BANK LOAN ANALYSIS DASHBOARD – Tableau Public

This project analyses bank loan data using SQL and Tableau to highlight key metrics such as total applications, funded amounts, payments received, and average interest rates. It includes month-to-date (MTD) and previous month-to-date (PMTD) comparisons to identify performance trends. The analysis categorizes loans by debt-to-income (DTI) ratio, loan status, region, loan term, employment length, purpose, and home ownership, with further classification by loan grade and state. By visualizing the data in Tableau, the project offers actionable insights for stakeholders to make informed decisions and assess risk effectively.

id	purpose	home_ownership	grade	sub_grade	issue_date	Funded Amount	Int Rate	Sum of installment	Collection Amount
55742	credit card	RENT	B	B5	8 May, 2021	$7,000	10.71%	$228.2	$8,216
57245	Debt consolidation	OWN	C	C2	10 March, 2021	$1,200	13.11%	$40.5	$1,458
57416	Debt consolidation	RENT	C	C3	9 November, 2021	$10,800	13.57%	$366.9	$13,208
58915	Debt consolidation	RENT	B	B3	8 April, 2021	$7,500	10.08%	$162.3	$5,844
62102	Debt consolidation	RENT	B	B1	10 April, 2021	$3,200	9.88%	$103.1	$3,414
65640	home improvement	MORTGAGE	C	C2	8 May, 2021	$5,000	11.34%	$87.2	$3,154
66431	Debt consolidation	RENT	B	B5	9 February, 2021	$2,525	12.21%	$84.1	$3,028
66749	Debt consolidation	MORTGAGE	C	C4	8 December, 2021	$10,625	13.47%	$360.4	$12,975
66943	Debt consolidation	RENT	B	B4	10 August, 2021	$2,800	11.49%	$61.6	$3,144
66964	Debt consolidation	MORTGAGE	D	D3	8 June, 2021	$7,500	13.24%	$253.6	$9,129
67503	Debt consolidation	MORTGAGE	A	A4	9 October, 2021	$10,000	8.59%	$316.1	$11,280
68163	small business	MORTGAGE	A	A3	10 February, 2021	$3,000	7.14%	$92.8	$3,342
68381	Debt consolidation	RENT	A	A5	8 March, 2021	$6,625	8.63%	$209.5	$7,542
68817	major purchase	MORTGAGE	C	C1	8 March, 2021	$10,000	11.03%	$327.5	$11,709
68926	moving	RENT	D	D2	8 August, 2021	$2,300	13.17%	$77.7	$2,797
69124	Debt consolidation	MORTGAGE	B	B4	8 March, 2021	$18,000	10.39%	$584.1	$21,028
69168	major purchase	RENT	E	E4	8 April, 2021	$5,000	15.13%	$173.7	$6,251
69550	Debt consolidation	RENT	D	D3	10 May, 2021	$11,200	15.33%	$268.4	$15,924

BANK LOAN ANALYSIS SQL QUERIES –

DASHBOARD 1 (SUMMARY) –

TOTAL LOAN APPLICATIONS -

Select COUNT(id) AS Total_Loan_Applications FROM bank_loan_db.bank_loan_data;

	Total_Loan_Applications
▶	38576

MTD LOAN APPLICATIONS –

Select COUNT(id) AS MTD_Loan_Applications FROM bank_loan_db.bank_loan_data

WHERE MONTH(issue_date)= 12 AND YEAR(issue_date)= 2021

	MTD_Loan_Applications
▶	4314

PMTD LOAN APPLICATIONS – (For month to month Track = (MTD-PMTD/PMTD)

Select COUNT(id) AS PMTD_Loan_Applications FROM bank_loan_db.bank_loan_data

WHERE MONTH(issue_date)= 11 AND YEAR(issue_date)= 2021

	PMTD_Loan_Applications
▶	4035

TOTAL FUNDED AMOUNT -

Select SUM(loan_amount) AS Total_Funded_Amount FROM bank_loan_db.bank_loan_data

	Total_Funded_Amount
▶	435757075

TOTAL FUNDED AMOUNT (in Dec) -

Select SUM(loan_amount) AS MTD_Total_Funded_Amount FROM bank_loan_db.bank_loan_data

