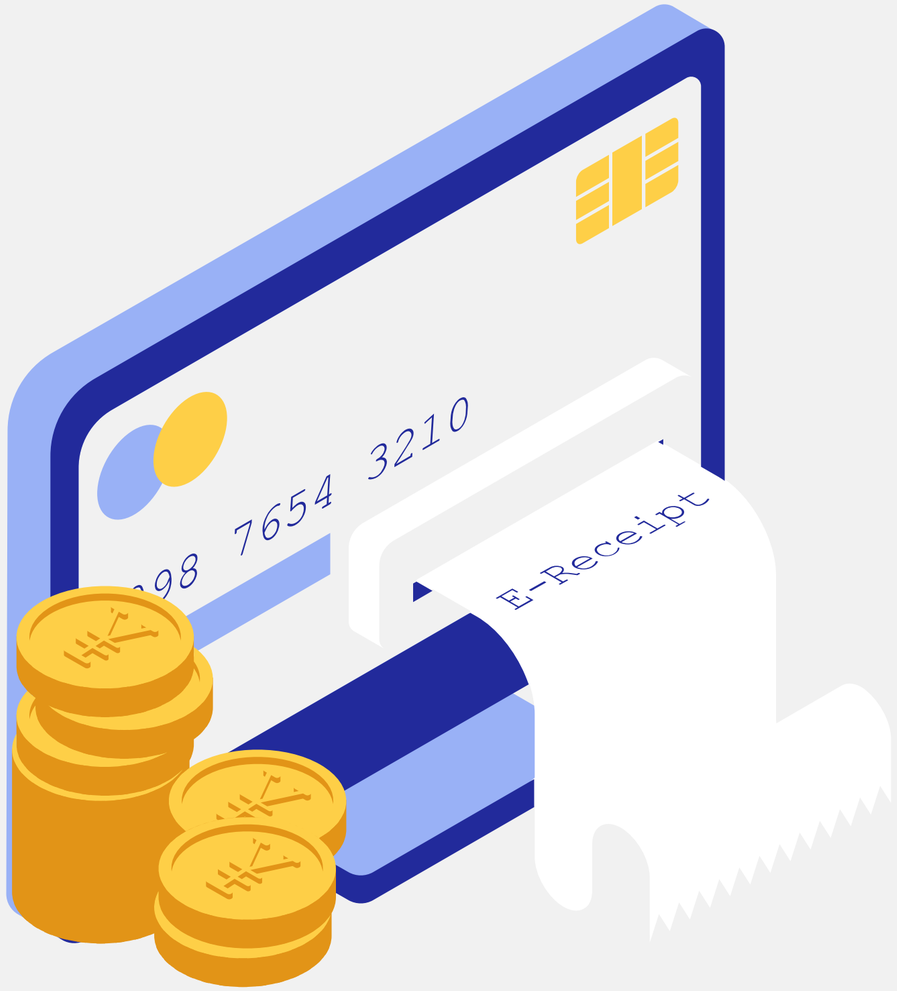
SYMBIOSIS INSTITUTE OF TECHNOLOGY



Business Analytics TABLEAU PROJECT

Bank Loan KPI Dashboard

Presented By:
SANNA JOHNSON - 21070122145

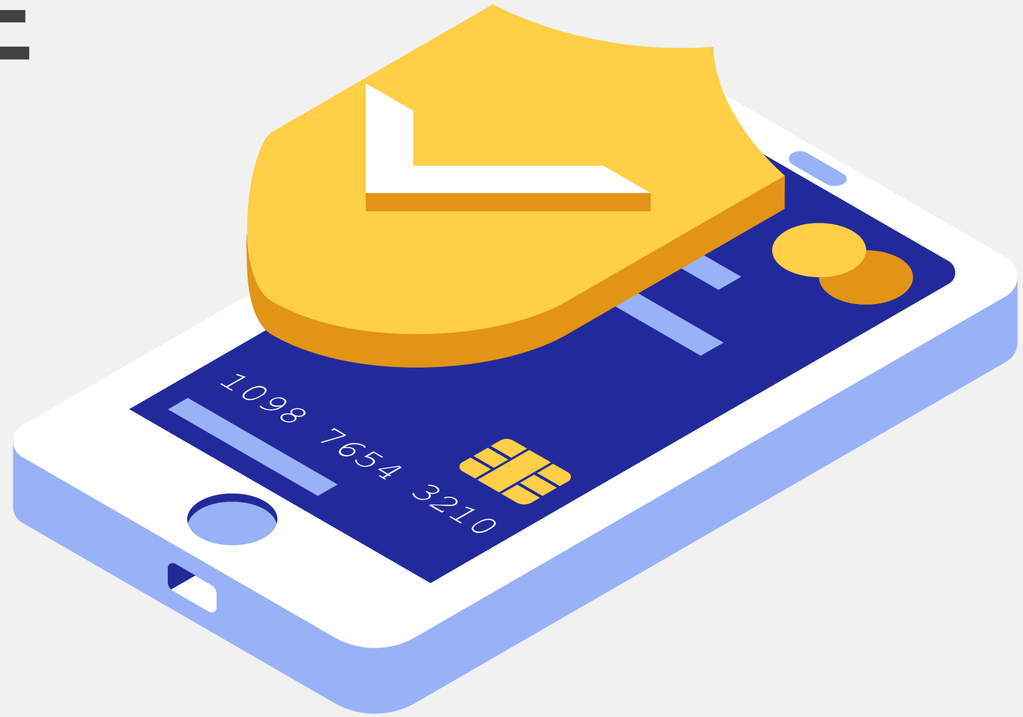
INTRODUCTION

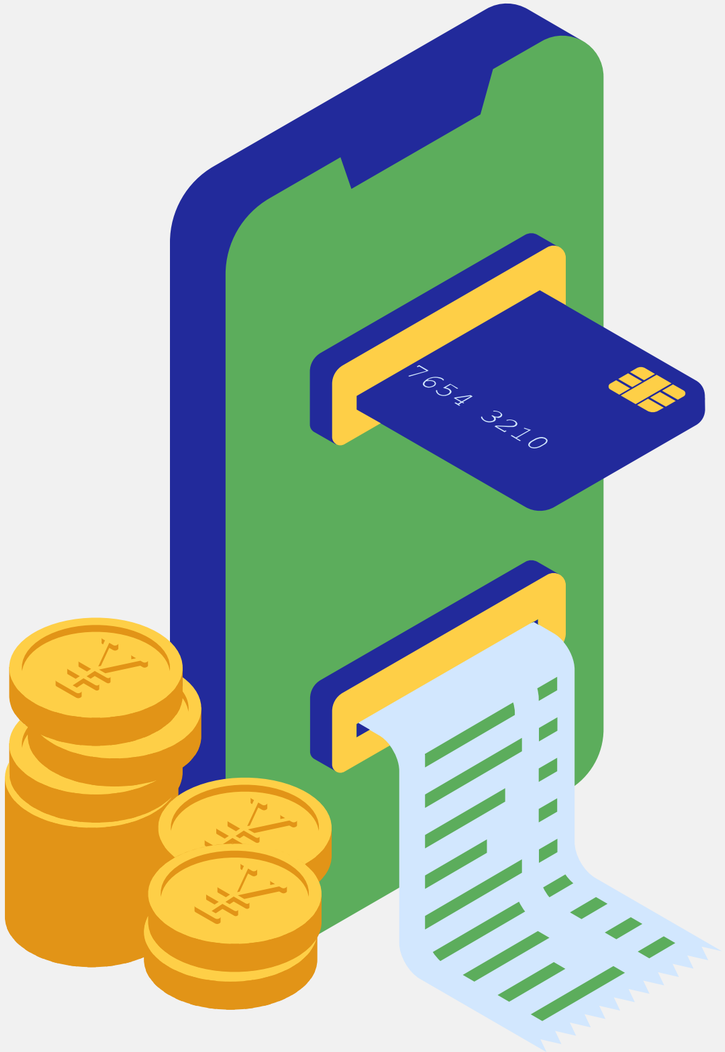
Bank loans serve as pillars of support in the constantly changing world of finance, enabling a wide range of endeavours for both individuals and businesses. Bank loans are the foundation of financial empowerment, making it possible for dreams to come true and objectives to be fulfilled, whether they are for buying a house, growing a business, or financing education. Understanding the workings of bank loans becomes crucial in today's interconnected world, where having access to capital can frequently mean the difference between stagnation and progress.

