



**PROJECT**


# **BANK LOAN ANALYSIS**



# MySQL

## CREATE DATABASE

# MySQL



Name:

Charset/Collation:

[Rename References](#)

Specify the name of the schema here. You can use any combination of ANSI letters, numbers and the underscore character for names that don't

Refactor model, changing all references found in view, triggers, stored procedures and functions from the old schema name to the new one.

The character set and its collation selected here will be used when no other charset/collation is set for a database object (it uses the DEFAULT

Schema

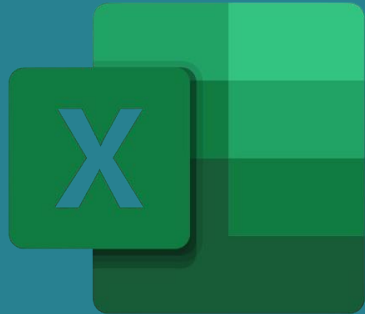
[Apply](#) [Revert](#)



# MySQL

## IMPORT DATA

# Excel csv File



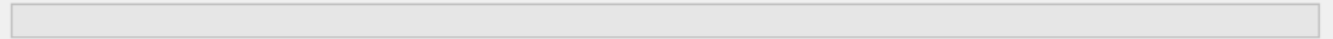
### Table Data Import

#### Import Data

The following tasks will now be performed. Please monitor the execution.

- ☒ Prepare Import
- ☐ Import data file

#### Data import



#### Message Log

- Data import
- Data import
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Hide Logs



# MySQL

## WRITING QUERIES

```
1 • SELECT
2     loan_status,
3     COUNT(ID) AS Loan_Count,
4     SUM(total_payment) AS Total_Amount_Received,
5     SUM(loan_amount) AS Total_Funded_Amount,
6     AVG(Int_rate * 100) AS Interest_Rate,
7     AVG(DTI * 100) AS DTI
8 FROM bank_loan_data
9 GROUP BY loan_status ;
```

Result Grid | Filter Rows:  | Export: | Wrap Cell Content:

	loan_status	Loan_Count	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



Result  
Grid

# FIRING SQL QUERIES TO SOLVE THE BUSINESS PROBLEMS

## COMPARING RESULTS WITH POWER BI and EXCEL

```
1 • SELECT
2     loan_status,
3     COUNT(ID) AS Loan_Count,
4     SUM(total_payment) AS Total_Amount_Received,
5     SUM(loan_amount) AS Total_Funded_Amount,
6     AVG(Int_rate * 100) AS Interest_Rate,
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8 FROM bank_loan_data
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	Current	1098	24199914	18866500	15.0993260473588	14.724344262295068



Result  
Grid

# BANK LOAN ANALYSIS

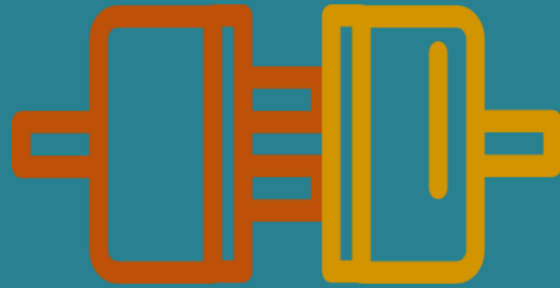
PART 2

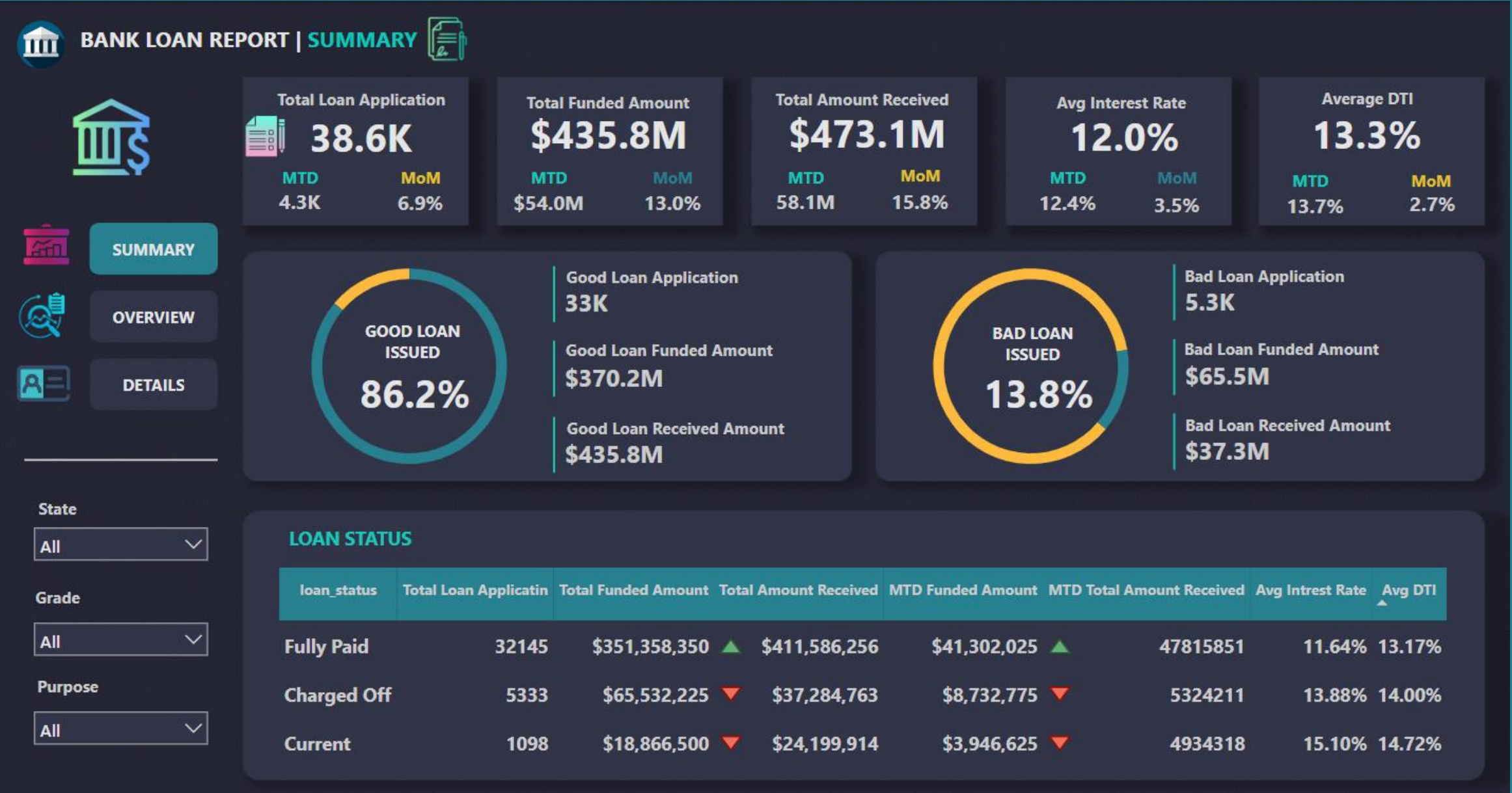
POWER BI



# POWER BI

IMPORT DATA









## BANK LOAN REPORT | OVERVIEW



SUMMARY



OVERVIEW



DETAILS

## Select Measure

Total Loan Applic... ▾

## State

All ▾

## Grade

All ▾

## Good v Bad Loan

All ▾

## Total Loan Application



38.6K

MTD

4.3K

MoM

6.9%

## Total Funded Amount

\$435.8M

MTD

\$54.0M

MoM

13.0%

## Total Amount Received

\$473.1M

MTD

58.1M

MoM

15.8%

## Avg Interest Rate

12.0%

MTD

12.4%

MoM

3.5%

## Avg DTI

13.3%

MTD

13.7%

MoM

2.7%

## Total Loan Application by Month



## Total Amount Received by State



## Total Loan Application by term

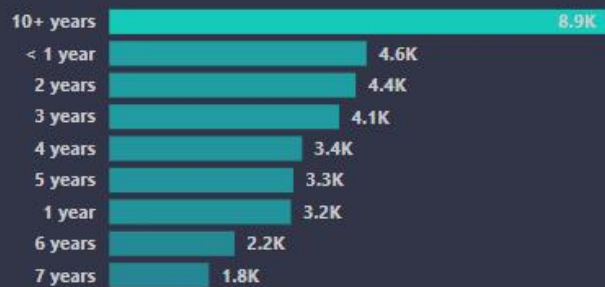
● 36 months ● 60 months

10K (27%)

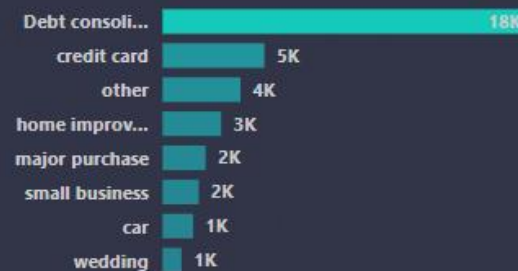


28K (73%)

