Lending Club Case Study

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Objective

The Objective of this case study is to implement EDA technique on a real world problem and to understand the insights.

Benefits of the case study:

- Gives a idea about how EDA is used in real life business problems.

- It also develops a basic understanding of risk analytics in banking and financial services.

- It improves our understating of visualization and what charts to use for real life data.
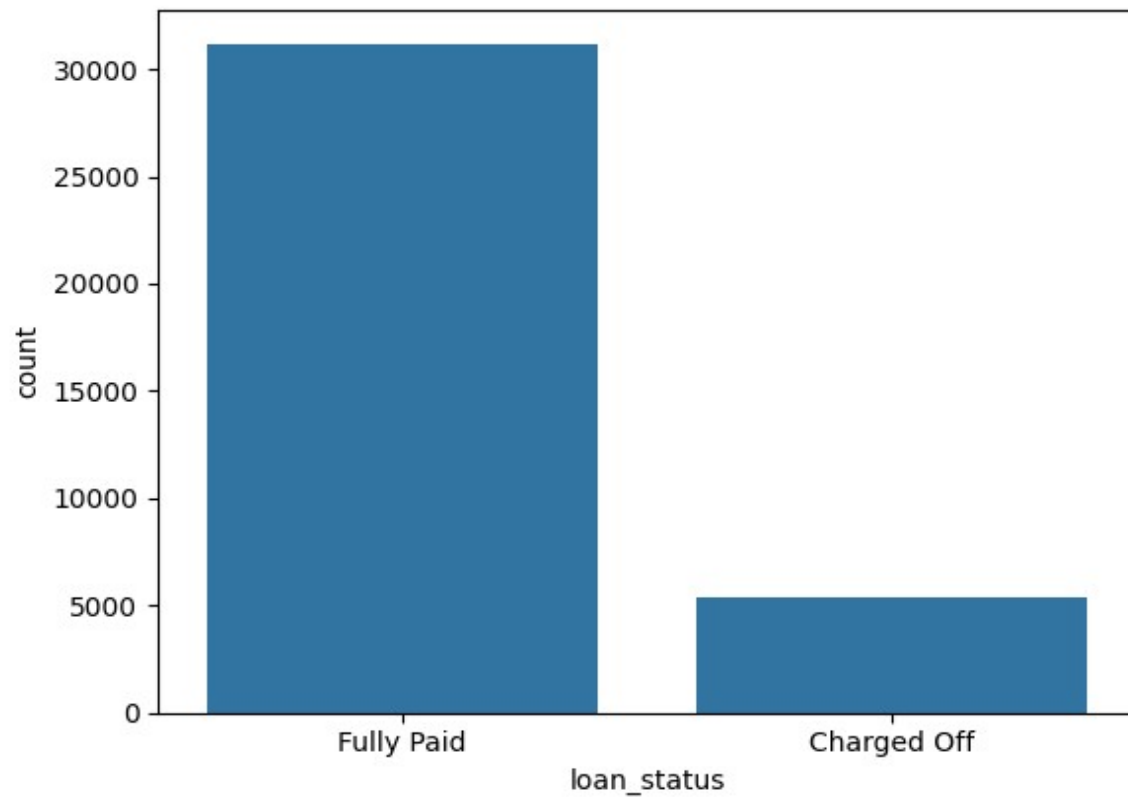
Business Understanding

Business objective is to take decision when loan application is received, Check whether to reject or approve the loan.

Dataset details:

