# Lending Club Case Study

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Problem statement and Objective

- Financial company provides various types of loans to urban customers.
- The aim of this project is to reduce the financial impact on the company caused by borrowers defaulting on their loans
- The objective is to perform data analytics to examine the loan dataset and identify the variables that impact loan defaults.
- A loan data set is available with the required details to perform EDA
- Our Analysis will help the company in approving or rejecting the loan based on prediction

Problem Solving Approach

- Data Cleaning
  - Removing columns with Null values
  - Checking Null values percentage and removing rows
- Data understanding
  - Understanding all the variable and understanding their impact
- Univariate Analysis
  - Analysis column values, plotting the distribution of each columns
- Bivariate Analysis
  - Analysis two columns like loan amount and loan status
- Observation
  - Observing the variables which indicates the loan default
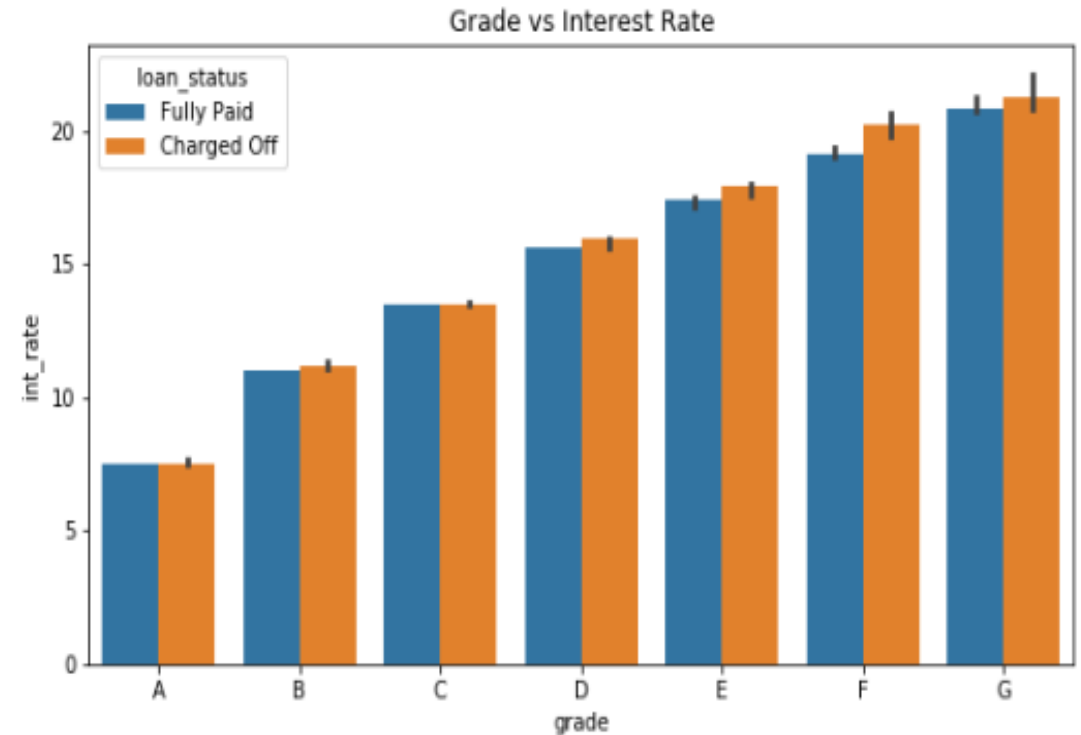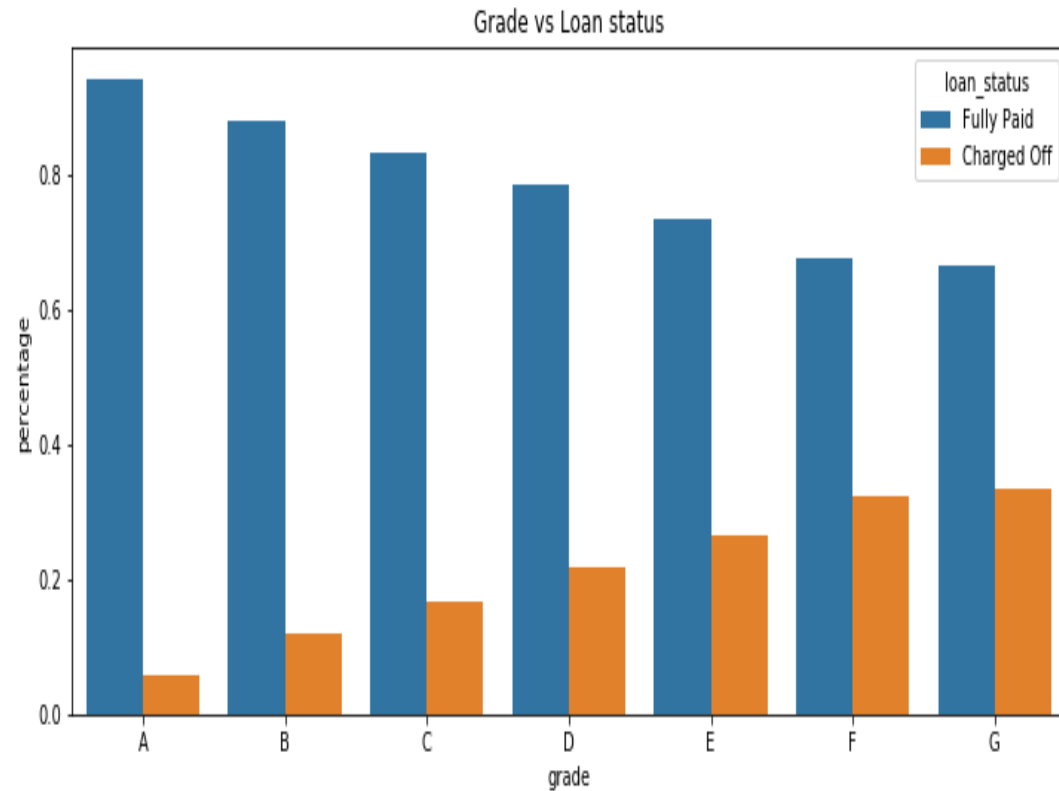
Data Analysis
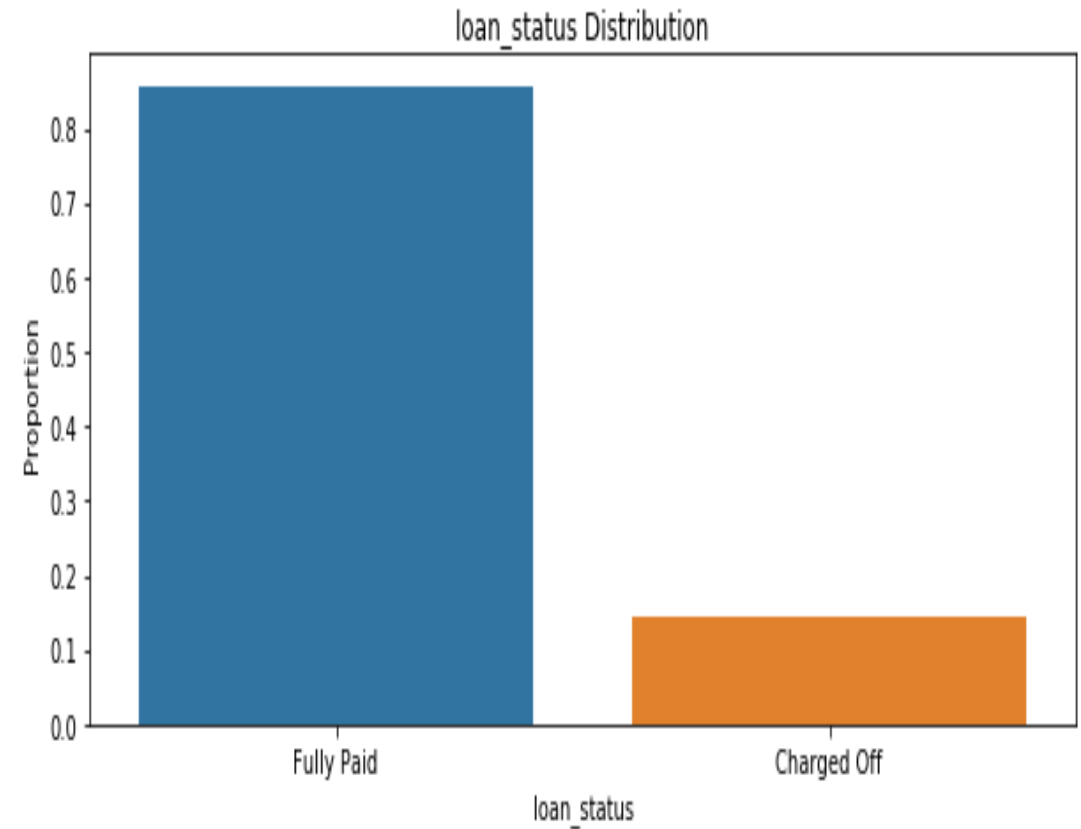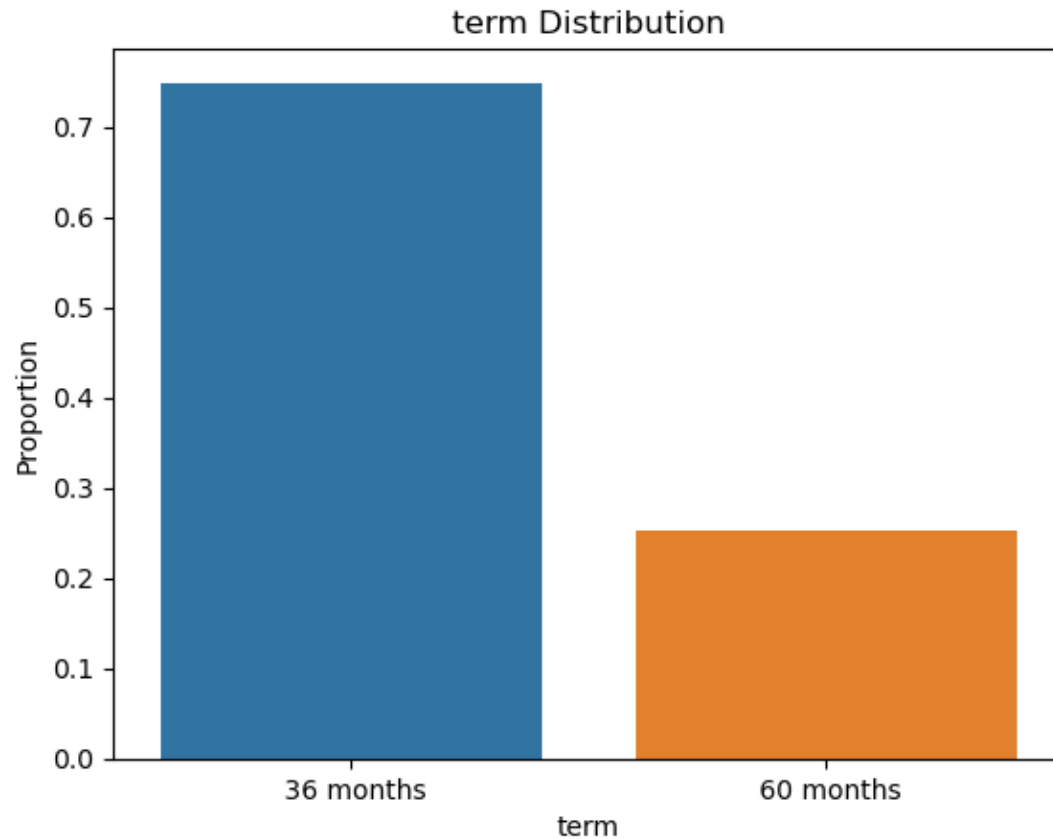
- Two type of loan terms are there, 36 Months and 60 Months. Around 75% loan distributed with 36 months terms.
