



BANK LOAN ANALYSIS PROJECT

POSTGRES SQL + POWER BI






POSTGRES SQL

IMPORT DATA



 **Introduction**

Introduction

Specify Input File

Preview Data

Modify Columns

Summary

Results


Help


Import Flat File


This wizard will help you import the contents of a file into a new table in your database.

To import data, you must:

- Specify the input file containing the data.
- Preview the automatically generated table schema and optionally modify columns.







✓

To begin importing your data, click Next.


☐ Do not show this page again.



POSTGRES SQL

CREATING DB



 **Introduction**

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POSTGRES SQL

WRITING QUERIES

```
SELECT
    loan_status,
    COUNT(id) AS LoanCount,
    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_data
GROUP BY
    loan_status
```

149 %

Results Messages

	loan_status	LoanCount	Total_Amount_Received	Total_Funded_Amount	Interest_Rate	DTI
1	Fully Paid	32145	411586256	351358350	11.6410707918092	13.1673507557434
2	Charged Off	5333	37284763	65532225	13.8785749318289	14.0047328005517
3	Current	1098	24199914	18866500	15.0993260800947	14.7243442736843

SQL



POSTGRES SQL

FIRING SQL QUERIES TO SOLVE THE BUSINESS PROBLEMS COMPARING RESULTS WITH POWER BI, and EXCEL

```
SELECT
    loan_status,
    COUNT(id) AS LoanCount,
    SUM(total_payment) AS Total_Amount_Received,
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    AVG(int_rate * 100) AS Interest_Rate,
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You can use the data in any DB to fire queries. Queries used will remain same

BANK LOAN ANALYSIS

STAGE : 2

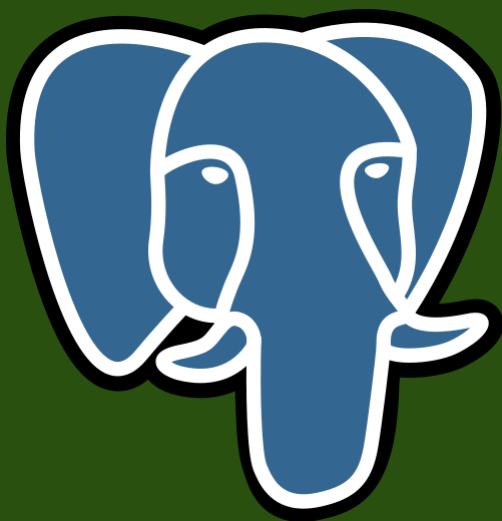
POWER BI





POWER BI

CONNECTING TO POSTGRES SQL





BANK LOAN REPORT | SUMMARY

Total Loan Applications

38.6K

MTD

4.3K

MOM

6.9%

Total Funded Amt

\$435.8M

MTD

\$54.0M

MOM

13.0%

Total Amt Receive

\$473.1M

MTD

\$58.1M

MOM

15.8%

Avg Int rate

12.0%

MTD

12.4%

MOM

3.5%

Avg DTI

13.3%

MTD

13.7%

MOM

2.7%

Summary

Overview

Details

Purpose

All

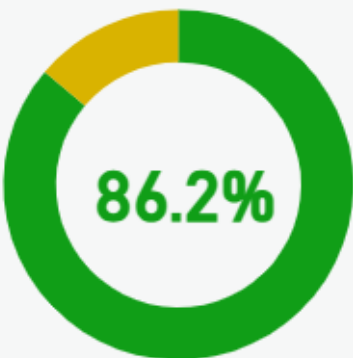
Grade

All

State

All

Good Loan Issues



Good Loan Application

33.2K

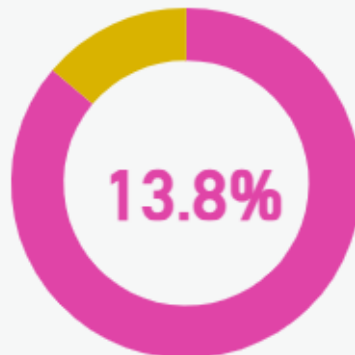
Good Loan Funded Amt

\$370.2M

Good Loan Receive Amt

\$435.8M

Bad Loan Issues



Bad Loan Application

5.3K

Bad Loan Funded Amt

\$65.5M

Bad Loan Receive Amt

\$37.3M

Loan Status..

loan_status	total loan application	Total Funded Amt	Total Amt receive	MTD Funded Amt	MTD Receive Amt	Avg Int rate	Avg 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%
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

Select Measure

Total Funded Amt

State

All

Grade

All