The data given below contains information about past loan applicants and whether they 'defaulted' or not. Data has details regarding approved loan not the rejected ones. It has 3 status of loan which is Fully Paid, Current and Charged-Off.
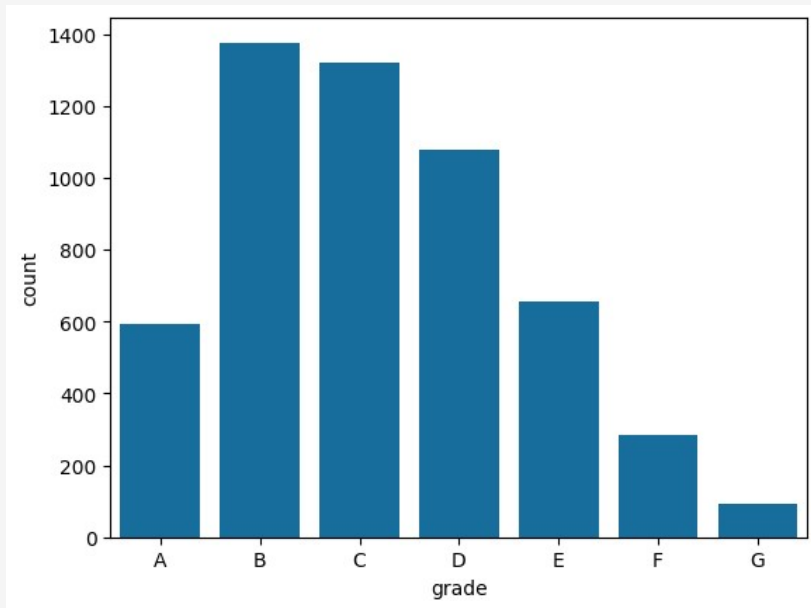
Importing the Data → Removing large null value columns → Removing Duplicate Data → Removing irrelevant columns → Removing/Fixing null values → Correcting data types and deriving new columns → Filter Data for requirement. → Removing outliers

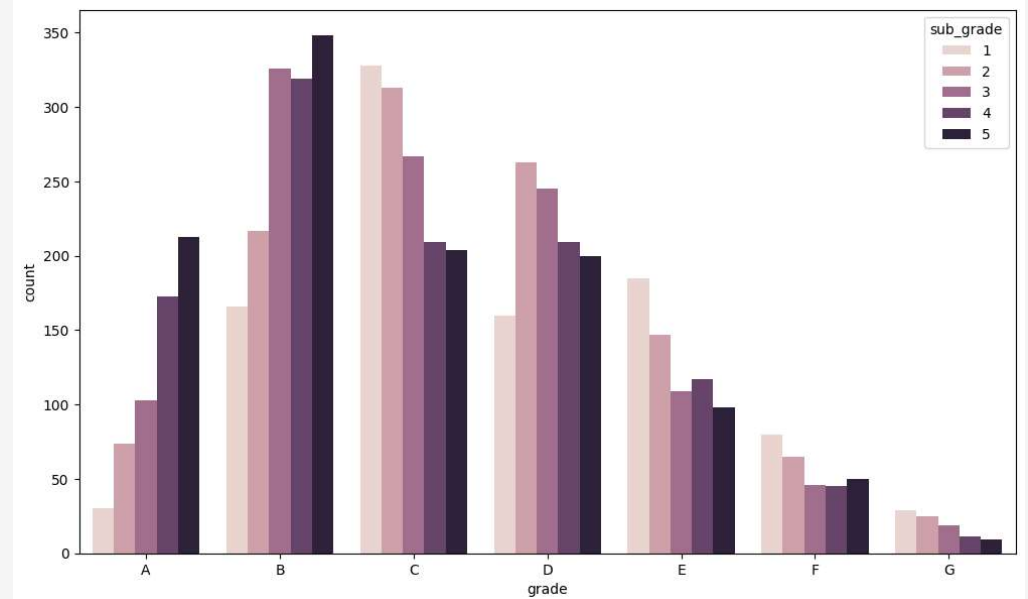# Loan Status and Amount

Loan Status: The number of charged off Is much smaller compared to total count
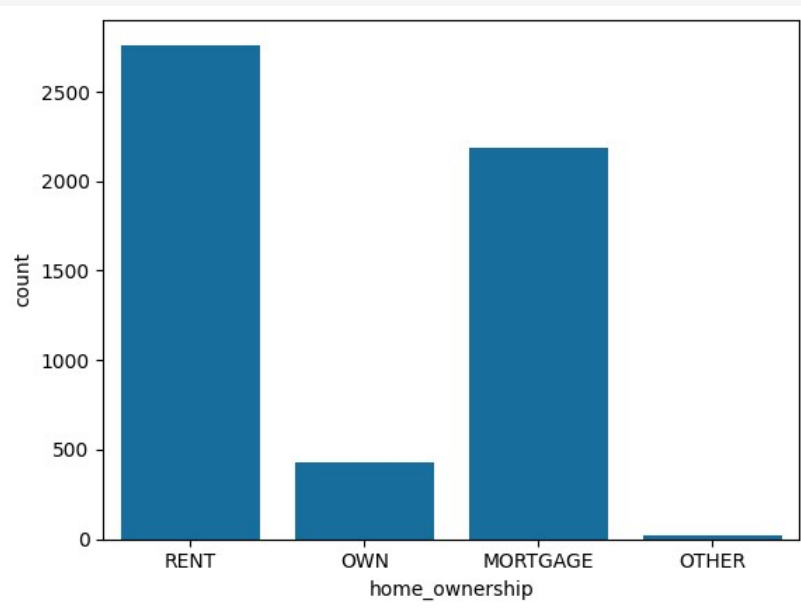
Grades and Sub Grades

