Lending case study

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Objective

➢To identify risky loan applicants

➢Subsequent cutting down amount of credit loss

➢To identify variable which indicated towards loan default

Steps

Cleaning → Univariate Analysis → Bivariate Analysis → Derived Metrics

Cleaning

- Removing the rows which have only Null values
- Removing the columns which have Null value cells more than 2/3 no of entries
- Checking and removing of columns which have only '0' as columns
- Checking for duplicates and removing them if any
- Converting the columns int_rate and revol_util to float after removing the '%' symbol
- Converting the column term into int after removing the additional space and

Univariate Analysis

Distribution of the Loan Amount
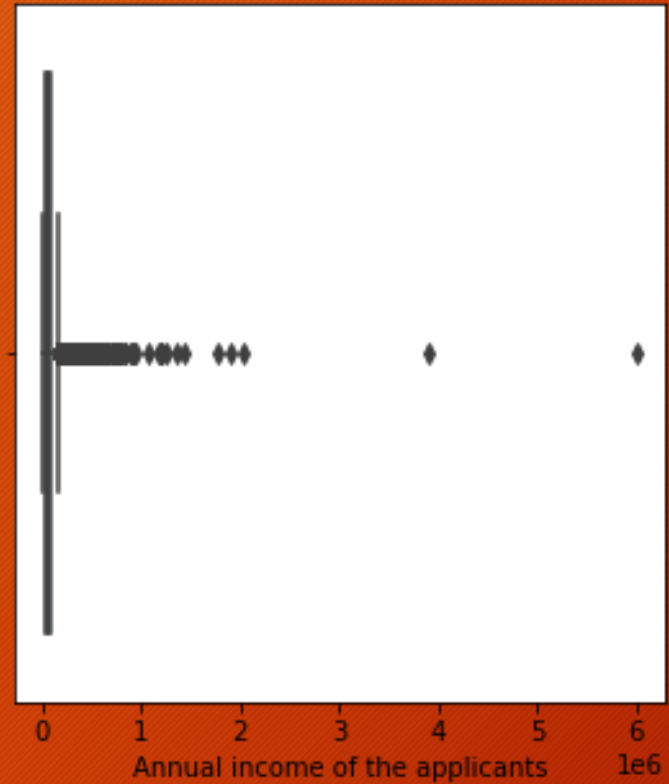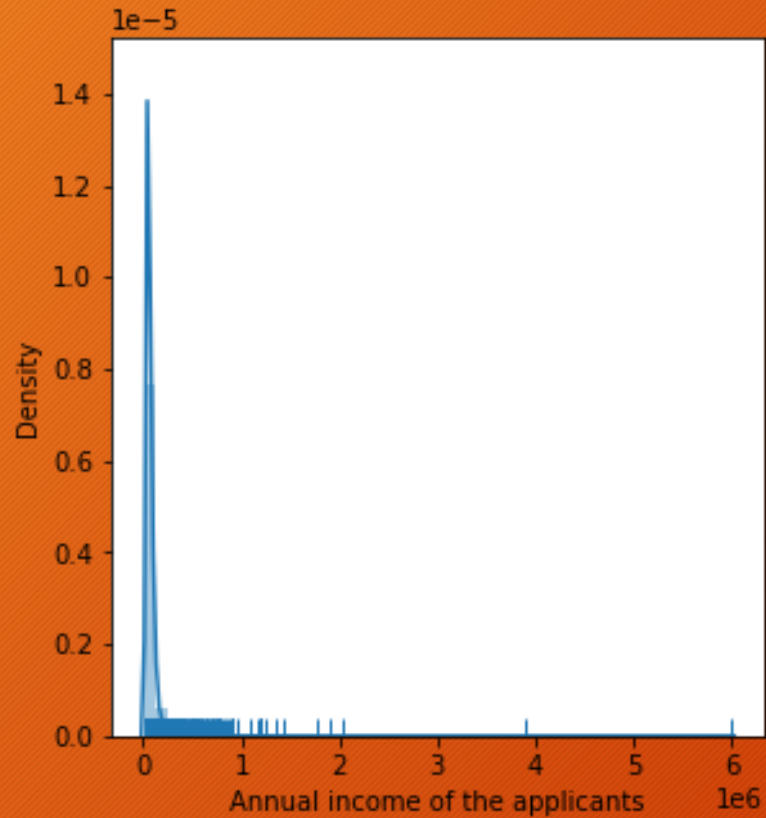