- 85% loan are fully paid, 15% loans are charged off.
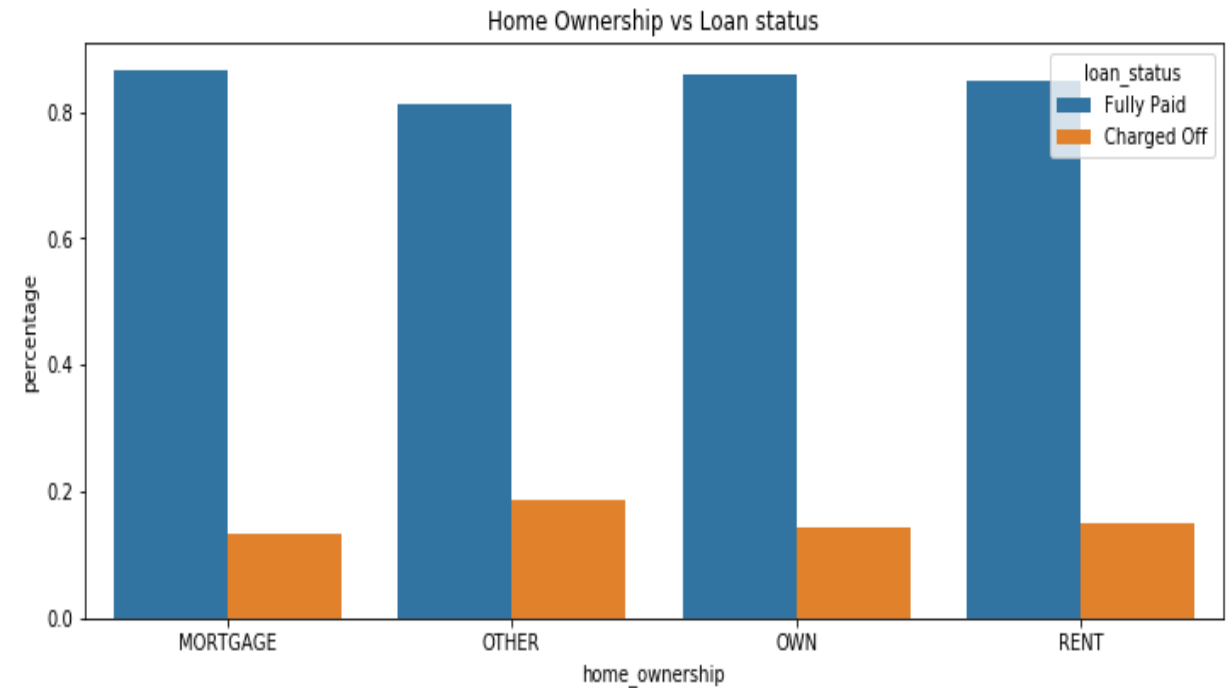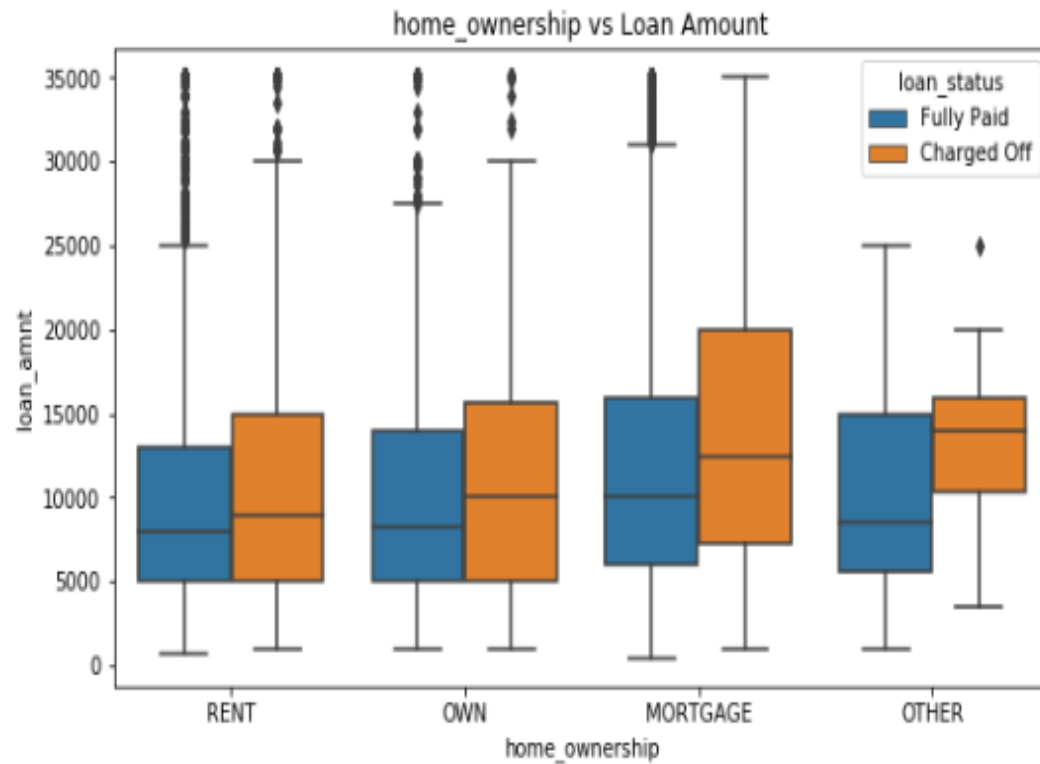
Data Analysis
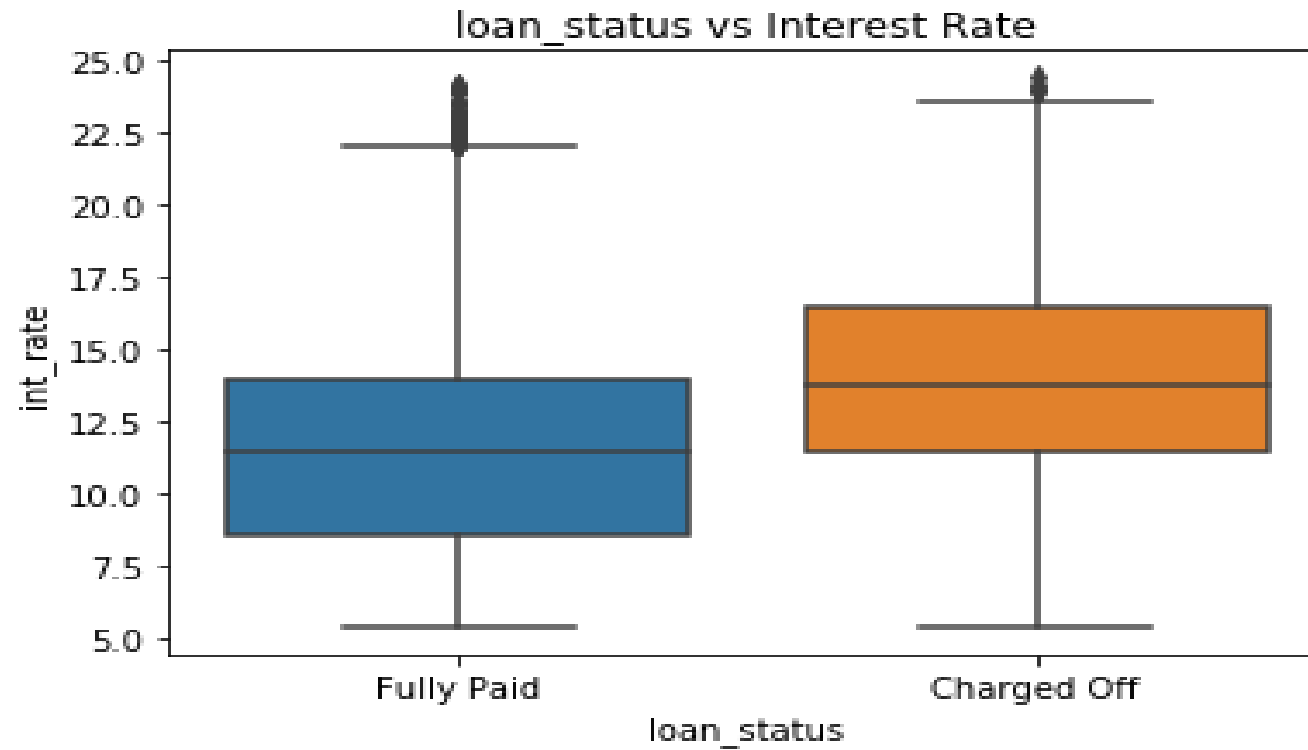
- Loan with higher interest more likely to get charged off
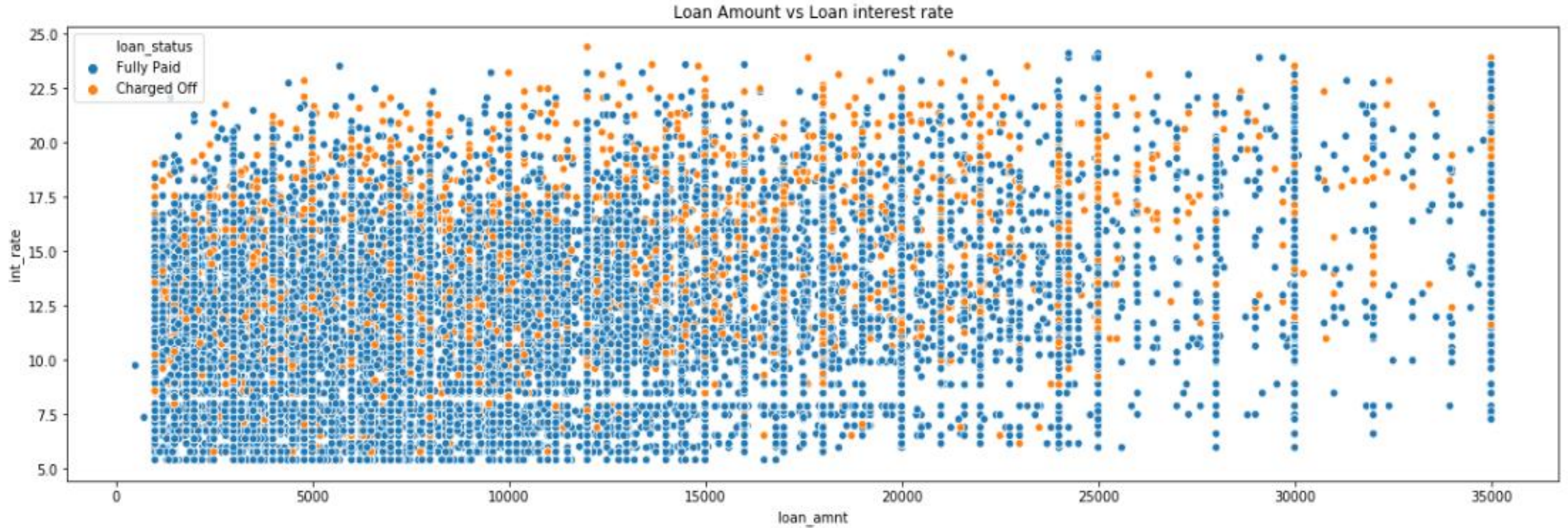
Data Analysis