PROJECT OBJECTIVE

Dashboard 1: SUMMARY-
This report aims to provide insights into key loan-related metrics and their changes over time.

Dashboard 2: OVERVIEW-
This report aims to visually represent critical loan-related metrics and trends using a variety of chart types.





MOTIVATION

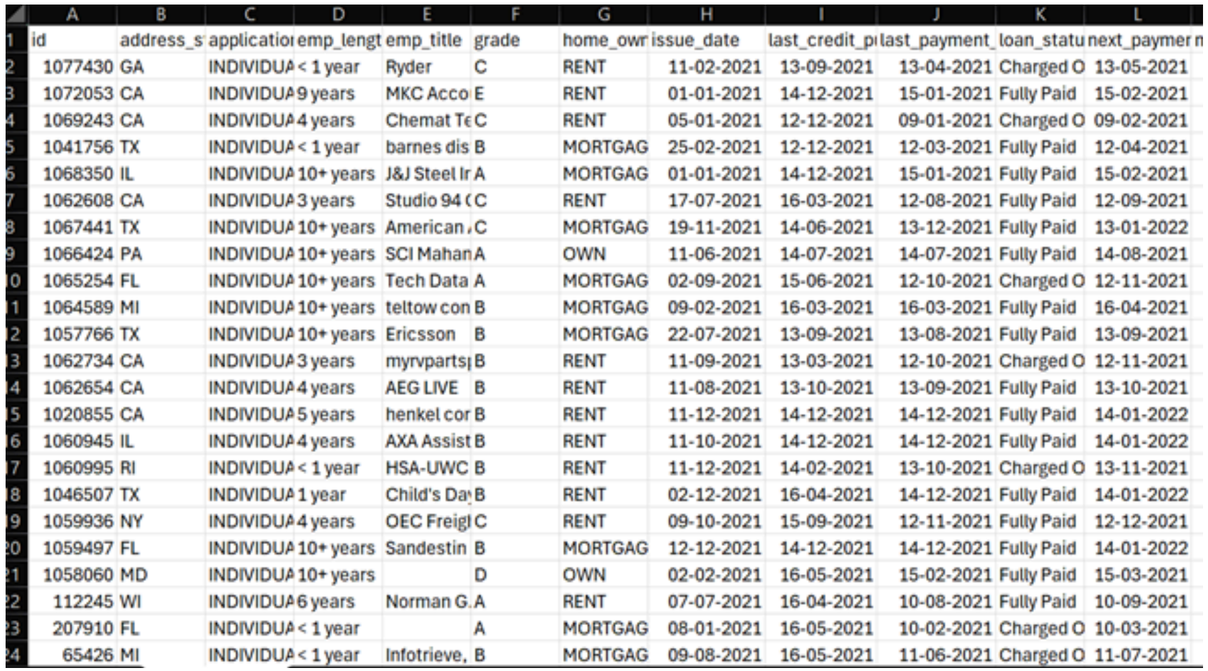
Our motivation comes from realizing that there is a plethora of information that is just waiting to be understood concealed behind every loan approval, interest rate change, and repayment schedule. We seek to reveal the stories, trends, and insights hidden within the depths of this data by exploring its depths.