Loan Amount Distribution
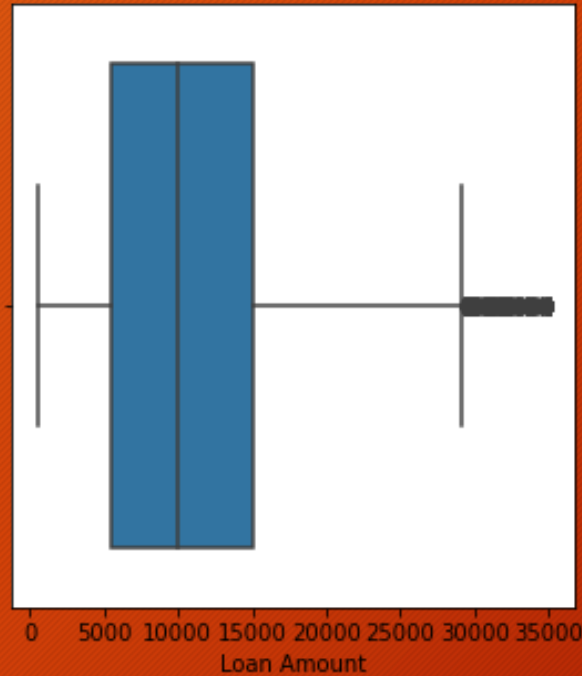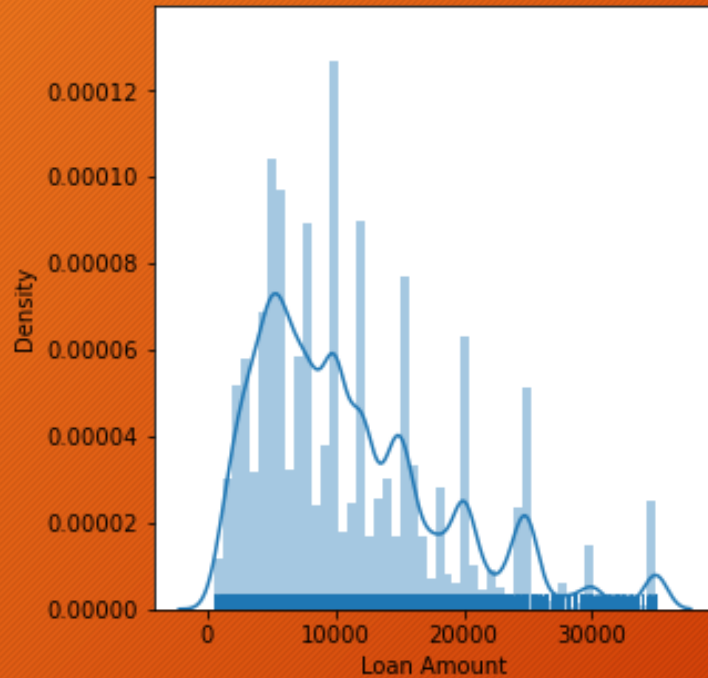
Observations

