Data To Decisions Qlik Journey Through LendingClub Issued Loans Analysis (Qlik)

Define Problem/Problem Understanding

Objective: Clearly articulate the problem we are trying to solve with LendingClub loan data analysis.

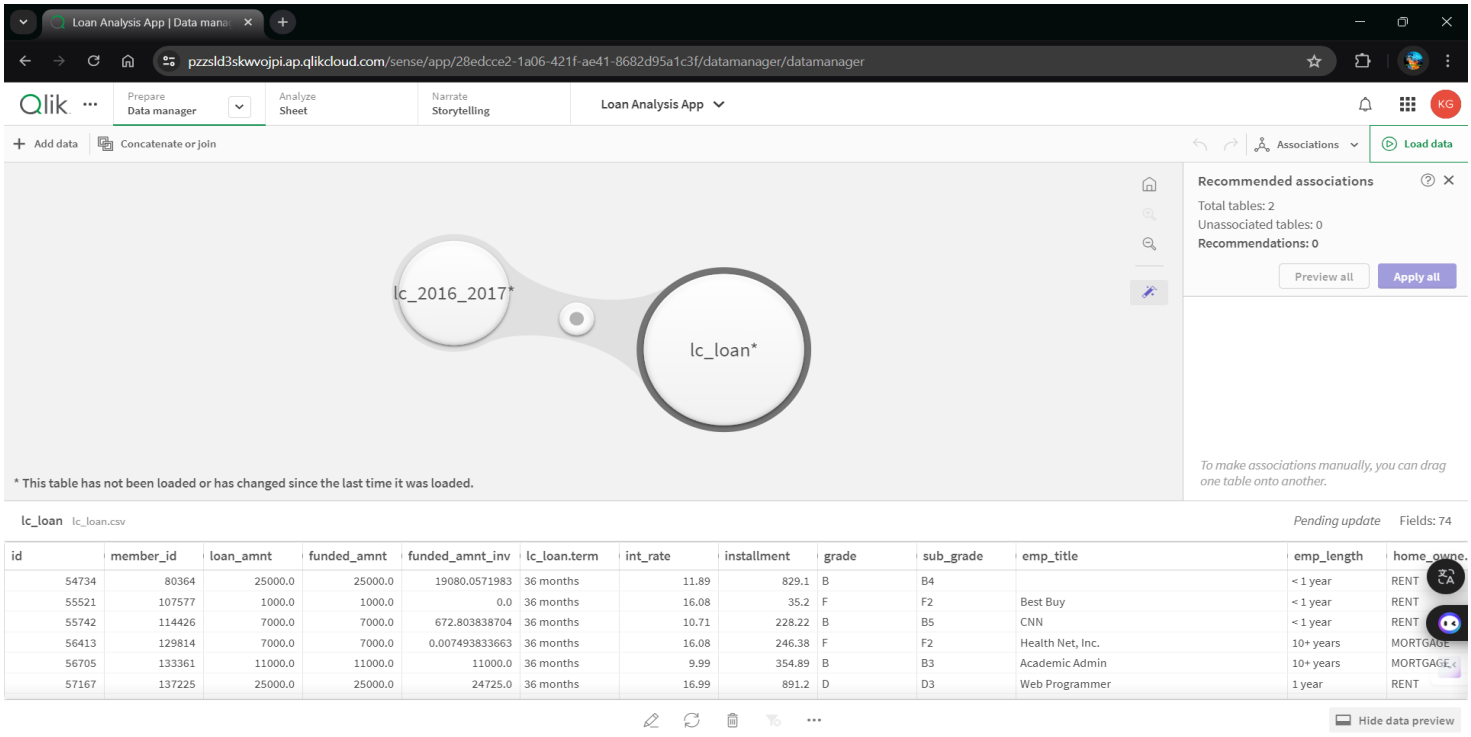
Eg: Lending Club wants to understand the factors contributing to loan defaults to improve their risk assessment models and reduce default rates.

- Specify the business problem: The business problem is the high rate of loan defaults, which affects LendingClub's profitability. By analyzing historical loan data, we aim to identify key predictors of loan defaults and improve loan approval criteria.
- Business Requirements: The analysis should include metrics such as default rate by loan grade, average interest rate, and borrower income distribution. The data should cover loans issued over the past five years and comply with regulatory reporting standards.
- Literature Survey: Research papers indicate that borrower income, credit score, and loan purpose are significant predictors of loan performance. Industry reports highlight the importance of real-time data analytics in reducing default rates.

