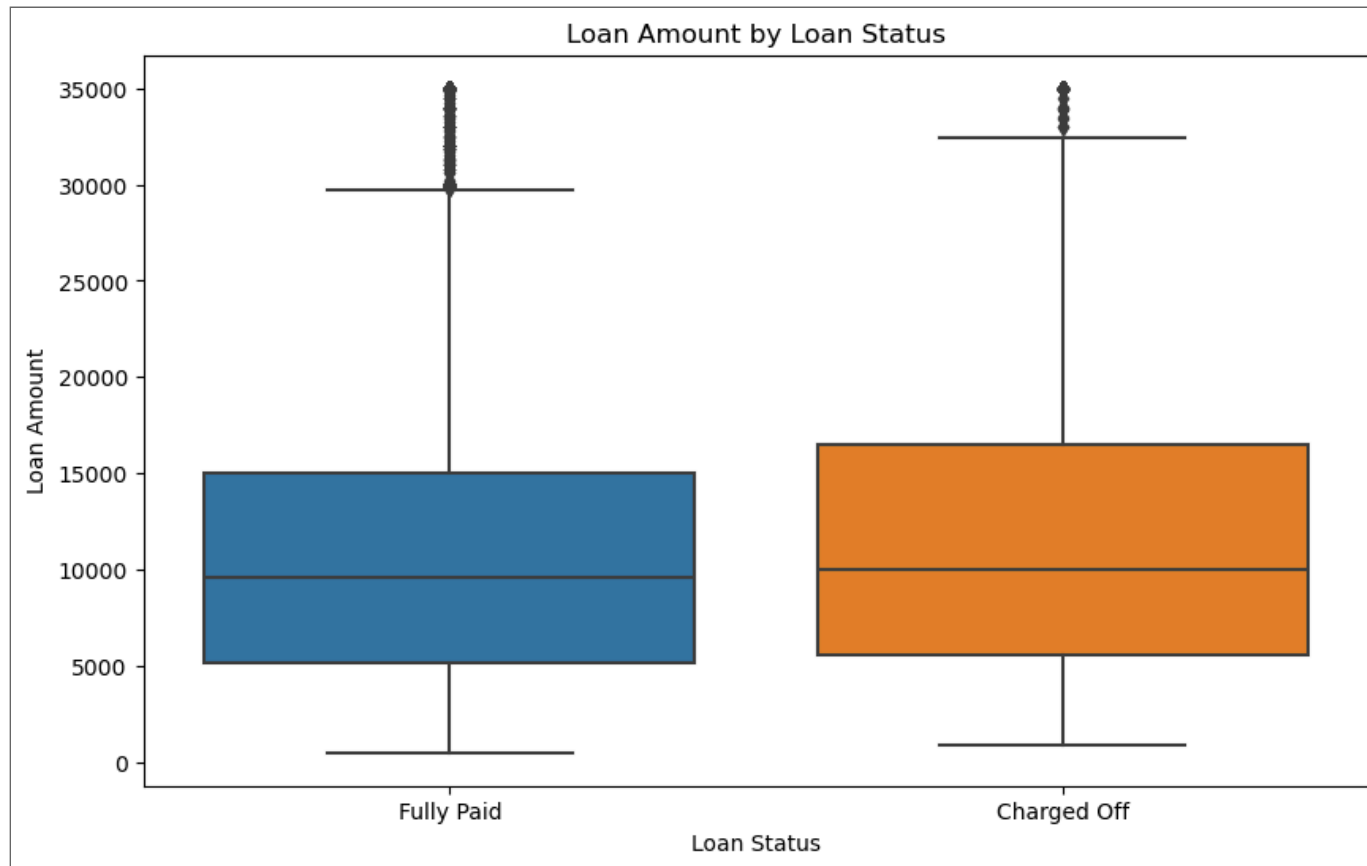


Problem statement

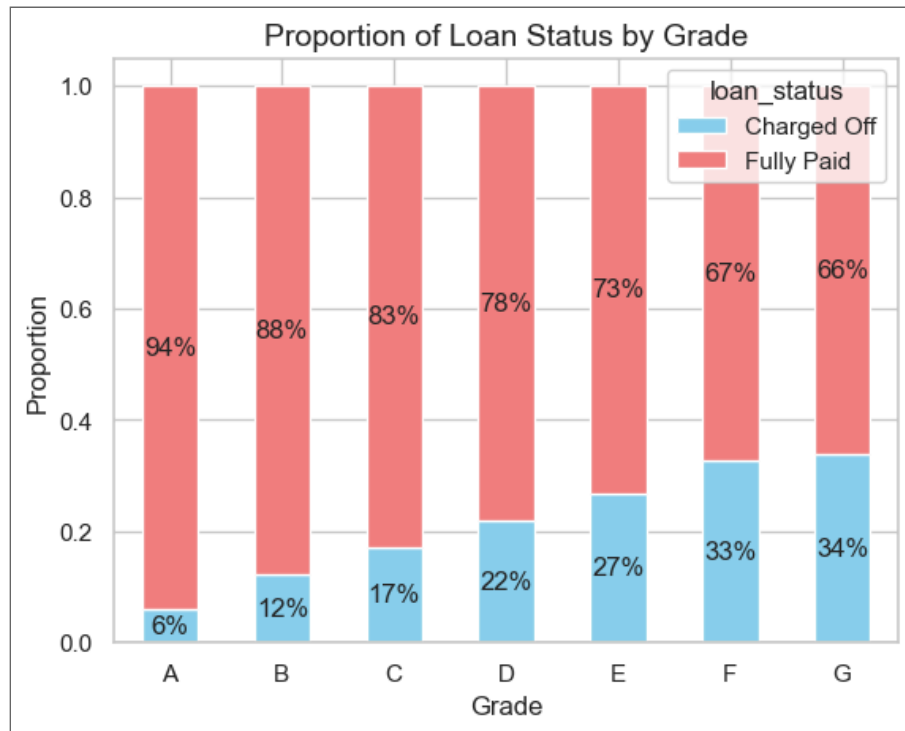
Objective: The purpose of this analysis is to understand the characteristics of the loan data and identify factors that influence loan status. This can help in assessing the risk associated with loan applicants and improving the decision-making process for loan approvals.

Loan Amount Analysis