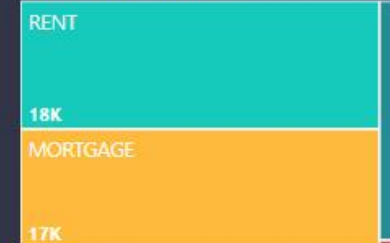
## Total Loan Application by Employee Length



## Total Loan Application by purpose



## Total Loan Application by Home Ownership





BANK LOAN REPORT | DETAILS



Total Loan Application

**38.6K**

MTD

4.3K

MoM

6.9%

Total Funded Amount

**\$435.8M**

MTD

\$54.0M

MoM

13.0%

Total Amount Received

**\$473.1M**

MTD

58.1M

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15.8%

Avg Interest Rate

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Avg DTI

**13.3%**

MTD

13.7%

MoM

2.7%



SUMMARY



OVERVIEW



DETAILS

Select Measure

Total Loan Applic... ▾

State

All ▾

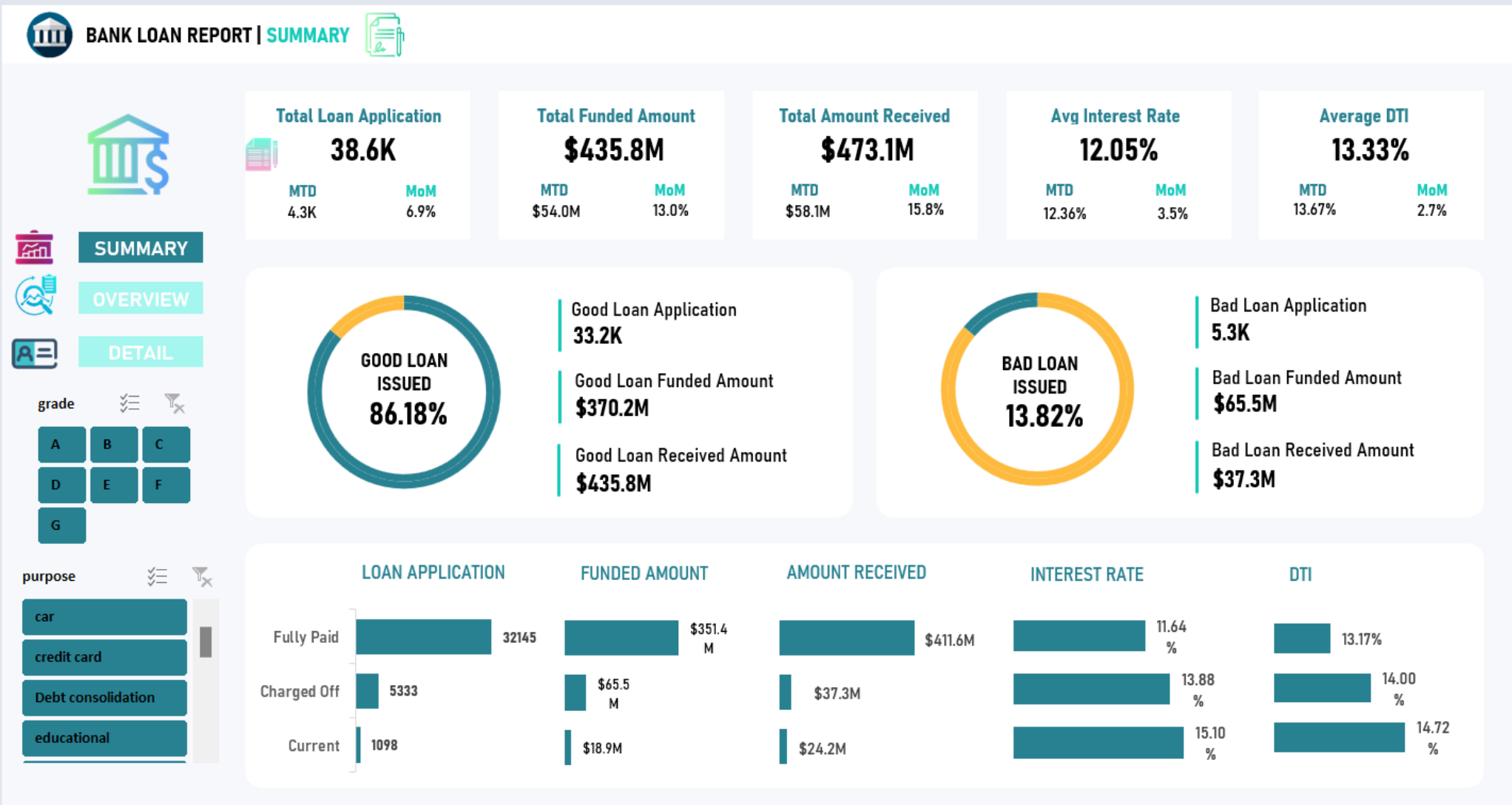
Grade

All ▾

Good v Bad Loan

All ▾

id	Purpose	Home Ownership	Grade	Sub Grade	Issue Date	Total Funded Amount	int_rate	Sum of installment	Total Amount Received
989285	Debt consolidation	RENT	G	G1	2021-10-11	\$35,000	0.23	981.45	▲\$58,564
812976	Debt consolidation	MORTGAGE	G	G2	2021-08-11	\$35,000	0.22	976.24	▲\$58,480
972576	credit card	MORTGAGE	F	F5	2021-10-11	\$35,000	0.22	973.64	▲\$57,835
874599	Debt consolidation	MORTGAGE	G	G3	2021-09-11	\$35,000	0.23	983.66	▲\$56,849
768930	small business	MORTGAGE	F	F3	2021-06-11	\$35,000	0.21	946.68	▲\$56,663
674448	Debt consolidation	MORTGAGE	G	G2	2021-02-11	\$35,000	0.20	936.66	▲\$56,199
914211	Debt consolidation	MORTGAGE	F	F1	2021-10-11	\$35,000	0.21	944.71	▲\$55,907
772157	small business	RENT	G	G1	2021-06-11	\$35,000	0.22	968.86	▲\$55,769