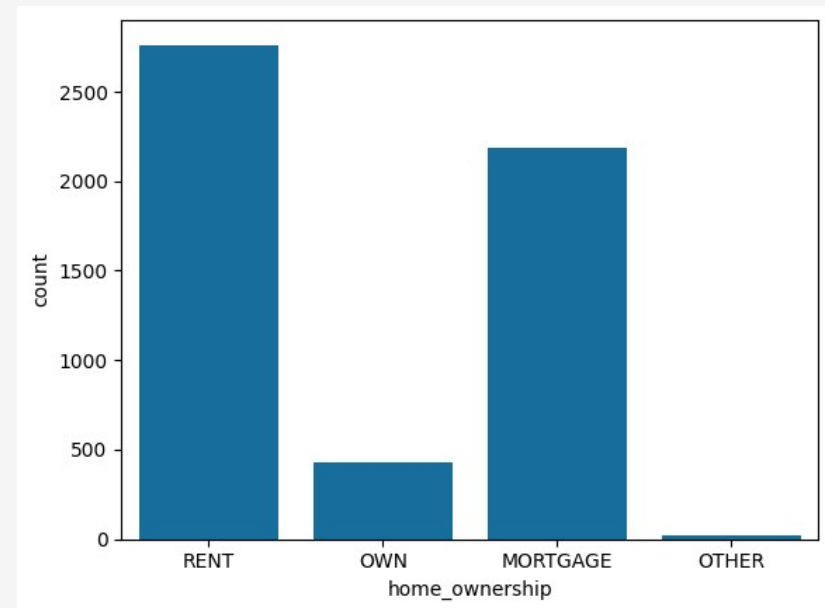Grade: Loan approved are higher grade

Sub-Grades: Grade 'B5' has higher count against all
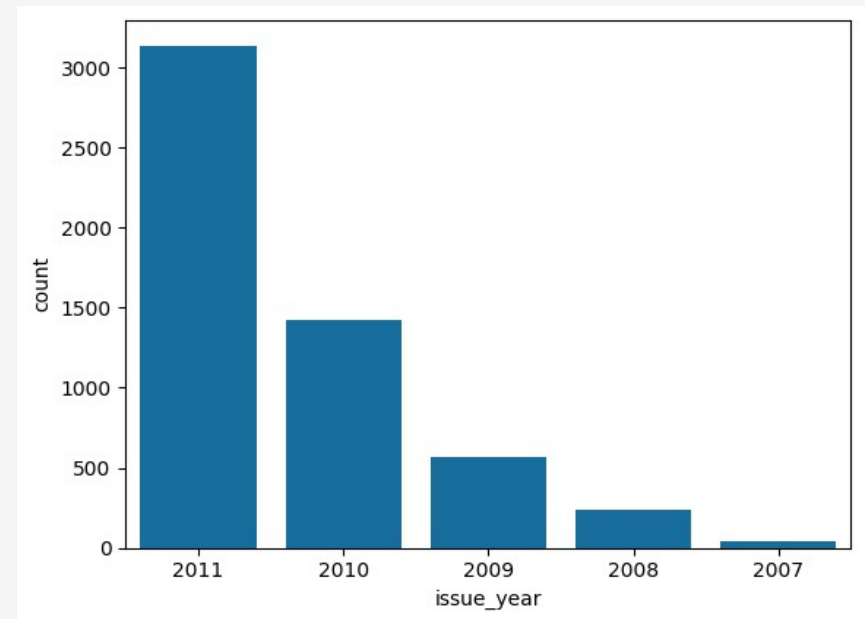Other grades

