



DATA ANALYST PORTFOLIO PROJECT

## ***BANK LOAN ANALYSIS***

VISHAL SINHA

## PROBLEM STATEMENT

### DASHBOARD 1: SUMMARY

- Performance indicators (KPIs) requirements.
- Total loan applications: we need to calculate the total number of loan applications received during a specified period. Additionally, it is essential to monitor the month-to-date (MTD) loan applications and track changes month-over-month( MOM)
- 2. Total funded amount: understanding the total amount of funds disbursed as loans is crucial. We also want to monitor the MTD total invested amount and analyze the month-over-month (mom) changes in this metric.
- 3. Total amount received: tracking the total amount received from borrowers is essential for assessing the bank's cash flow and loan repayment. We should analyze the month-to-date (MTD) total amount received and observe the month-over-month (mom) changes.
- 4. Average interest rate: calculating the average interest rate across all loans, MTD, and monitoring the month-over-month (mom) variations in interest rates will provide insights into our lending portfolio's overall cost.
- 5. Average debt-to-income ratio (DTI): evaluating the average DTI for our borrowers helps us gauge their financial health. We need to compute the average DTI for all loans, MTD, and track month-over-month (mom) fluctuate

**Good Loan v Bad Loan KPI's**

**Good Loan:**

- 1.Good Loan Application Percentage
- 2.Good Loan Applications
- 3.Good Loan Funded Amount
- 4.Good Loan Total Received Amount

**Bad Loan**

- 1.Bad Loan Application Percentage
- 2.Bad Loan Applications
- 3.Bad Loan Funded Amount
- 4.Bad Loan Total Received

**Loan Status Grid View**

To gain a comprehensive overview of our lending operations and monitor the performance of loans, we aim to create a grid view report categorized by 'Loan Status.' By providing insights into metrics such as 'Total Loan Applications,' 'Total Funded Amount,' 'Total Amount Received,' 'Month-to-Date (MTD) Funded Amount,' 'MTD Amount Received,' 'Average Interest Rate,' and 'Average Debt-to-Income Ratio (DTI),' this grid view will empower us to make data-driven decisions and assess the health of our loan portfolio.

### DASHBOARD 2: OVERVIEW

## CHARTS

- 1.Monthly Trends by Issue Date (Line Chart):** To identify seasonality and long-term trends in lending activities
- 2.Regional Analysis by State (Filled Map):** To identify regions with significant lending activity and assess regional disparities
- 3.Loan Term Analysis (Donut Chart):** To allow the client to understand the distribution of loans across various term lengths.
- 4.Employee Length Analysis (Bar Chart):** How lending metrics are distributed among borrowers with different employment lengths, helping us assess the impact of employment history on loan applications.
- 5.Loan Purpose Breakdown (Bar Chart):** **This will** provide a visual breakdown of loan metrics based on the stated purposes of loans, aiding in the understanding of the primary reasons borrowers seek financing.
- 6.Home Ownership Analysis (Tree Map):** For a hierarchical view of how homeownership impacts loan applications and disbursements.

**Metrics to be shown: 'Total Loan Applications,' 'Total Funded Amount,' and 'Total Amount Received'**

## DASHBOARD 3: DETAILS

### GRID

Need for a comprehensive 'Details Dashboard' that provides a consolidated view of all the essential information within our loan data. This Detailsformation efficiently.

#### *Objective:*

*The primary objective of the Details Dashboard is to provide a comprehensive and user-friendly interface for accessing vital loan data. It will serve as a one-stop solution for users seeking detailed insights into our loan portfolio, borrower profiles, and loan performance.*