LITERATURE REVIEW

METHODOLOGY	KEY FINDINGS	ADVANTAGES
The d3.js library is used to create the visualizations in the tool. The tool is developed using a combination of the Svelte framework, and the d3.js library. Svelte is used for the reactivity of the tool.	Indicates that visualizing different loan plans where each plan represents a certain level of risk might be more appropriate compared to using risk visualization techniques on one alternative	Simple visualization technique can improve the comprehension of loans in students.
These studies do not follow a structured and standardized methodology, given that these usability aspects (Memorability, Engagement, Enjoyment) are neither easy to define nor easy to measure	The A/B testing-based survey allowed the detection of preferences based on an absolute majority of the votes regarding almost all the dashboard design aspects that were encompassed in this project.	Allying data visualization best practices with high-tech, many organizations that end up dealing with massive amounts of data can rapidly analyze it and get data-driven insights in to streamline various areas of their operation
Researchers adopted a qualitative approach, and the findings were based on the experience shared by banking professionals. This research employed multiple case study method (where each bank was considered as a single case) and an individual from each bank who is wellversed in business analytics practices was considered for the data collection.	The data collected were probed through the content analysis method with the intention of generating more meaningful insights to the research. After conducting interviews with five different banks, researchers realized some common grounds and repetition.	Banks they represent have realized that business analytics should be an integral part of the core business. The majority are still looking forward to making it an integral part of the business

DATASET USED

- “financial_loan” sourced from Kaggle that consists 38,577 rows and 24 columns
- It encompasses a diverse range of loan types, including personal loans, mortgages, business loans, and more.
- It provides a valuable resource for analyzing trends, identifying risk factors, and understanding borrower behavior



	A	B	C	D	E	F	G	H	I	J	K	L
1	id	address_s	applicatio	emp_lengt	emp_title	grade	home_own	issue_date	last_credit_pi	last_payment_	loan_statu	next_paymer
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4	1069243	CA	INDIVIDUA	4 years	Chemat Te	C	RENT	05-01-2021	12-12-2021	09-01-2021	Charged O	09-02-2021
5	1041756	TX	INDIVIDUA	< 1 year	barnes dis	B	MORTGAG	25-02-2021	12-12-2021	12-03-2021	Fully Paid	12-04-2021
6	1068350	IL	INDIVIDUA	10+ years	J&J Steel Ir	A	MORTGAG	01-01-2021	14-12-2021	15-01-2021	Fully Paid	15-02-2021
7	1062608	CA	INDIVIDUA	3 years	Studio 94 (	C	RENT	17-07-2021	16-03-2021	12-08-2021	Fully Paid	12-09-2021
8	1067441	TX	INDIVIDUA	10+ years	American ,	C	MORTGAG	19-11-2021	14-06-2021	13-12-2021	Fully Paid	13-01-2022
9	1066424	PA	INDIVIDUA	10+ years	SCI Mahan	A	OWN	11-06-2021	14-07-2021	14-07-2021	Fully Paid	14-08-2021
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14	1062654	CA	INDIVIDUA	4 years	AEG LIVE	B	RENT	11-08-2021	13-10-2021	13-09-2021	Fully Paid	13-10-2021
15	1020855	CA	INDIVIDUA	5 years	henkel cor	B	RENT	11-12-2021	14-12-2021	14-12-2021	Fully Paid	14-01-2022
16	1060945	IL	INDIVIDUA	4 years	AXA Assist	B	RENT	11-10-2021	14-12-2021	14-12-2021	Fully Paid	14-01-2022
17	1060995	RI	INDIVIDUA	< 1 year	HSA-UWC	B	RENT	11-12-2021	14-02-2021	13-10-2021	Charged O	13-11-2021
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19	1059936	NY	INDIVIDUA	4 years	OEC Freigl	C	RENT	09-10-2021	15-09-2021	12-11-2021	Fully Paid	12-12-2021
20	1059497	FL	INDIVIDUA	10+ years	Sandestin	B	MORTGAG	12-12-2021	14-12-2021	14-12-2021	Fully Paid	14-01-2022
21	1058060	MD	INDIVIDUA	10+ years		D	OWN	02-02-2021	16-05-2021	15-02-2021	Fully Paid	15-03-2021
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24	65426	MI	INDIVIDUA	< 1 year	Infotrieve,	B	MORTGAG	09-08-2021	16-05-2021	11-06-2021	Charged O	11-07-2021