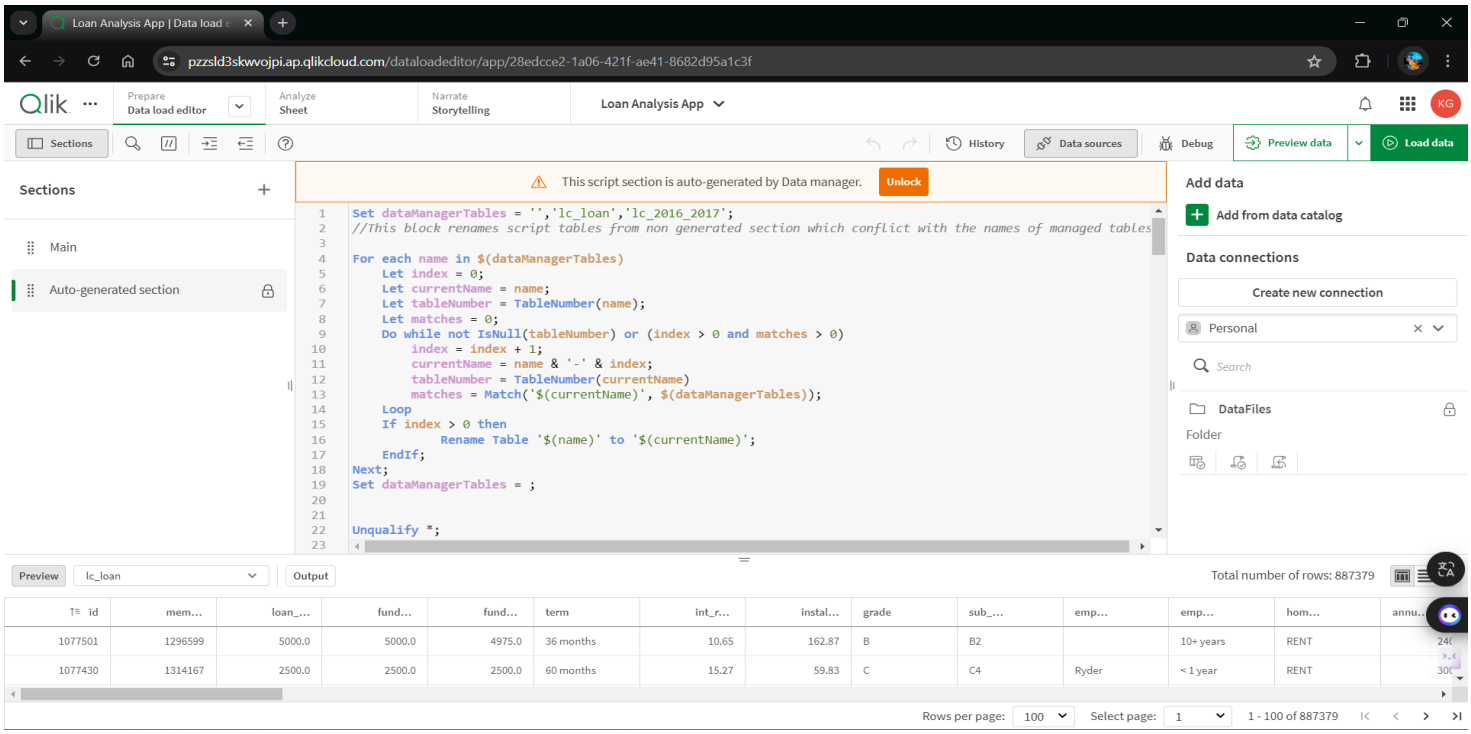
Data Collection

- Collection of Data set: We collected the LendingClub loan dataset from the link, which includes information on loan amounts, interest rates, loan grades, borrower incomes, and loan status.
- Connect Data with Qlik Sense: Using the Qlik Sense data load editor, we imported the loan dataset and linked tables such as borrower information and loan status to create an associative data model.

This below picture shows Data manager of load data script.



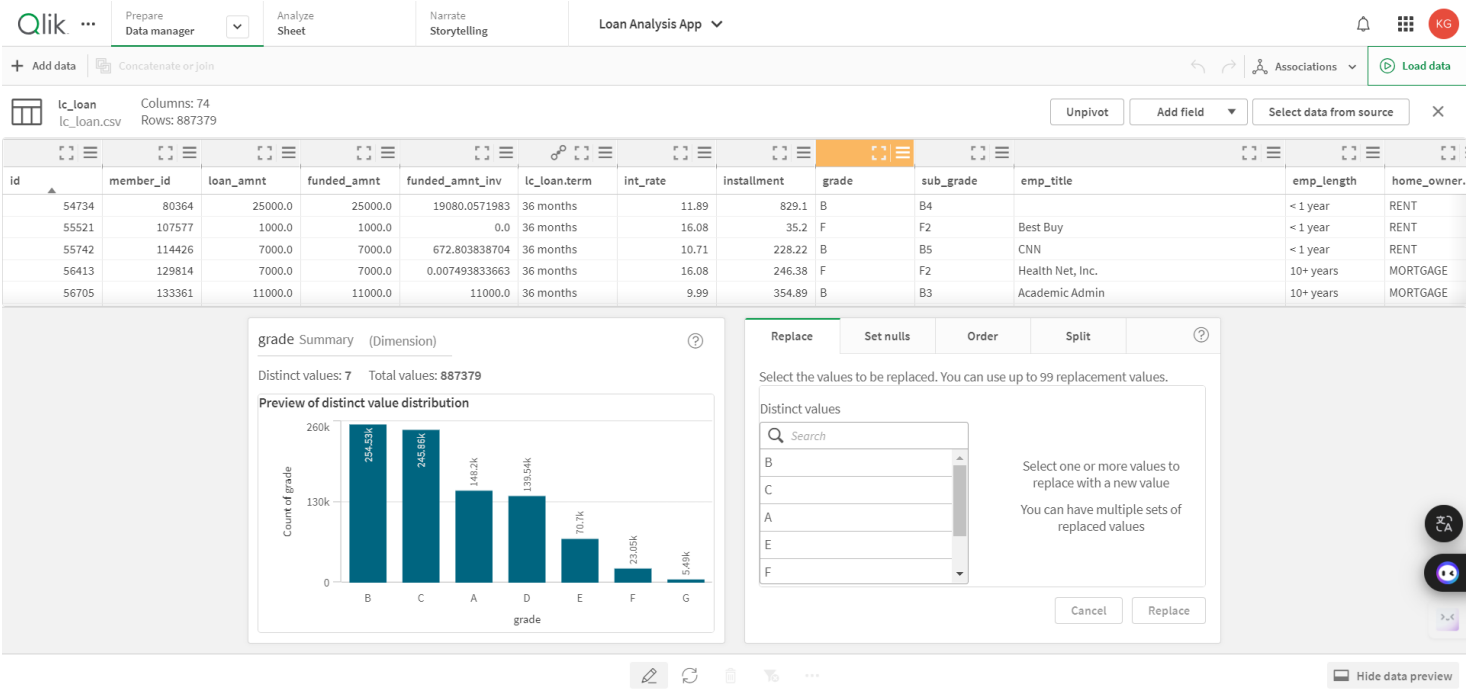
Data Load Editor View:



Data Preparations: We cleaned the dataset by removing records with missing values in key fields, standardized the date formats.

- Prepare a data for Visualizations: I developed a bar chart to show the distribution of loans by grade, a line graph to illustrate interest rate trends over time, and a scatter plot to analyze the

