



Loan Prophets

LOAN APPROVAL FORECASTING

Moringa School



OVERVIEW

01

Introduction

02

Business
Understanding

03

Data
Understanding

04

Predictive
Modeling

05

Chatbot
Integration

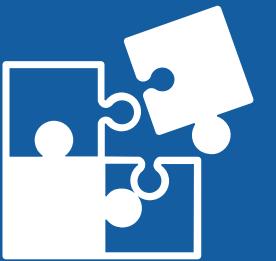
06

Conclusions
Recommendations



PROBLEM STATEMENT

A Tale of Efficiency and Trust



To assist financial institutions and individuals in automating and optimizing the loan approval processes.



By leveraging historical data, we aim to build a reliable model that predicts whether a loan application is likely to be approved or rejected.



STAKEHOLDERS

The loan approval system serves banks, financial institutions and their end-users in various capacities

BUSINESS VALUE

Innovative Solution

DataDriven Approach

Industry Leadership



OBJECTIVES

O1 Efficiency and Speed

O2 Customer Engagement

O3 Risk minimization

O4 Operational Efficiency



KEY FEATURES:

Age

Marital Status

Education

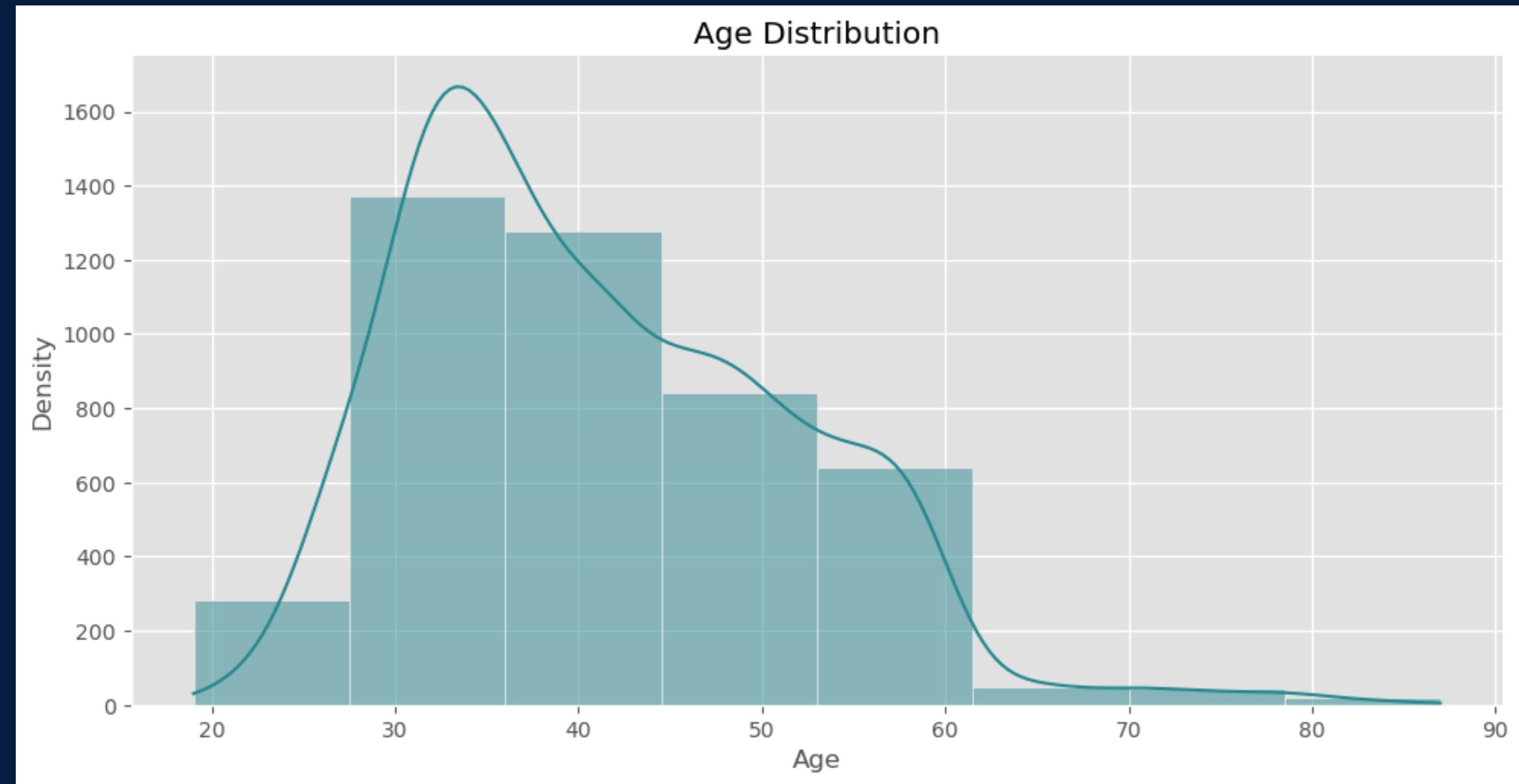
Other Loans

Loan Purpose

Job Type

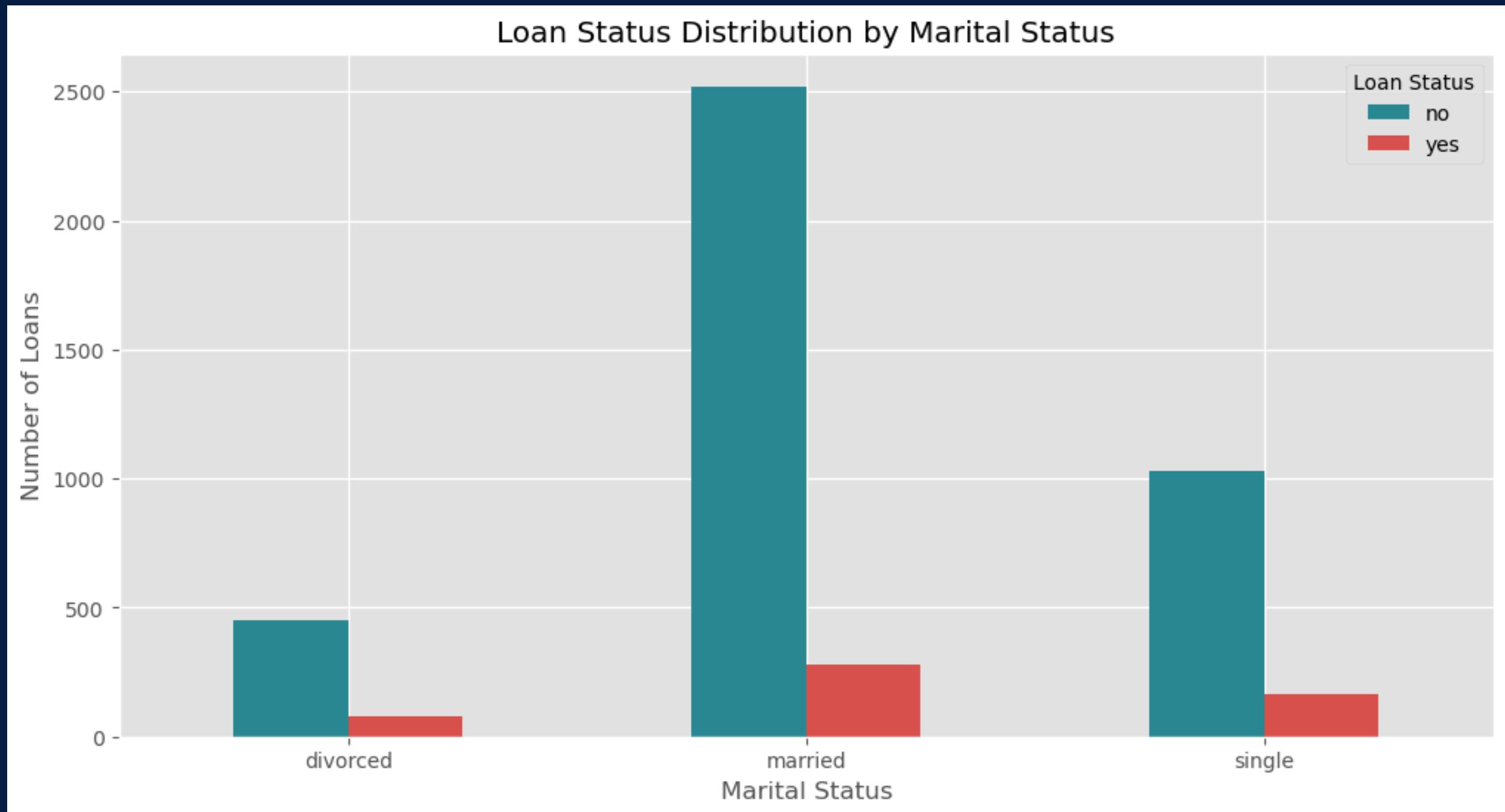
CUSTOMER AGE DISTRIBUTION

- Age Range:
19 - 87
- Most active customers
and loan applicants fall
between 30 - 40 years
of age