Good Vs Bad

All

Total Loan Applications

38.6K

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4.3K

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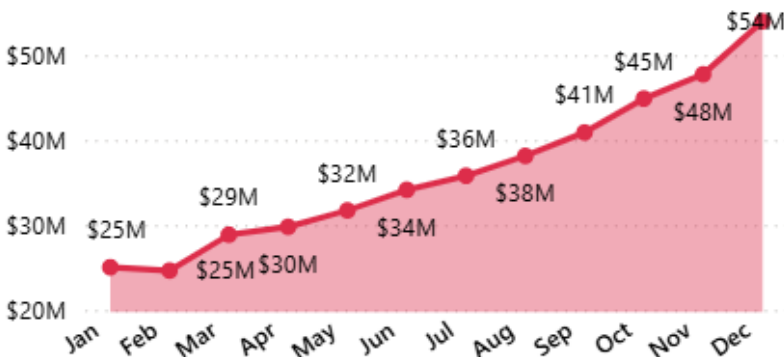
MTD

13.7%

MOM

2.7%

Total Funded Amt by month name



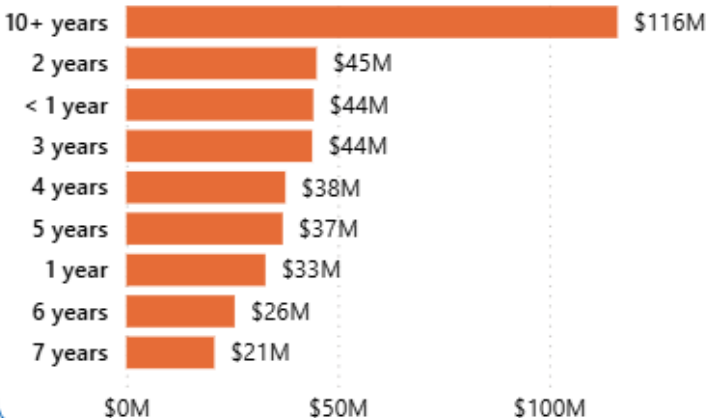
address_state



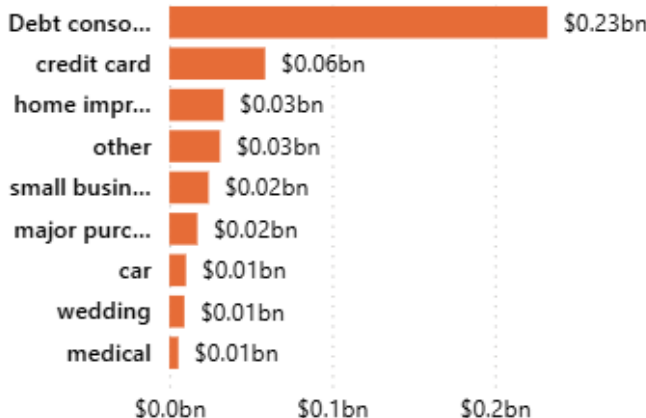
Total Funded Amt by term



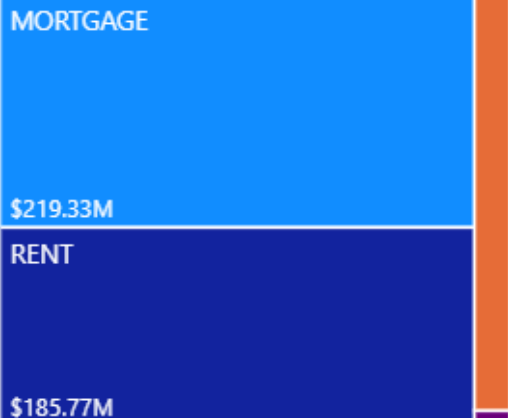
Total Funded Amt by emp_length



Total Funded Amt by purpose



Funded Amt by home_ownership





Summary

Overview

Details

State

All



Grade

All



Good Vs Bad

All



BANK LOAN REPORT | DETAILS

Total Loan Applications

38.6K

MTD

4.3K

MOM

6.9%

Total Funded Amt

\$435.8M

MTD

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MOM

13.0%

Total Amt Receive

\$473.1M

MTD

\$58.1M

MOM

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Avg Int rate

12.0%

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MOM

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Avg DTI

13.3%

MTD

13.7%

MOM

2.7%

id	purpose	home_ownership	grade	issue_date	Funded Amt	int_rate	installment	Amt receive
54734	Debt consolidation	RENT	B	09 August 2021	\$25,000	0.12	829.10	\$29,330
55742	credit card	RENT	B	08 May 2021	\$7,000	0.11	228.22	\$8,216
57245	Debt consolidation	OWN	C	10 March 2021	\$1,200	0.13	40.50	\$1,458
57416	Debt consolidation	RENT	C	09 November 2021	\$10,800	0.14	366.86	\$13,208
58915	Debt consolidation	RENT	B	08 April 2021	\$7,500	0.10	162.34	\$5,844
59006	credit card	MORTGAGE	C	09 September 2021	\$3,000	0.14	102.92	\$3,705
61390	credit card	MORTGAGE	A	10 February 2021	\$4,000	0.08	125.13	\$4,452
61419	Debt consolidation	RENT	D	10 February 2021	\$5,600	0.15	194.02	\$6,475
62102	Debt consolidation	RENT	B	10 April 2021	\$3,200	0.10	103.08	\$3,414
65426	car	MORTGAGE	B	09 August 2021	\$4,000	0.11	131.22	\$2,755
65640	home improvement	MORTGAGE	C	08 May 2021	\$5,000	0.11	87.19	\$3,154
66431	Debt consolidation	RENT	B	09 February 2021	\$2,525	0.12	84.12	\$3,028
66749	Debt consolidation	MORTGAGE	C	08 December 2021	\$10,625	0.13	360.43	\$12,975
66943	Debt consolidation	RENT	B	10 August 2021	\$2,800	0.11	61.57	\$3,144
66964	Debt consolidation	MORTGAGE	D	08 June 2021	\$7,500	0.13	253.58	\$9,129
67503	Debt consolidation	MORTGAGE	A	09 October 2021	\$10,000	0.09	316.11	\$11,280
68163	small business	MORTGAGE	A	10 February 2021	\$3,000	0.07	92.82	\$3,342
68381	Debt consolidation	RENT	A	08 March 2021	\$6,625	0.09	209.54	\$7,542

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.

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 I HAVE USED

POSTGRES SQL

- ✓ 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