- Lower grades have higher chance of defaulting than higher grades.
- Lower grades getting loan with higher interest which may lead to loan default.
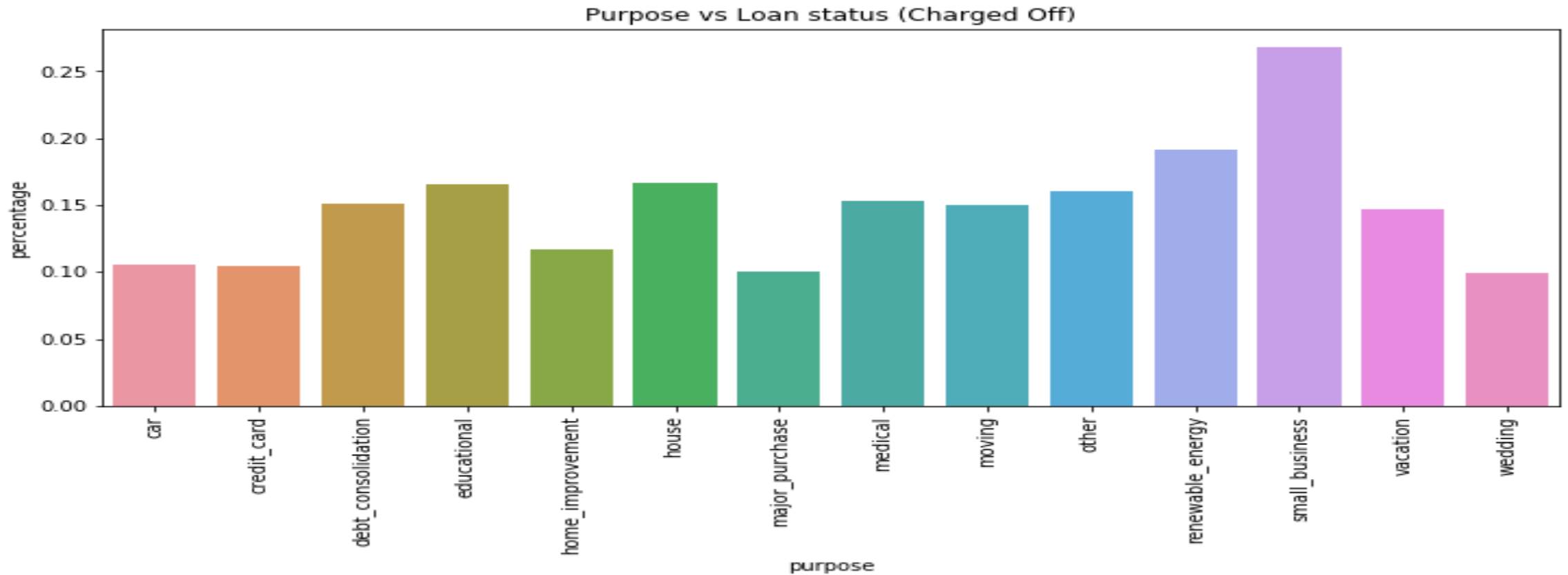
Data Analysis

