BANK ANALYSIS

INTRODUCTION

This project focuses on leveraging data analytics to gain insights into banking operations, customer behaviors, and financial trends. By analyzing large datasets, the goal is to enhance decision-making and operational efficiency within the banking sector.

The primary objectives of this project include analyzing customer segmentation, identifying transaction patterns, and improving financial forecasting models.

The project involved analyzing customer transaction data, financial records, and operational data from various banking systems. This data was large in scale and required efficient processing and analysis.

OVERVIEW

- Dataset Description:
  - Comprehensive customer data from a bank
  - Includes personal, professional, and credit information
  - Two files: Finance_1 and Finance_2
- Data Details:
  - Each file contains over 39,000 records
  - Common column ID links both files

OBJECTIVES

- Primary Objective:
  - Convert KPIs into easy-to-understand visuals
- Aim:
  - Develop clear and comprehensible charts/graphs
  - Enhance understanding of company performance
- Challenge:
  - Refine data analysis skills
  - Communicate insights visually
- Outcome:
  - Facilitate better decision-making through data

ANALYSIS

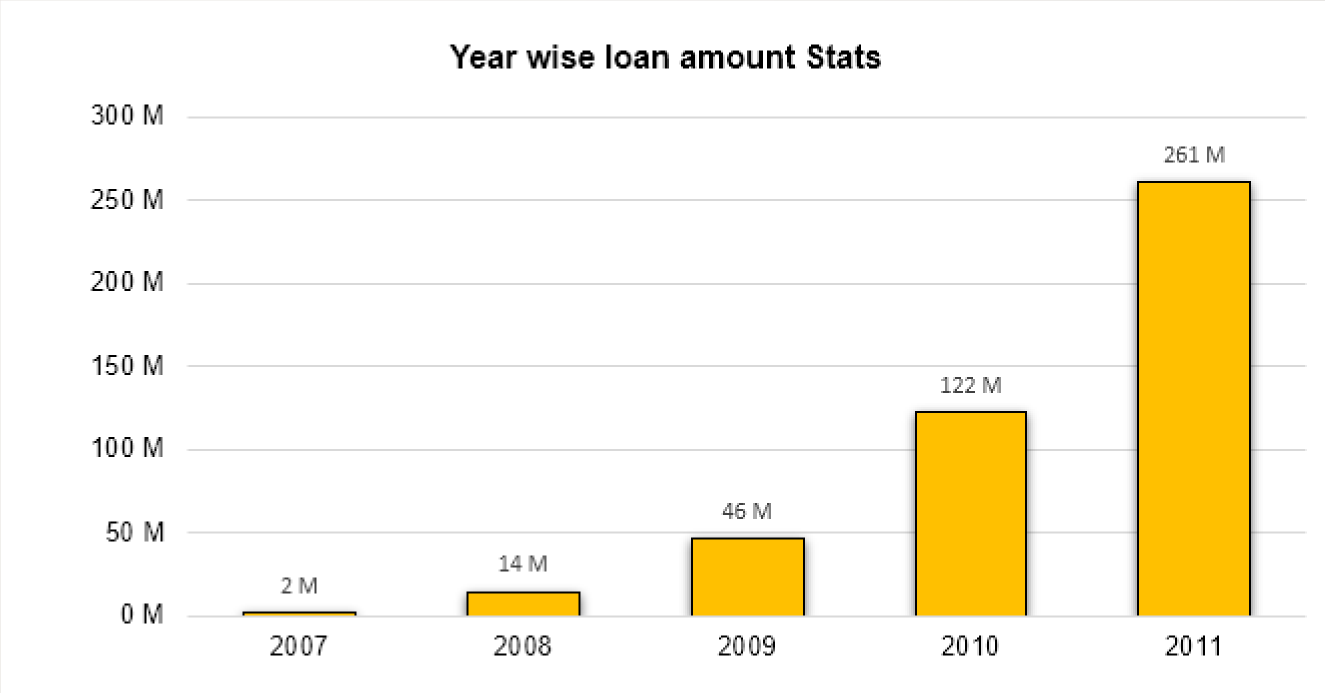
1. Merging Datasets
2. Handling Missing (Empty or Null) Values
3. Removed Duplicate or Irrelevant Column
4. Removing Redundant Columns
5. Data Consistency

KPI’s

1. Year wise loan amount Stats
2. Grade and sub grade wise revolving balance.
3. Total Payment for Verified Status Vs Total Payment for Non-Verified Status
4. State wise and month wise loan status
5. Home ownership Vs last payment date stats