WHERE MONTH(issue_date)= 12 AND YEAR(issue_date)= 2021

	MTD_Total_Funded_Amount
▶	53981425

TOTAL FUNDED AMOUNT (in Nov) -

Select SUM(loan_amount) AS PMTD_Total_Funded_Amount FROM bank_loan_db.bank_loan_data

WHERE MONTH(issue_date)= 11 AND YEAR(issue_date)= 2021

	PMTD_Total_Funded_Amount
	47754825

TOTAL AMOUNT RECEIVED -

Select SUM(total_payment) AS Total_Amount_received FROM bank_loan_db.bank_loan_data;

	Total_Amount_received
▶	473070933

TOTAL AMOUNT RECEIVED (in Dec) -

Select SUM(total_payment) AS MTD_Total_Amount_received FROM bank_loan_db.bank_loan_data

WHERE MONTH(issue_date)= 12 AND YEAR(issue_date)= 2021

	MTD_Total_Amount_received
▶	58074380

TOTAL AMOUNT RECEIVED (in Nov) -

Select SUM(total_payment) AS PMTD_Total_Amount_received FROM bank_loan_db.bank_loan_data

WHERE MONTH(issue_date)= 11 AND YEAR(issue_date)= 2021

	PMTD_Total_Amount_received
▶	50132030

AVERAGE INT RATE –

Select AVG(int_rate) * 100 AS Avg_Interest_Rate FROM bank_loan_db.bank_loan_data

ROUNDING AVERAGE INT RATE -

Select ROUND(AVG(int_rate),4) * 100 AS Avg_Interest_Rate FROM bank_loan_db.bank_loan_data

	Avg_Interest_Rate
▶	12.049999999999999

AVERAGE INT RATE (in Dec) -

Select ROUND(AVG(int_rate),4) * 100 AS MTD_Avg_Interest_Rate FROM bank_loan_db.bank_loan_data

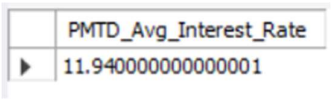
WHERE MONTH(issue_date)= 12 AND YEAR(issue_date)= 2021

	MTD_Avg_Interest_Rate
▶	12.36

AVERAGE INT RATE (in Nov) -

Select ROUND(AVG(int_rate),4) * 100 AS PMTD_Avg_Interest_Rate FROM bank_loan_db.bank_loan_data

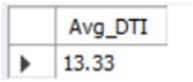
WHERE MONTH(issue_date)= 11 AND YEAR(issue_date)= 2021



	PMTD_Avg_Interest_Rate
▶	11.940000000000001

ROUNDING AVERAGE DTI -

Select ROUND(AVG(dti),4) * 100 AS Avg_DTI FROM bank_loan_db.bank_loan_data

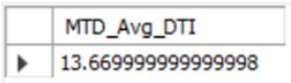


	Avg_DTI
▶	13.33

AVERAGE DTI (in Dec) -

Select ROUND(AVG(dti),4) * 100 AS MTD_Avg_DTI FROM bank_loan_db.bank_loan_data

WHERE MONTH(issue_date)= 12 AND YEAR(issue_date)= 2021

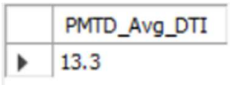


	MTD_Avg_DTI
▶	13.669999999999998

AVERAGE DTI (in Nov) -

Select ROUND(AVG(dti),4) * 100 AS PMTD_Avg_DTI FROM bank_loan_db.bank_loan_data

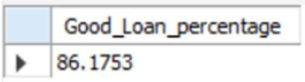
WHERE MONTH(issue_date)= 11 AND YEAR(issue_date)= 2021



	PMTD_Avg_DTI
▶	13.3

GOOD LOAN PERCENTAGE (Fully Paid, Loan status) –

SELECT (COUNT(CASE WHEN loan_status = "Fully Paid" OR loan_status ="Current" THEN id END)*100)/COUNT(id) AS Good_Loan_percentage From bank_loan_db.bank_loan_data;