1057770	Debt consolidation	MORTGAGE	E	E5	2021-12-11	\$35,000	0.20	933.14	▲\$55,139
833224	Debt consolidation	MORTGAGE	F	F2	2021-08-11	\$35,000	0.21	939.41	▲\$55,106
698163	home improvement	MORTGAGE	G	G2	2021-03-11	\$35,000	0.20	936.66	▲\$54,774





## BANK LOAN REPORT | OVERVIEW



SUMMARY



OVERVIEW



DETAIL

grade



A

B

C

D

E

F

G

purpose



car

credit card

Debt consolidation

educational

### Total Loan Application



38.6K

MTD

4.3K

MoM

6.9%

### Total Funded Amount

\$435.8M

MTD

\$54.0M

MoM

13.0%

### Total Amount Received

\$473.1M

MTD

\$58.1M

MoM

15.8%

### Avg Interest Rate

12.05%

MTD

12.36%

MoM

3.5%

### Average DTI

13.33%

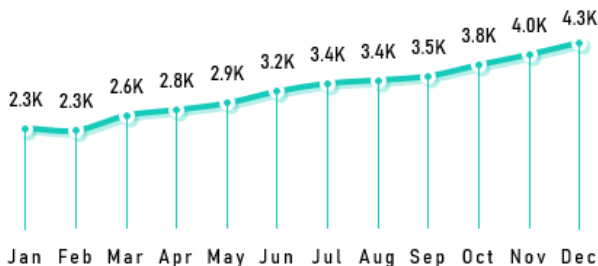
MTD

13.67%

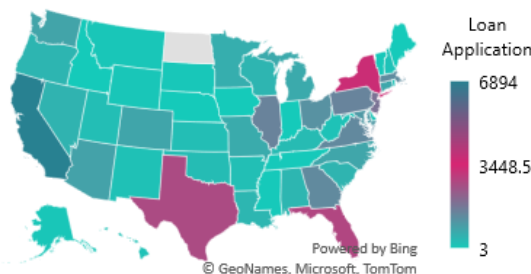
MoM

2.7%

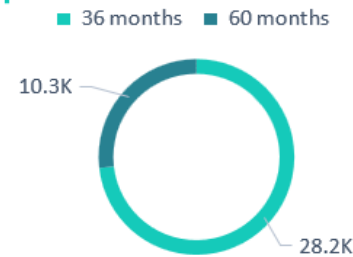
### Total Loan Application by Month



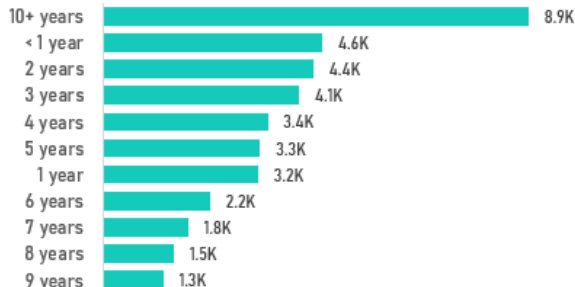
### Total Loan Application by State



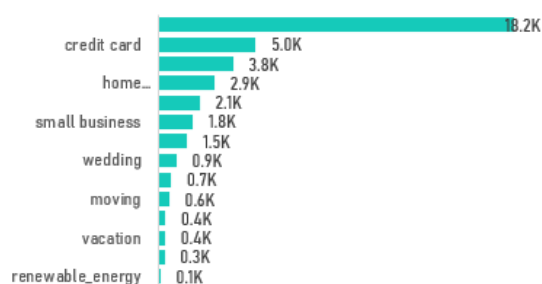
### Total Loan Application by Term



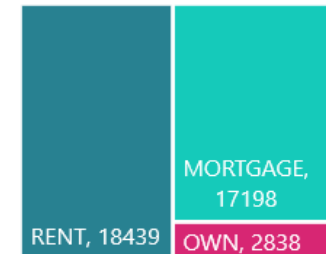
### Total Loan Application by Emp Lenght



### Total Loan Application by Purpose



### Total Loan Application by Home Ownership



# PROBLEM STATEMENT

## DASHBOARD 1: SUMMARY

### Key Performance Indicators (KPIs) Requirements:

- 1. 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 keep an eye on the MTD Total Funded Amount and analyse 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 analyse 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) fluctuations.