- People with MORTGAGE home ownership and higher loan amount has more charged off loan
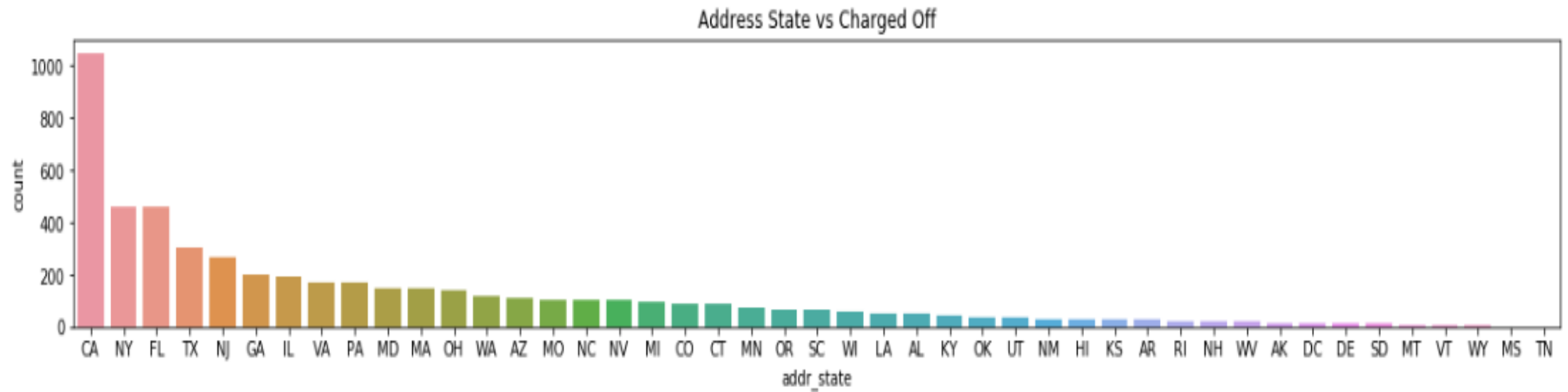
Data Analysis

Loan Amount vs Loan interest rate

- Loan default increases as interest rate goes more than 15%

Data Analysis

Purpose vs Loan status (Charged Off)

- Borrower with loan purpose as small business has defaulted more

Data Analysis

Address State vs Charged Off

- Borrower from state CA, NY, FL has defaulted more

Observation

- Loan with 60 month term and high interest rate have more chances of charged off.

- Lower grades with higher interest rate are prone to loan default

- Borrower with Mortgage home ownership approved higher loan amount have more chances of loan default.

- Loan approved with purpose as small business has more chance of loan default

- Borrowers from state CA, NY, FL has more chances of loan default