Data to Decisions Qlik Journey through LendingClub Issued Loans Analysis (Qlik)

INTRODUCTION :

In the ever-evolving landscape of financial technology, LendingClub has emerged as a prominent player in the peer-to-peer lending market. The company facilitates loans to individuals by connecting them with investors through an online platform. Analyzing the data generated by these transactions can provide invaluable insights into lending trends, borrower profiles, loan performance, and potential risk factors. This is where data visualization and business intelligence tools like Qlik come into play.

OVERVIEW:

In this project, we leverage the capabilities of Qlik, a leading data analytics and visualization tool, to perform an in-depth analysis of loans issued by LendingClub. LendingClub is a major player in the peer-to-peer lending industry, and understanding the nuances of its loan data is critical for optimizing lending practices, assessing risk, and enhancing decision-making.

PURPOSE:

This project uses Qlik to analyze LendingClub's issued loan data. Our goals are to understand borrower profiles, assess loan performance, identify risk factors, and facilitate data-driven decision-making. By transforming raw data into actionable insights, we aim to improve LendingClub's lending strategies, risk management, and operational efficiency.

TECHNICAL ARCHITECTURE:

The technical architecture for analyzing LendingClub's loan data with Qlik involves extracting, transforming, and loading data into a warehouse or Qlik's in-memory storage. Qlik connects to these sources, models the data, and creates interactive dashboards for visualization. Advanced analytics identify patterns and risks, while security measures ensure data integrity. The system is deployed on-premises or in the cloud, with role-based access, and continuously improved through updates and feedback.

DEFINE PROBLEM / PROBLEM UNDERSTANDING:

LendingClub generates extensive loan data, but raw data alone isn't enough for insights. Key problems include limited understanding of borrower profiles, unclear loan performance metrics, unidentified risk factors, underutilized data, and decision-making challenges. Using Qlik, we aim to analyze and visualize this data to enhance borrower understanding, evaluate loan performance, identify and mitigate risks, support strategic decisions, and improve operational efficiency.

BUSINESS REQUIREMENTS:

The analysis aims to optimize LendingClub's lending operations and manage risks effectively by analyzing borrower profiles, evaluating loan performance metrics, identifying and mitigating risks, and providing clear data visualization and predictive analytics. Compliance, integration with existing systems, and comprehensive user training are also essential for successful implementation.

LITERATURE SURVEY:

Existing literature on LendingClub issued loans covers various aspects including the peer-to-peer lending landscape, borrower behavior, loan performance, risk management, data analytics, and regulatory considerations. Key findings emphasize the importance of data-driven approaches, risk mitigation strategies, and regulatory compliance in optimizing lending operations and informing decision-making processes.

DATA COLLECTION:

https://drive.google.com/drive/folders/15mxiEnMosBok0Oi_0ENIFo66tmZ86lG8?usp=drive_link

This dataset contains complete loan data for all loans issued through 2007-2015, including the current loan status (Current, Late, Fully Paid, etc.) and latest payment information. It is a valuable resource for analyzing LendingClub's lending patterns, borrower profiles, and loan performance.

CONNECT DATA WITH QLIK SENSE:

To connect LendingClub loan data with Qlik Sense, follow these steps:

1. **Prepare Data:** Clean and transform the dataset to ensure consistency.

2. **Load Data:** Use Qlik Sense's Data Load Editor to connect to the data source and load the data.
3. **Model Data:** Define relationships and optimize the data model using the Data Model Viewer.
4. **Create Visualizations:** Build interactive charts, graphs, and tables with Qlik Sense's drag-and-drop interface.
5. **Analyze Data:** Explore data interactively, apply advanced analytics, and identify trends.