KEY FACTORS EXTRACTED FROM DATASET

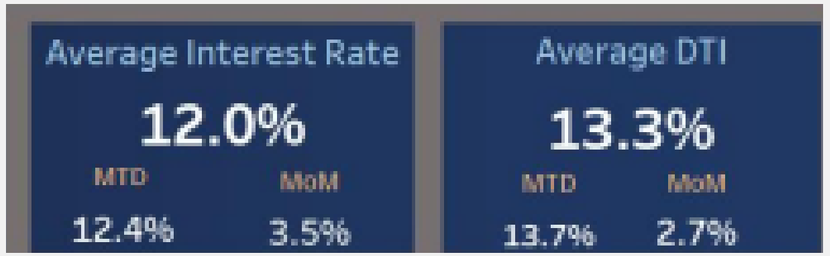
Highlight two or more cells, right-click then choose "Merge Cells" to organize your table according to your needs!

✓	1	Total Funded Amount
✓	2	Total Loan Applications
✓	3	Total Amount Recieved
✓	4	Average Interest Rate
✓	5	Average DTI (Debt To Income) Ratio
✓	6	Good Loan Application Percentage
✓	7	Bad Loan Application Percentage
✓	8	Good Loan Applications
✓	9	Bad Loan Applications

Dashboard 1: SUMMARY

Key Performance Indicators (KPIs) Requirements:

- Total Loan Application
- Total Funded Amount
- Total Amount Received
- Average Interest
- Average DTI



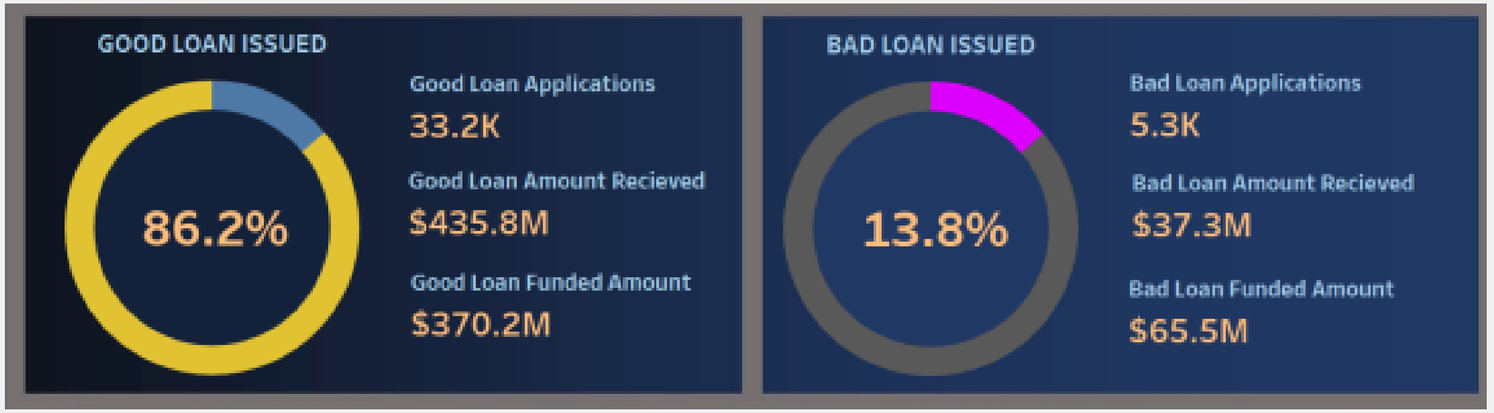
Dashboard 1: SUMMARY

Bad Loan KPIs:

- Bad Loan Application Percentage
- Bad Loan Application
- Bad Loan Funded Amount
- Bad Loan Total Received Amount

Good Loan KPIs:

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



Dashboard 1: SUMMARY

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.'