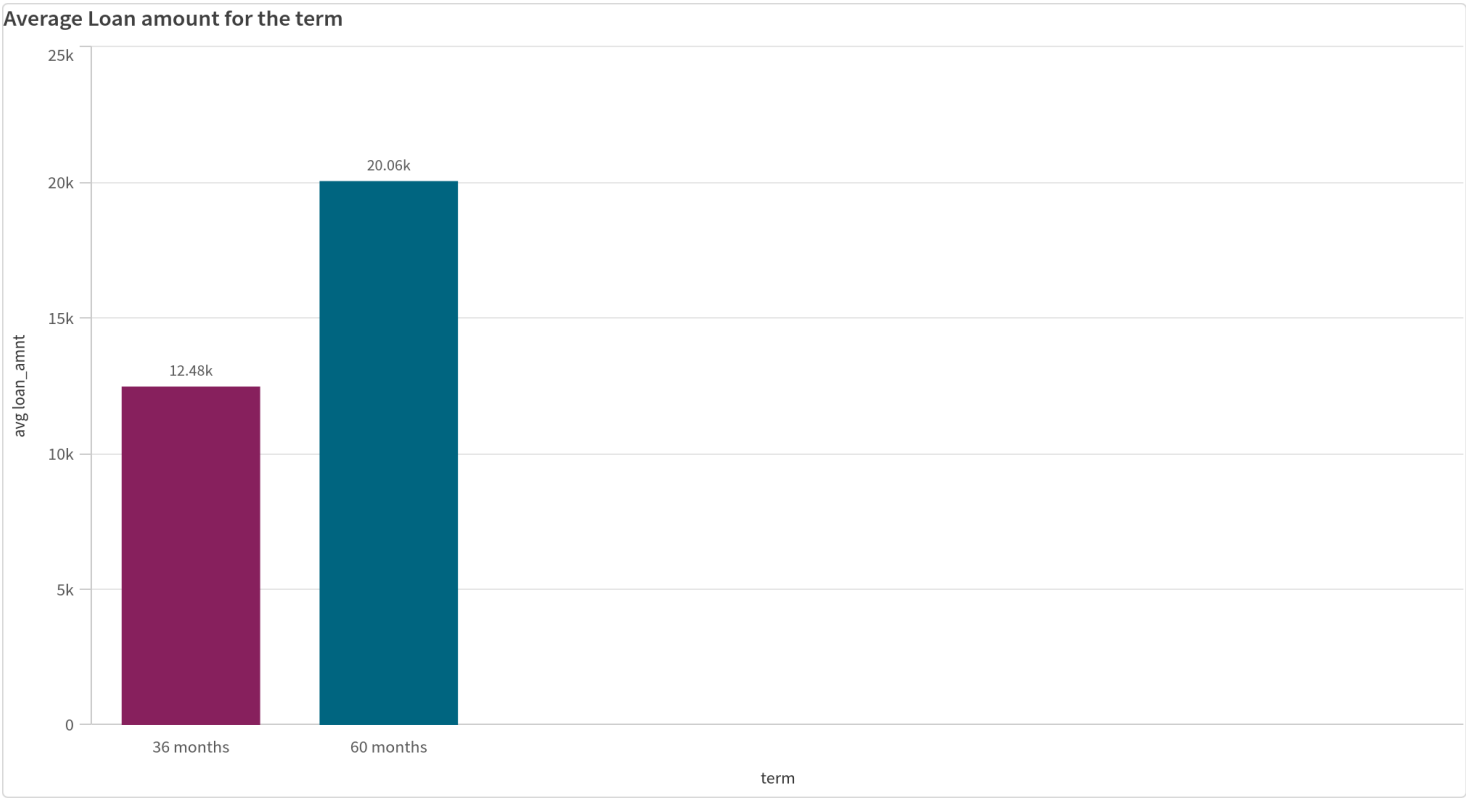
relationship between loan amount and interest rate.



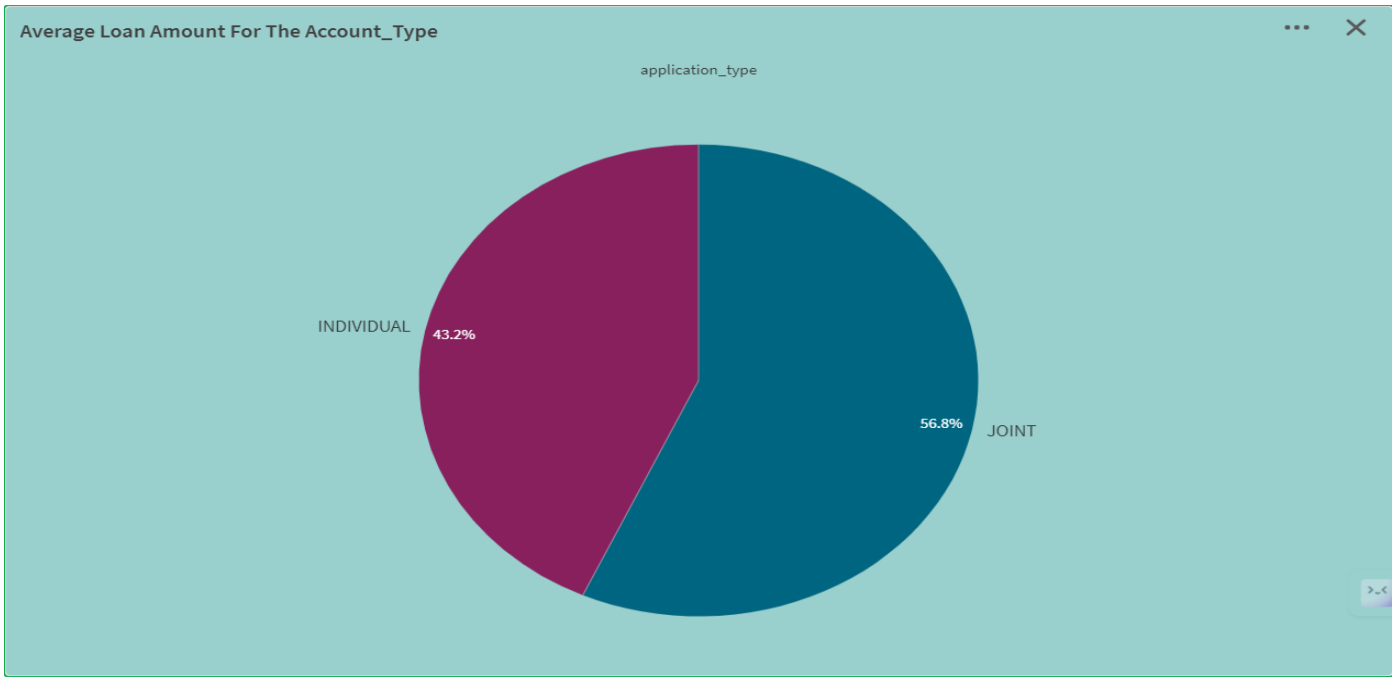
Data Visualizations: Create visualizations to explore and present the data

1. Visualizations:

1. **Loan Amount Analysis:** In this bar graph only 2 categories are present out of 60 monyhs is the highest.



