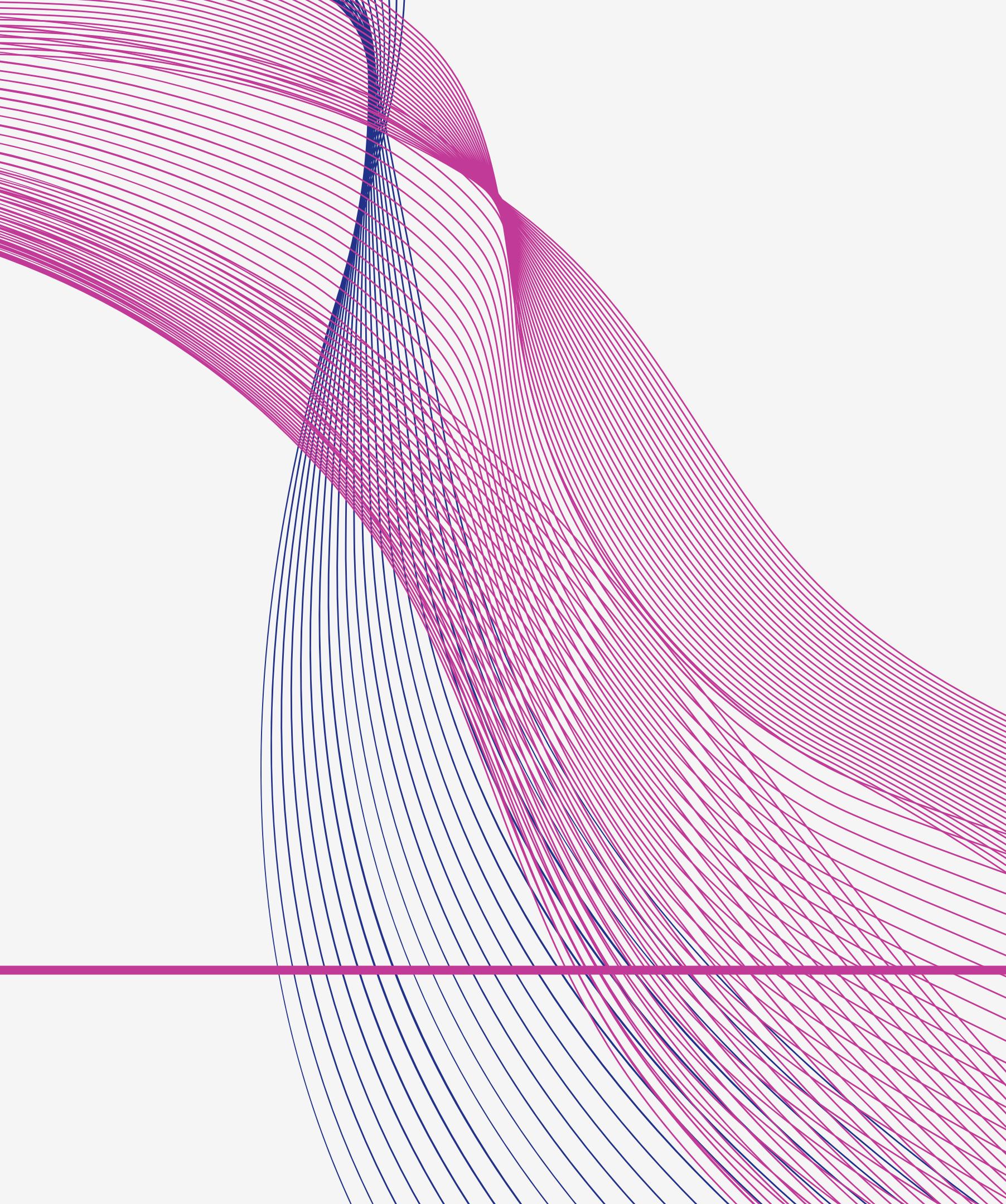




Mortgage Approval System

Presented by Norbert & Darshik

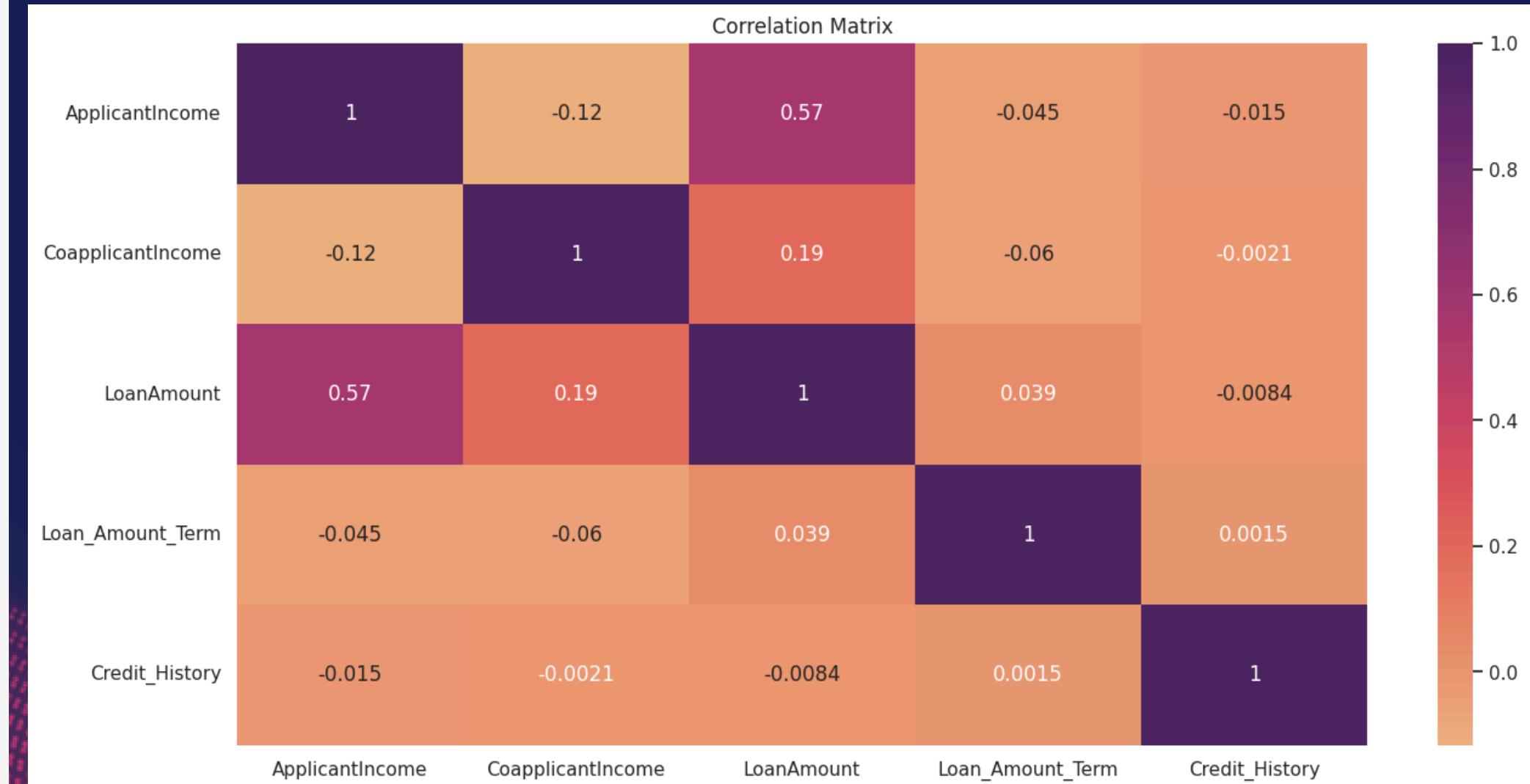


OBJECTIVE

Automating the home mortgage eligibility process. Instead of manually validating each application, we will use customer details—such as Gender, Marital Status, Education, Number of Dependents, Income, Loan Amount, and Credit History—from online forms to determine eligibility in real-time. This automation will help us quickly identify eligible customers and streamline loan approvals. We have a partial dataset to develop and test this system

