

# DATA ANALYST PORTFOLIO PROJECT



## BANK LOAN ANALYSIS



USING- EXCEL + SQL + POWERBI



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# BANK LOAN REPORT | SUMMARY

Summary

Overview

Details Dashboard

State  
All

Grade  
All

Purpose  
All

Total Loan Applications

38.6K

MTD 0.0K% MoM -100.0%

Total Funded Amount

\$435.8M

MTD \$54.0M MoM 13.0%

Total Amount Received

\$473.1M

MTD \$58.1M MoM 15.8%

Average Interest Rate

12.0%

MTD 12.4% MoM 3.5%

Average DTI

13.3%

MTD 14% MoM 2.7%

GOOD LOAN ISSUED

Good Loan Applications  
33.2K

Good Funded Amount  
\$370.2M

Good Loan Amount Recived  
\$435.8M

BAD LOAN ISSUED

Bad Loan Applications  
5.3K

Bad Funded Amount  
\$65.5M

Bad Loan Amount Recived  
\$37.3M

## LOAN STATUS

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

BANK LOAN REPORT | OVERVIEW



Summary

Overview

Details Dashboard

Select Purpose

Total\_Loan\_App... ▾

State

All ▾

Grade

All ▾

Good vs Bad

Bad Loan ▾

Total Loan Applications

5333

MTD

0.0K%

MoM

-100.0%

Total Funded Amount

\$65.5M

MTD

\$8.7M

MoM

16.3%

Total Amount Received

\$37.3M

MTD

\$5.3M

MoM

33.3%

Average Interest Rate

13.9%

MTD

14.3%

MoM

-0....

