

# MATH 231.4 Final Project Presentation

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# Overview

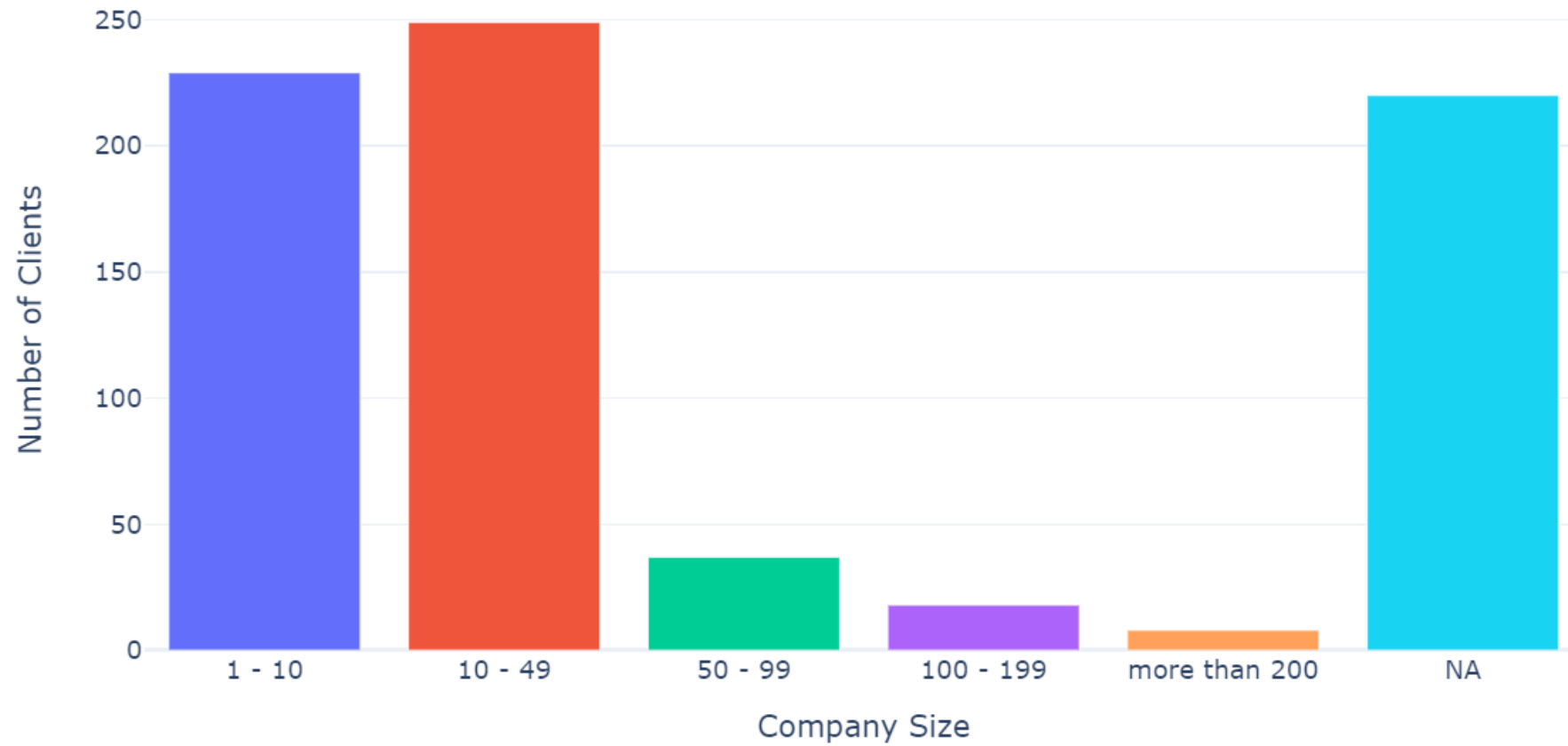
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*Overview of the Data and Clients*

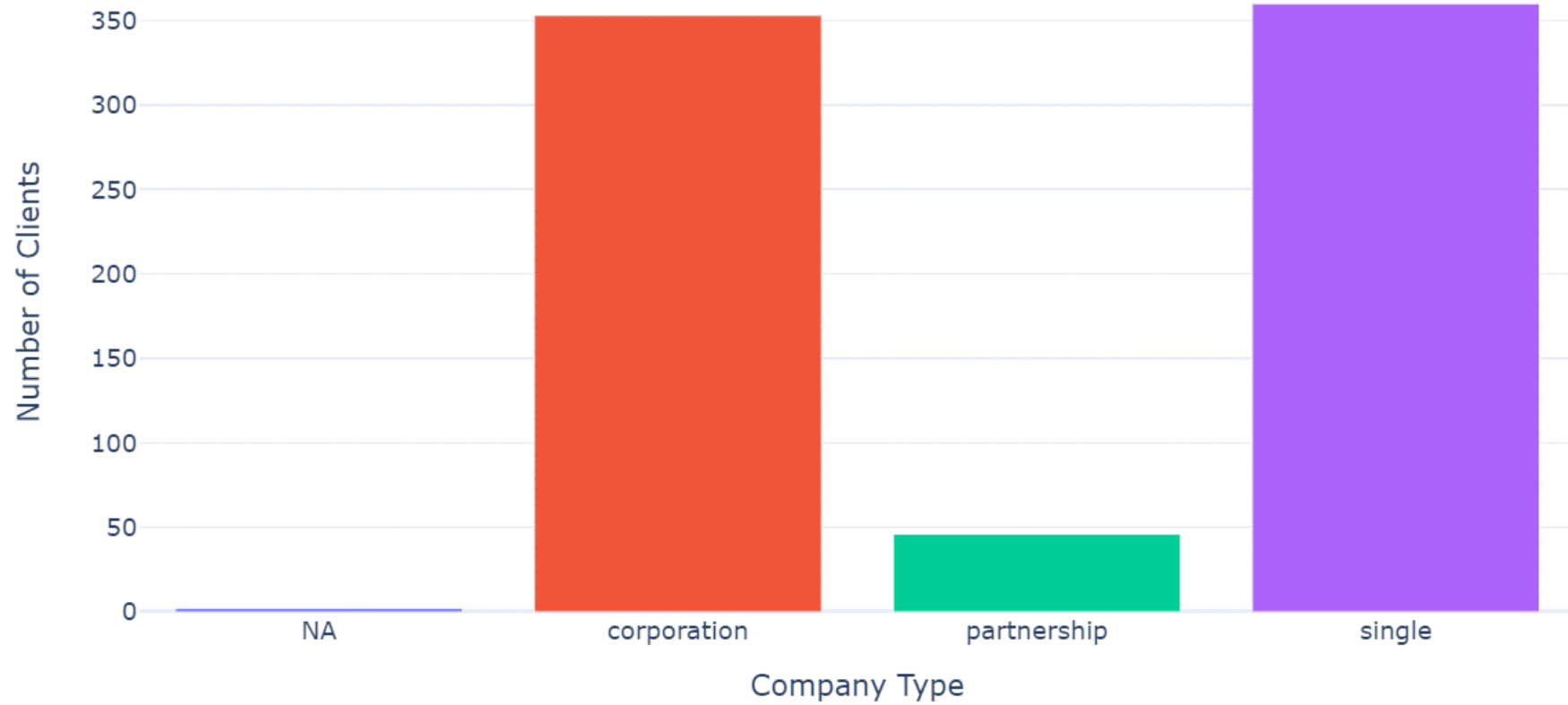
# Dataset Used

- Data pulled on May 23, 2020
- Total of 761 clients
  - Company Size, Company Type, Industry, Subindustry
- Total of 6,500 loan accounts
  - Repayment Date, Current Principal, Current Interest, Times Rescheduled