# POWER BI





# BANK LOAN REPORT SUMMARY



VISHAL SINHA



## STATES

Multiple selections

## GRADE

All

## PURPOSE

All

### TOTAL LOAN APPLICATION

2544711606K%

MTD

3,343.1M

MOM

8.89%

### TOTAL fund amount

\$422.592M

MTD

52.5M

MOM

13.43%

### TOTAL AMOUNT RECIVED

\$458.68M

MTD

56.5M

MOM

15.9%

### Average Interest rate

12.06%

MTD

12.4%

MOM

3.61%

### AVERAGE DTI

13.30%

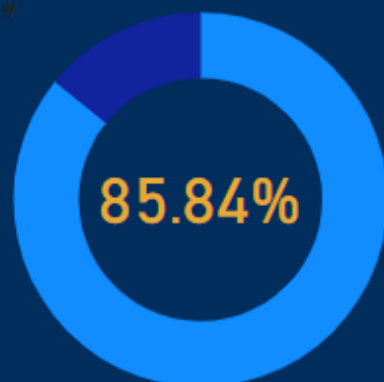
MTD

13.7%

MOM

2.84%

### GOOD \_LOAN ISSUED



#### GOOD LOAN APPLICATION

21,844.5M

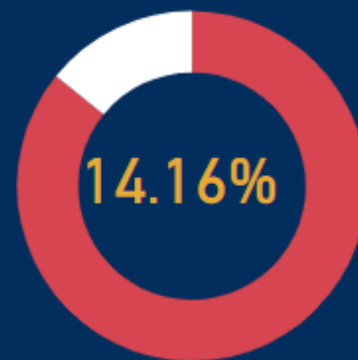
#### GOOD LOAN FUNDED\_AMOUNT

\$358.9M

#### GOOD LOAN RECIVED

\$422.5M

### BAD \_LOAN ISSUED



#### BAD LOAN APPLICATION

3,602.6M

#### BAD LOAN FUNDED\_AMOUNT

\$63.7M

#### BAD LOAN RECIVED

\$36.2M

## LOAN \_STATUS

LOAN STATUS	TOTAL LOAN APPLICATION	TOTAL FUNDED AMOUNT	TOTALAMOUNT RECIVED	MTD_FUNDED_AMOUNT	MTD_AMOUNT_RECIVED	AVG_lintreset rate	AVG_DTI
Charged Off	360260258100.0%	\$6,37,14,125	\$3,61,99,067	8560300	5183011	14%	13.98%
Current	96459573600.0%	\$1,82,28,350	\$2,33,70,102	3757500	4690089	15%	14.69%
Fully Paid	2087991774300.0%	\$34,06,49,050	\$39,91,12,645	40189650	46580672	12%	13.14%
Total	2544711606000.0%	\$42,25,91,525	\$45,86,81,814	52507450	56453772	12%	13.30%



# BANK LOAN REPORT DETAILS

## TOTAL LOAN APPLICATION

14963721K%

MTD 18.7M  
MOM -4.38%

## TOTAL fund amount

\$2.256M

MTD 0.2M  
MOM -30.48%

## TOTAL AMOUNT

\$2.63M

MTD 245.5K  
MOM -22.8%

## Average Interest rate

11.50%

MTD 11.1%  
MOM 9.08%

## AVERAGE DTI

15.06%

MTD 14.0%  
MOM 1.42%

## Select Measure

TOTAL FUNDE... ▾

## STATES

AR ▾

## GRADE

All ▾

## GOOD VS BAD LOAN

GOOD LOAN ▾

id	Purpose	Home_ownership	Grade	Sub_grade	Issue_date	Sum of int_rate	TOTAL FUNDED AMOUNT	Sum of installment	TOTALAMOUNT RECEIVED
724312	major purchase	MORTGAGE	F	F4	11 April 2021	19.36%	\$35,000	914.87	\$35,000
882241	Debt consolidation	RENT	C	C5	11 September 2021	15.96%	\$35,000	850.39	\$39,800
832185	Debt consolidation	MORTGAGE	B	B3	11 August 2021	10.99%	\$30,000	982.02	\$35,300
846512	Debt consolidation	MORTGAGE	E	E4	11 September 2021	19.29%	\$30,000	783.02	\$33,200
987465	Debt consolidation	MORTGAGE	D	D4	11 October 2021	17.58%	\$30,000	1,078.27	\$36,000
878029	small business	MORTGAGE	B	B3	11 September 2021	11.71%	\$28,000	926.13	\$33,300
448058	Debt consolidation	MORTGAGE	D	D3	09 October 2021	15.31%	\$25,000	870.39	\$31,300
562670	credit card	MORTGAGE	C	C2	10 August 2021	13.61%	\$25,000	576.67	\$32,300
566740	credit card	MORTGAGE	C	C3	10 August 2021	13.98%	\$25,000	350.62	\$19,000
808531	major purchase	MORTGAGE	C	C1	11 July 2021	12.99%	\$25,000	568.70	\$32,900
821601	credit card	MORTGAGE	C	C4	11 July 2021	14.79%	\$25,000	592.00	\$35,100
857224	medical	MORTGAGE	D	D4	11 August 2021	16.89%	\$25,000	619.84	\$34,600
565456	other	MORTGAGE	B	B2	10 August 2021	10.75%	\$24,250	791.05	\$26,300
448699	Debt consolidation	MORTGAGE	B	B3	09 October 2021	11.83%	\$24,000	795.22	\$28,600
843460	Debt consolidation	MORTGAGE	A	A4	11 August 2021	7.49%	\$24,000	746.44	\$25,700
890216	car	OWN	B	B5	11 September 2021	12.69%	\$22,800	764.83	\$27,500
616492	Debt consolidation	MORTGAGE	A	A5	10 November 2021	6.91%	\$21,600	407.81	\$13,300
818882	Debt consolidation	MORTGAGE	C	C5	11 August 2021	15.23%	\$21,000	502.13	\$29,700
993824	Debt consolidation	MORTGAGE	C	C4	11 November 2021	15.27%	\$21,000	502.57	\$29,000
874774	Debt consolidation	MORTGAGE	F	F3	11 September 2021	20.99%	\$20,950	566.66	\$31,800
487048	home improvement	MORTGAGE	B	B3	10 February 2021	10.62%	\$20,000	651.20	\$23,400