- Most of the applicants have applied for a loan amount of Rs.10000.00

Distribution of the Annual Income

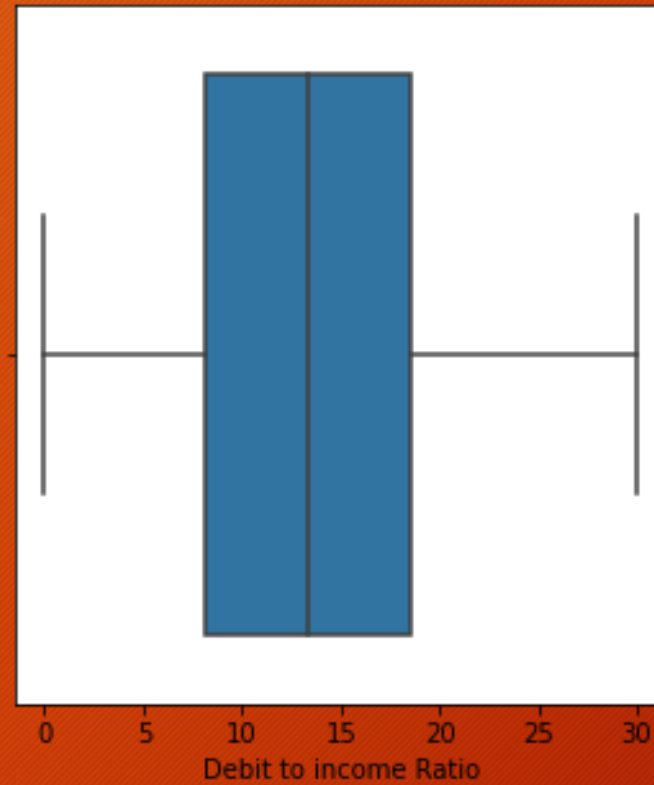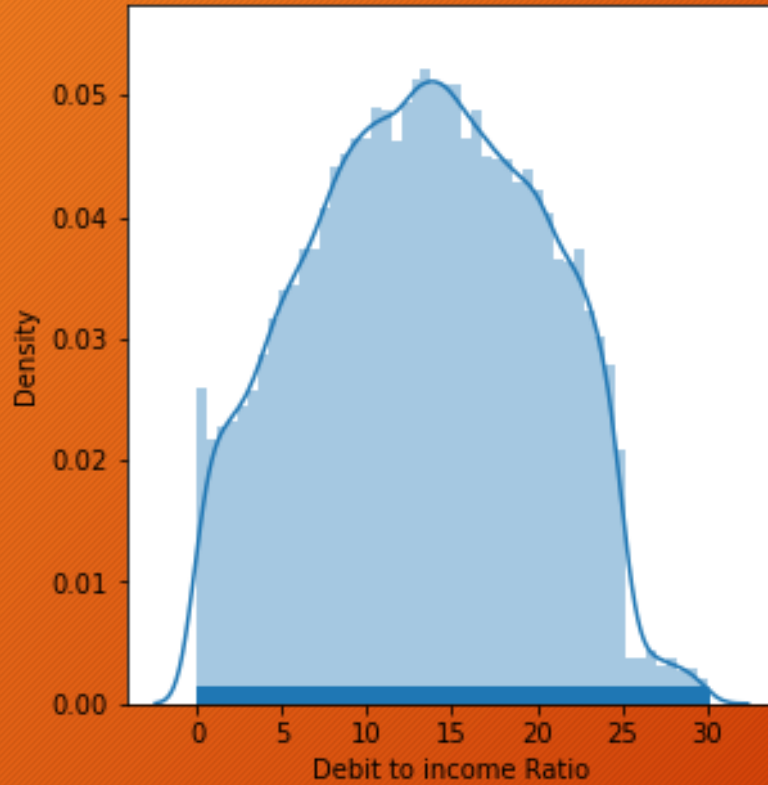## Distribution of annual income provided by the applicant