# PROBLEM STATEMENT

## DASHBOARD 1: SUMMARY

### 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 Amount

### Loan Status Grid View

In order 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.

# PROBLEM STATEMENT

## 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):** 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 home ownership impacts loan applications and disbursements.

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

# PROBLEM STATEMENT

## 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 Details Dashboard aims to offer a holistic snapshot of key loan-related metrics and data points, enabling users to access critical information efficiently.



# FUNCTIONALITIES YOU WILL LEARN

## MySQL

- ✓ Creating Database
- ✓ Creating Table
- ✓ Select
- ✓ Datename
- ✓ Datepart
- ✓ Cast
- ✓ Decimal
- ✓ Month
- ✓ Hour
- ✓ Quarter
- ✓ Day
- ✓ Group by
- ✓ Order by
- ✓ Decimal
- ✓ Limit
- ✓ Count
- ✓ Distinct
- ✓ CTE
- ✓ Partition

## POWER BI

- ✓ Import Data Excel csv file
- ✓ Data Cleaning
- ✓ Data Modelling
- ✓ Data Processing
- ✓ Power Query
- ✓ Date Tables
- ✓ Time Intelligence Func
- ✓ DAX
- ✓ Date Function
- ✓ Text Function
- ✓ Filter Function
- ✓ Calculate
- ✓ SUM/ SUMX
- ✓ Creating KPI's
- ✓ New Card Visual
- ✓ Creating Charts
- ✓ Formatting visuals
- ✓ Creating Functions
- ✓ Navigations

# SOFTWARE USED

MS EXCEL

MySQL

POWER BI

POWER QUERY