# BANK LOAN REPORT OVERVIEW



## TOTAL LOAN APPLICATION

1877445K%

MTD	MOM
2.3M	-45.57%

## TOTAL fund amount

\$0.273M

MTD	MOM
0.0M	-65.17%

## TOTAL AMOUNT RECIVED

\$144.74K

MTD	MOM
16.3K	-52.4%

## Average Interest rate

13.84%

MTD	MOM
11.0%	-33.50%

## AVERAGE DTI

16.46%

MTD	MOM
17.0%	-15.82%

### Select Measure

TOTAL LOAN ...

### STATES

AR

### GRADE

All

### GOOD VS BAD LOAN

BAD LOAN

## TOTAL LOAN APPLICATION by month

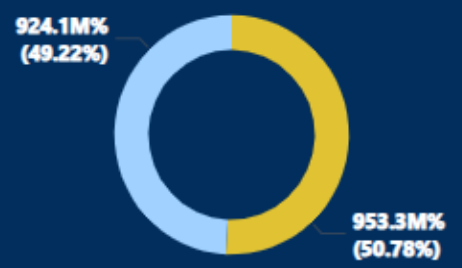


## TOTALAMOUNT RECIVED by STATE

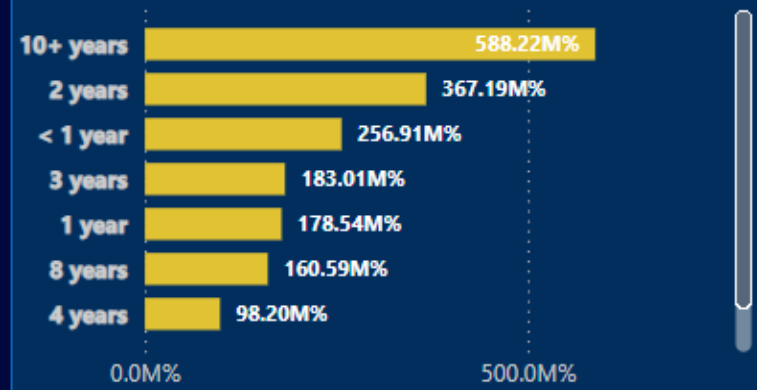


## TOTAL FUNDED AMOUNT by Term

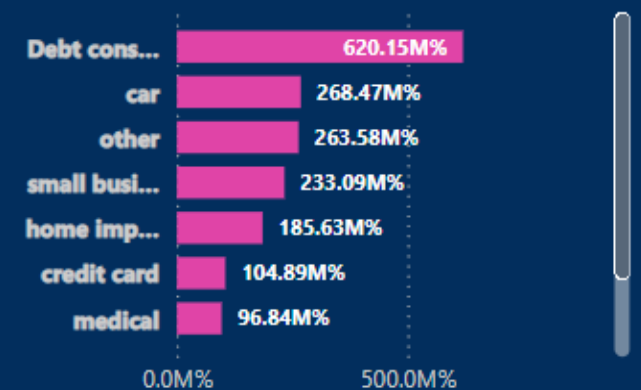
36 months 60 months



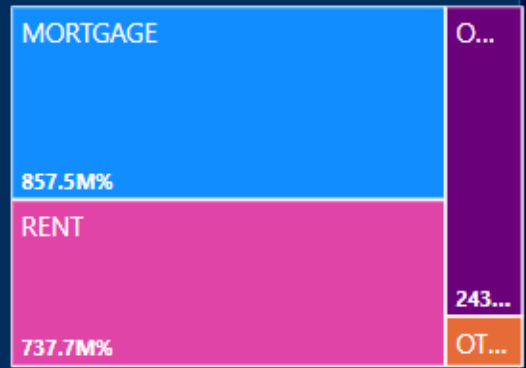
## TOTAL LOAN APPLICATION by Employee length