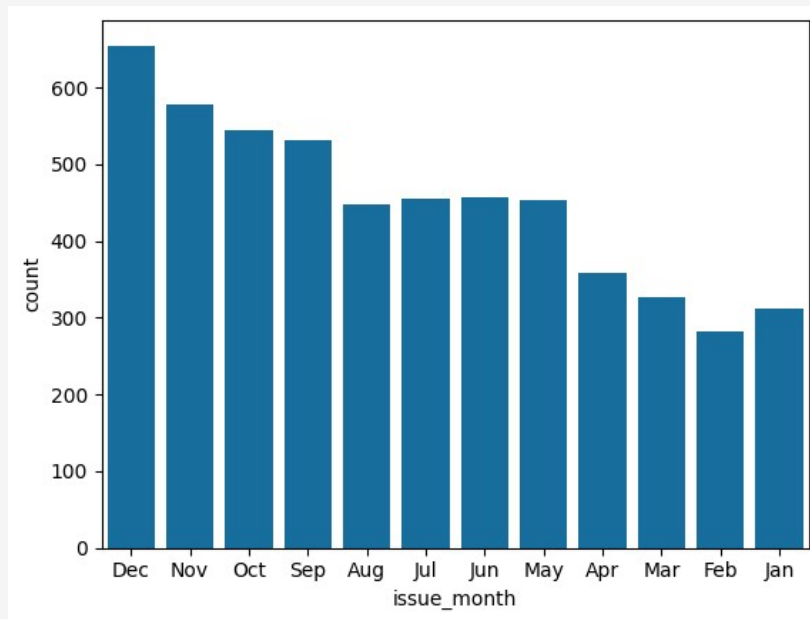# Employment length & Home ownership

Employment Length: Majority of clients have 10+ years of experience and has highest number of defaulted loan
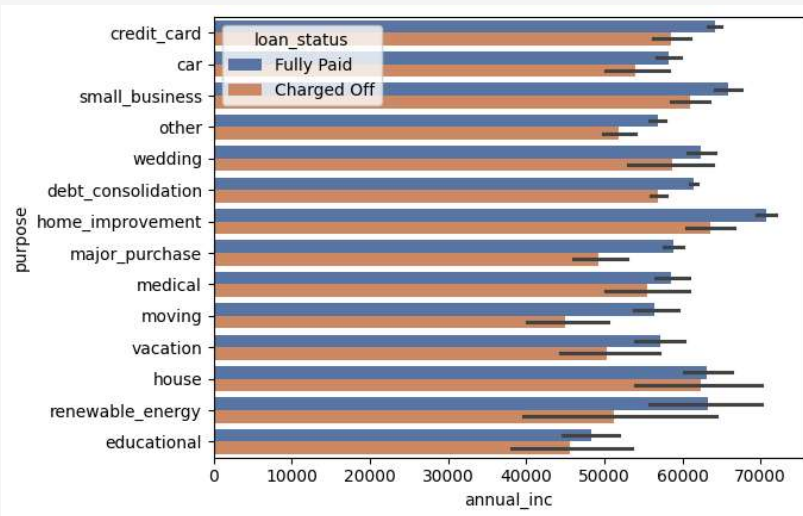
Home Ownership: Majority of clients are lacking ownership of any property and are on rent or mortgage and have a higher chance of defaulting.
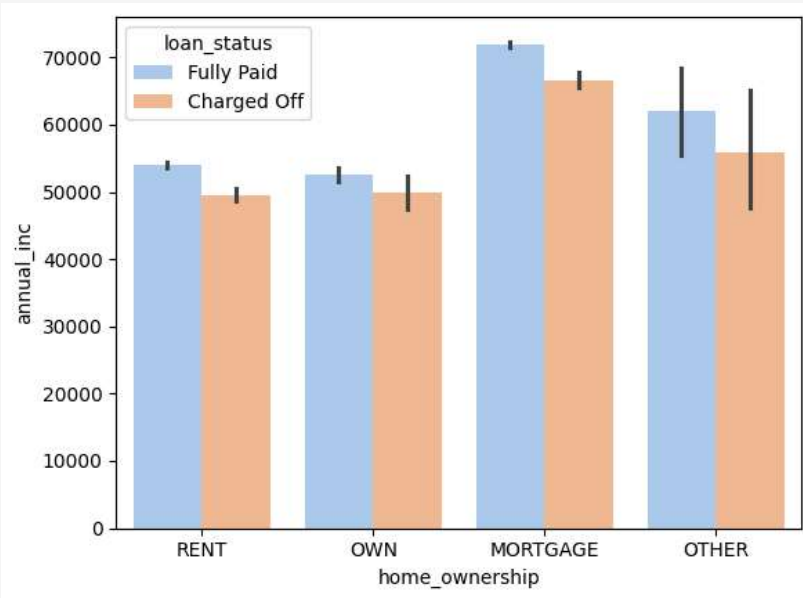
Issue Month and Issue Year