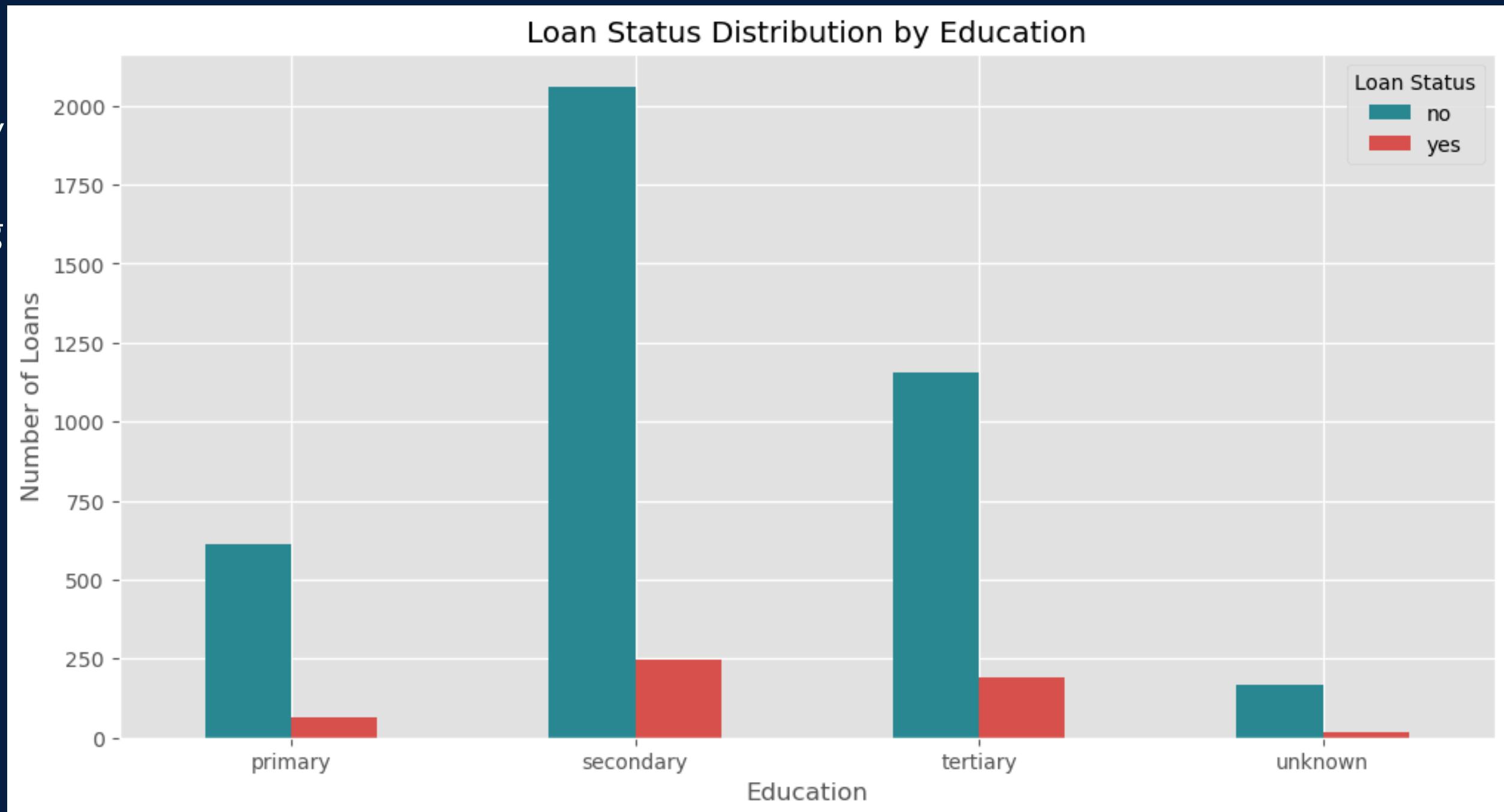
MARITAL STATUS & LOAN STATUS

- The bulk of bank customers are married
- Married customers receive more loans



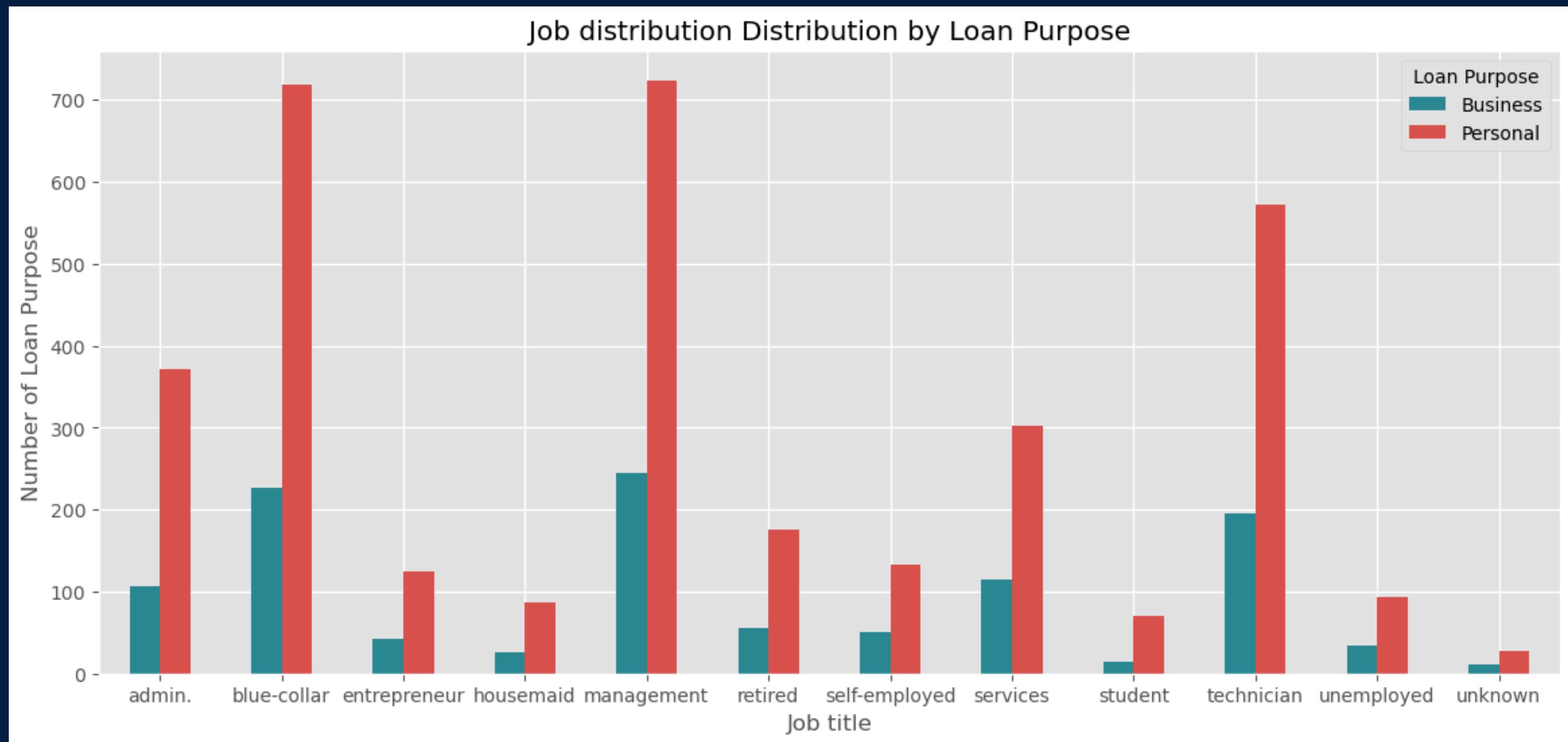
EDUCATION LEVEL & LOAN STATUS

- Higher education levels are closely related with higher account balances and chances of receiving loans
- Secondary education level graduates requested for and received more loans



JOB DISTRIBUTION AND LOAN PURPOSE:

Personal loans
take precedence
over business loans



FEATURE ENGINEERING

10X



Loan recipients will be granted up to 10 times their account balance

12%



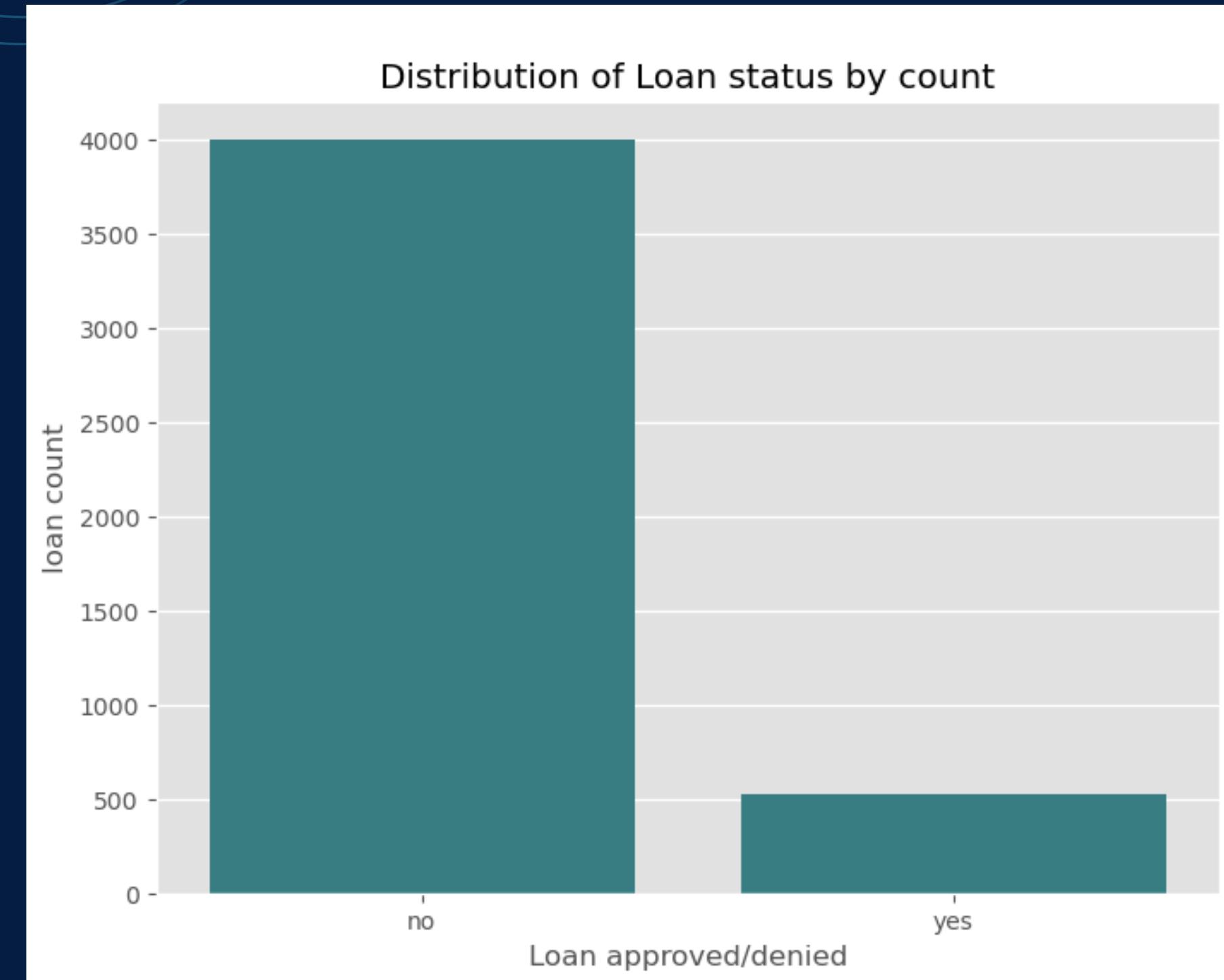
Loan repayment incurs a 12% charge



LOAN APPROVAL DISTRIBUTION

Class Imbalance

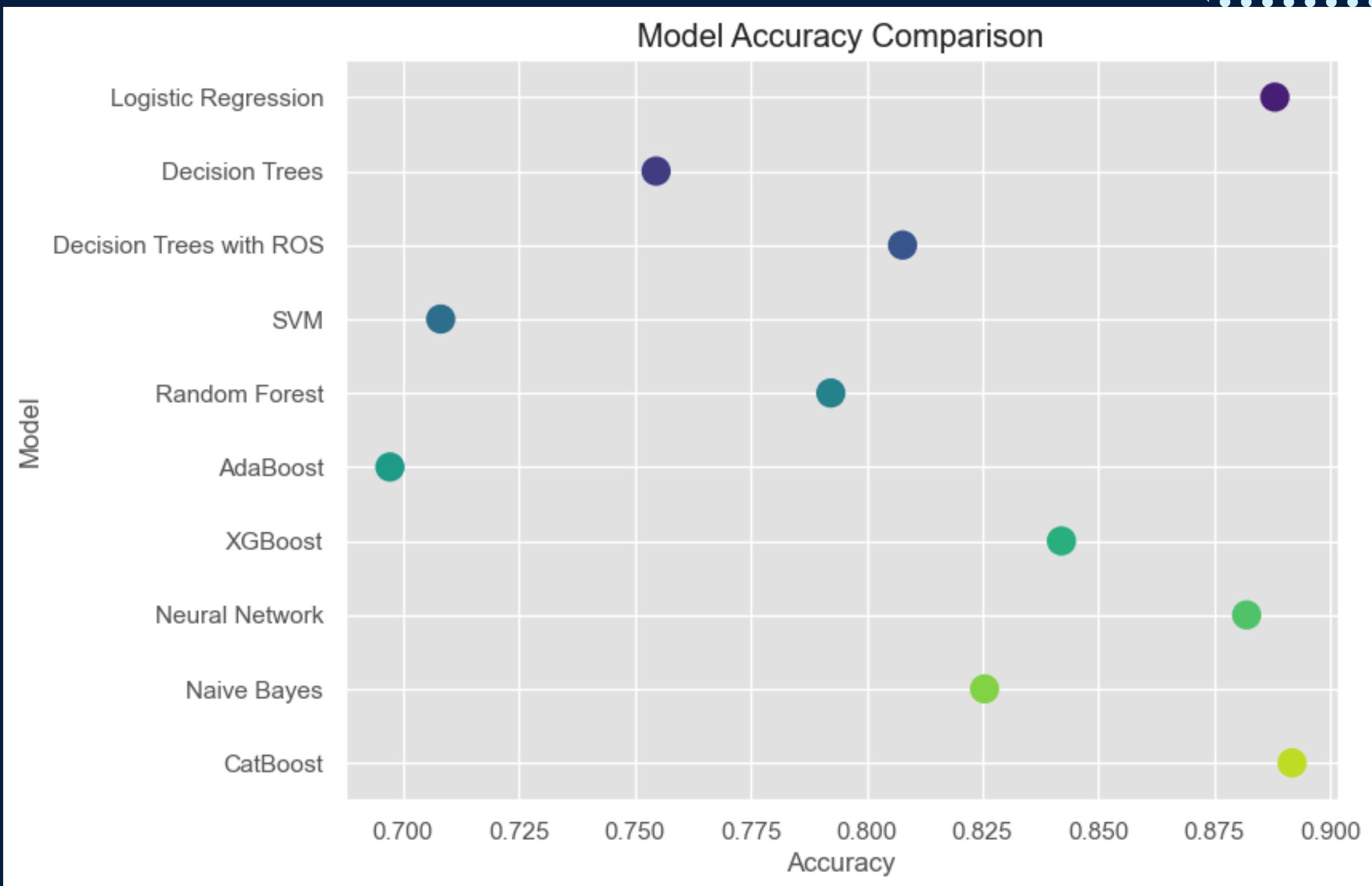
- SMOTE technique was used in modelling



PREDICTIVE MODELLING

01 Our baseline model was
Logistic Regression

02 We settled on CAT Boost
model



CONCLUSIONS

1. Automation and Efficiency
2. Risk Mitigation
3. Customer Engagement
4. Data-Driven Decision Making

RECOMMENDATIONS

Continuous monitoring and updating of the Model

Incorporating explainable AI

Explore advanced feature engineering and ensemble techniques

Responsible AI practices

Chatbot Expansion

Collaboration and knowledge sharing with other experts



CHATBOT INTEGRATION

We used the Streamlit app as the front end for the user to interact with the model:

Demo here: [click](#)



OUR TEAM

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Thank You