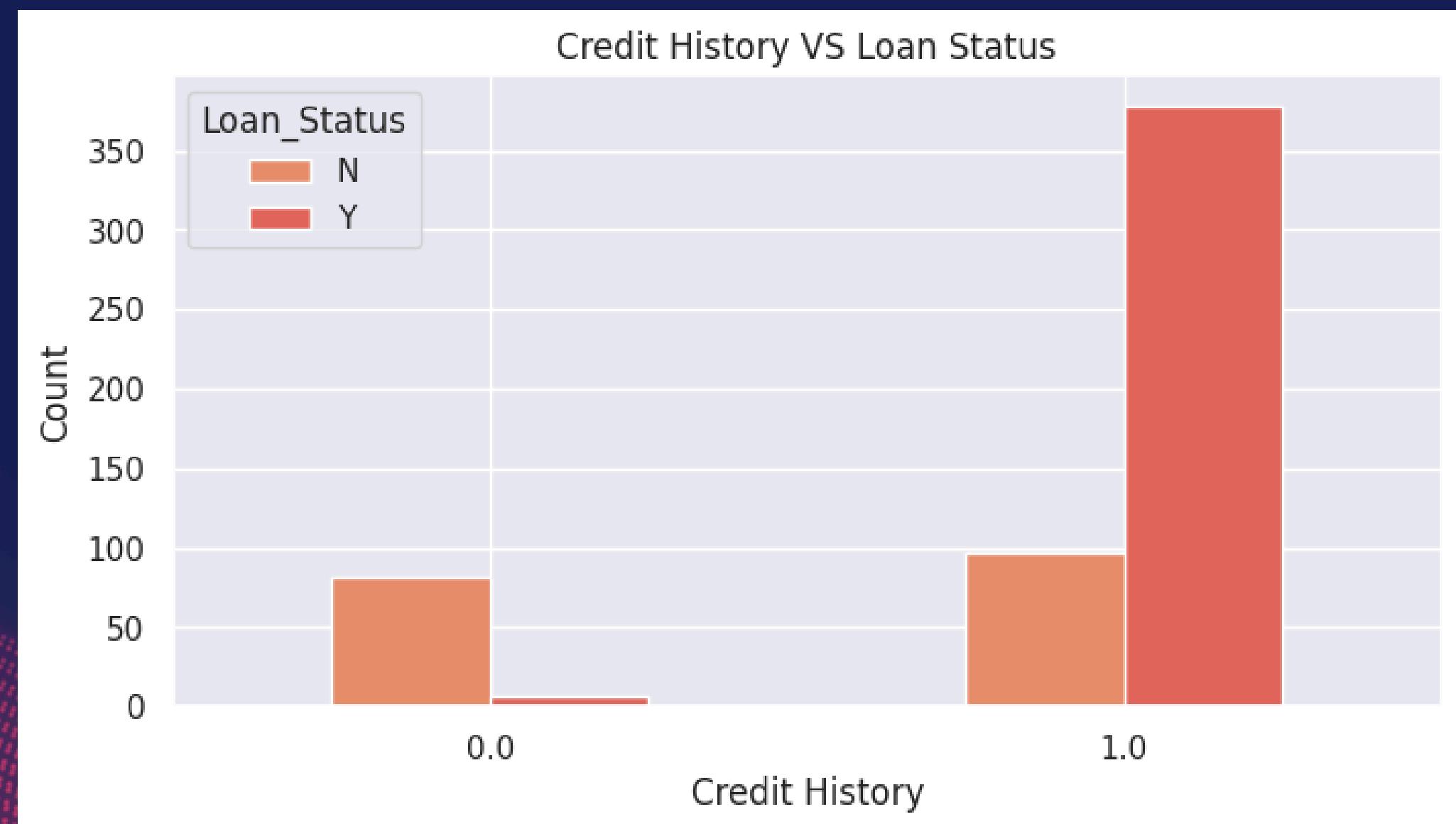
Correlation Analysis

There is positive correlation between Loan Amount and Applicant Income



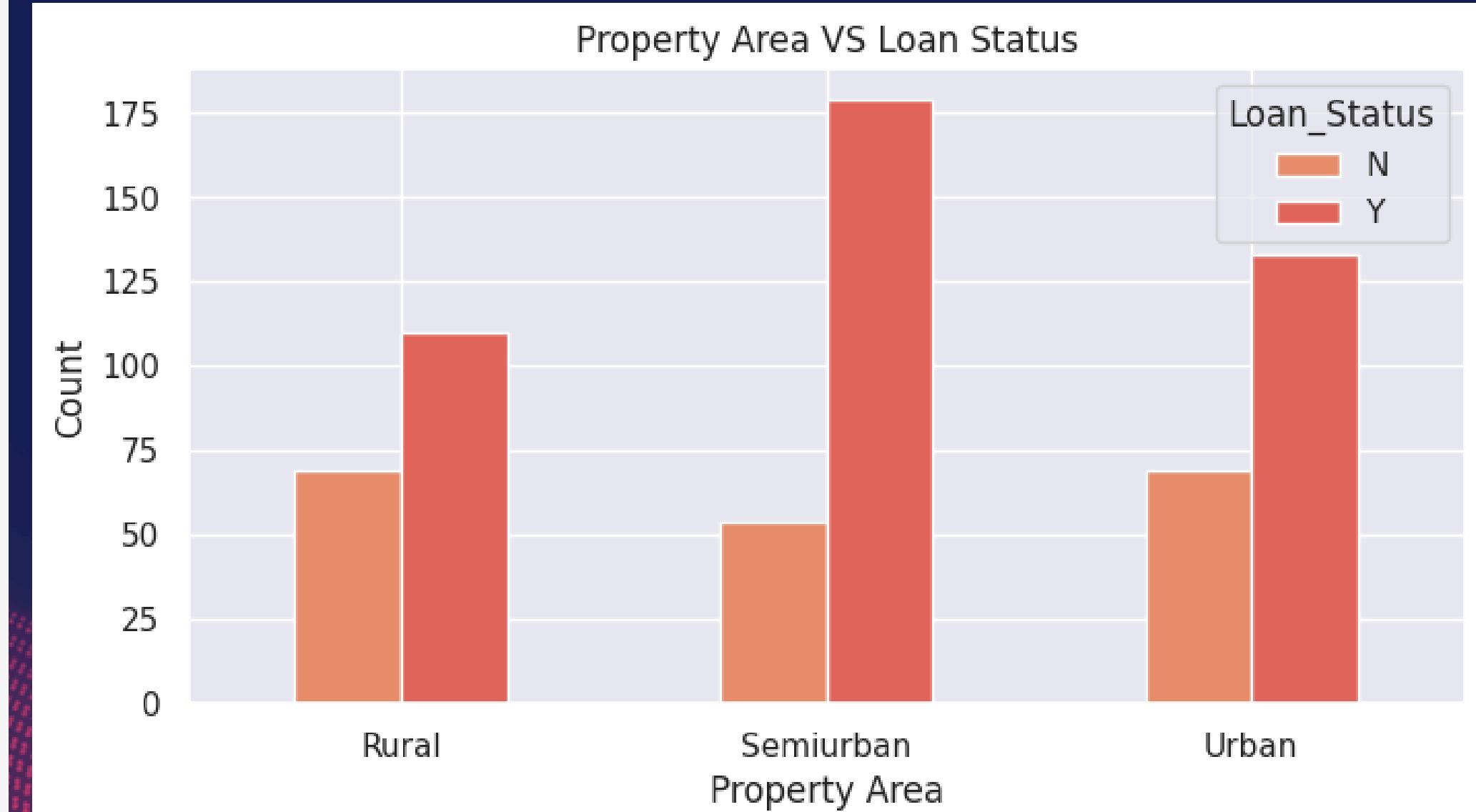
Credit History Analysis

The analysis appears a good credit history significantly increases the chances of loan approval. Because the percentage of people who have a good credit history and are approved is much better than a bad credit history.