- Loan requirement is more among people with annual income < 2L

Distribution of debit to income ratio of the applicant

Observations

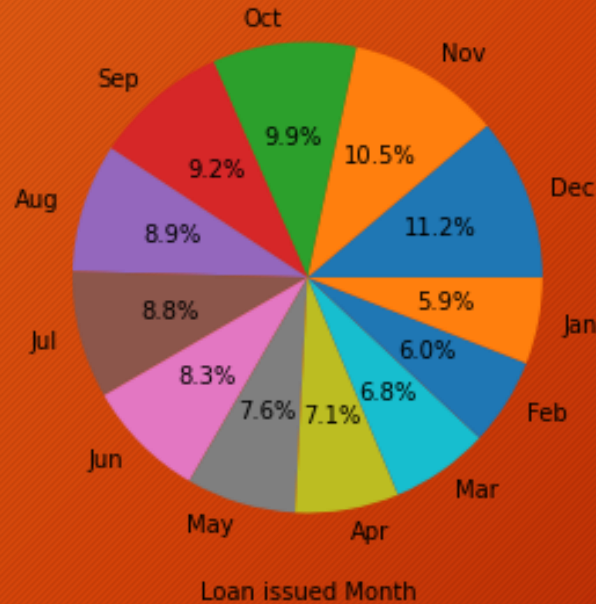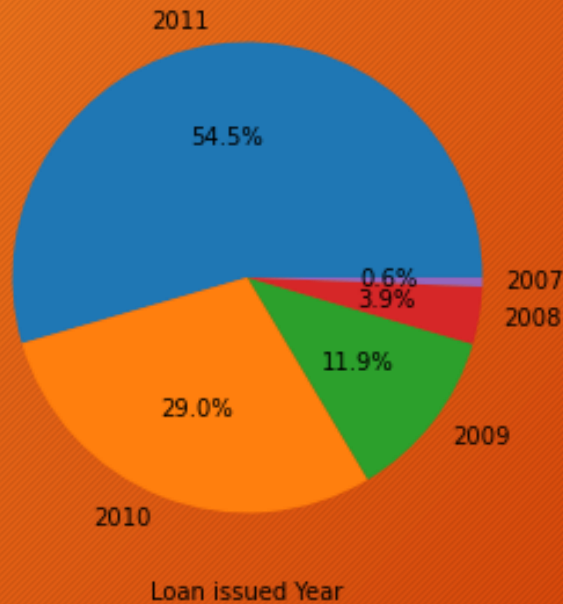Distribution of debit to income ratio of the applicant

- Most of the Debts are within the repayment capacity of the applicant i.e within atmost 30% of their inco

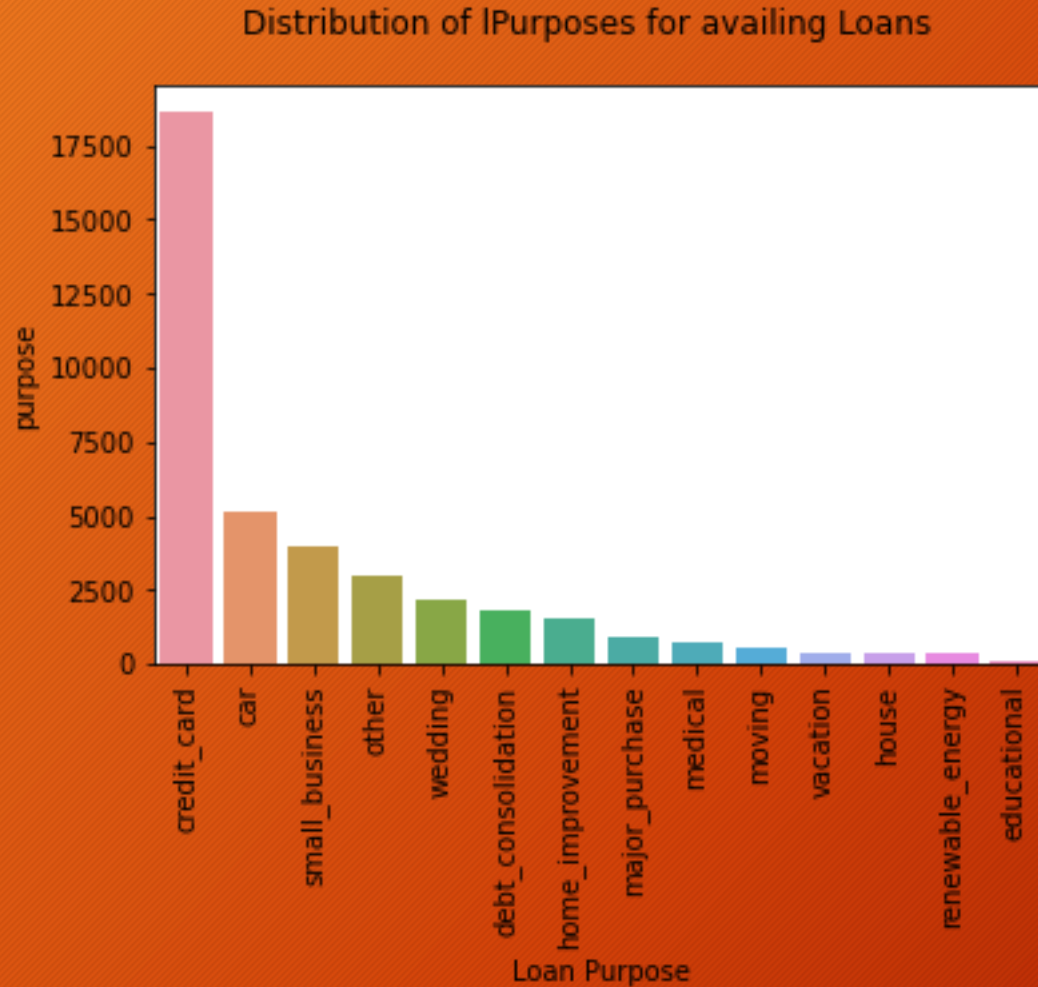# Distribution of Loan Issue Year and Month