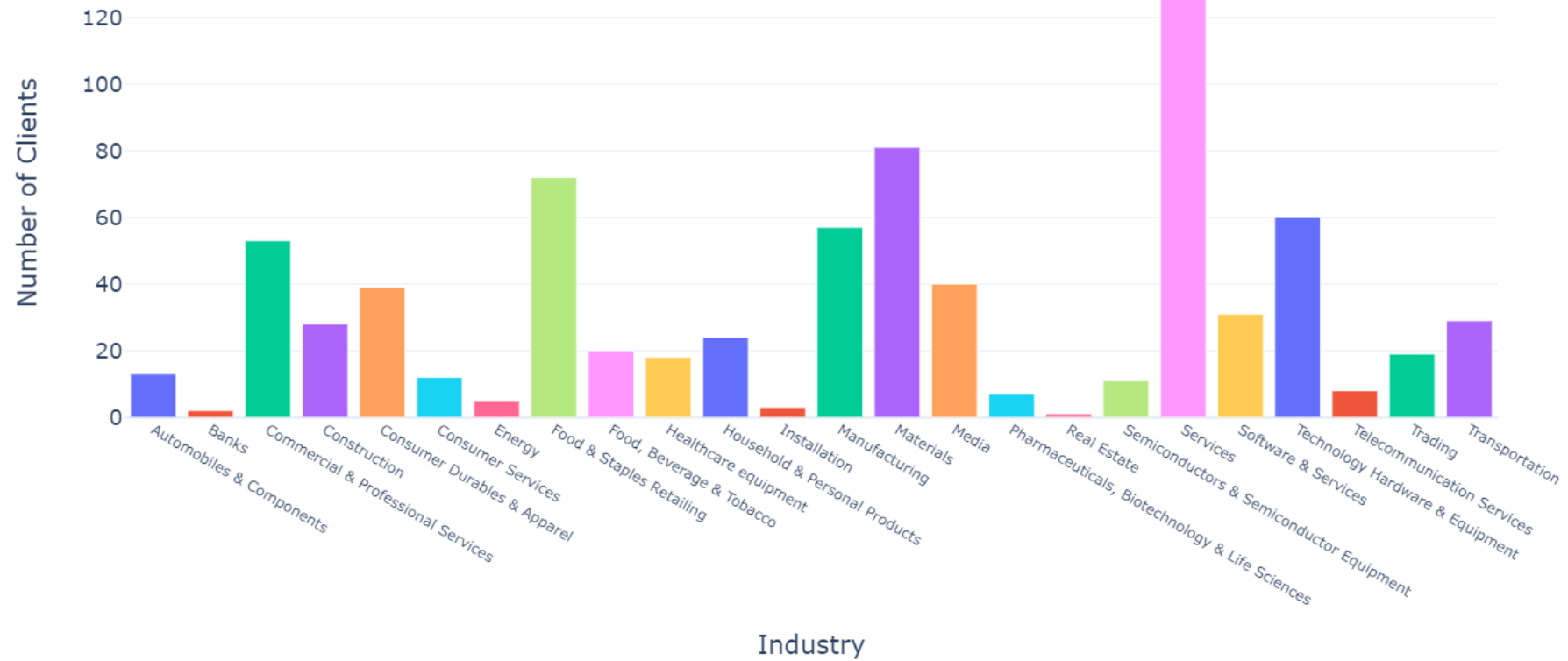
# Client Profile



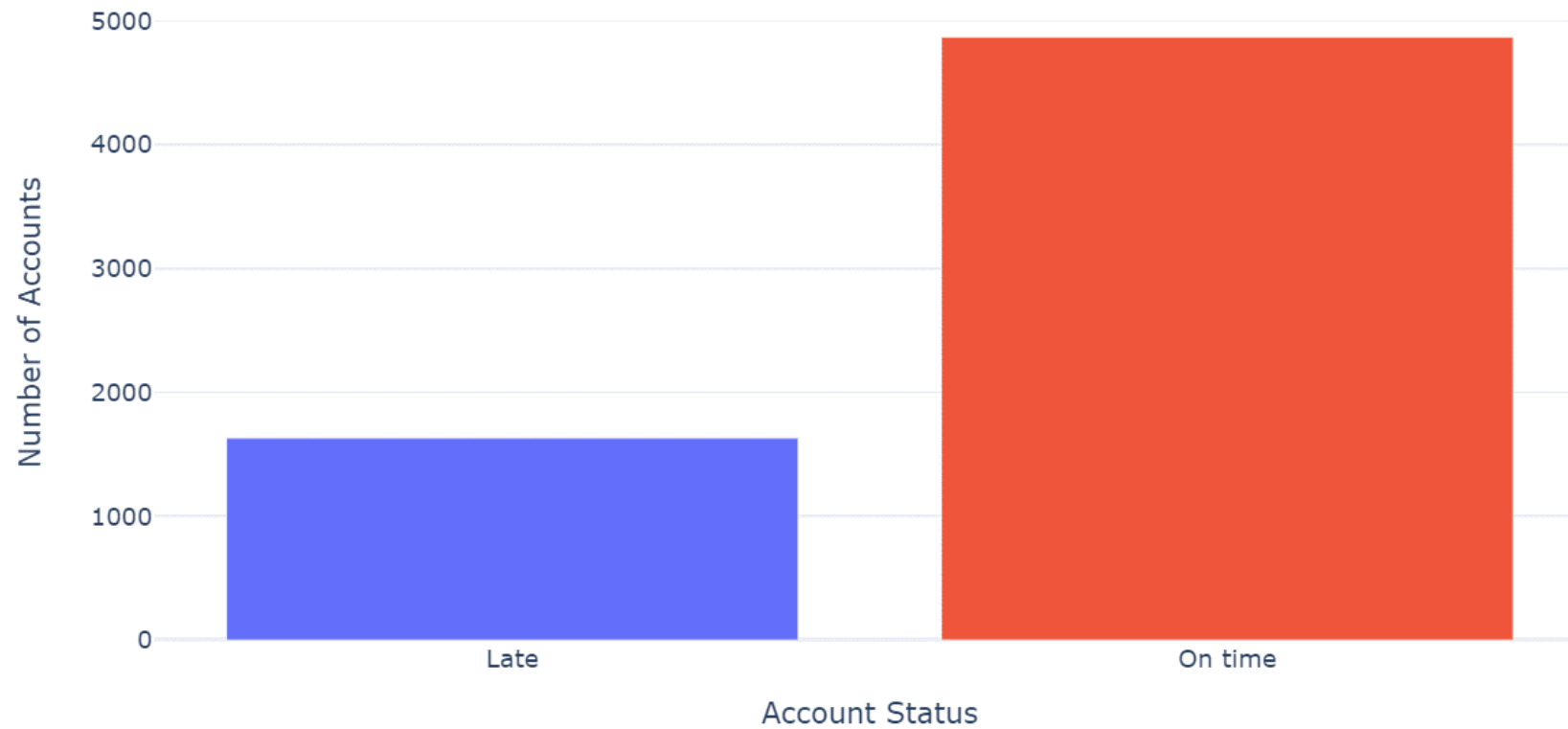
# Client Profile



# Client Profile



# Account Status





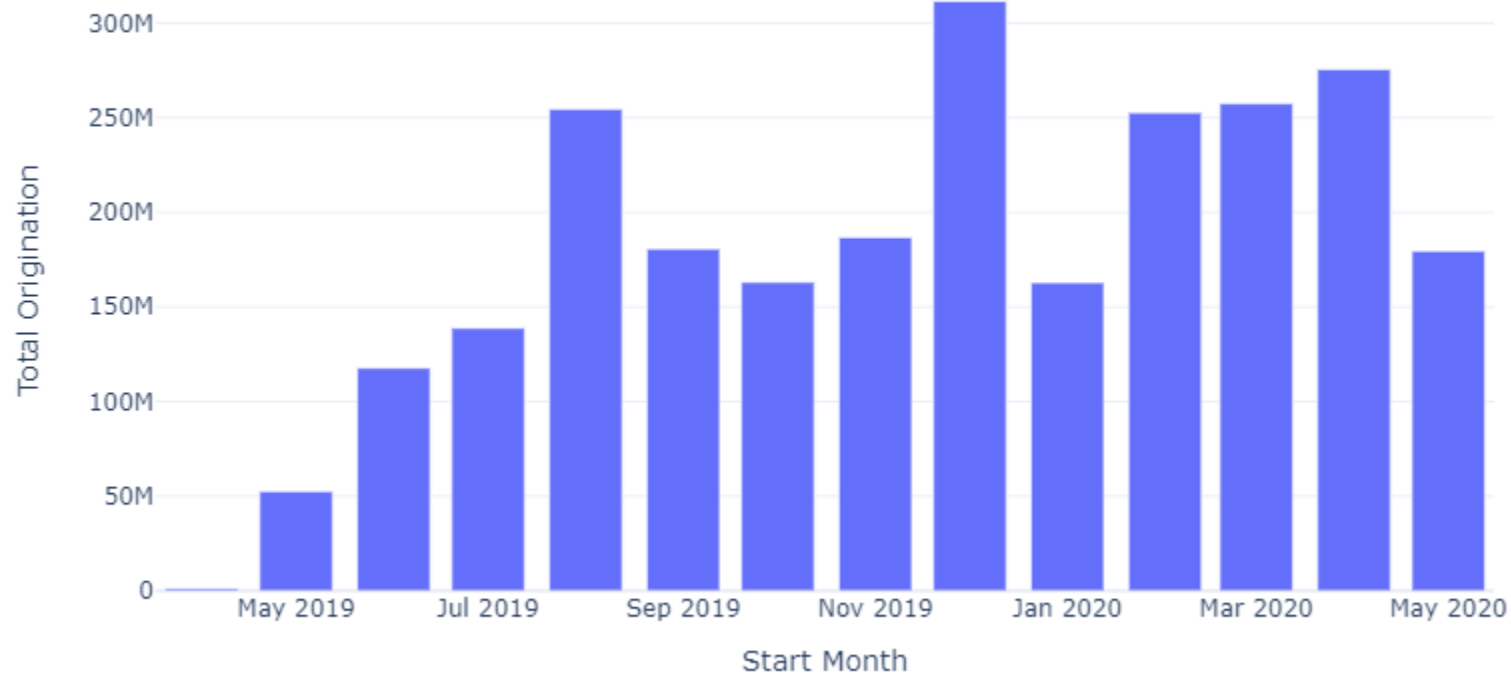
# Sales Manager

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*Growth of Client Base, Sales Performance, Loan Contracts*