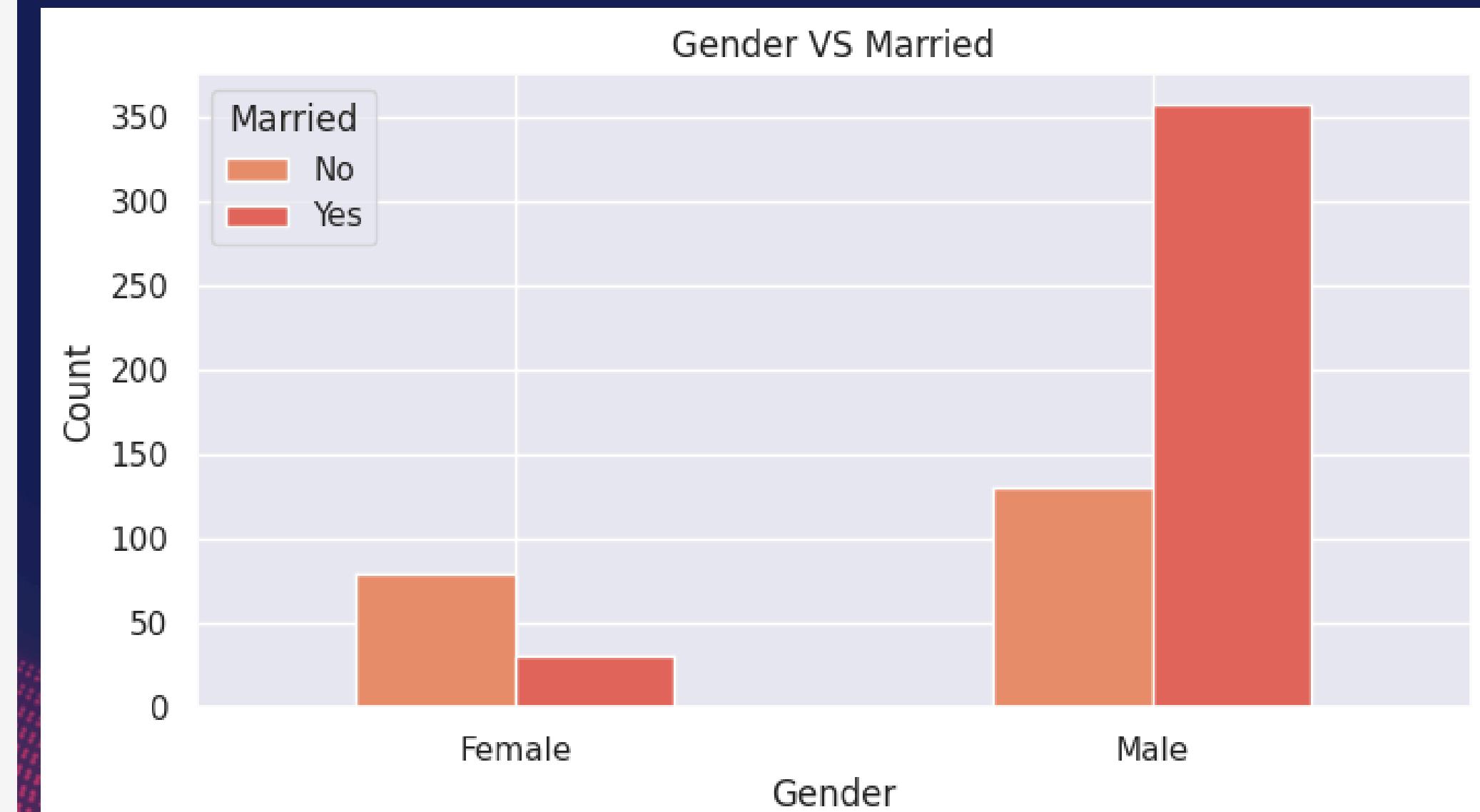
Property Area Analysis

Most of loan that got accepted has property in Semiurban compared to Urban and Rural.