DATA PREARATION:

PREPARE THE DATA FOR VISULIZATION:

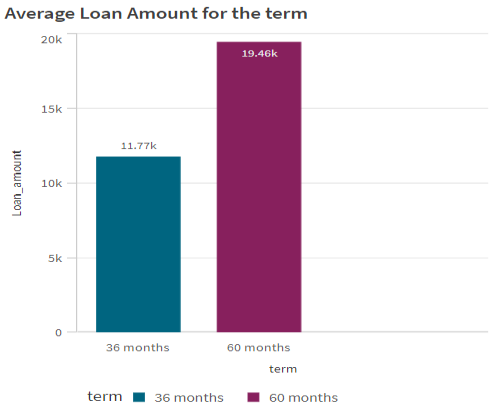
Preparing the data for visualization involves cleaning the data to remove irrelevant or missing data, transforming the data into a format that can be easily visualized, exploring the data to identify patterns and trends, filtering the data to focus on specific subsets of data, preparing the data for visualization software, and ensuring the data is accurate and complete. This process helps to make the data easily understandable and ready for creating visualizations to gain insights into the performance and efficiency. Since the data is already cleaned, we can move to visualization.

DATA VISULIZATIONS:

Data visualization is the process of creating graphical representations of data to help people understand and explore the information. The goal of data visualization is to make complex data sets more accessible, intuitive, and easier to interpret. By using visual elements such as charts, graphs, and maps, data visualizations can help people quickly identify patterns, trends, and outliers in the data.

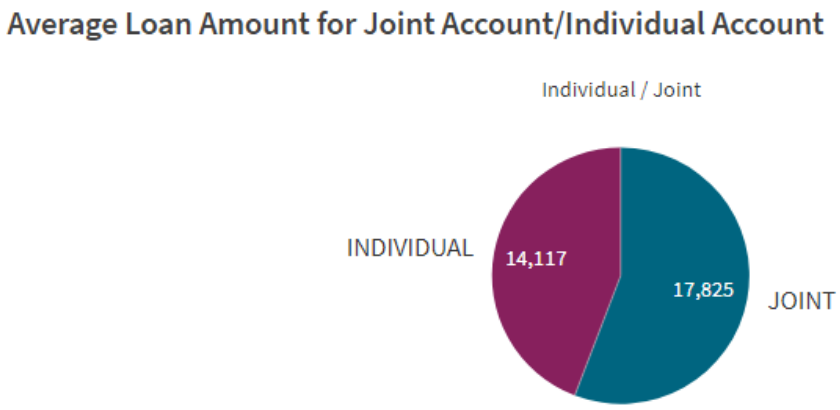
VISULIZATIONS:

Loan Amount Analysis



This visualization contains the average loan amount taken by members for the tenure such as 36 months or 60 months. Some common types of visualizations that can be used to analyze the performance and efficiency of banks include bar charts, line charts, heat maps, scatter plots, pie charts, Maps etc.

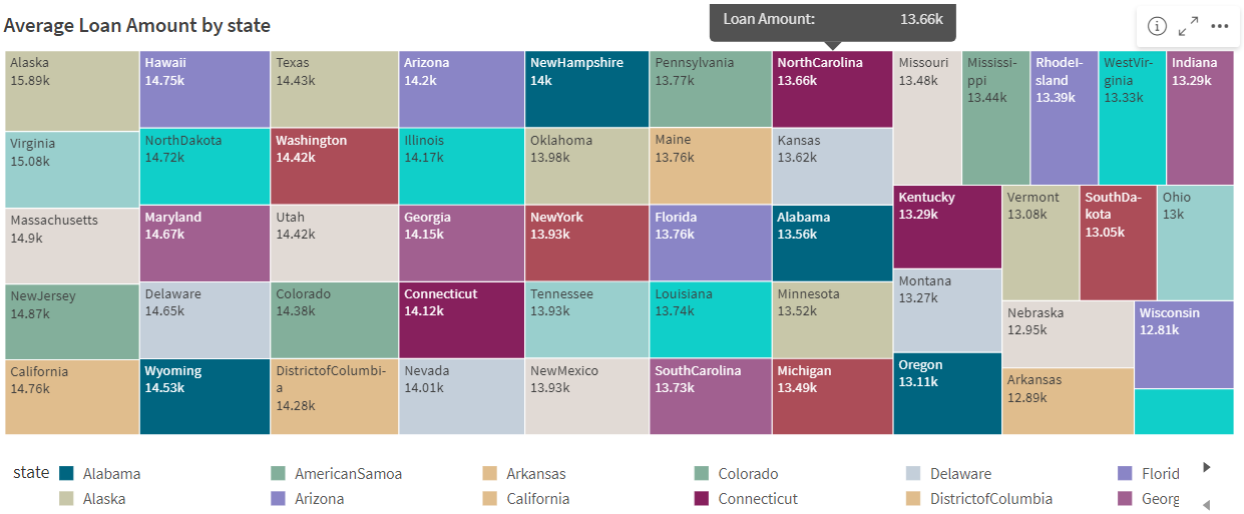
Average Loan Amount For The Account_Type