# Monthly Origination Is On An Upward Trend



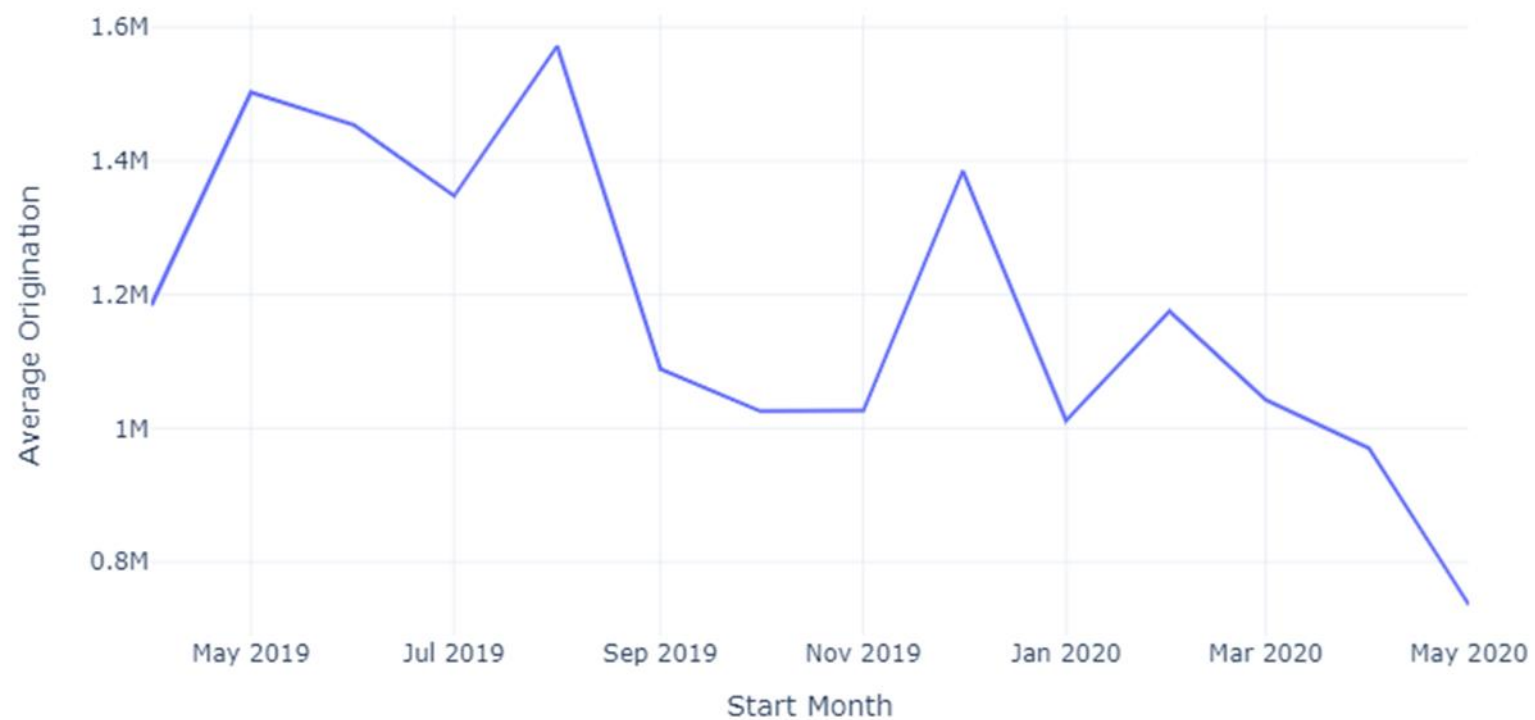
# Taking A Deeper Look...

Monthly Origination

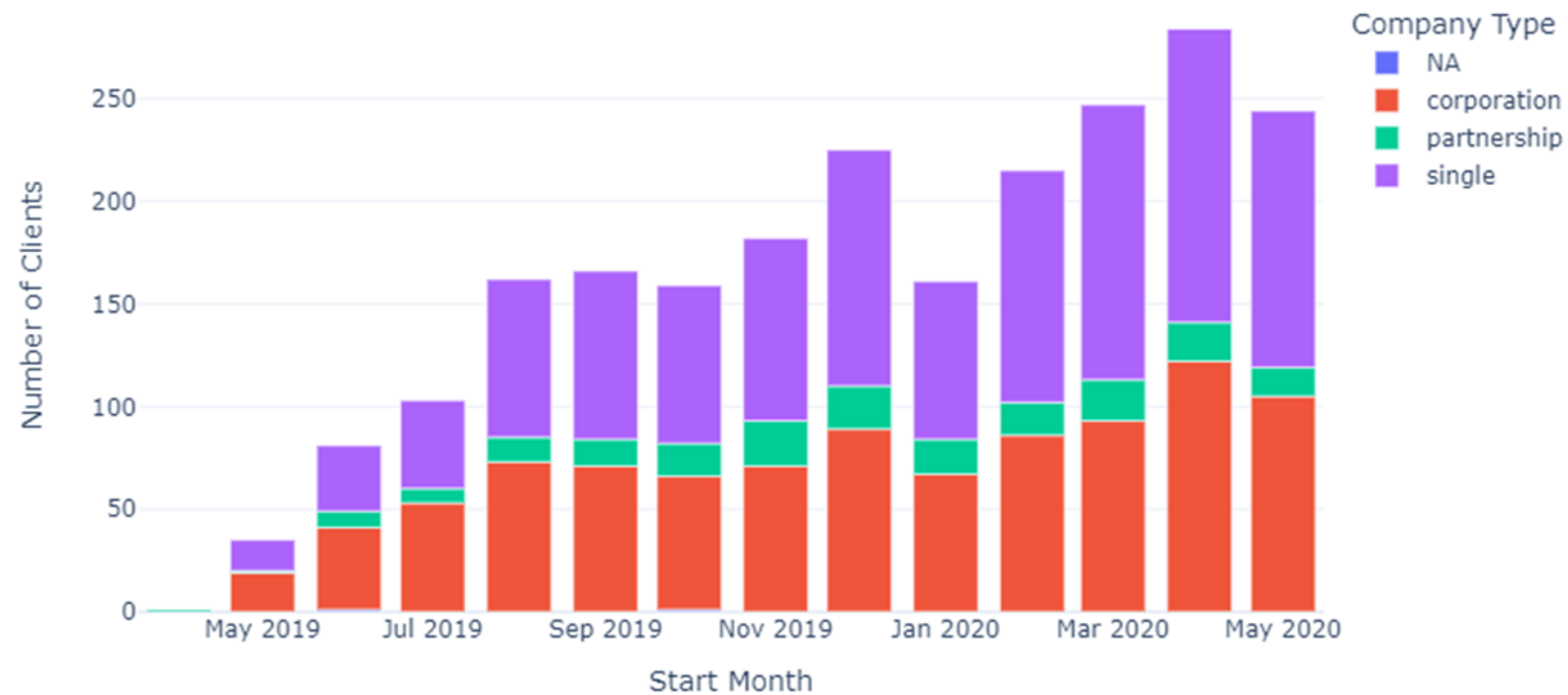
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Origination Amount per Client × Clients per Month