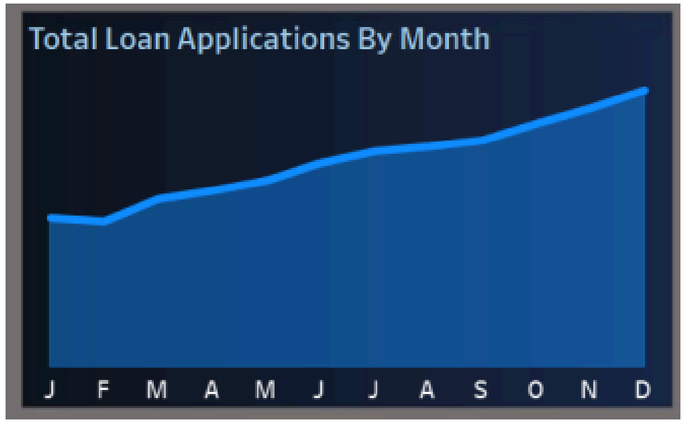
LOAN STATUS

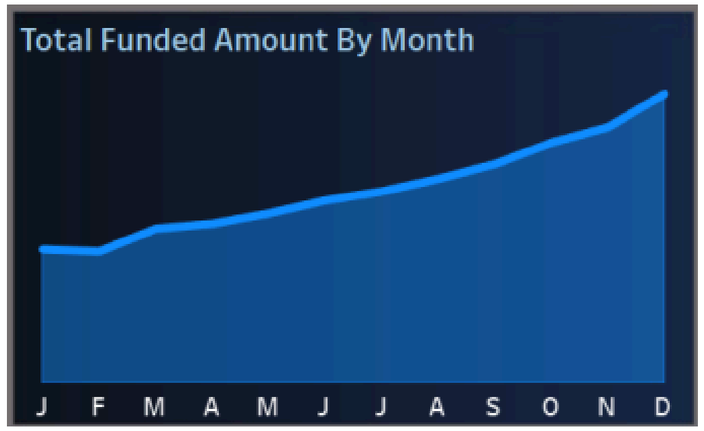
Loan Status	Total Loan Applications	Total Amount Recieved	Total Funded Amount	MTD Total Amount Recieved	MTD Total Funded Amount	Average Interest Rate	Average DTI
Charged Off	5.33K	$37.28M	$65.5M	$5.3M	$ 8.73M	13.9%	14.0%
Current	1.10K	$24.20M	$18.9M	$4.9M	$ 3.95M	15.1%	14.7%
Fully Paid	32.15K	$411.59M	$351.4M	$47.8M	$ 41.30M	11.6%	13.2%
Grand Total	38.58K	$473.07M	$435.8M	$58.1M	$ 53.98M	12.0%	13.3%

Dashboard 2: OVERVIEW

Monthly Trends by Issue Date (Line Chart):

- This line chart will showcase how 'Total Loan Applications,' 'Total Funded Amount,' and 'Total Amount Received' vary over time, allowing us to identify seasonality and long-term trends in lending activities.

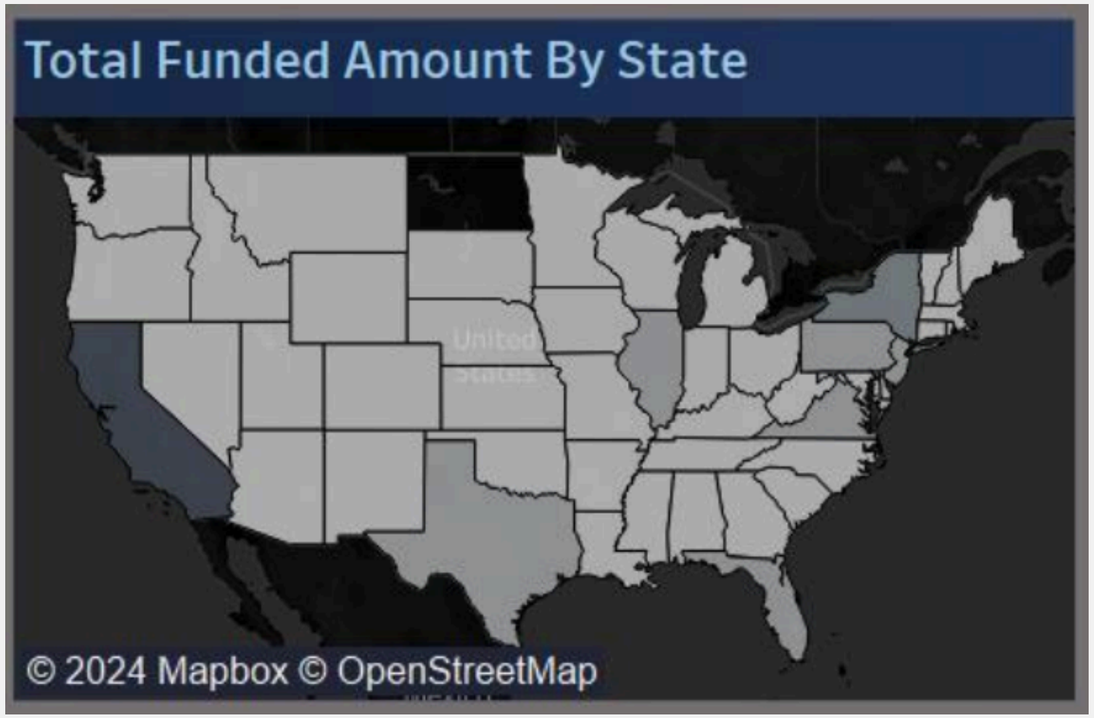




Dashboard 2: OVERVIEW

Regional Analysis by State (Filled Map):

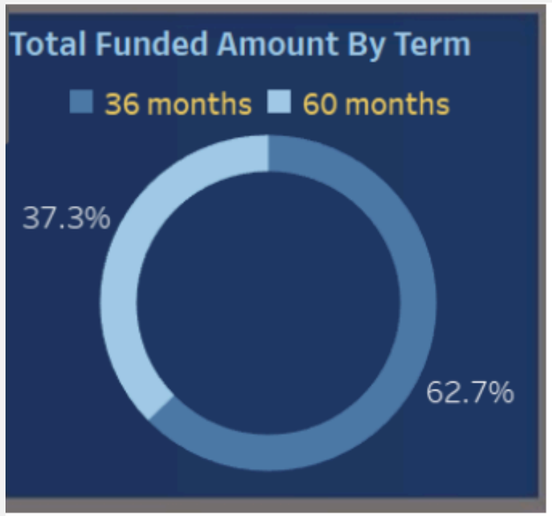
- This filled map will visually represent lending metrics categorized by state, enabling us to identify regions with significant lending activity and assess regional disparities.