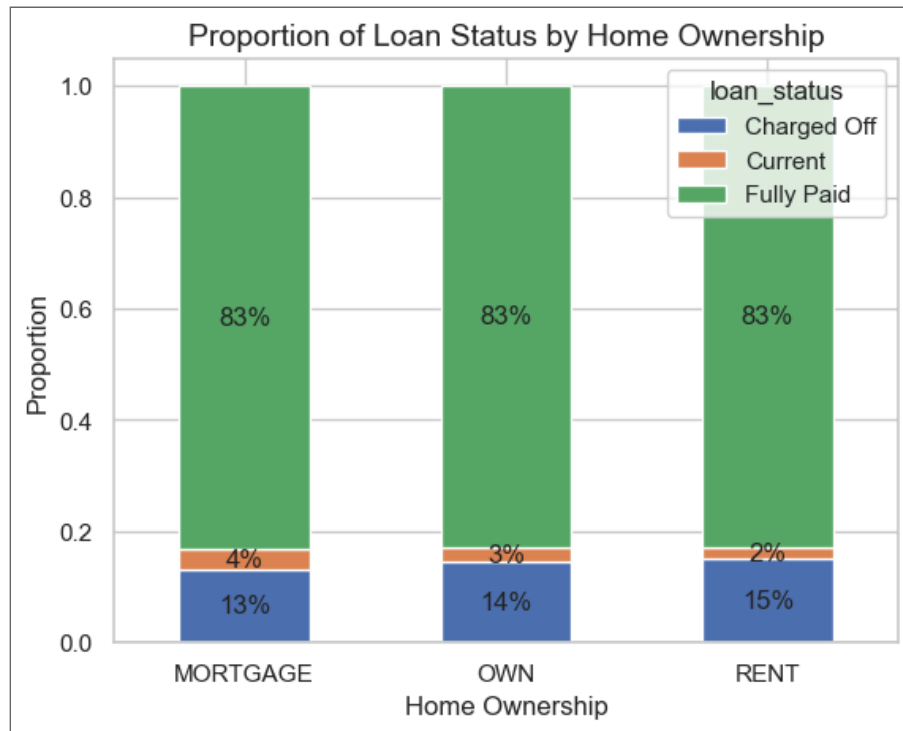
The visualization reveals that charged-off or defaulted loans tend to have slightly higher loan amounts compared to fully paid loans. However, the difference in medians is not very large, and the distributions of loan amounts for both groups overlap considerably. This suggests that while loan amount might play a role in loan default, it is not the most significant factor.