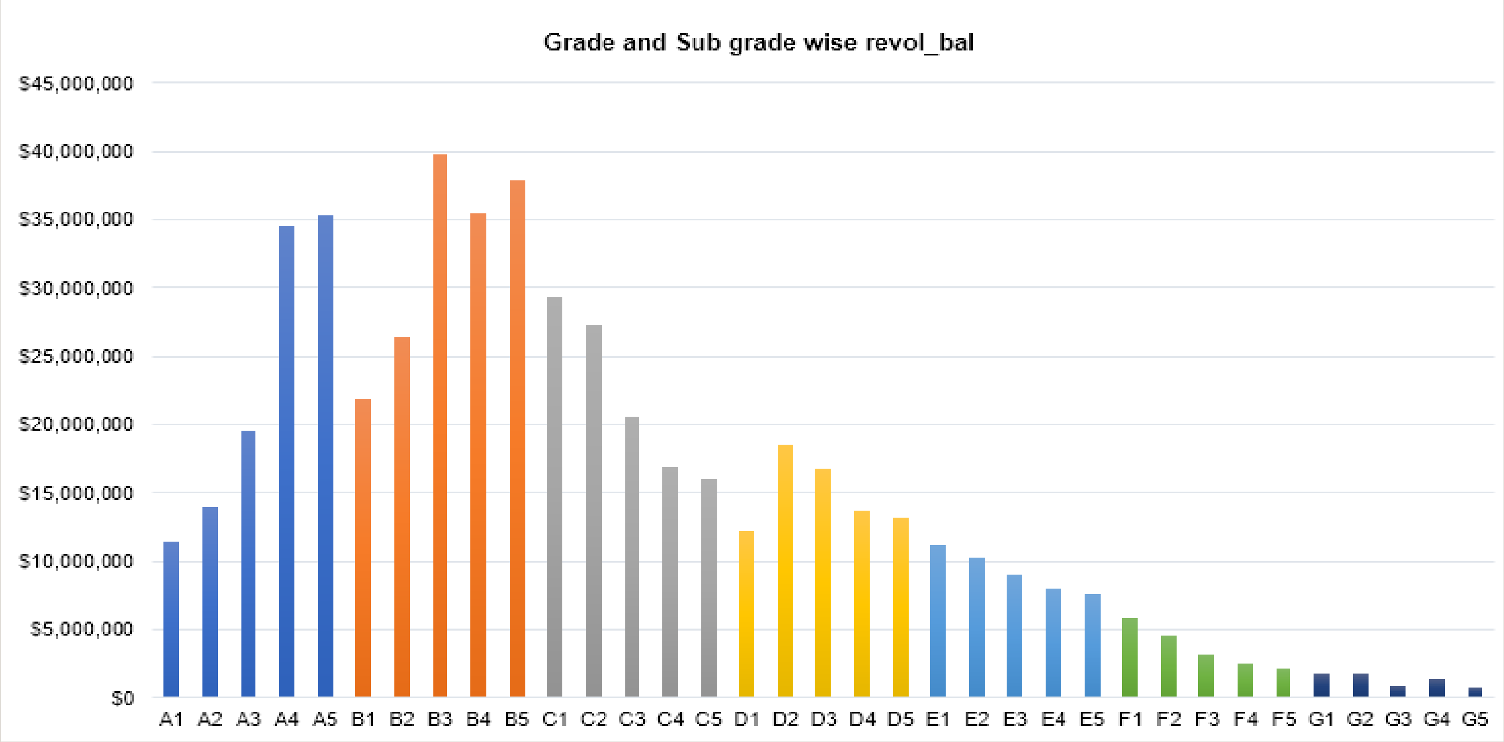
KPI 1

- Examining the relationship between the loan amounts taken by customers
- Compares the loan amounts taken by customers year over year