## TOTAL LOAN APPLICATION by purpose



## TOTAL LOAN APPLICATION by Home\_ownership



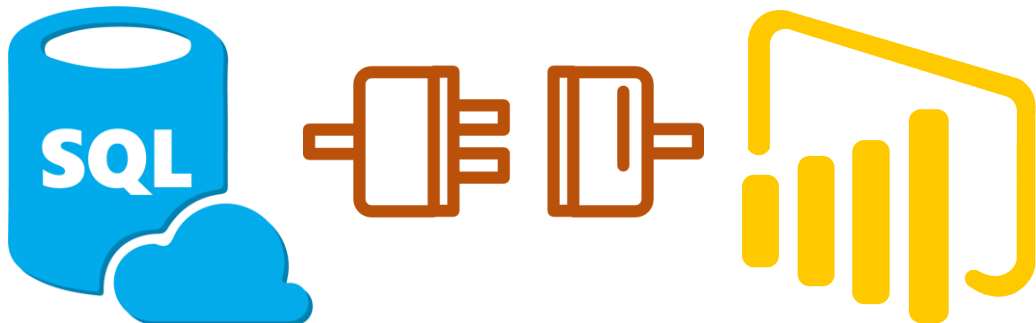
## BANK LOAN ANALYSIS



MS SQL SERVER

CONNECTING TO

POWER BI



```
-- total loan application '
```

```
--select* from Bank_loan_data
```

```
select count(id) as Total_loan_Application from Bank_loan_data
```

```
-- total application month to date total application ##2021 data
```

```
--select count(id) as pmtd_Total_loan_Application from Bank_loan_data
```

```
where MONTH (issue_date)=11 And YEAR (issue_date)=2021
```

```
---(mtd-pmtd)/pmtd
```

	Results	Messages
	Total_loan_Application	
1	50132030	

```
--total amount recived in previous month
```

```
select sum(total_payment) as Total_loan_Application from Bank_loan_data
```

```
where Month(issue_date)=11 and year(issue_date)=2021
```

	Results	Messages
	bad_loan_application	
1	5333	

```
'-good loan funded amount
```

```
elect sum(loan_amount) as Good_loan_funded_amount from bank_loan_data
```

```
here loan_status ='Fully Paid' Or loan---status='current'
```

```
-good loan total recived amount
```

	Good_loan_funded_amount
1	370224850

```
- total appliction of bad loan
```

```
select count(id) as bad_loan_application from bank_loan_data
```

```
here loan_status ='Charged Off'
```

	bad_loan_application
1	5333

```
-- month to date how much amount received
select loan_status,
sum(total_payment) as mtd_total_amount,
sum(loan_amount) as mtd_total_fund_amount
from bank_loan_data
where month (issue_date)=12
group by loan_status
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_recived_amount
from bank_loan_data
group by MONTH(issue_date),DateName(MONTH,issue_date)
order by MONTH(issue_date)
```

Results Messages	
	bad_loan_funded_amount_recived
1	65532225

	loan_status	Total_applications	total_amount_recived	total_funded_amount	interest_rate	DTI
1	Fully Paid	32145	411586256	351358350	11.6410707918092	13.1673507557434
2	Current	1098	24199914	18866500	15.0993260800947	14.7243442736843
3	Charged Off	5333	37284763	65532225	13.8785749318289	14.0047328005517

```
--ADDRESS STATE
select
address_state,
count(id) as total_loan_applications,
sum(loan_amount) as total_funded__amount,
sum(total_payment) as total_recived_amount
from bank_loan_data
group by address_state
order by address_state
```

Results		Messages		
	address_state	total_loan_applications	total_funded__amount	total_recived_amount
1	AK	78	1031800	1108570
2	AL	432	4949225	5492272
3	AR	236	2529700	2777875
4	AZ	833	9206000	10041986
5	CA	6894	78484125	83901234
6	CO	770	8976000	9845810
7	CT	730	8435575	9357612
8	DC	214	2652350	2921854
9	DE	110	1138100	1269136
10	FL	2773	30046125	31601905
11	GA	1355	15480325	16728040
12	HI	170	1850525	2080184
13	IA	5	56450	64482
14	ID	6	59750	65329
15	IL	1486	17124225	18875941
16	IN	9	86225	85521
17	KS	260	2872225	2247204

# THANK YOU!

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