	Good_Loan_percentage
▶	86.1753

GOOD LOAN APPLICATIONS –

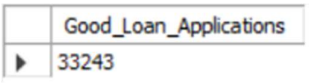
SELECT (COUNT(CASE WHEN loan_status = "Fully Paid" OR loan_status = "Current" THEN id END)) AS Good_Loan_Applications FROM bank_loan_db.bank_loan_data;

OR

SELECT COUNT(id) AS Good_Loan_Applications FROM bank_loan_db.bank_loan_data WHERE loan_status = "Fully Paid" OR loan_status ="Current"

OR

SELECT COUNT(id) AS Good_Loan_Applications FROM bank_loan_db.bank_loan_data WHERE loan_status IN ('Fully Paid','Current')



	Good_Loan_Applications
▶	33243

GOOD LOAN FUNDED AMOUNT –

SELECT SUM(loan_amount) AS Good_Loan_Funded_Amount FROM bank_loan_db.bank_loan_data WHERE loan_status = "Fully Paid" OR loan_status ="Current"

Good_Loan_Funded_Amount
370224850

GOOD LOAN RECEIVED AMOUNT –

SELECT SUM(total_payment) AS Good_Loan_Received_Amount FROM bank_loan_db.bank_loan_data WHERE loan_status = "Fully Paid" OR loan_status ="Current"

Good_Loan_Received_Amount
435786170

BAD LOAN PERCENTAGE (Charged Off) –

SELECT (COUNT(CASE WHEN loan_status = "Charged Off" THEN id END)*100)/COUNT(id) AS Bad_Loan_percentage From bank_loan_db.bank_loan_data;

Bad_Loan_percentage
13.8247

BAD LOAN APPLICATIONS –

SELECT (COUNT(CASE WHEN loan_status ="Charged Off" THEN id END)) AS Bad_Loan_Applications FROM bank_loan_db.bank_loan_data;

OR

SELECT COUNT(id) AS Bad_Loan_Applications FROM bank_loan_db.bank_loan_data WHERE loan_status = "Charged Off"

Bad_Loan_Applications
5333

BAD LOAN FUNDED AMOUNT –

SELECT SUM(loan_amount) AS Bad_Loan_Funded_Amount FROM bank_loan_db.bank_loan_data WHERE loan_status = "Charged Off"

Bad_Loan_Funded_Amount
65532225

BAD LOAN RECEIVED AMOUNT –

SELECT SUM(total_payment) AS Bad_Loan_Received_Amount FROM bank_loan_db.bank_loan_data WHERE loan_status = "Charged Off"

Bad_Loan_Received_Amount
37284763

LOAN STATUS –

```
SELECT
        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 * 100) AS Interest_Rate,
    AVG(dti * 100) AS DTI
FROM
        bank_loan_db.bank_loan_data
GROUP BY
        loan_status
```

loan_status	Total_Loan_applications	Total_Amount_Received	Total_Funded_Amount	Interest_Rate	DTI
Charged Off	5333	37284763	65532225	13.878574910931917	14.004732795799695
Fully Paid	32145	411586256	351358350	11.641070773058658	13.167350754394164
Current	1098	24199914	18866500	15.0993260473588	14.724344262295068

MTD LOAN STATUS –

```
SELECT
        loan_status,
        SUM(total_payment) AS MTD_Total_Amount_Received,
        SUM(loan_amount) AS MTD_Total_Funded_Amount
    FROM
        bank_loan_db.bank_loan_data
    WHERE
        MONTH(issue_date) = 12
    GROUP BY
        loan_status
```

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

DASHBOARD 2 (OVERVIEW) –

MONTH TRENDS BY ISSUE DATE -

```
SELECT
        MONTHNAME(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
        bank_loan_db.bank_loan_data
GROUP BY
        MONTHNAME(issue_date)
ORDER BY
        MONTHNAME(issue_date)
```

OR (TO GET MONTH WISE)

```
SELECT
        MONTH(issue_date) AS Month_Number,
        MONTHNAME(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
        bank_loan_db.bank_loan_data
GROUP BY
        MONTH(issue_date), MONTHNAME(issue_date)
ORDER BY
        MONTH(issue_date)
```