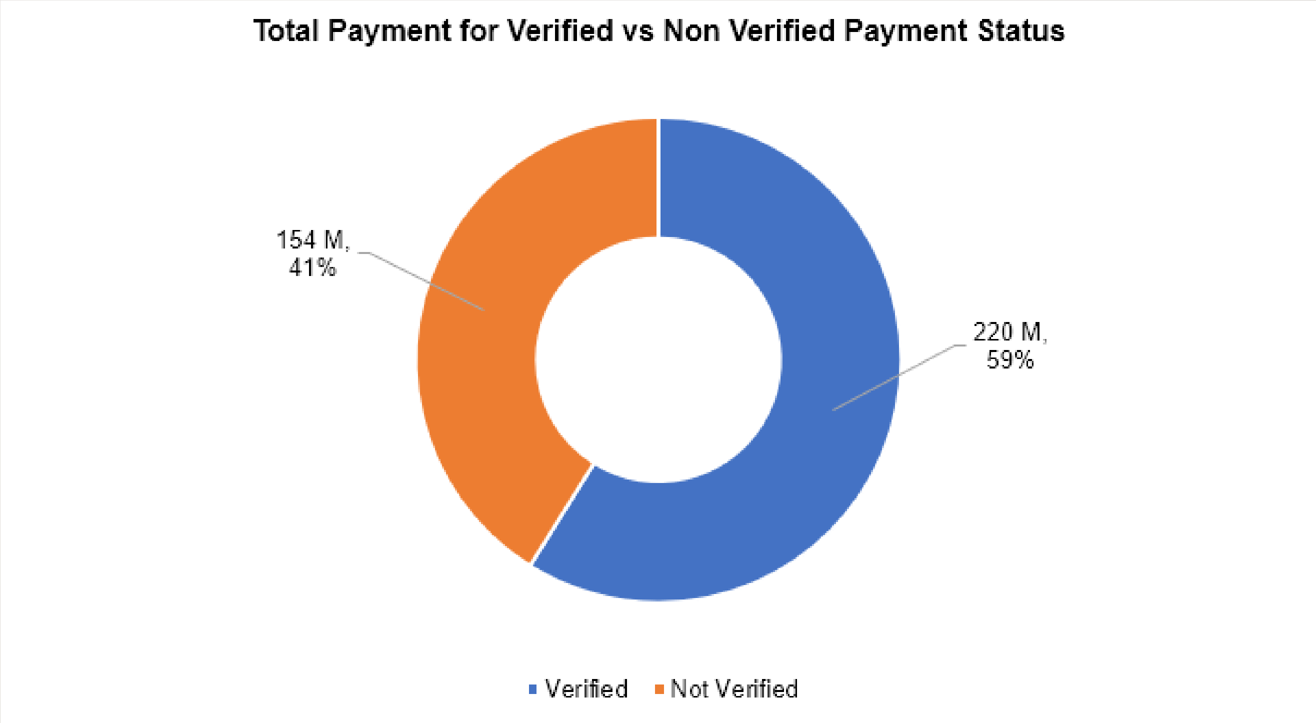
KPI 2

- Understand the relationship between grade, sub-grade, and revolving balance (revol_bal).
- Highlights the total revolving balance contributed by each sub-grade and grade.