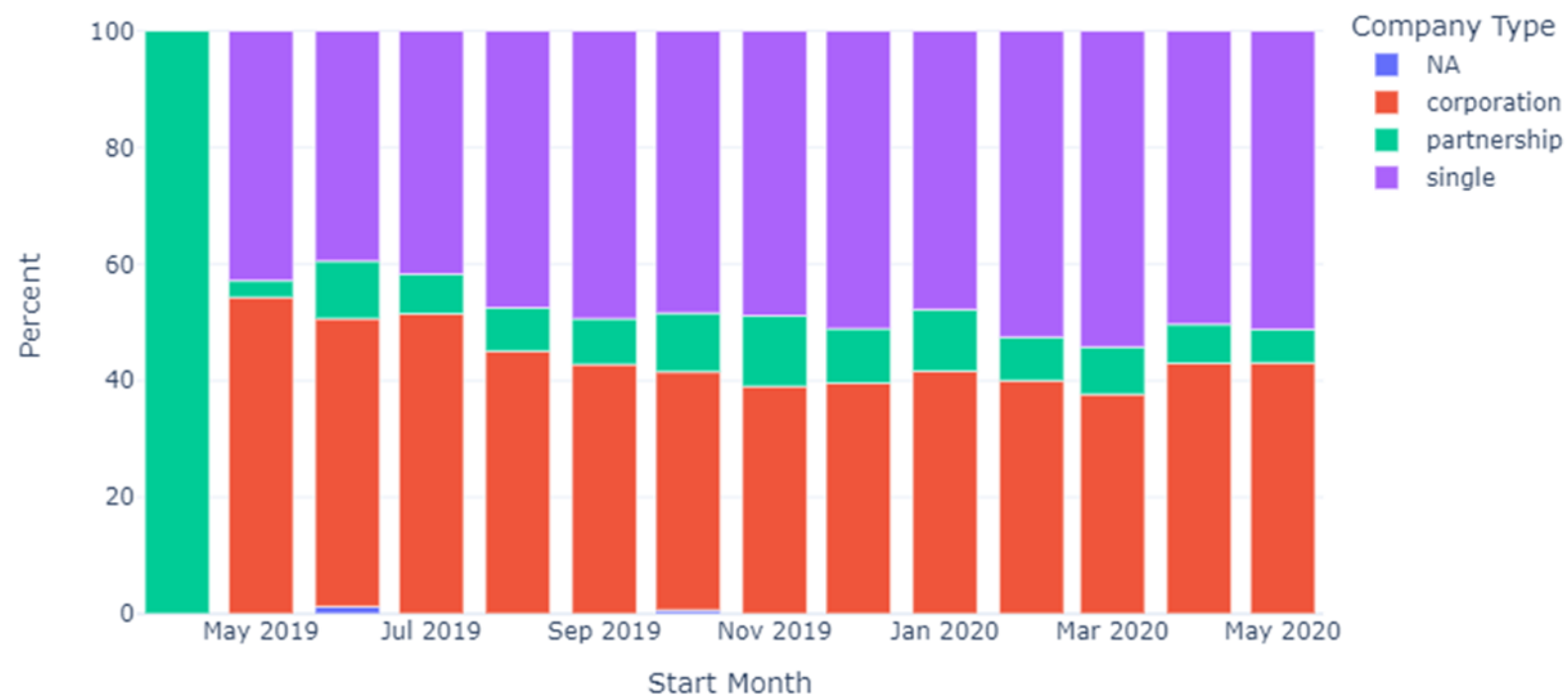
# Taking A Deeper Look...



# Taking A Deeper Look...



# Taking A Deeper Look...



# Taking A Deeper Look...

↑ Monthly Origination

=

↓ Origination Amount per Client × ↑ Clients per Month

# Insights and Solutions

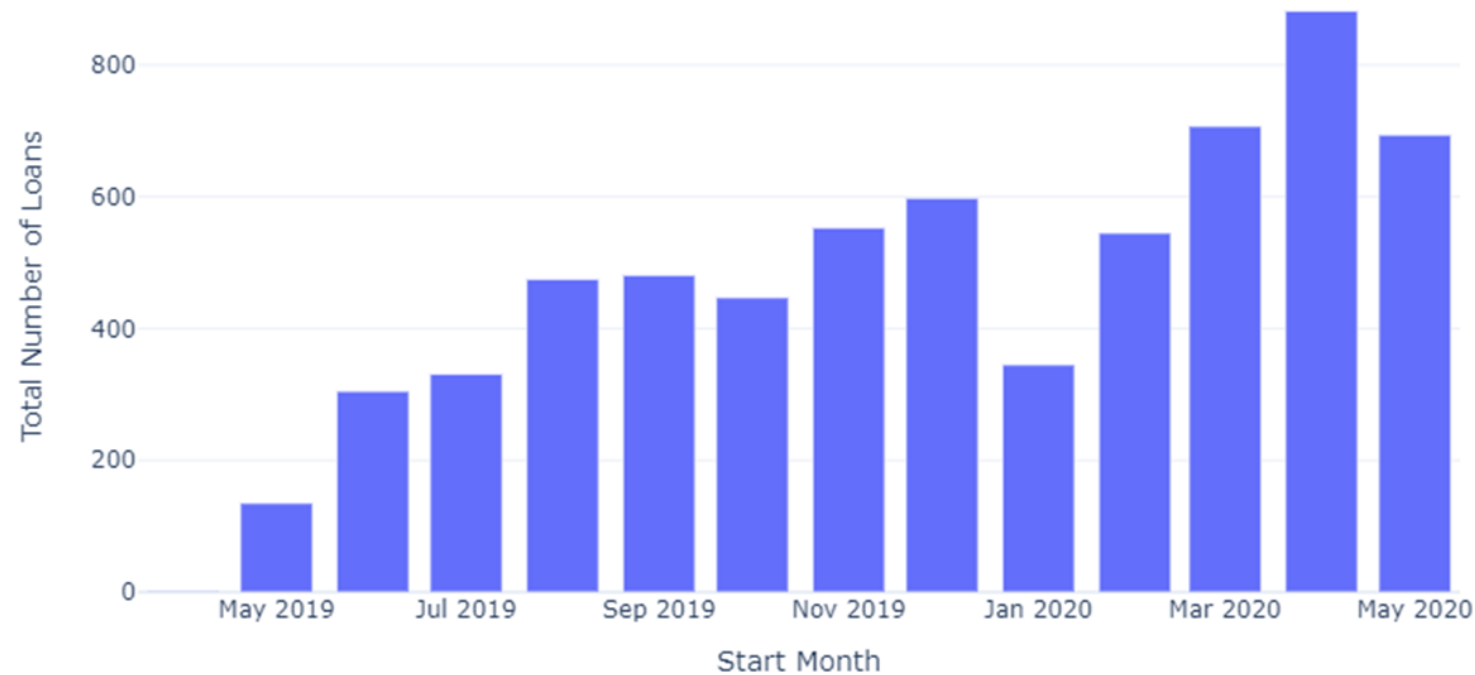
## Insights

- Steadily growing client base
- Origination amounts per client are decreasing
  - Review interest rate and other charges, terms and conditions of the loans
  - Assess target market and purpose of loan
  - Market loans with large amount to clients with good creditworthiness

## Solutions

- Market research to confirm if there are underlying causes
  - Make necessary improvements to increase origination per client
  - Compare terms with loans offered by other companies
  - Check if there is a need to expand target market