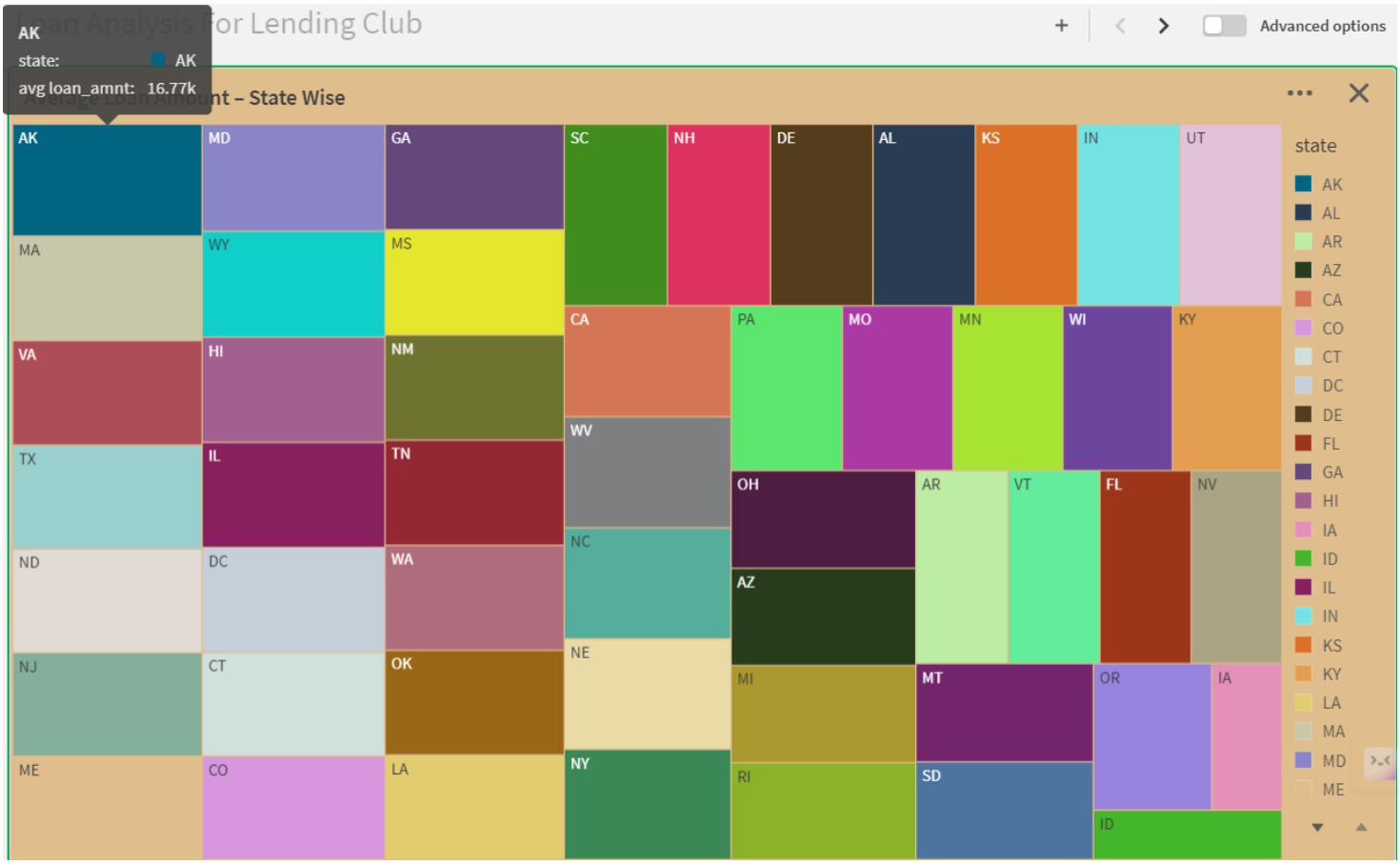
2. Average Loan Amount For The Account_Type



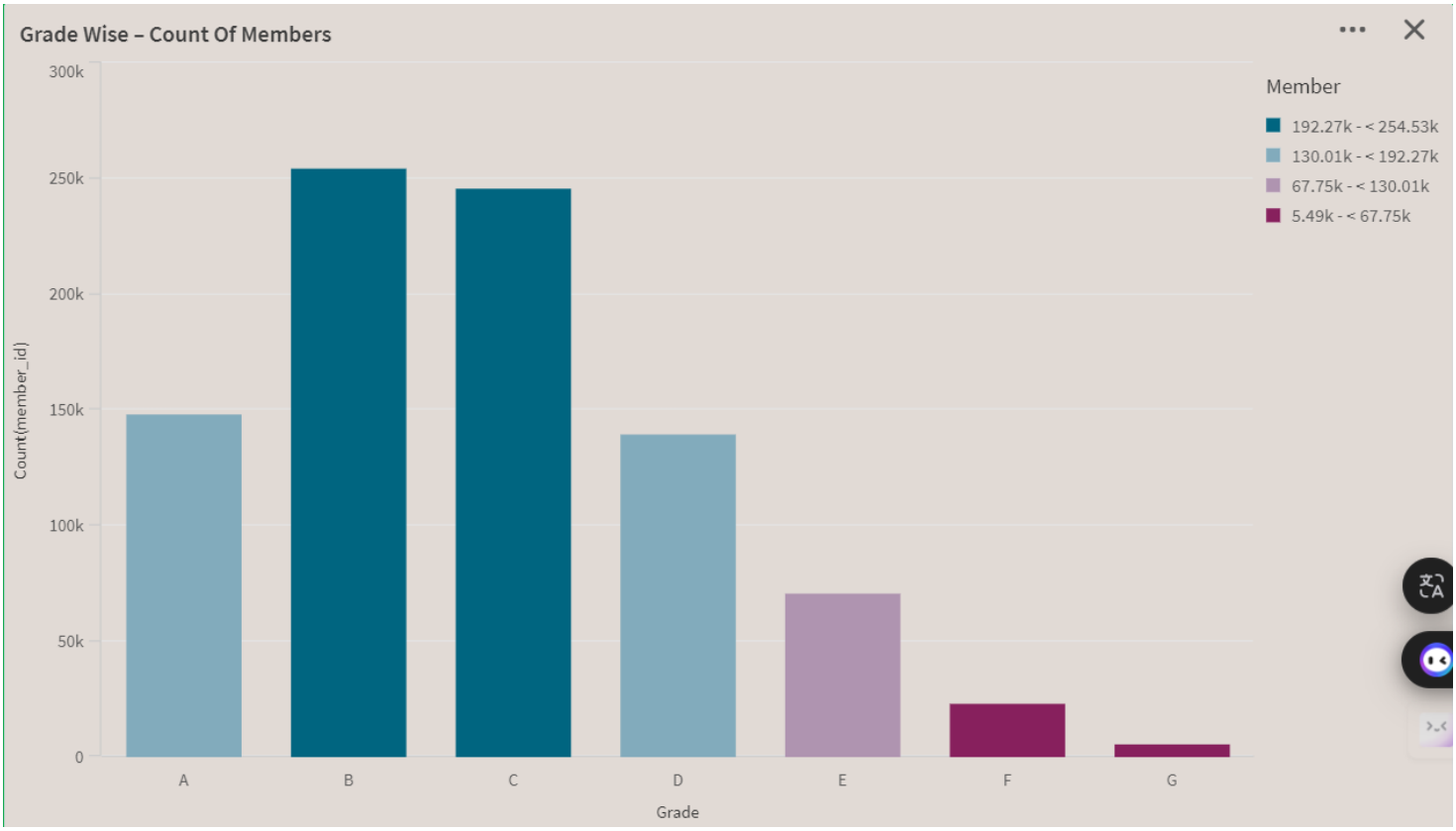
3.Total Loan Amount:

4. Total Number of Loan Accounts:

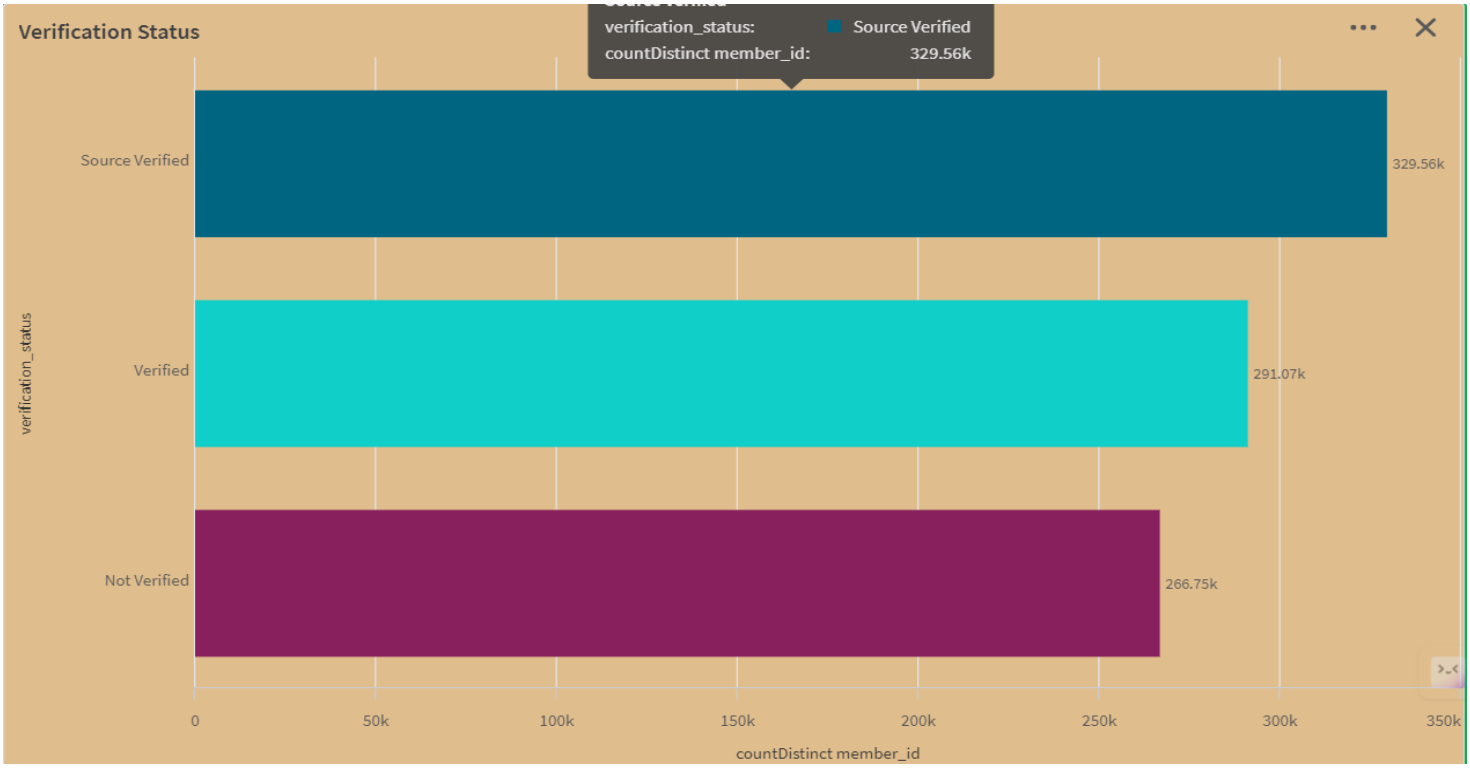
5. Average Loan Amount State-Wise



6. Grade Wise - Count of Members

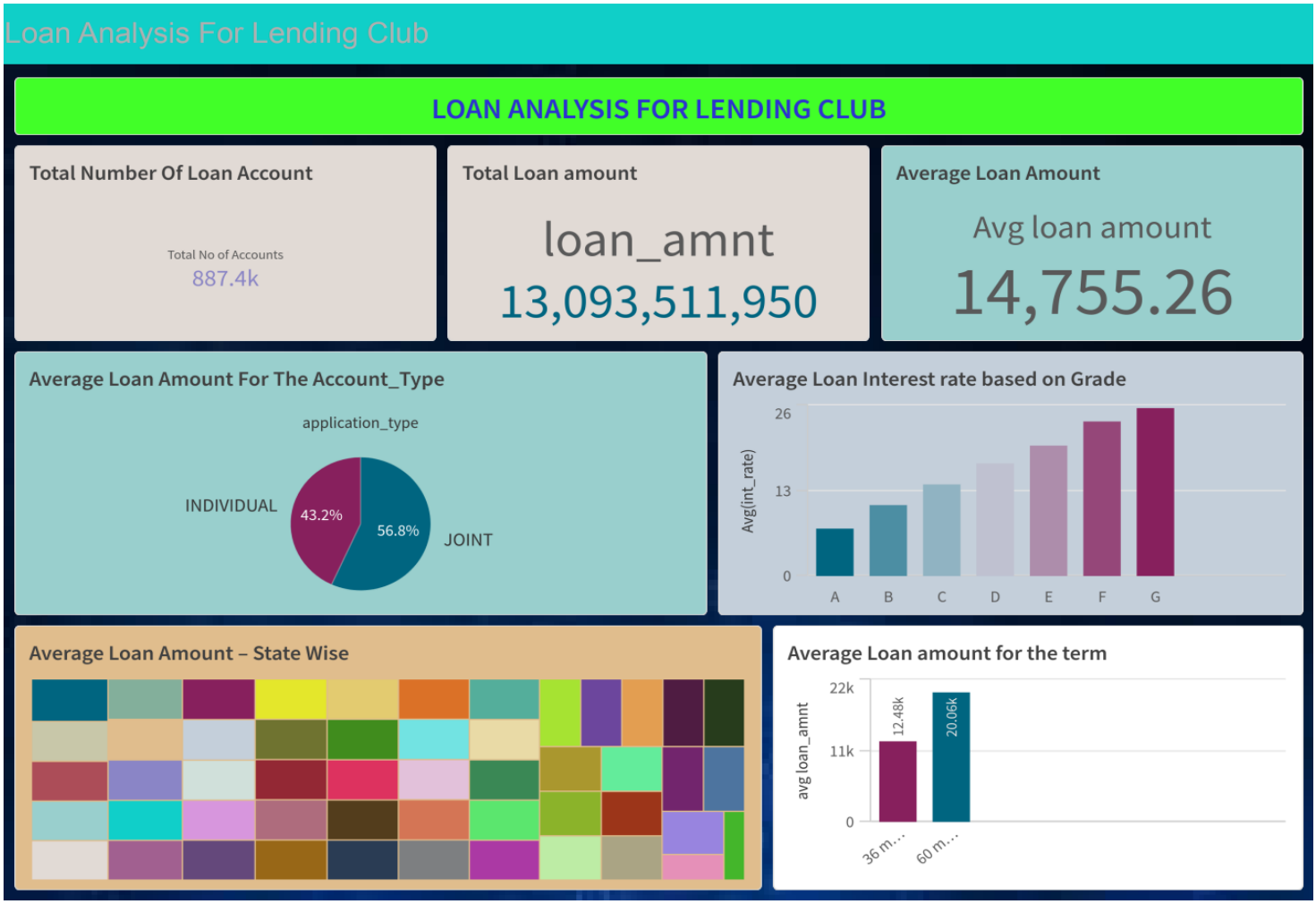