Loan Grade Analysis



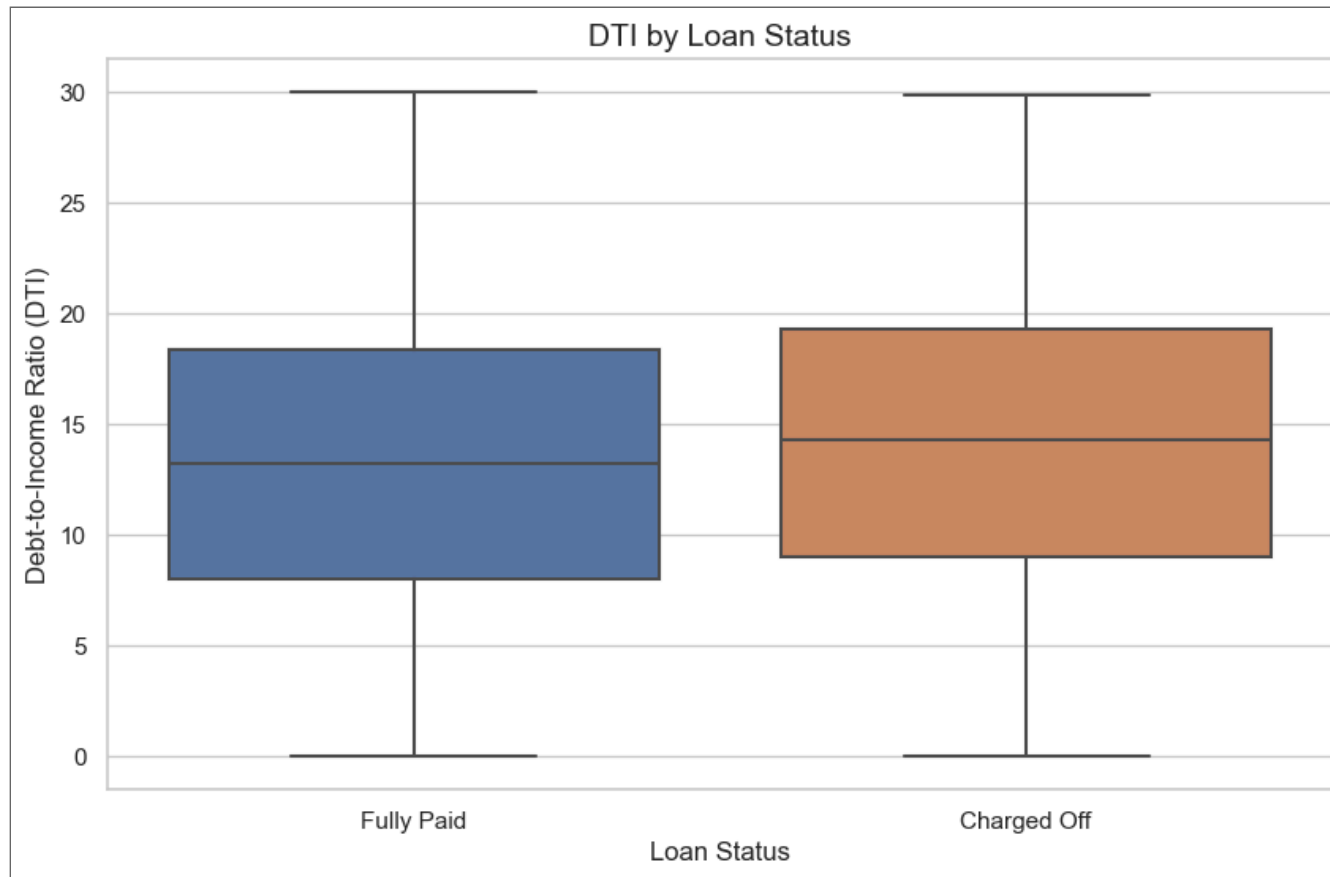
The visualization reveals a clear relationship between loan grade and the proportion of charged-off loans. As the loan grade decreases (from A to G), the proportion of charged-off loans increases significantly. This indicates that lower-grade loans, which are considered riskier, are indeed more likely to default.