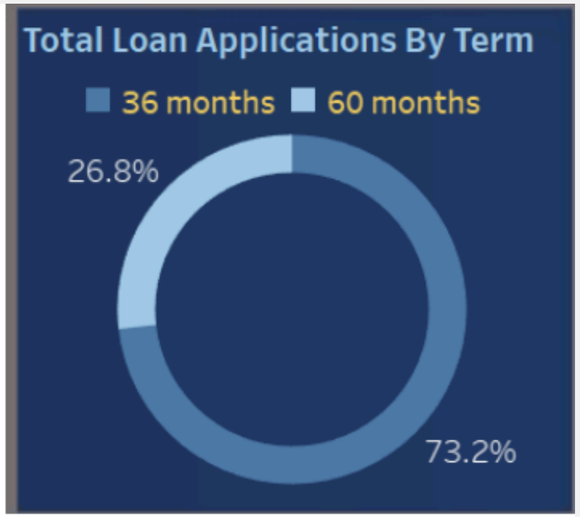


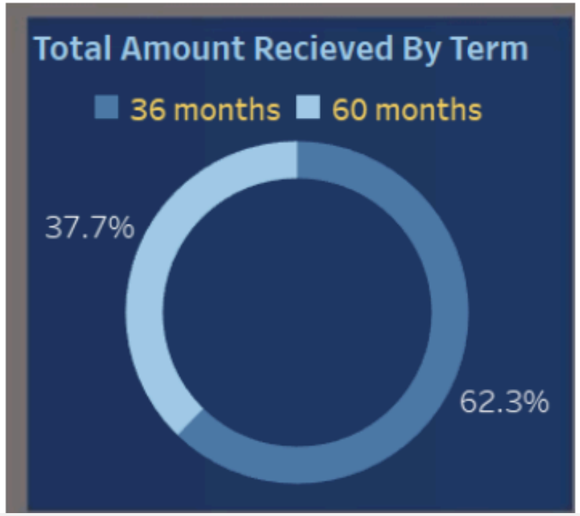
Dashboard 2: OVERVIEW

Loan Term Analysis (Donut Chart):

- This donut chart will depict loan statistics based on different loan terms, allowing us to understand the distribution of loans across various term lengths.



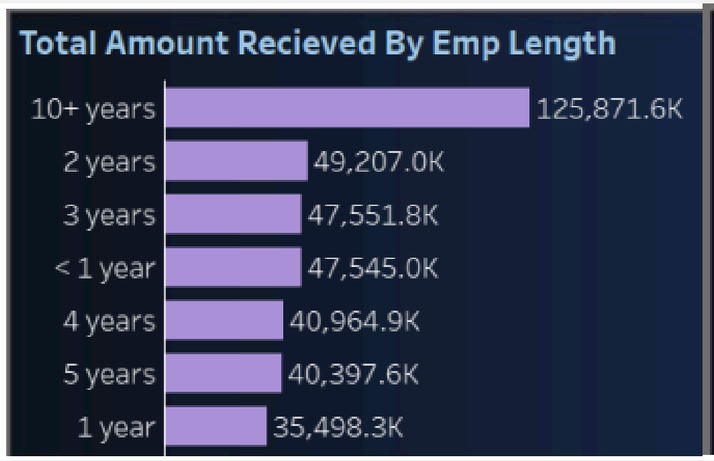


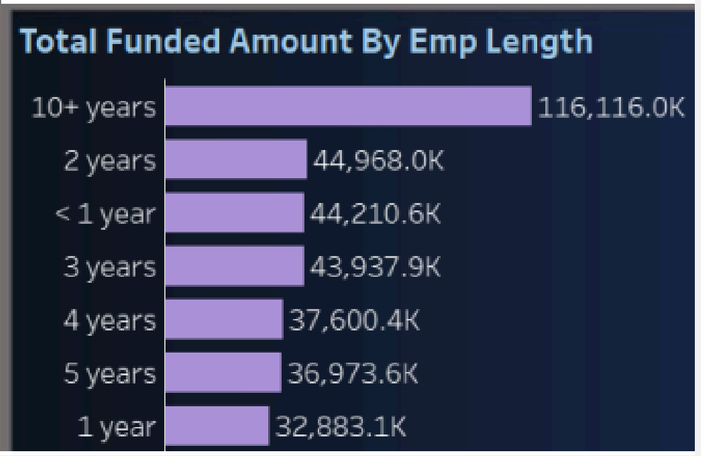


Dashboard 2: OVERVIEW

Employee Length Analysis (Bar Chart):

- This bar chart will illustrate how lending metrics are distributed among borrowers with different employment lengths, helping us assess the impact of employment history on loan applications