Observations

- Most of the demand for Loan was in 2011

- Most of the demand for Loan was in December

Distribution of loan issue Year and Month

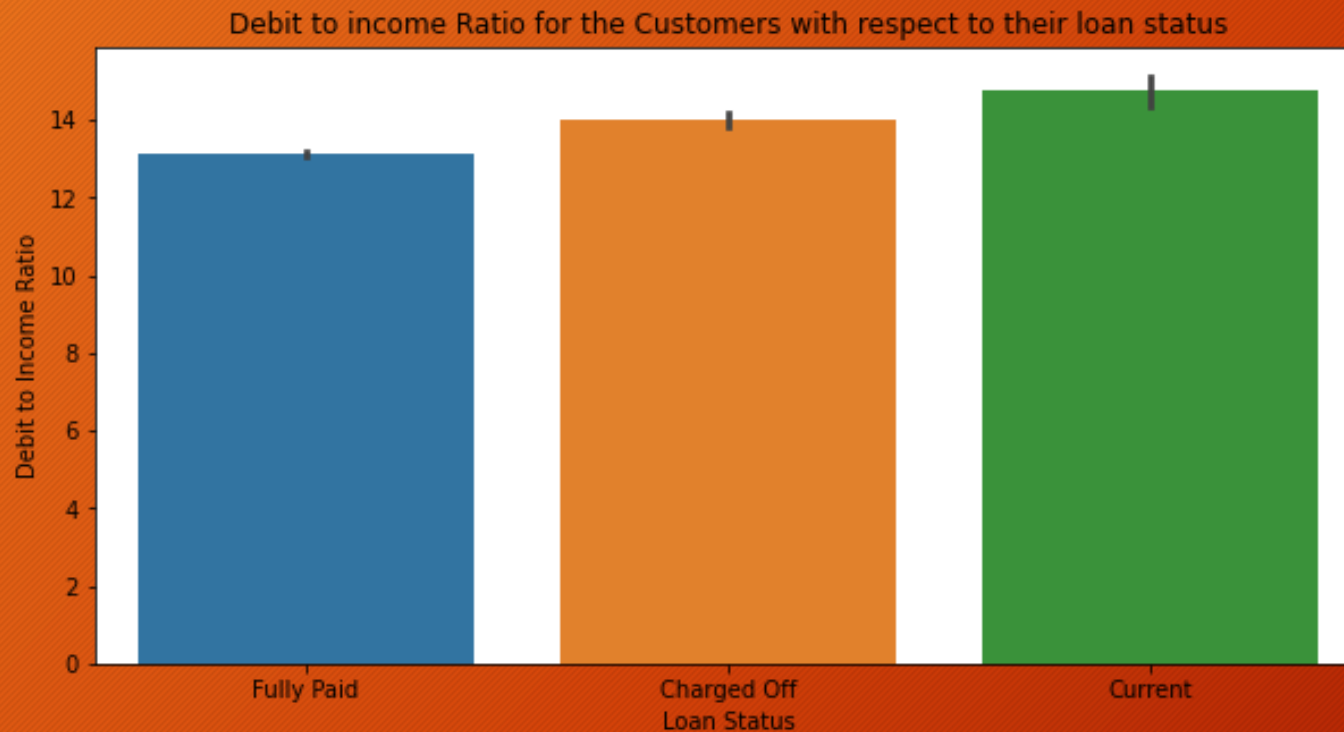# Distriburion of the purpose for availing loan