# Monthly Number of Loans Is On An Upward Trend

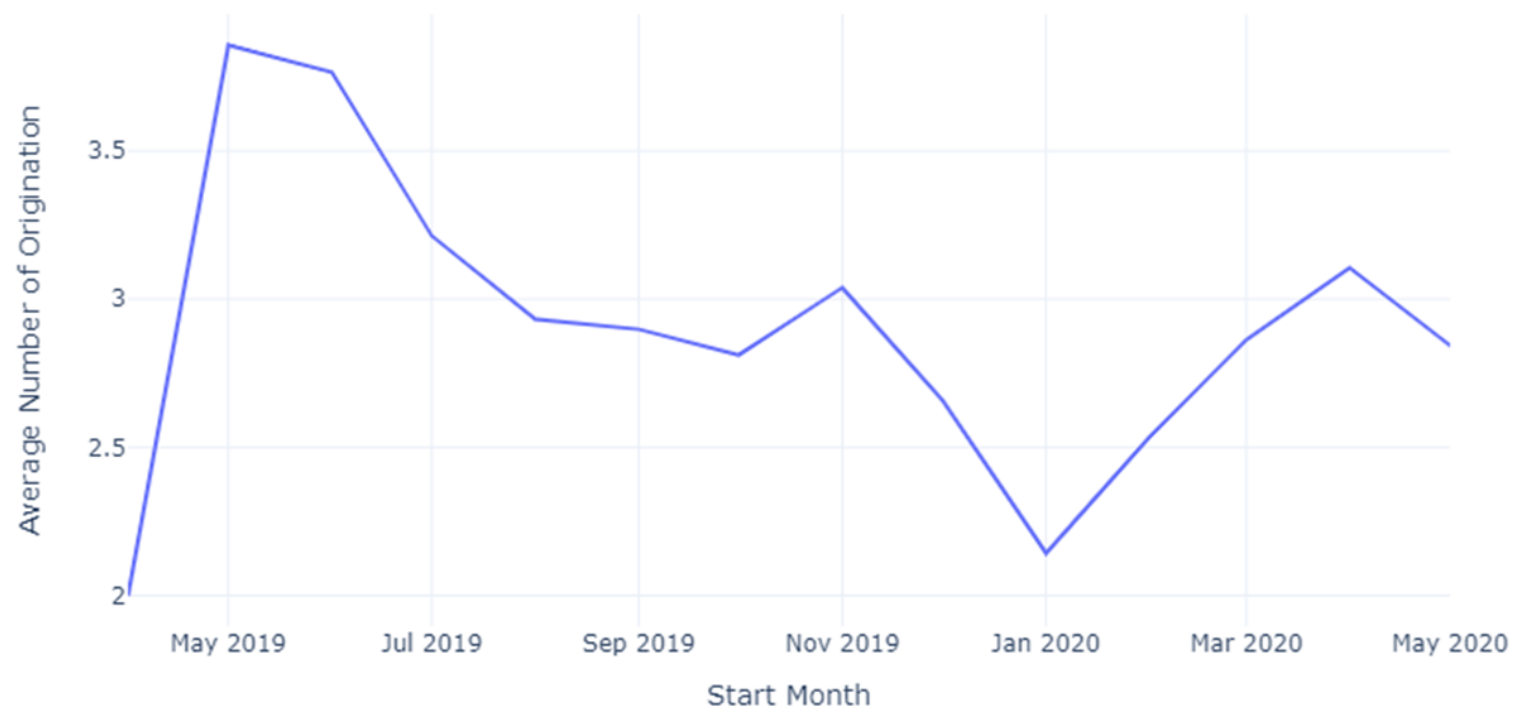




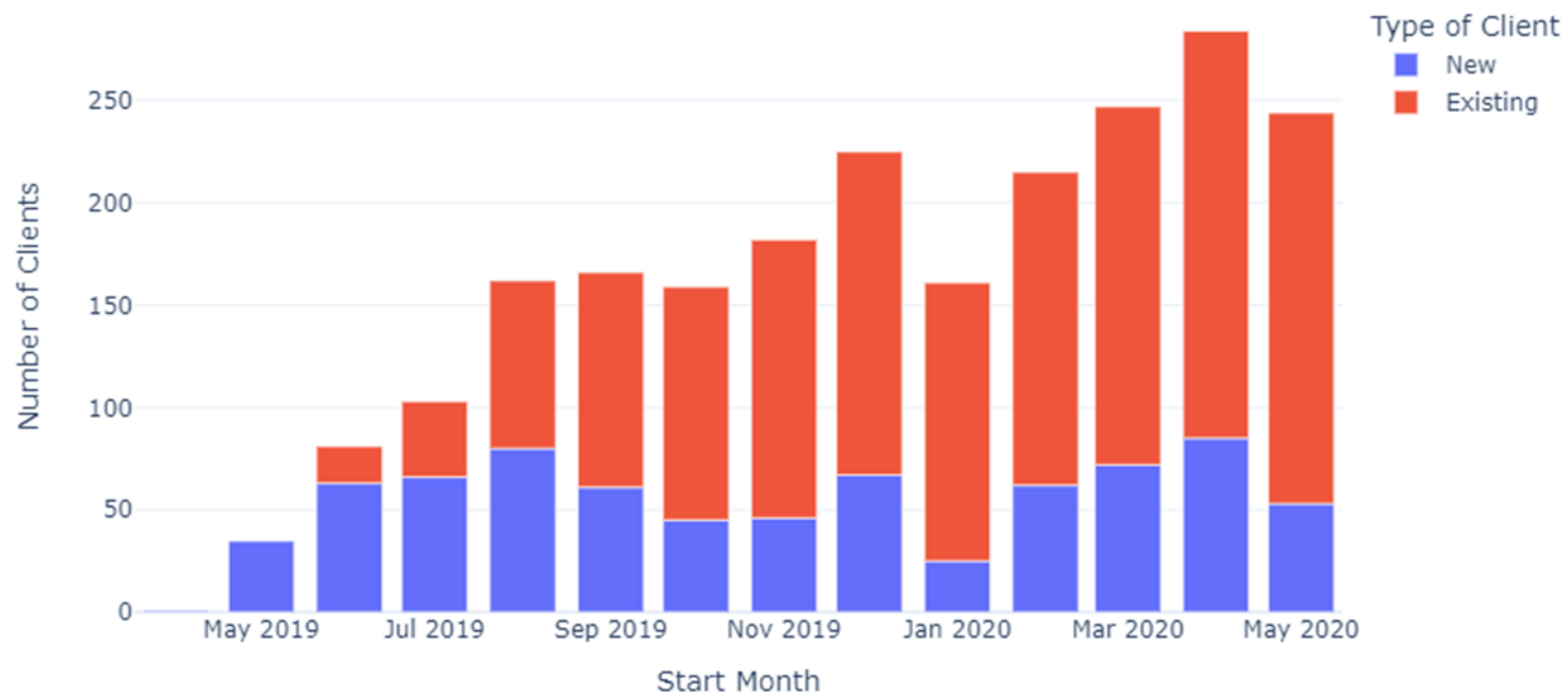
## Taking A Deeper Look...

$$\begin{aligned} &\text{Monthly Number of Loan} \\ &= \\ &\text{Number of Loan per Client} \times \text{Clients per Month} \end{aligned}$$

# Taking A Deeper Look...



# Taking A Deeper Look...



# Taking A Deeper Look...

↑ Monthly Number of Loan

=

↓ Number of Loan per Client × ↑ Clients per Month

# Insights and Solutions

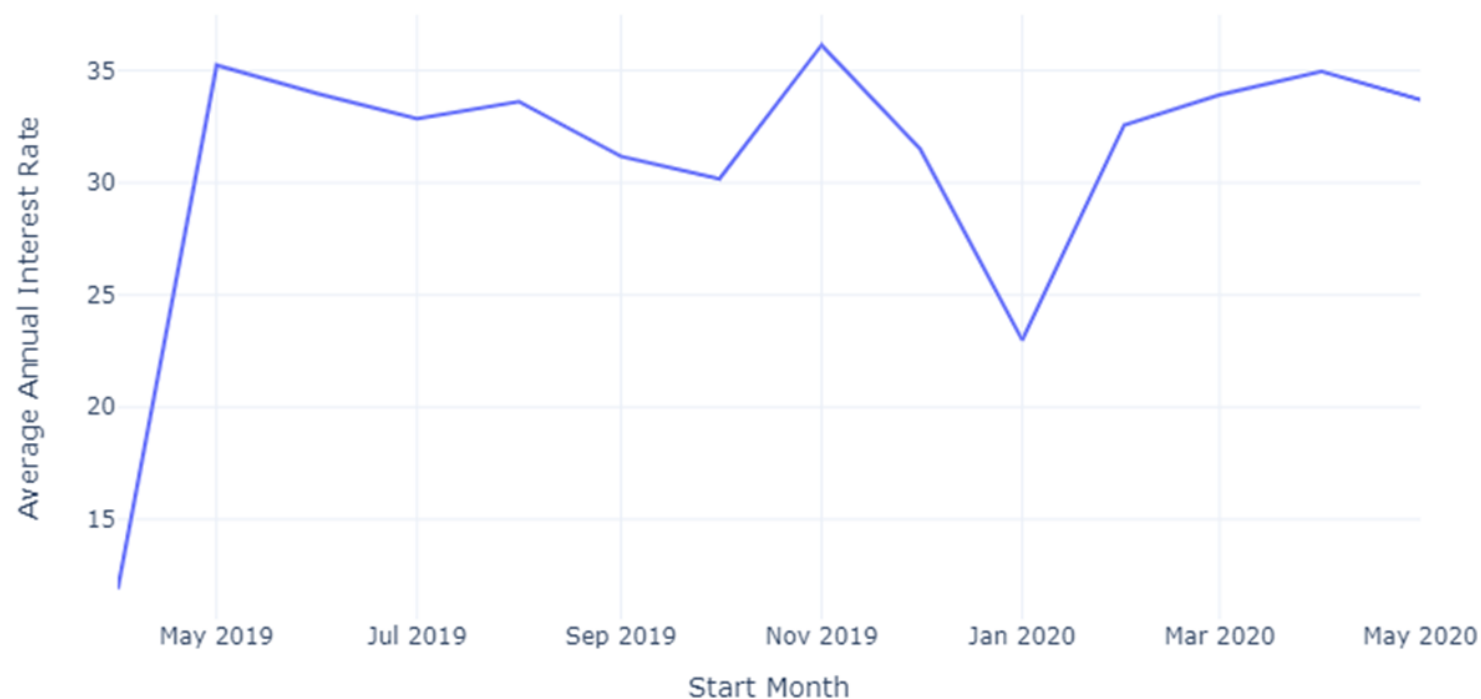
## Insights

- We have a strong loyal client base
- Existing clients are availing less loans
  - Might be due to existence of competitors with better terms
  - Might be due to nature of loans