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

REGIONAL ANALYSIS BY 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
        bank_loan_db.bank_loan_data
GROUP BY
        address_state
ORDER BY
        SUM(loan_amount) DESC
```

address_state	Total_Loan_Applications	Total_Funded_Amount	Total_Received_Amount
CA	6894	78484125	83901234
NY	3701	42077050	46108181
TX	2664	31236650	34392715
FL	2773	30046125	31601905
NJ	1822	21657475	23425159
IL	1486	17124225	18875941
VA	1375	15982650	17711443
PA	1482	15826525	17462908
GA	1355	15480325	16728040
MA	1310	15051000	16676279
OH	1188	12991375	14330148
MD	1027	11911400	12985170
AZ	833	9206000	10041986
CO	770	8976000	9845810

LOAN TERM ANALYSIS –

```
SELECT
        term,
   COUNT(id) AS Total_Loan_Applications,
   SUM(loan_amount) AS Total_Funded_Amount,
   SUM(total_payment) AS Total_Received_Amount
FROM
        bank_loan_db.bank_loan_data
GROUP BY
        Term
```

	term	Total_Loan_Applications	Total_Funded_Amount	Total_Received_Amount
▶	60 months	10339	162715850	178361475
	36 months	28237	273041225	294709458

EMPLOYEE LENGTH ANALYSIS –

```
SELECT
        emp_length,
   COUNT(id) AS Total_Loan_Applications,
   SUM(loan_amount) AS Total_Funded_Amount,
   SUM(total_payment) AS Total_Received_Amount
FROM
        bank_loan_db.bank_loan_data
GROUP BY
        emp_length
ORDER BY
        COUNT(id) DESC
```

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

LOAN PURPOSE BREAKDOWN –

```
SELECT
        purpose,
    COUNT(id) AS Total_Loan_Applications,
    SUM(loan_amount) AS Total_Funded_Amount,
    SUM(total_payment) AS Total_Received_Amount
FROM
        bank_loan_db.bank_loan_data
GROUP BY
        purpose
ORDER BY
        COUNT(id) DESC
```

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

HOME OWNERSHIP ANALYSIS –

```
SELECT
        home_ownership,
    COUNT(id) AS Total_Loan_Applications,
    SUM(loan_amount) AS Total_Funded_Amount,
    SUM(total_payment) AS Total_Received_Amount
FROM
        bank_loan_db.bank_loan_data
GROUP BY
        home_ownership
```

home_ownership	Total_Loan_Applications	Total_Funded_Amount	Total_Received_Amount
RENT	18439	185768475	201823056
MORTGAGE	17198	219329150	238474438
OWN	2838	29597675	31729129
OTHER	98	1044975	1025257
NONE	3	16800	19053

OR (To Classify by Grade)

```
SELECT
        home_ownership,
   COUNT(id) AS Total_Loan_Applications,
   SUM(loan_amount) AS Total_Funded_Amount,
   SUM(total_payment) AS Total_Received_Amount
FROM
        bank_loan_db.bank_loan_data
WHERE
        grade = 'A'
GROUP BY
        home_ownership
ORDER BY
        COUNT(id) DESC
```

home_ownership	Total_Loan_Applications	Total_Funded_Amount	Total_Received_Amount
MORTGAGE	4973	45908575	47963188
RENT	3918	31825075	33290992
OWN	773	6340100	6618219
OTHER	24	168475	167924
NONE	1	10000	11240

OR (To Classify by Grade and Address State)

```
SELECT
        home_ownership,
   COUNT(id) AS Total_Loan_Applications,
   SUM(loan_amount) AS Total_Funded_Amount,
```

```
   SUM(total_payment) AS Total_Received_Am  ount
FROM
        bank_loan_db.bank_loan_data
WHERE
        grade = 'A' AND address_state = 'CA'
GROUP BY
        home_ownership
ORDER BY
        COUNT(id) DESC
```

home_ownership	Total_Loan_Applications	Total_Funded_Amount	Total_Received_Amount
RENT	894	7359175	7680797
MORTGAGE	612	6276375	6490097
OWN	93	802100	844556
OTHER	2	14000	15340