Home ownership Analysis



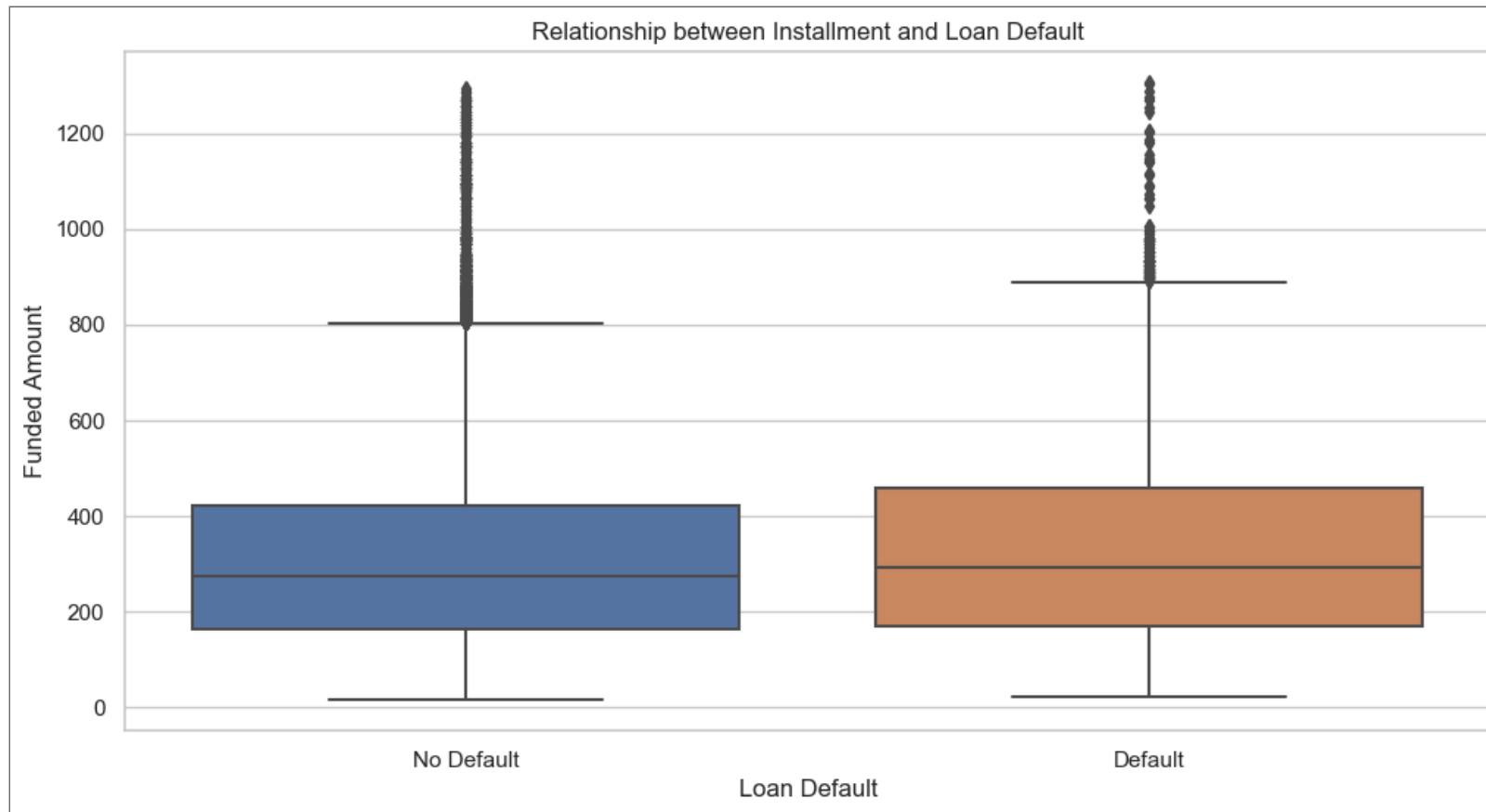
The visualization reveals the relationship between home ownership and the proportion of charged-off loans. The proportion of charged off loans is highest for those who have 'RENT' as their home ownership status, followed by 'OWN' and then 'MORTGAGE'. This suggests that home ownership might be a factor in loan default, with those who do not own a home being slightly more likely to default.