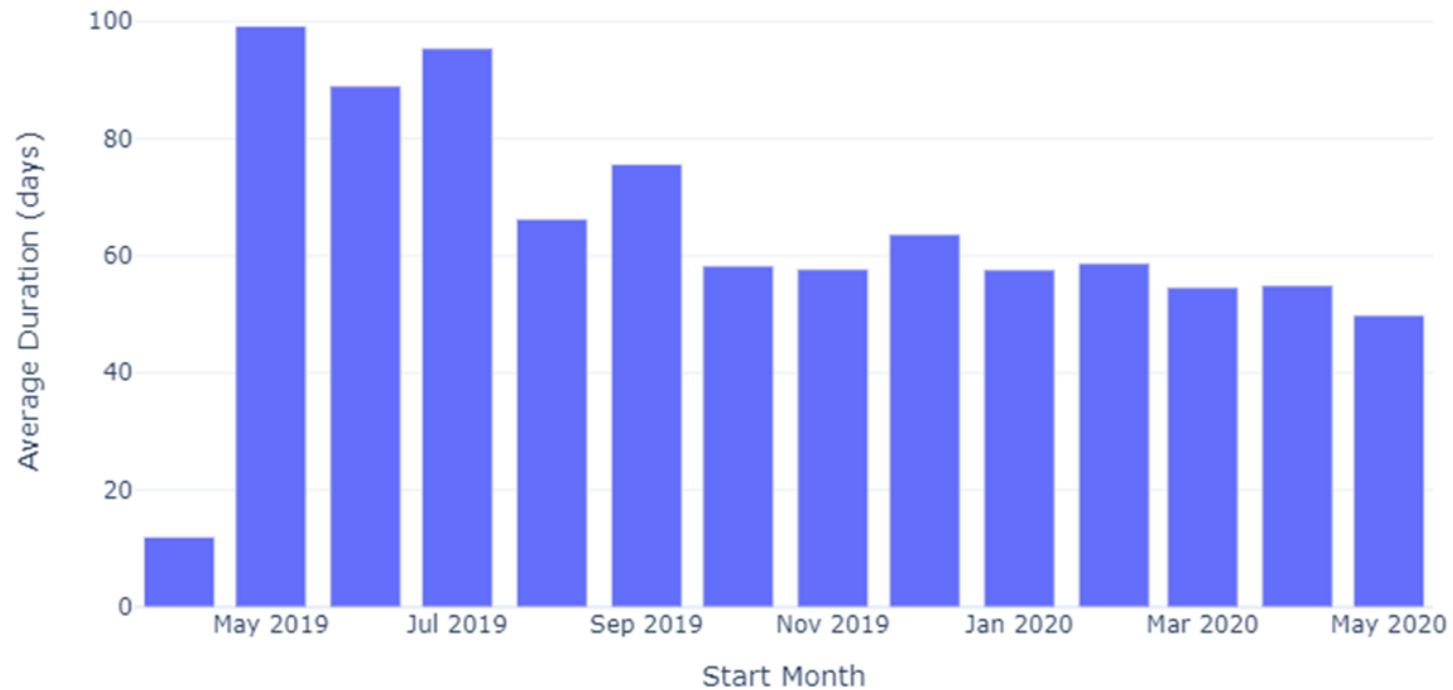
## Solutions

- Satisfaction study
  - Research if clients are satisfied with current services
  - Feedback for improvements
- Revamping of services/features
  - Stay up-to-date with latest features and trends in terms of service

# Adjustments Needed to Loan Contracts



# Adjustments Needed to Loan Contracts



# Insights and Solutions

## Insights

- Average interest rates and duration is stable
  - Good cashflow management
- Focus on adjusting the terms of loan contracts that better suit clients

## Solutions

- Competitor Analysis and Market Study
  - Compare the current values with other companies in the same industry
  - Check if the interest rate and duration match our current market
- Perform experiments (A/B Testing)
  - Check how much impact does easing/restricting loan contracts have



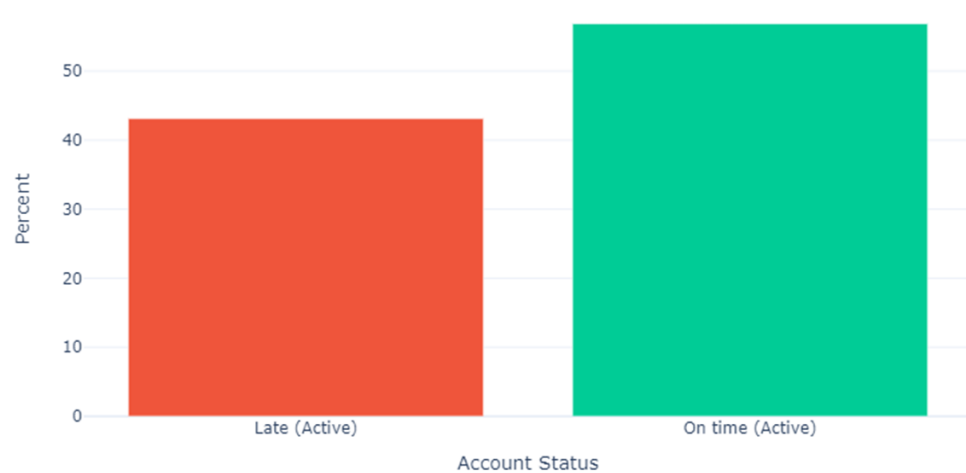


# Risk Manager

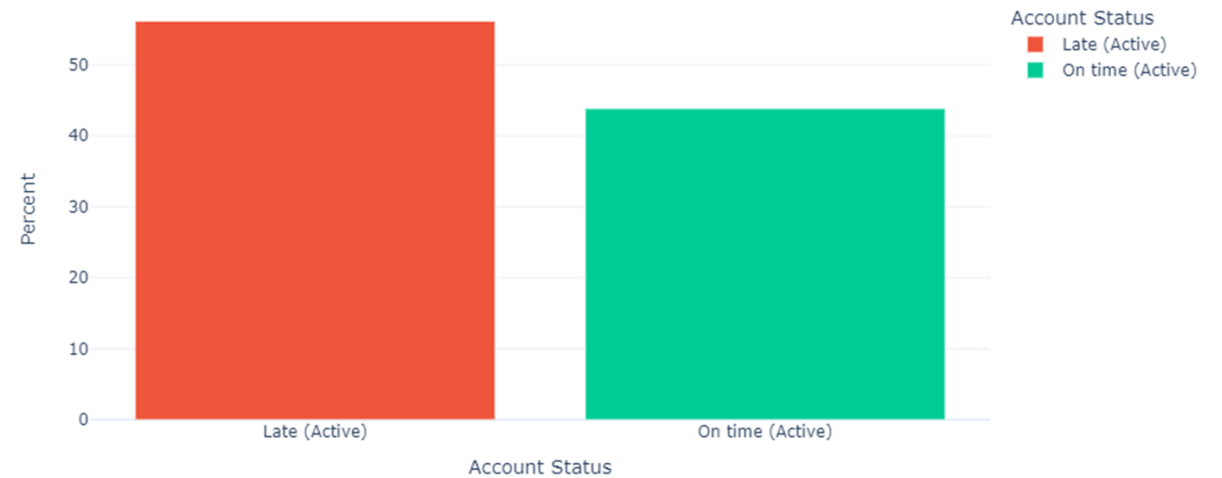
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*Collection Performance, Risky Clients, Overdue Accounts*