Most loans are defaulted in December of 2011
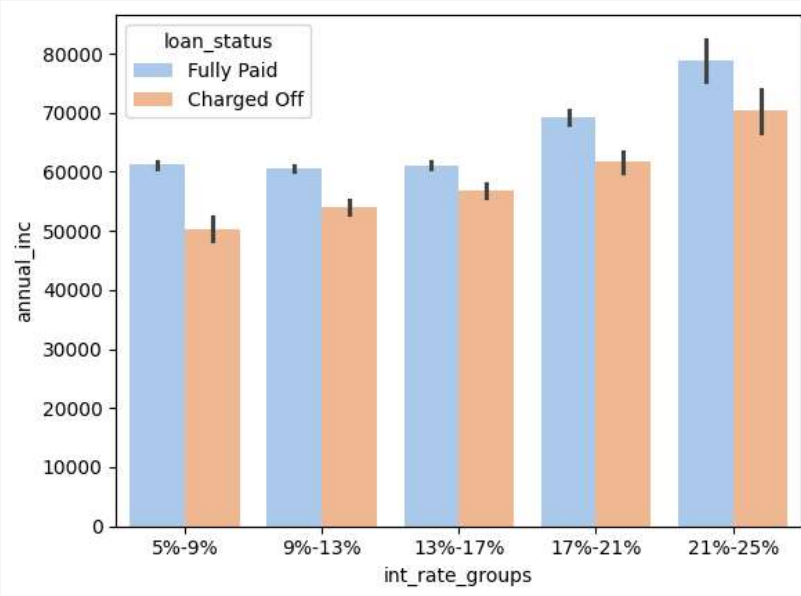
Annual income and loan purpose

Most loans are defaulted when borrowed for 'home_improvement'
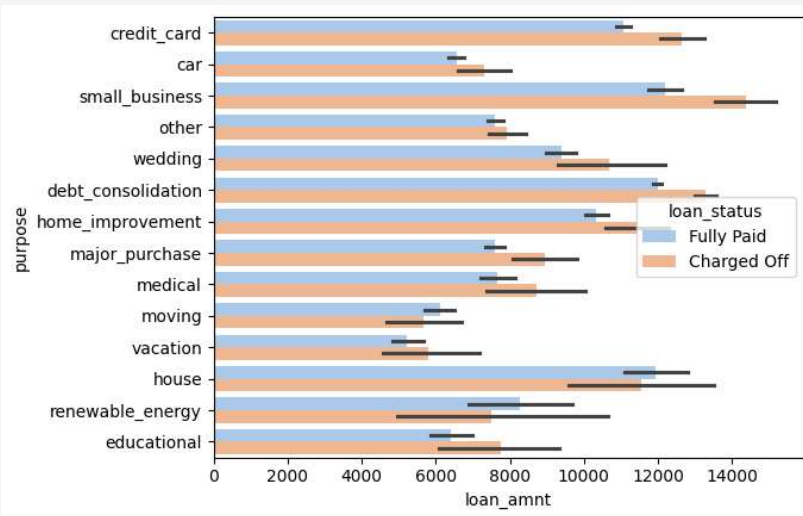
Home ownership and Annual income

Most loans are defaulted when borrower has 'MORTGAGE'

Annual income vs interest rate

Most loans are default when interest rate is between 21% to 25%

Loan vs loan purpose

Most loans are defaulted when loan is taken for Paying for another loan

Recommendations

Major driving factors that can be used to predict the defaulting changes are:

• DTI

• Grades

• Verification Status

• Annual Income

• Home ownership

• Grades

• Employment experience