```

	Employee_Length	Total_Loan_Applications	Total_Funded_Amount	Total_Amount_Received
1	< 1 year	4575	44210625	47545011
2	1 year	3229	32883125	35498348
3	10+ years	8870	116115950	125871616
4	2 years	4382	44967975	49206961
5	3 years	4088	43937850	47551832
6	4 years	3428	37600375	40964850
7	5 years	3273	36973625	40397571
8	6 years	2228	25612650	27908658
9	7 years	1772	20811725	22584136
10	8 years	1476	17558950	19025777
11	9 years	1255	15084225	16516173

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_data
GROUP BY purpose
ORDER BY purpose

```

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

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_data
GROUP BY home_ownership
ORDER BY home_ownership

```

	Home_Ownership	Total_Loan_Applications	Total_Funded_Amount	Total_Amount_Received
1	MORTGAGE	17198	219329150	238474438
2	NONE	3	16800	19053
3	OTHER	98	1044975	1025257
4	OWN	2838	29597675	31729129
5	RENT	18439	185768475	201823056