# Poor Collection Performance

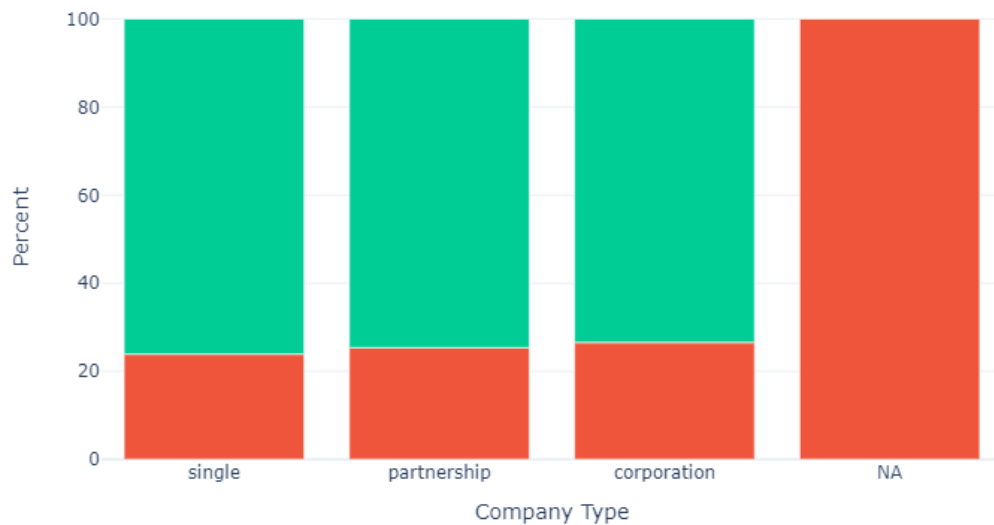


Percentage by  
Number of Accounts



Percentage by  
Origination Amount

# Overdue Accounts: Corporations with High Loan Amounts have Highest Late Percentage

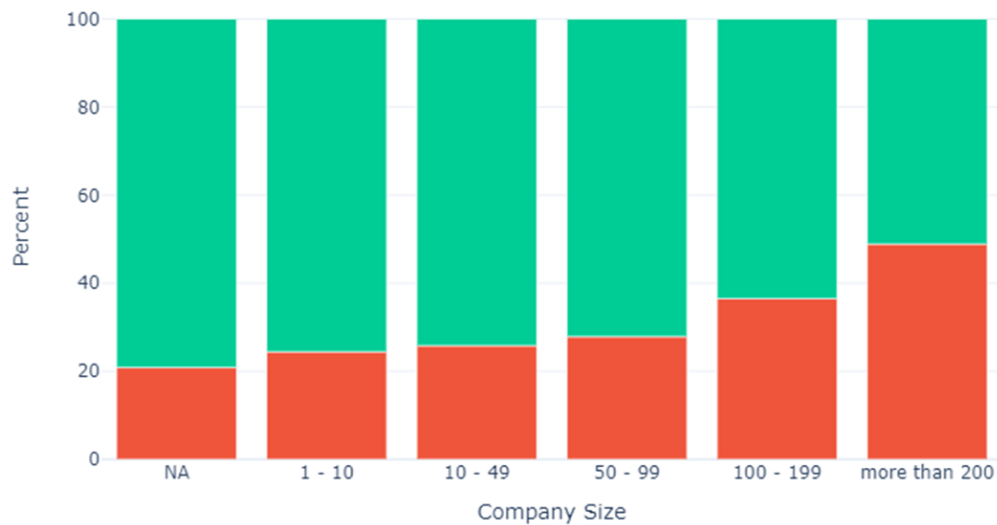


Percentage by  
Number of Accounts

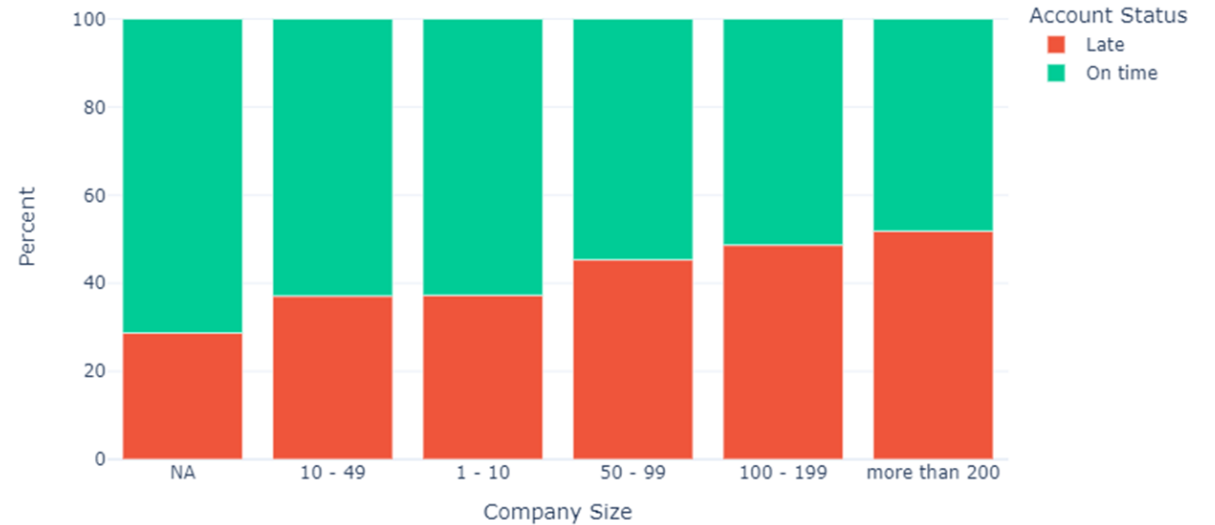


Percentage by  
Origination Amount

# Overdue Accounts: Small to Medium Companies



Percentage by  
Number of Accounts



Percentage by  
Origination Amount

# Insights and Solutions

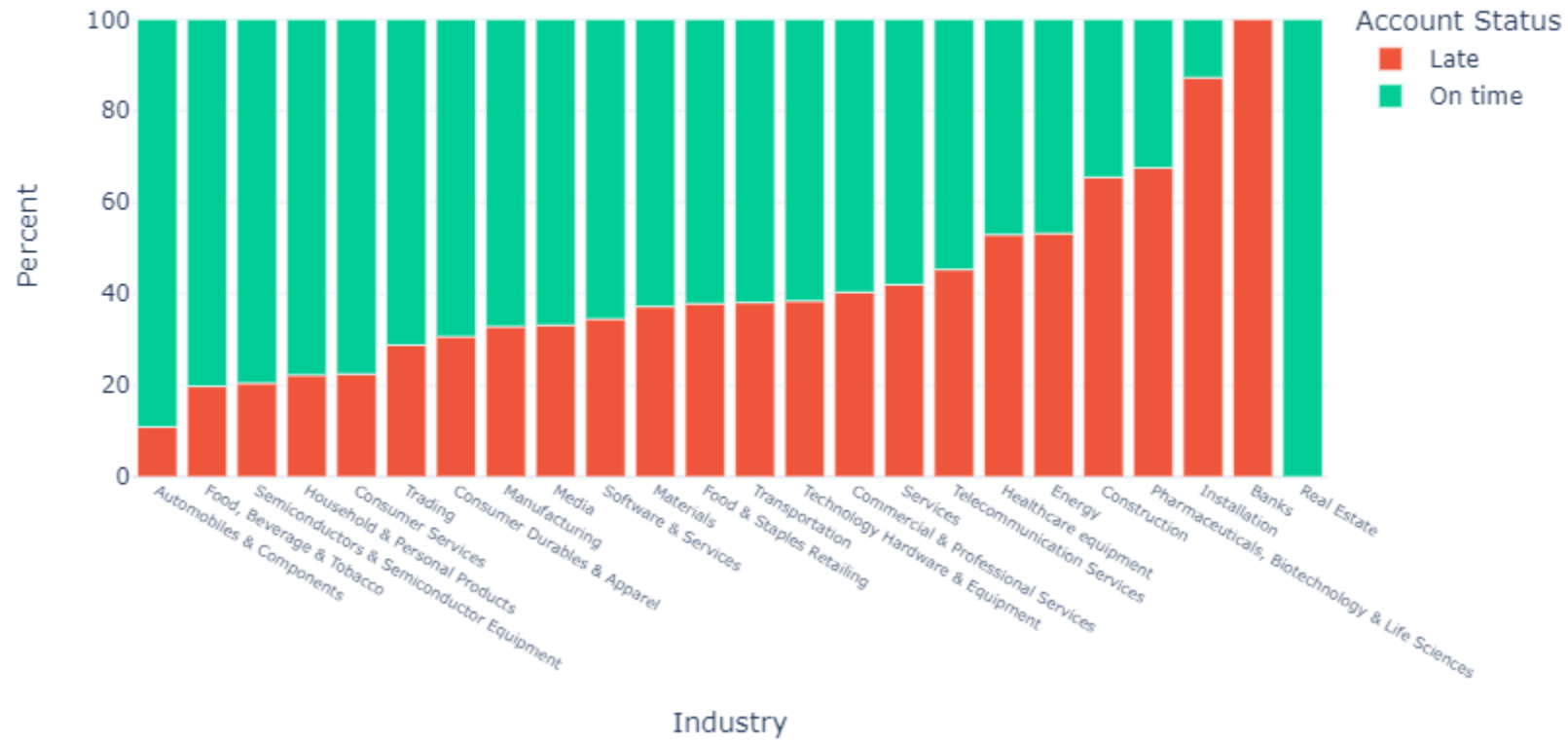
## Insights

- Large portion of funds tied to overdue accounts
  - This drags down future revenues
- Many clients with larger loan amount are overdue
  - Problem of diversification of loan book