Dashboard 2: OVERVIEW

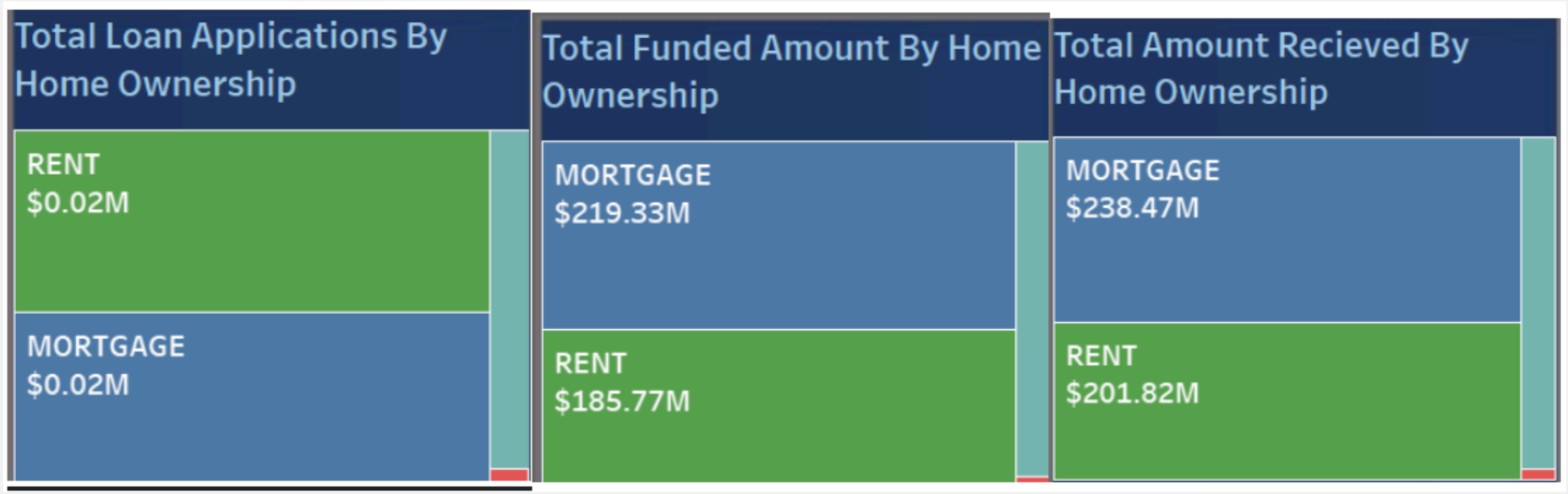
Loan Purpose Breakdown (Bar Chart):

- This 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.

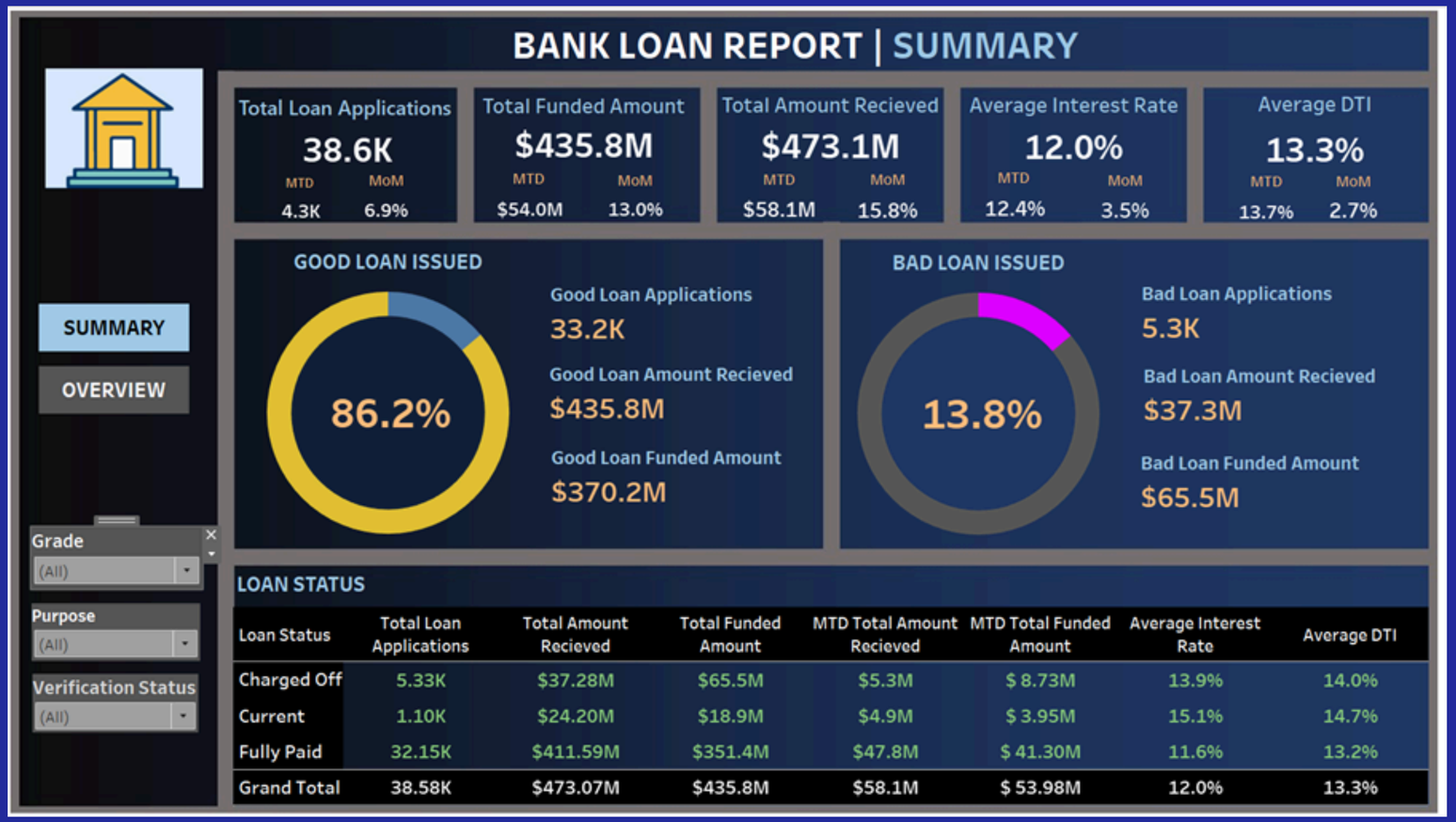
Dashboard 2: OVERVIEW

Home Ownership Analysis (Tree Map):