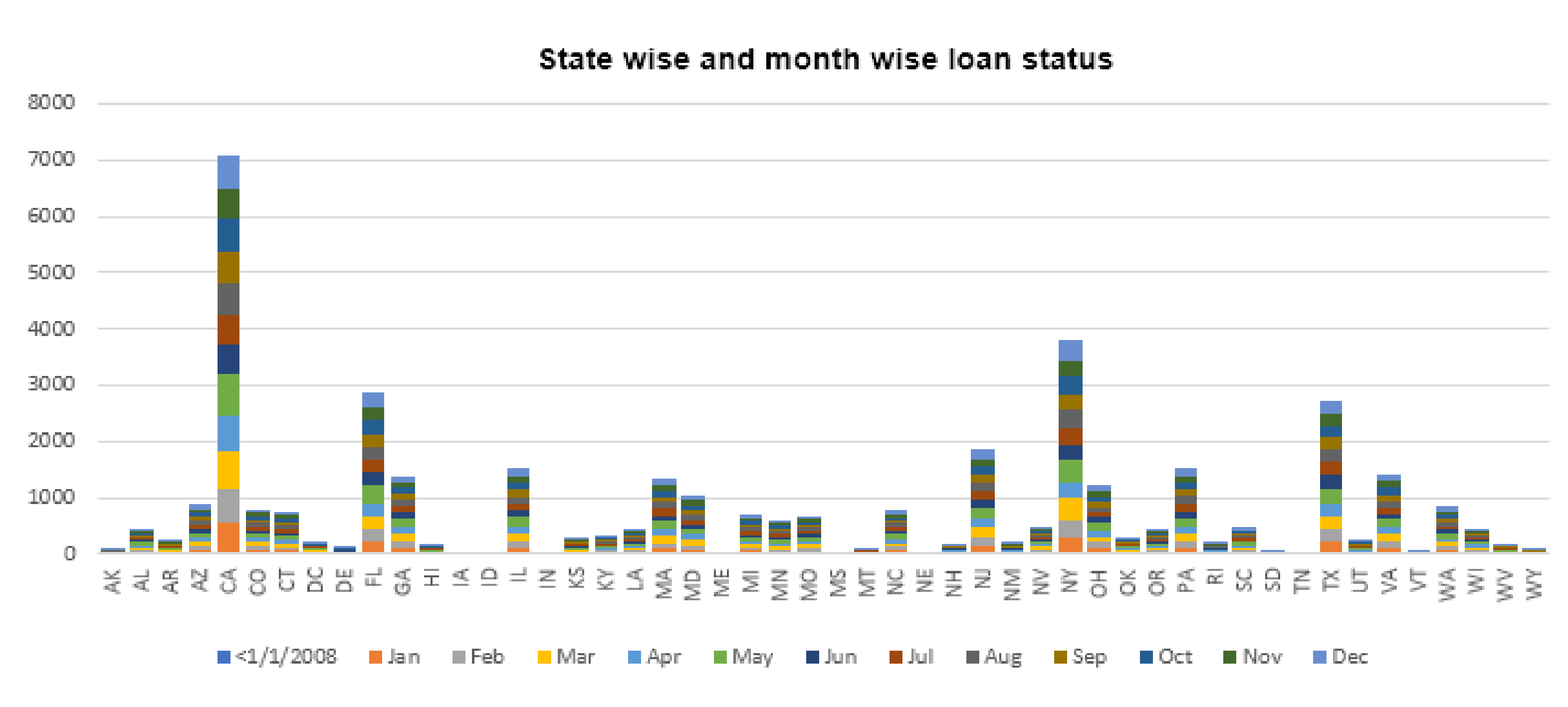
KPI 3

- Examines the relationship between the loan amounts taken by customers.
- Specifically focuses on comparing the contributions of verified versus non-verified customers to the total payments.