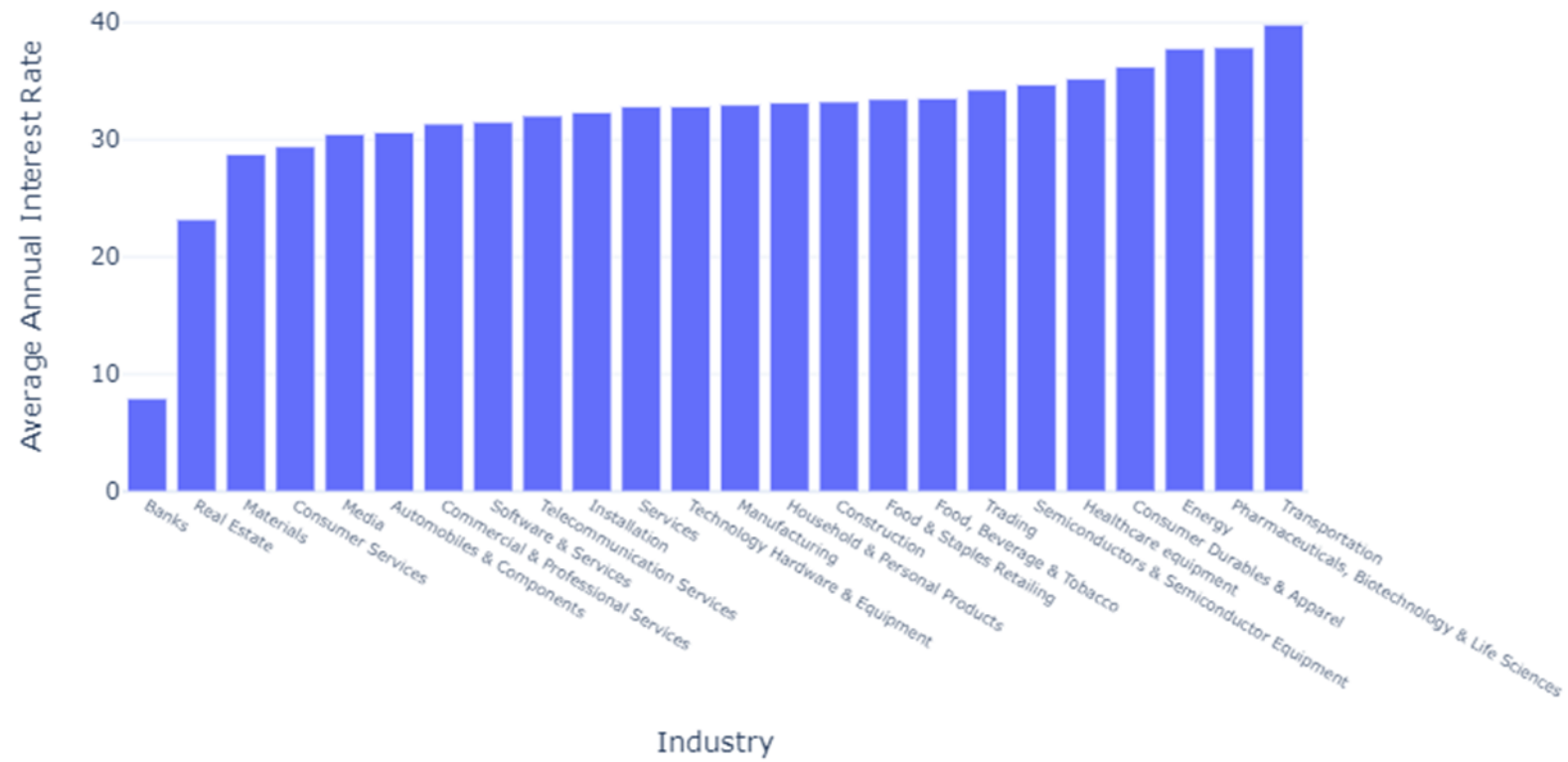
## Solutions

- Stricter collection procedures
  - Impose higher interest based on credit history/customer profile
  - Impose large fees for overdue accounts
- Larger bad debt allocation
  - Better preparation for default
- Improvement of systems to determine potentially bad accounts
  - Make filtering of clients better earlier on
  - Prevent ballooning of bad accounts

# Status of Loans per Industry



# Status of Loans per Industry



# Insights and Solutions

## Insights

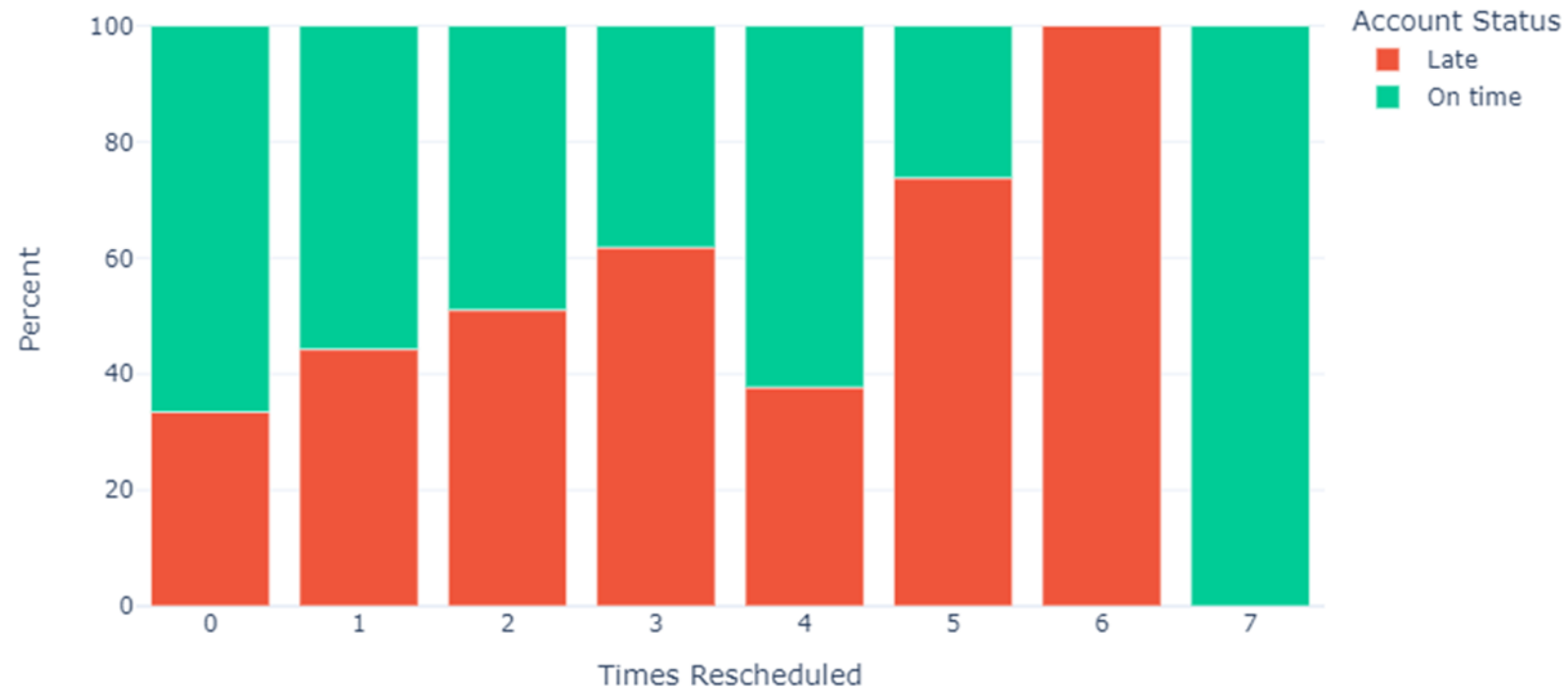
- Different Industries have a higher rate of late loans.
- Construction Companies are the ones with the highest percentage of late loans
- Average Interest rates do not balance the risk being taken based on industries

## Solutions

- Rebalancing the interest rates given out to properly offset the risk of different industries
- Creating a segmented scorecard model to be able to better cater to the customer profiles across different industries.



# Stricter Guidelines for Rescheduling Payments



# Insights and Solutions

## **Insights**

- Rescheduling is associated with higher probability of late payments

## **Solutions**

- Redefine payment schedules
  - Staggered payment options
  - Require at least 50% payment before allowing rescheduling
- Close coordination with clients nearing due dates
- Impose penalties for those that reschedule within a month before due date
- Cap the rescheduling to 2 times at most