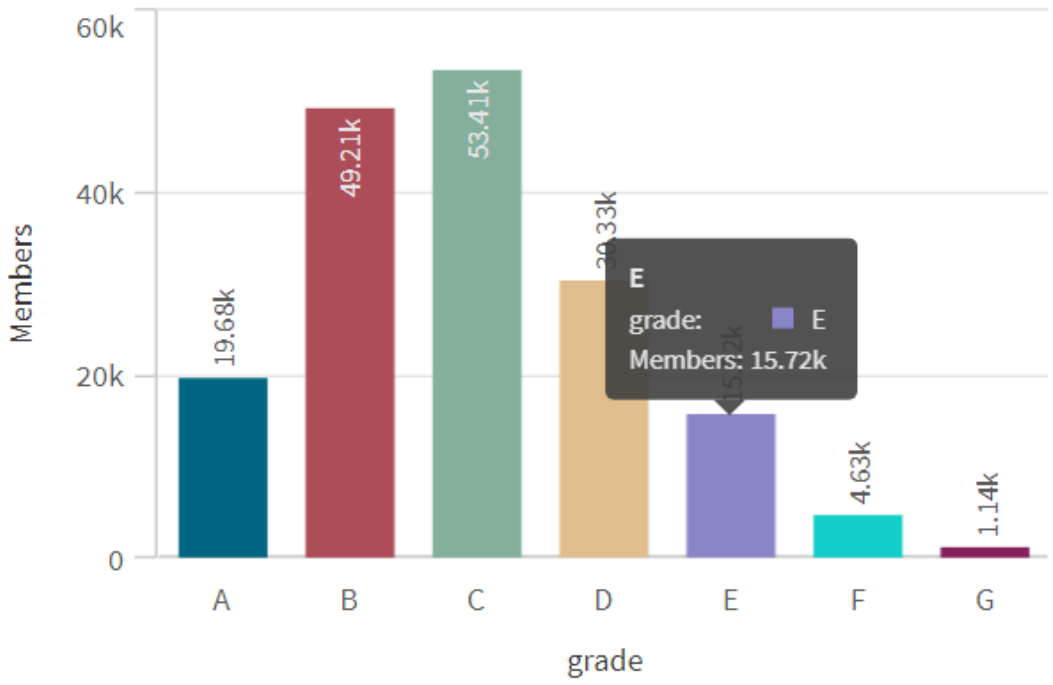
Total Loan Amount

Total Number Of Loan Account

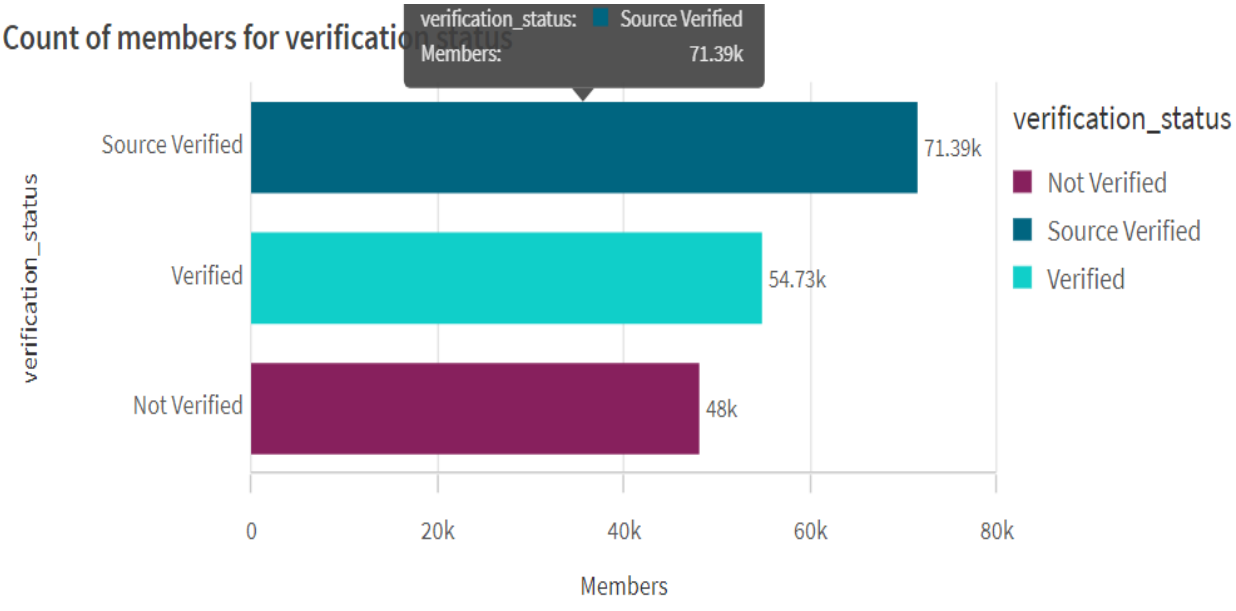
Average Loan Amount – State Wise



Grade Wise – Count Of Members



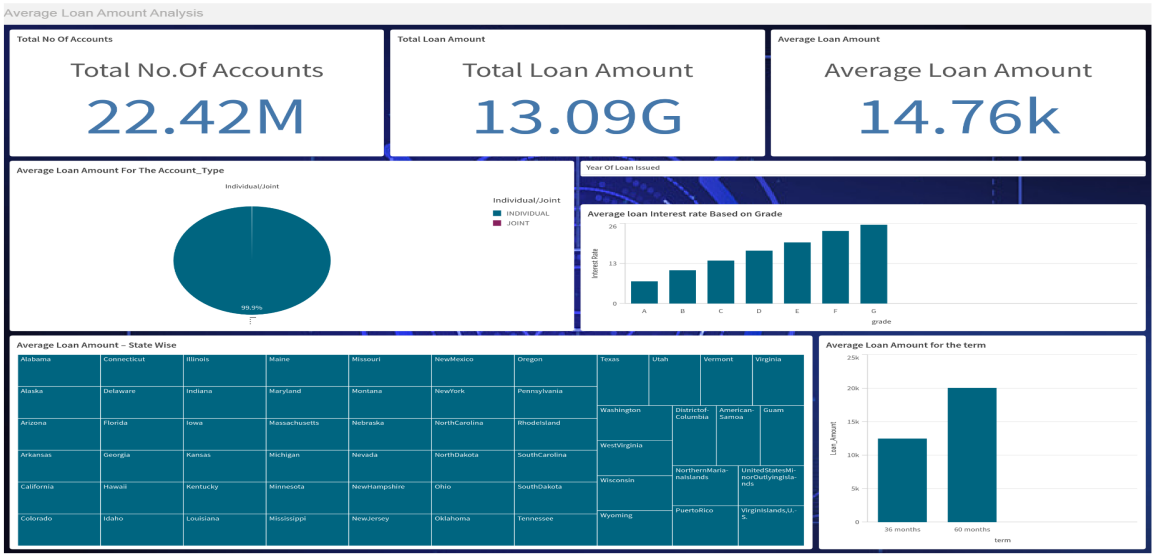
Verification Status

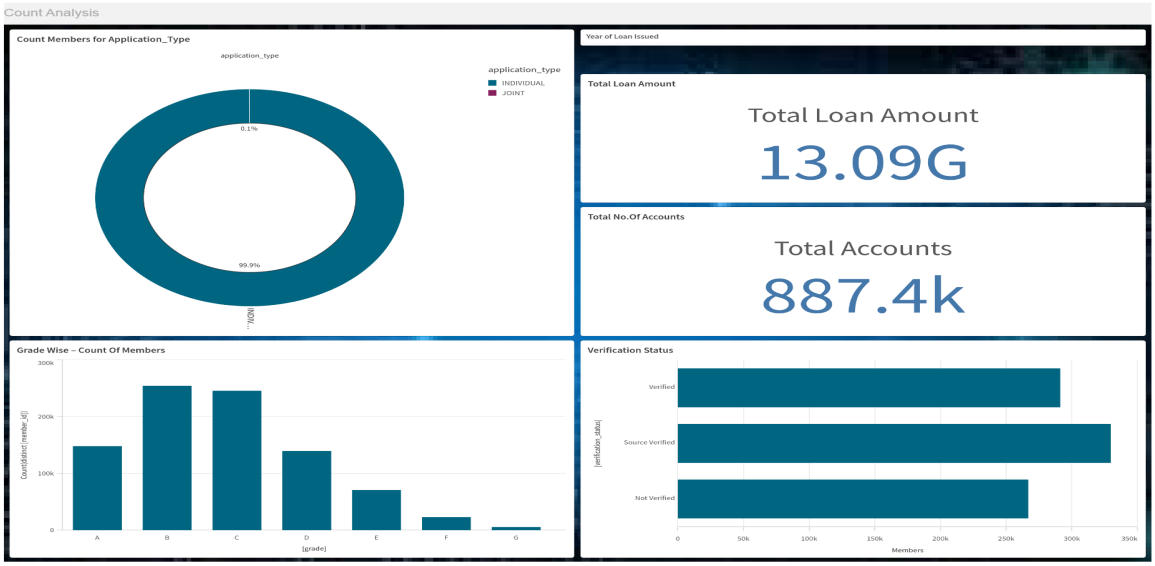


DASHBOARD:

A dashboard is a graphical user interface (GUI) that displays information and data in an organized, easy-to-read format. Dashboards are often used to provide real-time monitoring and analysis of data and are typically designed for a specific purpose or use case. Dashboards can be used in a variety of settings, such as business, finance, manufacturing, healthcare, and many other industries. They can be used to track key performance indicators (KPIs), monitor performance metrics, and display data in the form of charts, graphs, and tables.

RESPONSIVE AND DESIGN OF DASHBOARD:

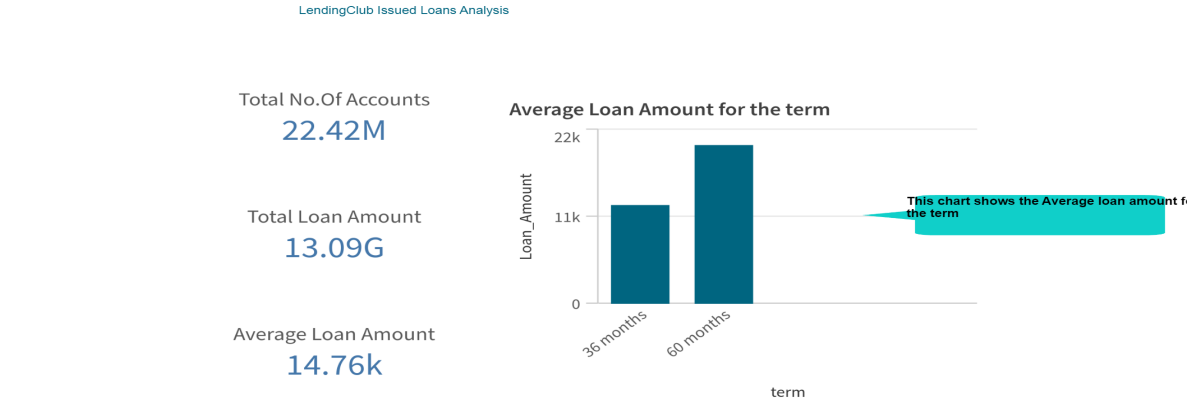


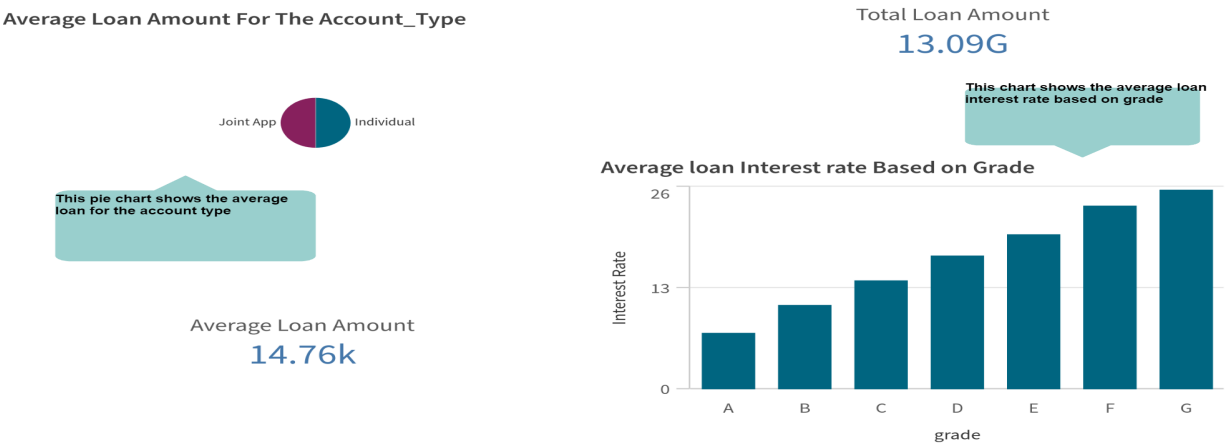


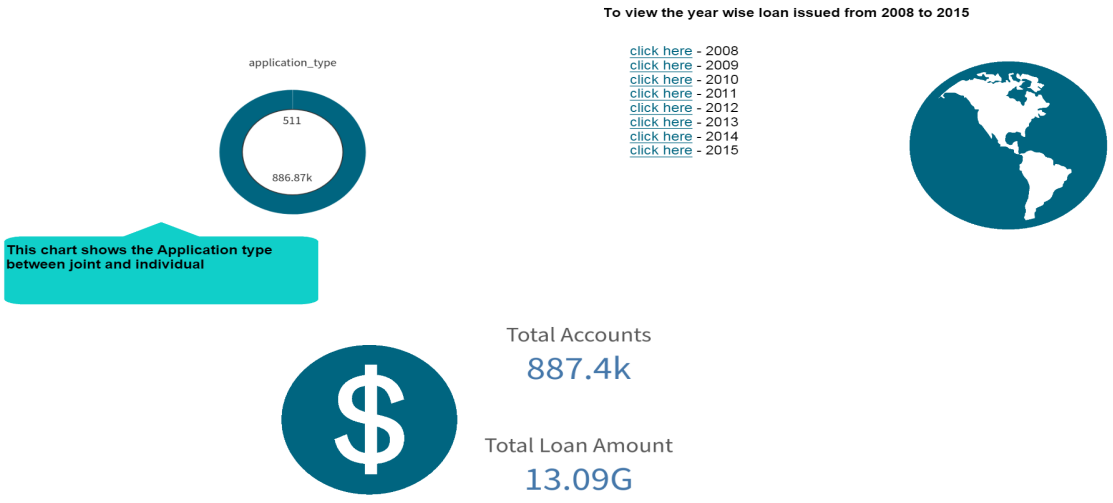
REPORT:

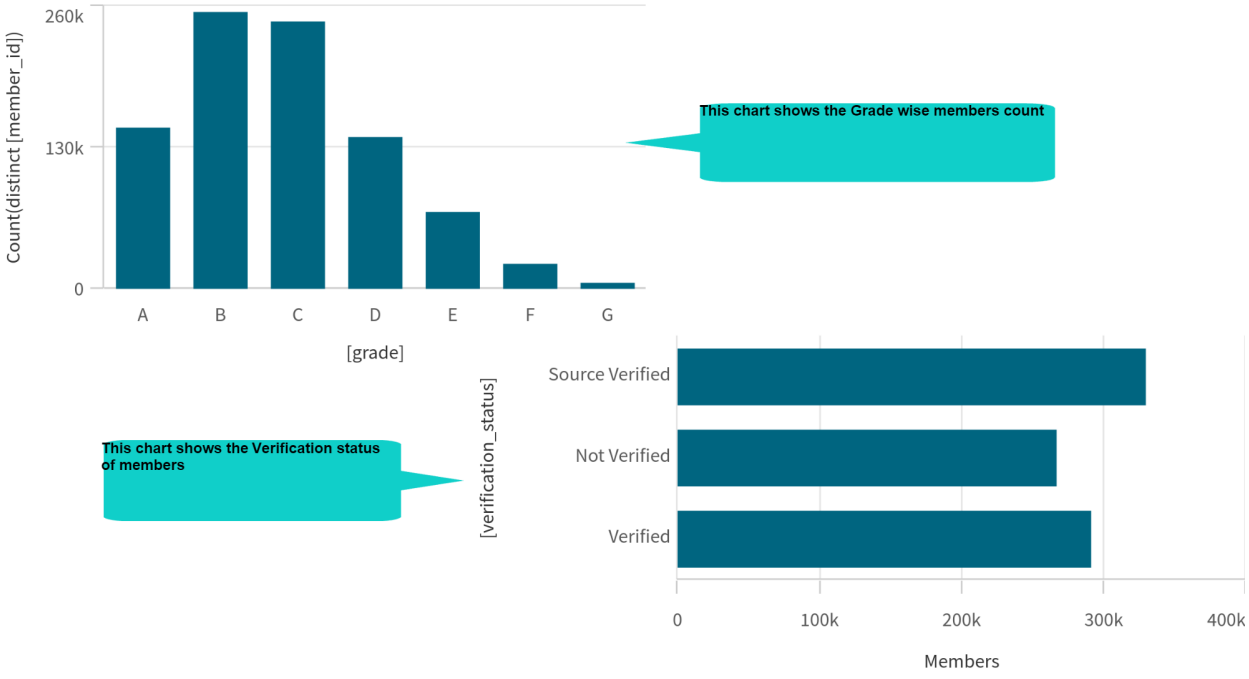
A data story is a way of presenting data and analysis in a narrative format, with the goal of making the information more engaging and easier to understand. A data story typically includes a clear introduction that sets the stage and explains the context for the data, a body that presents the data and analysis in a logical and systematic way, and a conclusion that summarizes the key findings and highlights their implications. Data stories can be told using a variety of mediums, such as reports, presentations, interactive visualizations, and videos.

REPORT CREATION:





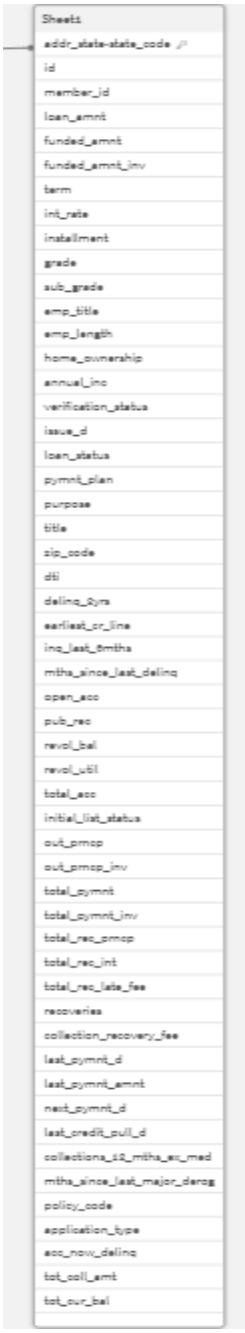

To view the year wise loan issued from 2008 to 2015
click here - 2008
click here - 2009
click here - 2010
click here - 2011
click here - 2012
click here - 2013
click here - 2014
click here - 2015
application_type
511
886.87k
This chart shows the Application type between joint and individual
Total Accounts
887.4k
Total Loan Amount
13.09G


260k
130k
0
Count(distinct [member_id])
A
B
C
D
E
F
G
[grade]
This chart shows the Grade wise members count
This chart shows the Verification status of members
[verification_status]
Source Verified
Not Verified
Verified
0
100k
200k
300k
400k
Members

PERFORMANCE TESTING:

Amount Of Data Loaded

"Amount of Data Loaded" refers to the quantity or volume of data that has been imported, retrieved, or loaded into a system, software application, database, or any other data storage or processing environment. It's a measure of how much data has been successfully processed and made available for analysis, manipulation, or use within the system.



Utilization Of Filters:

"Utilization of Filters" refers to the application or use of filters within a system, software application, or data processing pipeline to selectively extract, manipulate, or analyze data based on specified criteria or conditions. Filters are used to narrow down the scope of data, focusing only on the relevant information that meets certain predefined criteria.