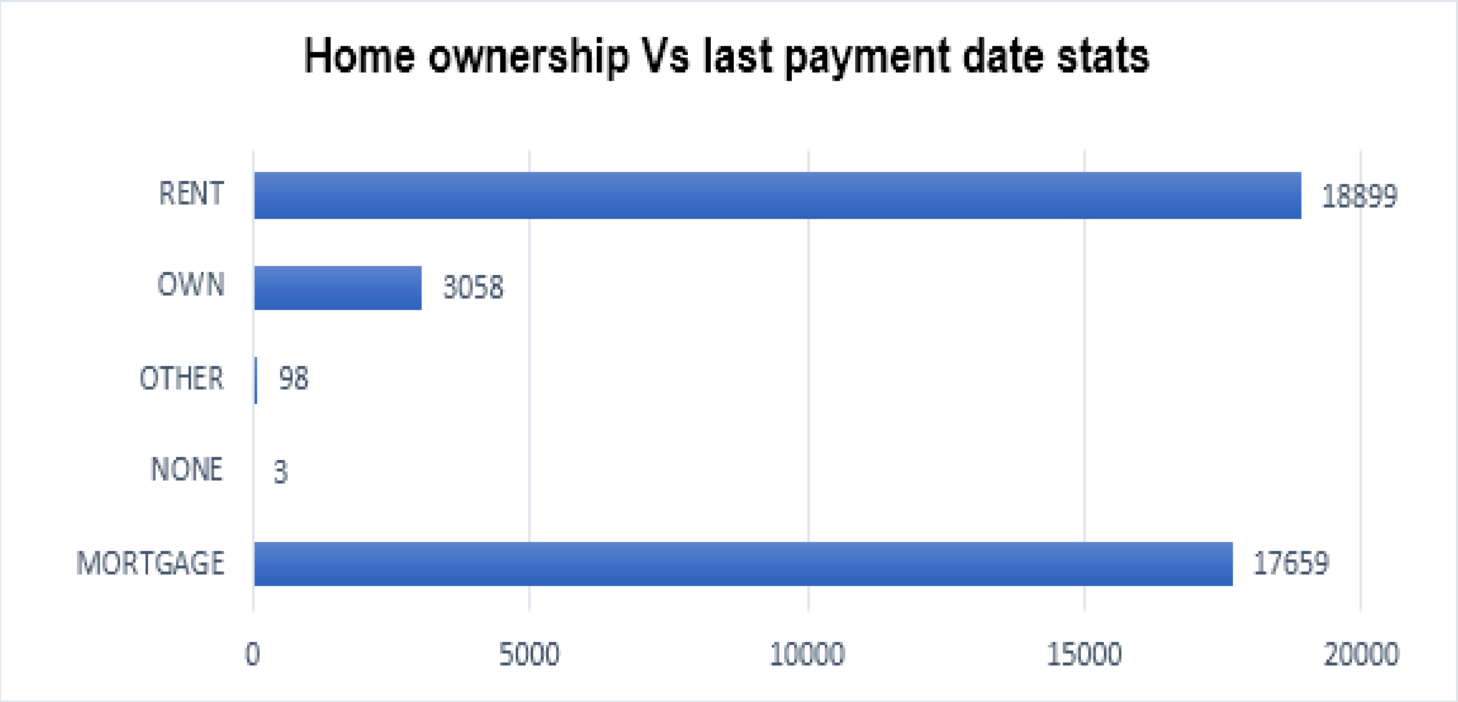
KPI 4

- Represent the loan status across different states
- Comparing the distribution of various loan statuses for each state.



KPI 5

- Explores the relationship between the home ownership status of customers and their last payment date
- Compares the last payment dates of customers across different home ownership status



KEY PERFORMANCE INDICATORS

1. Total loan amount taken by customers

$ 446 M
Sum of Loan Amnt

2. Count loan issuance dates to understand frequency of loans over time.

39717
Total Loans Issued

3. Total funded amount to gauge financial support provided.

$ 435 M
Sum of Funded Amnt

4. Average interest rate

12.02%
Aggregate Interest

5. Average funded amount per loan

$10,948
Avg Funded Amnt

DASHBOARD


BANK ANALYSIS
$ 446 M
Sum of Loan Amnt
39717
Total Loans Issued
$ 435 M
Sum of Funded Amnt
12.02%
Aggregate Interest
$10,948
Avg Funded Amnt
loan_status
Charged Off
Current
Fully Paid
Months (last_pym...
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Year wise loan amount Stats
300 M
250 M
200 M
150 M
100 M
50 M
0 M
2 M
14 M
46 M
122 M
261 M
2007
2008
2009
2010
2011
Grade and Sub grade wise revol_bal
$50,000,000
$40,000,000
$30,000,000
$20,000,000
$10,000,000
$0
A1 A3 A5 B2 B4 C1 C3 C5 D2 D4 E1 E3 E5 F2 F4 G1 G3 G5
Payment for Verified Vs Non Verified Status
154 M, 41%
220 M, 59%
Verified
Not Verified
State wise and month wise loan status
8000
7000
6000
5000
4000
3000
2000
1000
0
AK AL AR AZ CA CO CT DC DE FL GA HI IA ID IL IN KS KY LA MA MD ME MI MN MO MS MT NC NE NH NJ NM NV NY OH OK OR PA RI SC SD TN TX UT VA VT WA WI WV WY
<1/1/2008 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Home ownership Vs last payment date stats
RENT
18899
OWN
3058
OTHER
98
NONE
3
MORTGAGE
17659
0
5000
10000
15000
20000

INSIGHTS AND RECOMMENDATIONS

- **1.** There is a clear and gradual increase in the loan amount taken by customers from one year to the next.
- **2.** Customers with grade B have the highest revolving balance (revol_bal), while those with grade G have the lowest.
- **3.** Verified accounts, which make up 41.12% of the total, have contributed $153.54 million in total payments. Non-verified accounts, representing 58.88%, have contributed $219.89 million, indicating a clear distinction in total payments based on verification status.
- **4.** "Fully Paid" has the highest count of loan statuses at 32,950, followed by "Charged Off" at 5,627, and "Current" at 1,140.
- **5.** Across all five home ownership categories, the count of last payments ranges from 3 to 18,899. "Rent" accounts for 47.54% of last payments, while "None" has the least count of last payments.

CONCLUSION

Managing loan demand requires robust risk management and resource allocation strategies, especially as loan amounts increase to sustain growth. Credit utilization analysis shows that variations in revolving balances by grade indicate diverse credit behaviors, which call for tailored financial products and support for higher-risk groups.

Encouraging account verification can enhance payment reliability and reduce financial risk, further contributing to effective credit risk management. Additionally, addressing the high number of charged-off loans through improved credit assessments and support mechanisms is essential in mitigating potential losses. Customizing loan products to meet the needs of specific groups, such as renters, can also enhance financial stability and improve repayment performance.

Thank You