7. Verification Status:

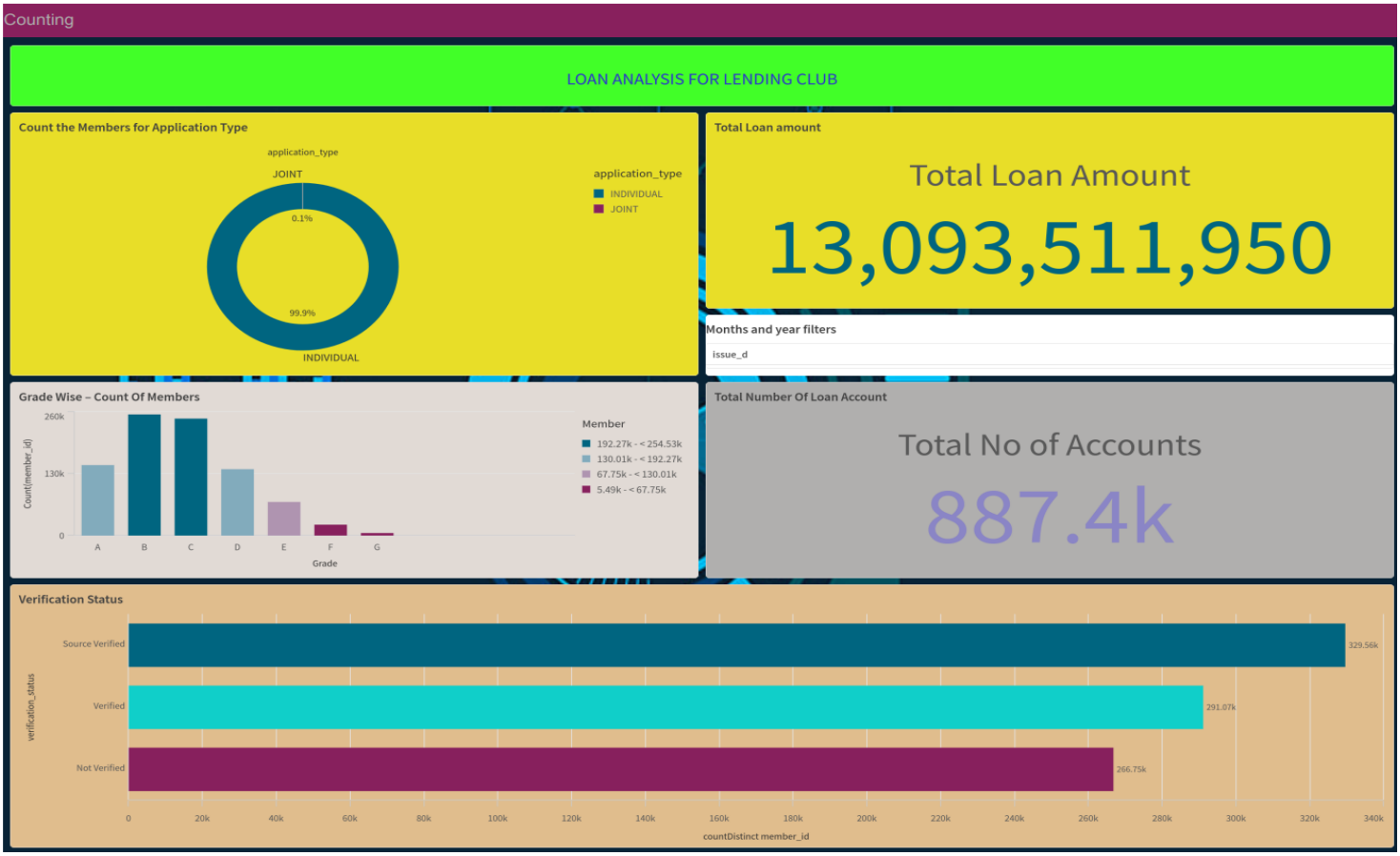


Dash Board: To Build a responsive and well-designed dashboard to display visualizations.