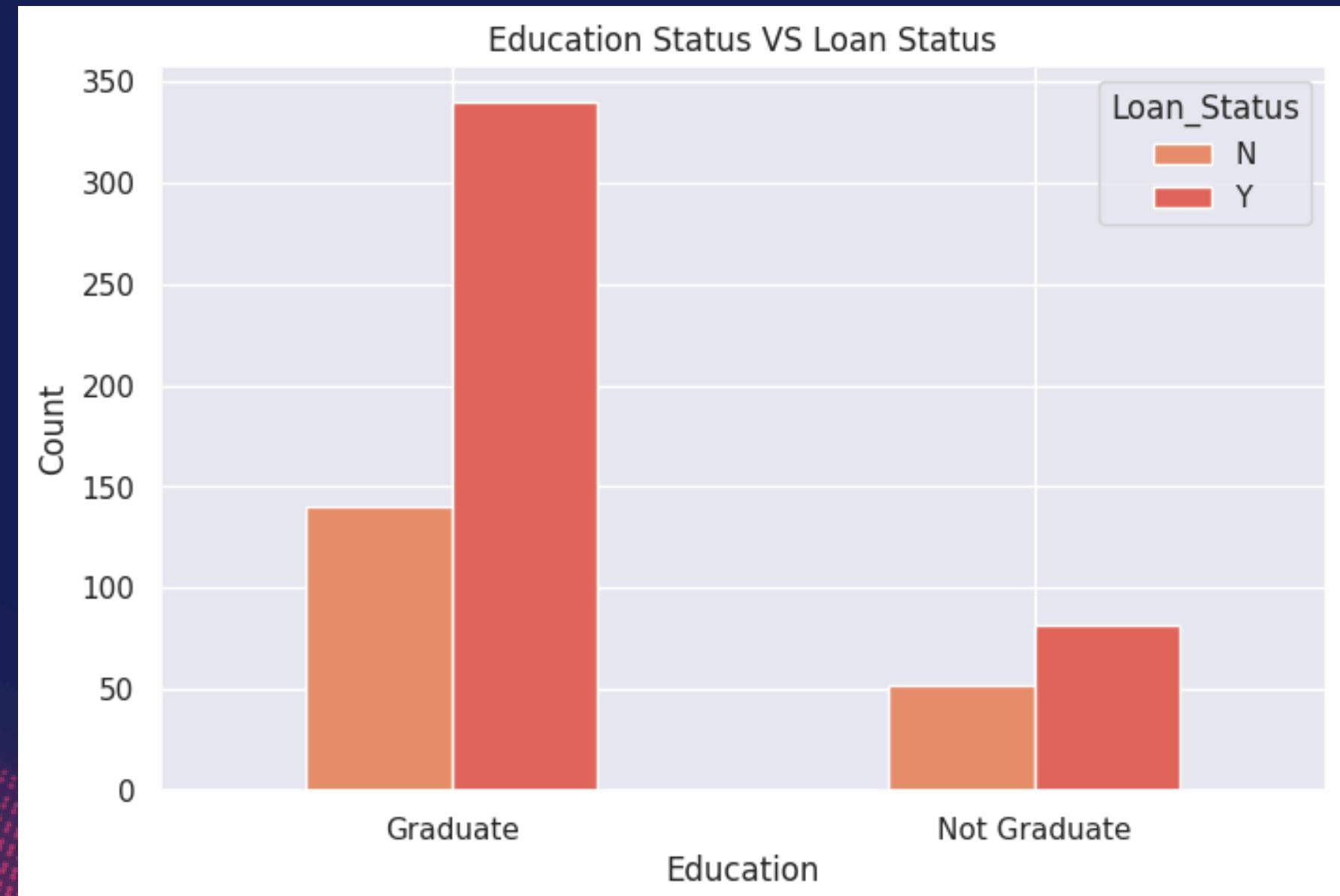
Gender Analysis

Most male applicants are already married compared to female applicants. Also, the number of not married male applicants are higher compare to female applicants that had not married.



Education Analysis

The analysis appears a graduate applicant significantly increases the chances of loan approval. Because the percentage of people who graduated and were approved is much better than who didn't graduate.



Model Evaluation

- 1. DECISION TREE CLASSIFIER: 96.4286**
- 2. RANDOM FOREST CLASSIFIER: 96.4286**
- 3. GAUSSIANNB: 89.2857**
- 4. BERNOULLINB: 92.8571**
- 5. LOGISTIC REGRESSION: 96.4286**
- 6. RIDGE CLASSIFIER CV: 92.8571**
- 7. K-NEAREST NEIGHBORS (KNN): 92.8571**

The best models in accuracy are models 1 & 2 & 5 : Decision Tree Classifier and Random Forest Classifier and Logistic Regression with accuracy 96.43%. We chosen Random Forest Classifier model.