Average DTI

14.0%

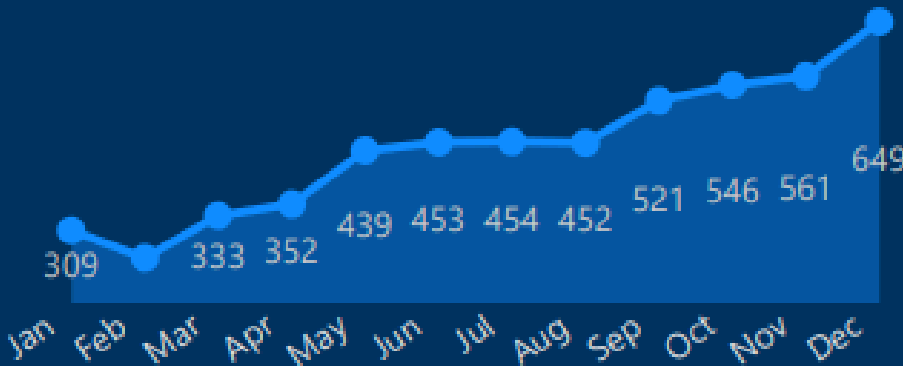
MTD

15%

MoM

4.3%

Total\_Loan\_Applications by Month

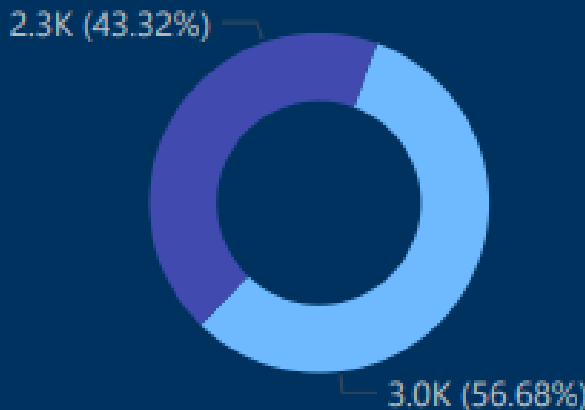


Total Loan Application by State

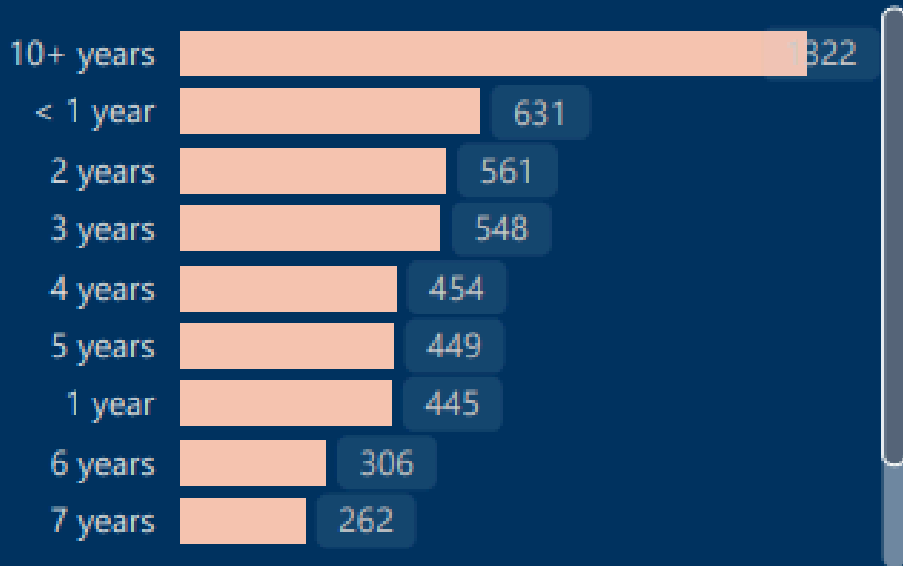


Total\_Loan\_Applications by Term

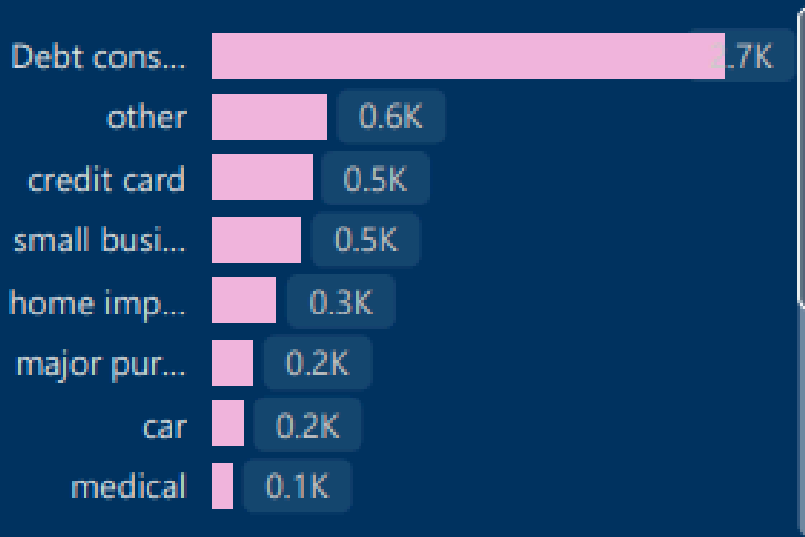
Term ● 36 months ● 60 months



Total\_Loan\_Applications by Employ Length



Total\_Loan\_Applications by Purpose



Total\_Loan\_Applications by Home Ownership



# BANK LOAN REPORT | DETAILS



Summary

Overview

Details Dashboard

State

All

Grade

All

Good vs Bad

Bad Loan

Total Loan Applications

5333

MTD

0.0K%

MoM

-100.0%

Total Funded Amount

\$65.5M

MTD

\$8.7M

MoM

16.3%

Total Amount Received

\$37.3M

MTD

\$5.3M

MoM

33.3%

Average Interest Rate

13.9%

MTD

14.3%

MoM

-0.4%

Average DTI

14.0%

MTD

15%

MoM

4.3%

id	Purpose	Home Ownership	Grade	Sub grade	Issue date	Sum of int_rate	Sum of installment	Total Amount Recived
802401	Debt consolidation	RENT	F	F1	11 July 2021	0.20	1,305.19	\$23,39
737345	Debt consolidation	OWN	G	G1	11 April 2021	0.20	1,302.69	\$6,45
810107	Debt consolidation	RENT	E	E4	11 July 2021	0.19	1,288.10	\$27,04
936915	Debt consolidation	RENT	E	E1	11 October 2021	0.19	1,276.60	\$37,41
999248	small business	MORTGAGE	D	D3	11 November 2021	0.17	1,252.56	\$14,10
994284	other	OWN	D	D2	11 October 2021	0.17	1,243.85	\$18,75
1041534	Debt consolidation	MORTGAGE	E	E1	11 December 2021	0.19	1,203.66	\$36,04
1014541	Debt consolidation	RENT	C	C2	11 November 2021	0.14	1,200.82	\$19,28

# 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:

- Good Loan Application Percentage
- Good Loan Applications
- Good Loan Funded Amount
- Good Loan Total Received Amount

#### Bad Loan:

- Bad Loan Application Percentage
- Bad Loan Applications
- Bad Loan Funded Amount
- 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

- **Monthly Trends by Issue Date (Line Chart):** To identify seasonality and long-term trends in lending activities
- **Regional Analysis by State (Filled Map):** To identify regions with significant lending activity and assess regional disparities
- **Loan Term Analysis (Donut Chart):** To allow the client to understand the distribution of loans across various term lengths.
- **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.
- **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.
- **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

## 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.

### *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.*



# FUNCTIONALITIES USED

## SQL – MS SQL SERV

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

Connecting to SQL Server

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