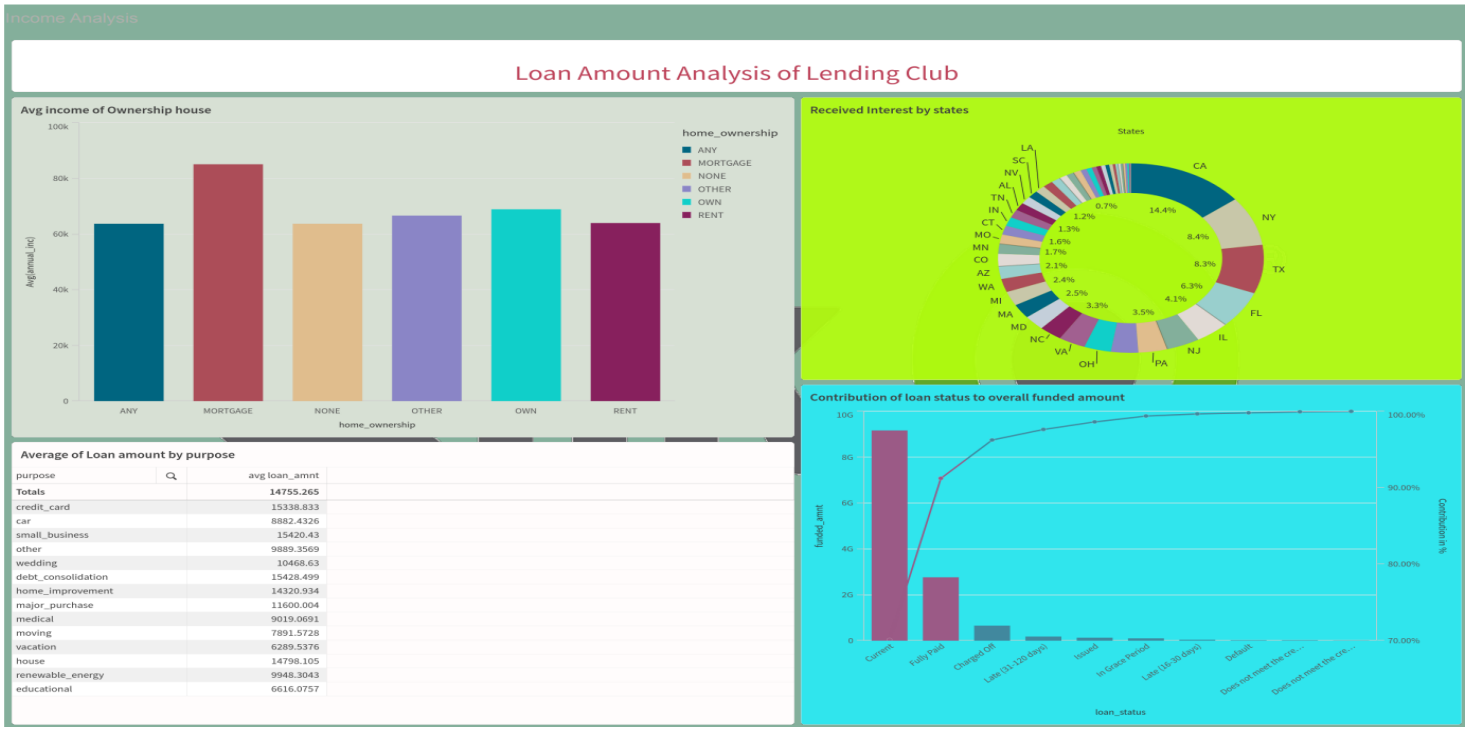
Dashboard1: Average Loan Amount Analysis



Dashboard 2: Count Analysis



Dashboard 3: Income Analysis



Story: Our Qlik story starts with an introduction to LendingClub's business model, followed by key insights on loan performance, and concludes with

actionable recommendations for improving risk assessment.

Data To Decisions Qlik Journey Through Lending Club Issued Loans Analysis (Story)

Problem Statement:

The specific business problem revolves around the inadequacy of the current lending strategy, which is not sufficiently informed by comprehensive insights derived from LendingClub loan data. The institution struggles to assess borrower behavior and market dynamics effectively, resulting in challenges such as inaccurate risk identification, difficulties in predicting loan default rates, and the inability to dynamically adjust lending criteria to respond to evolving market conditions.

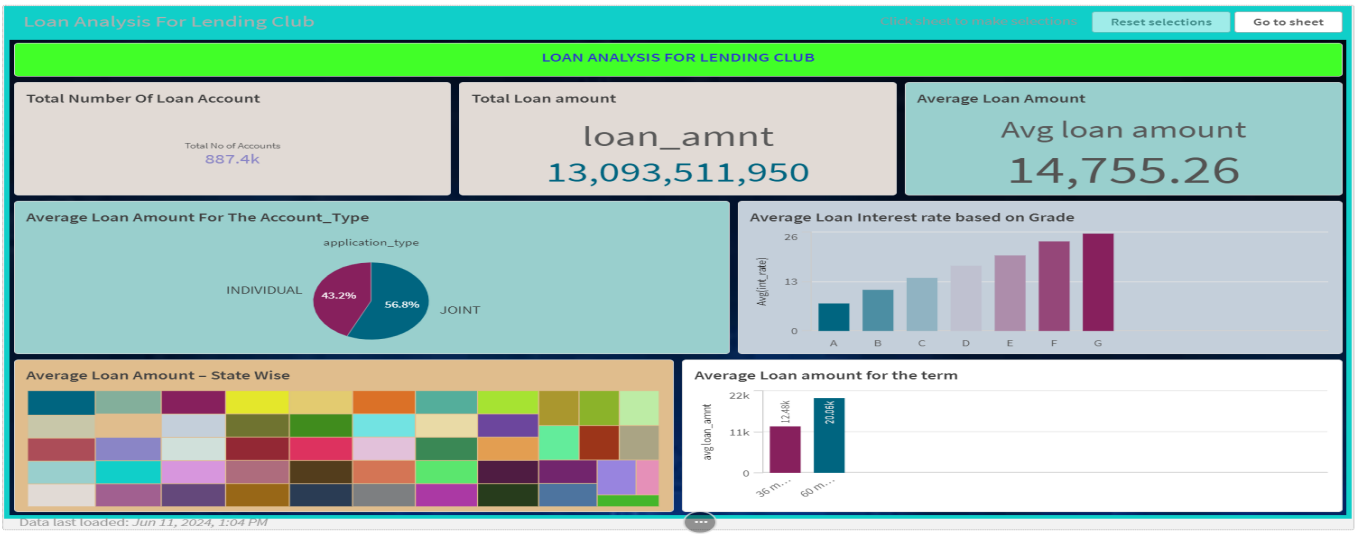
Below Shows the number of Loan Accounts

Correlation: Click here

Total Number Of Loan Account

Total No of Accounts
887.4k

Correlation b/w t_a by T_p: Click here



Performance Testing:

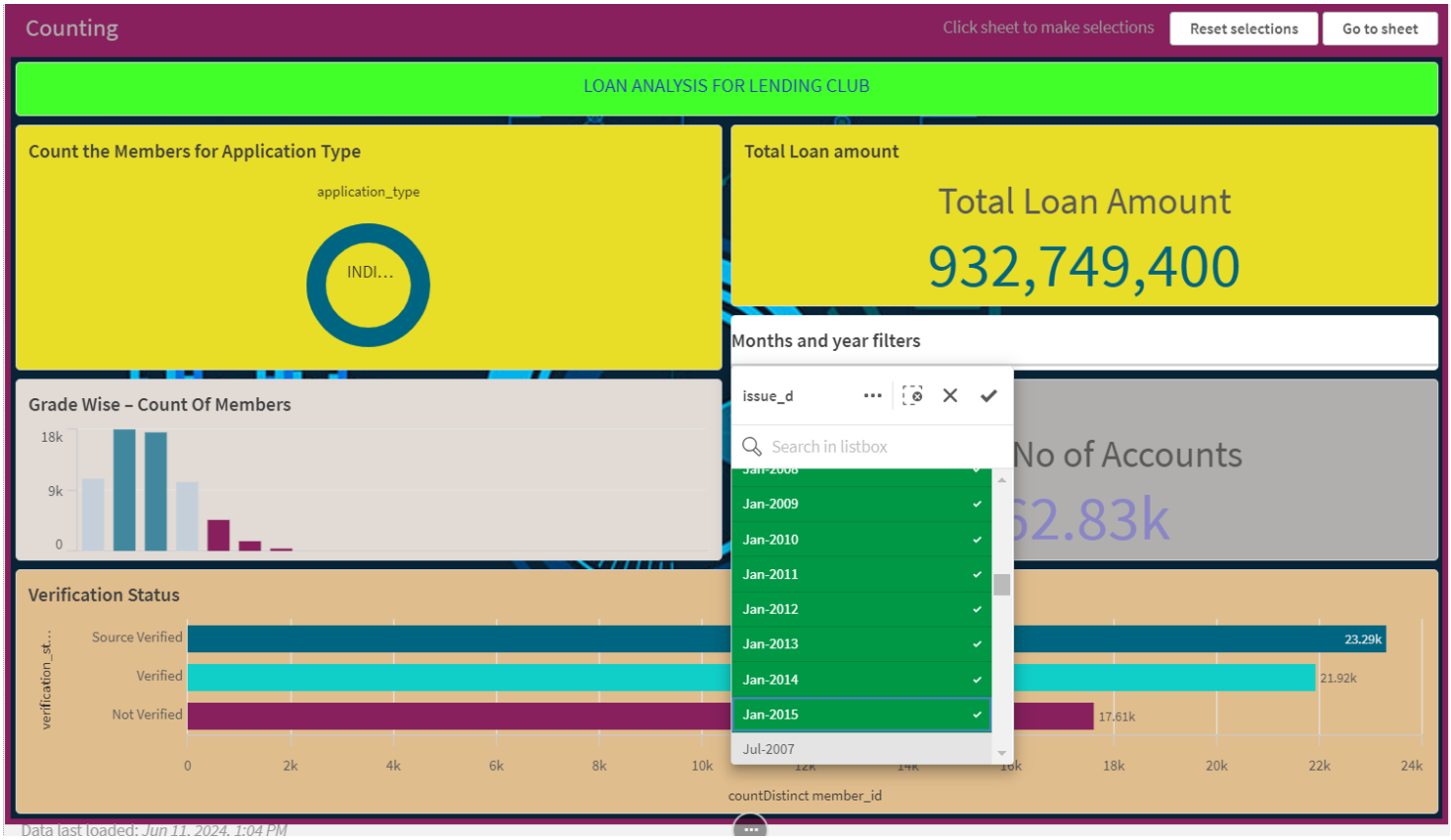
We tested the dashboard with different data volumes to ensure it can handle large datasets efficiently. We also evaluated the responsiveness of data filters and optimized queries to reduce loading times.

- **Amount of Data Loaded**

lc_loan
id
member_id
loan_amnt
funded_amnt
funded_amnt_inv
term
int_rate
installment
grade
sub_grade
emp_title
emp_length
home_ownership
annual_inc
verification_status
issue_d
loan_status
pymnt_plan
url
desc

application_type
annual_inc_joint
dti_joint
verification_status_joint
acc_now_delinq
tot_coll_amt
tot_cur_bal
open_acc_6m
open_il_6m
open_il_12m
open_il_24m
mths_since_rcnt_il
total_bal_il
il_util
open_rv_12m
open_rv_24m
max_bal_bc
all_util
total_rev_hi_lim
inq_fi
total_cu_tl
inq_last_12m

- **Utilization of Filters:**



- **No of Visualizations/Graphs**

1. Total Number of Accounts
2. Total Loan Amount
3. Average Loan Amount
4. Average Loan Amount for Account type
5. Average Loan Interest rate based on Grade
6. State wise Average Loan Amount
7. Tenure wise Average Loan Amount
8. The number of Accounts (Individual/Joint)
9. The number of members – Grade wise
10. The number of members – Verification Status
11. Average Income of ownership house
12. Received Loan Interest by states
13. Loan Amount for purpose
14. Contribution to loan status to overall funded amount

Project Demonstation and Documentation:

I recorded a video walkthrough explaining each step of the project, from data loading to dashboard creation. This documentation includes detailed instructions, screenshots, and code snippets for reproducing the analysis

Demo Video : Click Here.