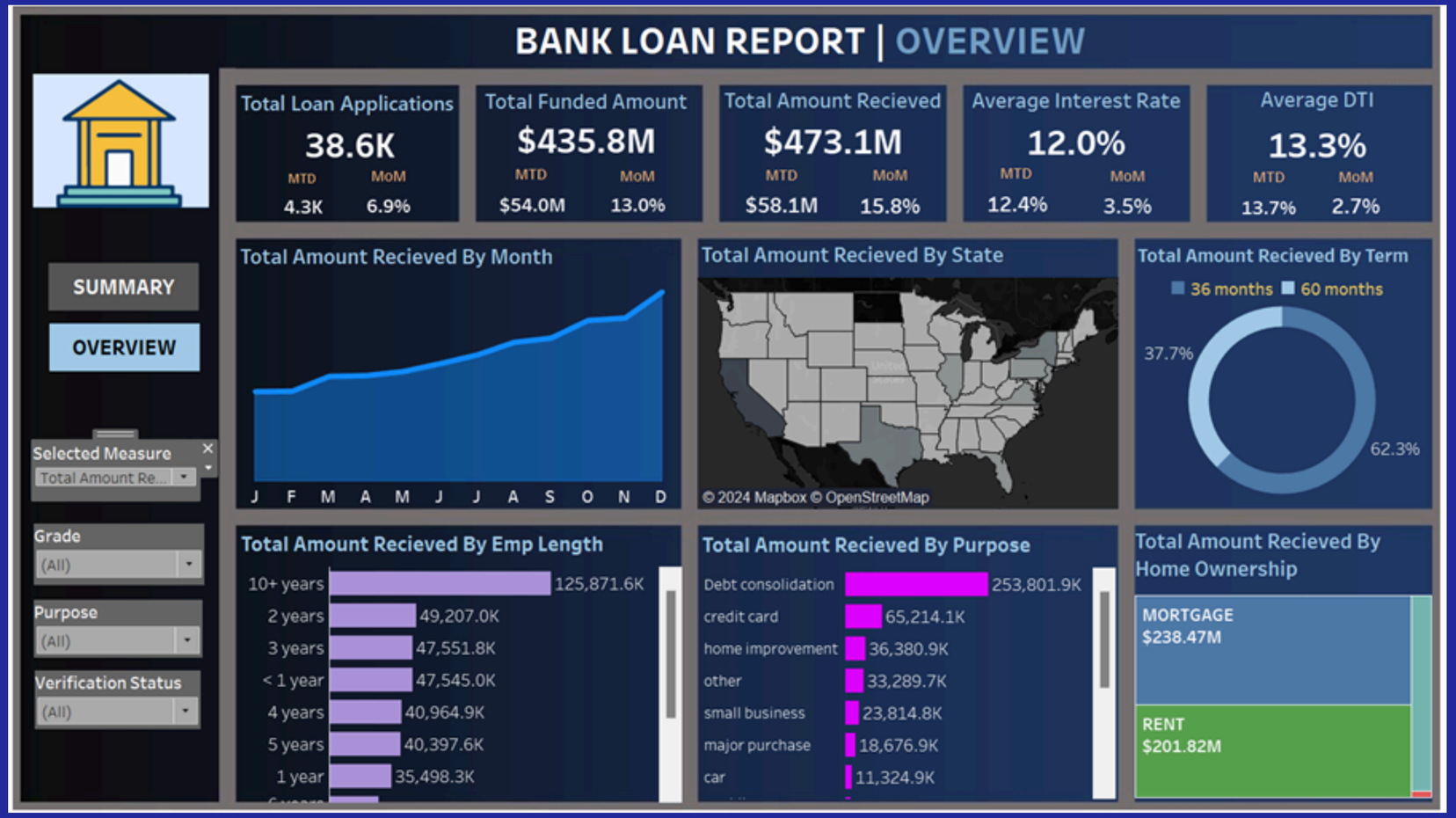
- This tree map will display loan metrics categorized by different home ownership statuses, allowing for a hierarchical view of how home ownership impacts loan applications and disbursements



RESULTS
DASHBOARD 1: SUMMARY



DASHBOARD 2: OVERVIEW



CONCLUSION

In conclusion, the creation and investigation of the Tableau-based dashboard for analysing bank loan data have yielded priceless insights into the complexities of lending dynamics. We have found trends, patterns, and correlations that provide insight into borrower behaviour, loan performance, and market trends through painstaking data visualization and analysis.

Online Link to Dashboard: https://prod-apnortheast-a.online.tableau.com/#/site/sannaannjohnson4d3c2fad69/workbooks/1697571?:origin=card_share_link

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