DTI Analysis



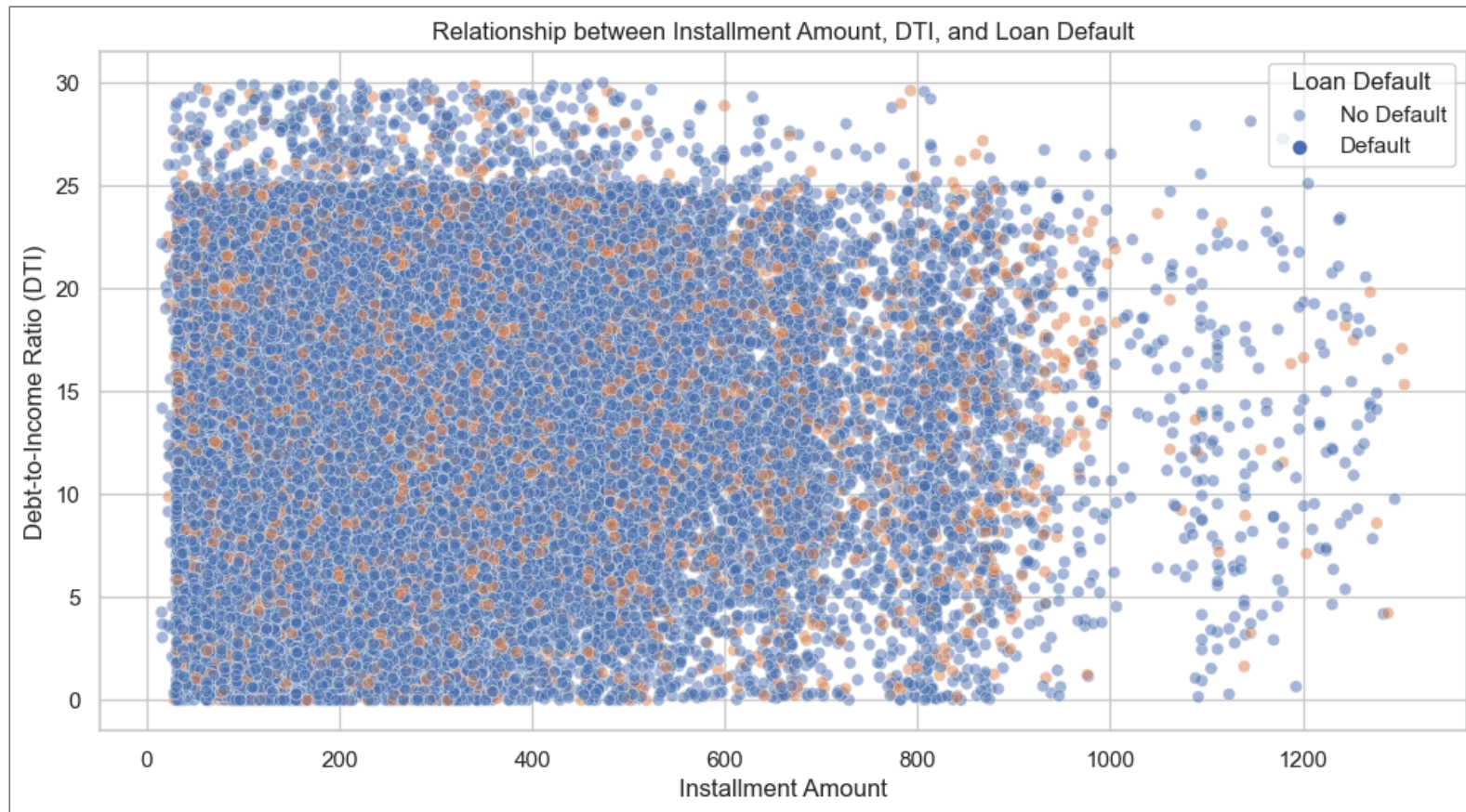
This graph indicates that borrowers with higher DTI ratios are more likely to default on their loans

Installment Analysis



This graph indicates that borrowers with higher Installment are more likely to default on their loans

DTI and Installment Analysis



DTI and Installment Analysis

The analysis reveals that higher installment amounts and higher DTI ratios are associated with an increased risk of loan default. Financial institutions should consider both of these factors in their risk assessment models and loan approval processes to minimize the risk of defaults and improve overall portfolio health.