Observations

- Majority of the purpose for availing loan is for paying off credit card bills

Segmented Univariate Analysis

Distribution of debit to income ratio of the applicants Vs their loan status

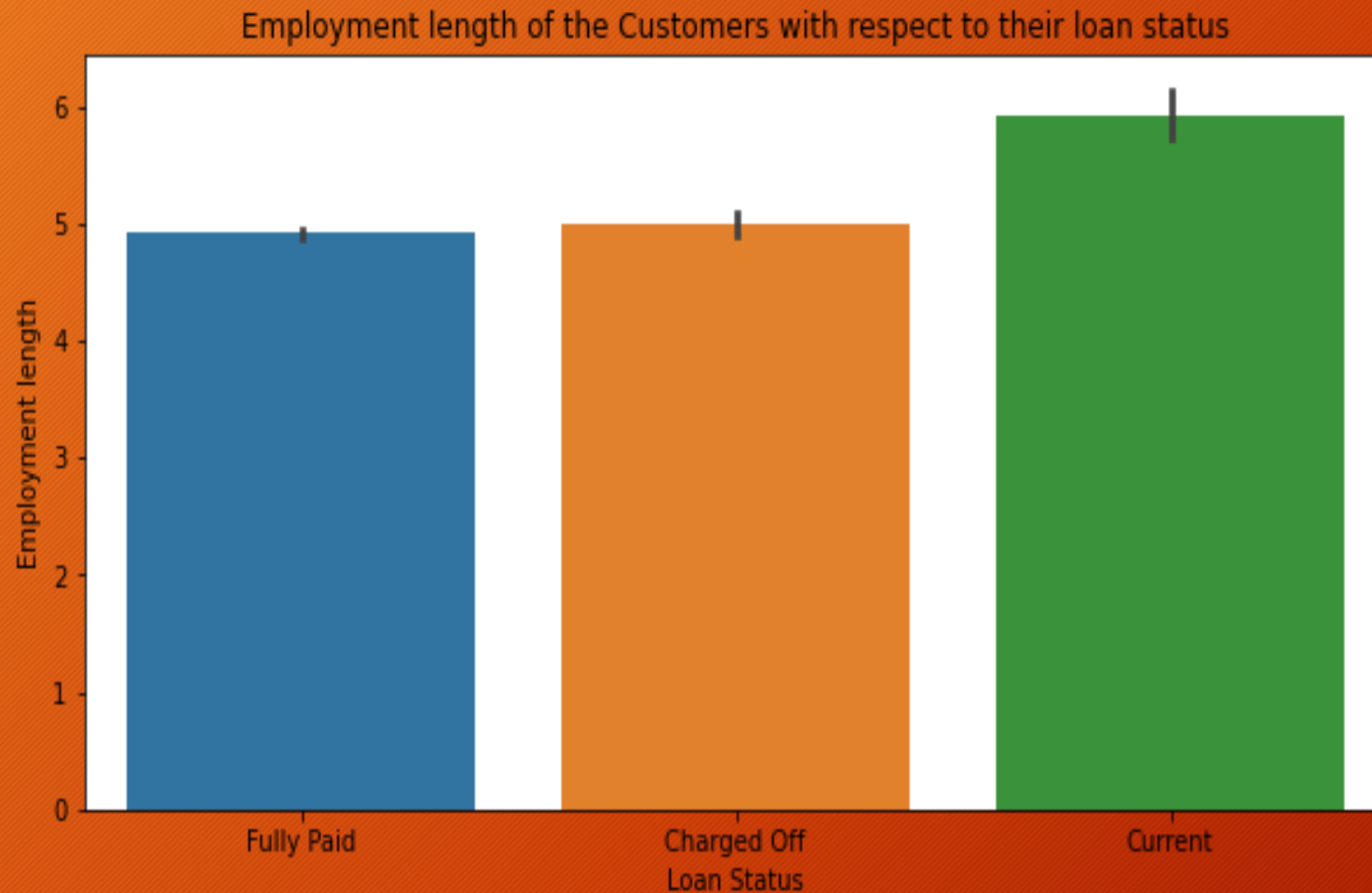Debit to income Ratio for the Customers with respect to their loan status

Observations

- Fully paid customers have aslightly lower dti compared to those with Charged Off status

Distribution of Employment Length of the applicants Vs their loan status
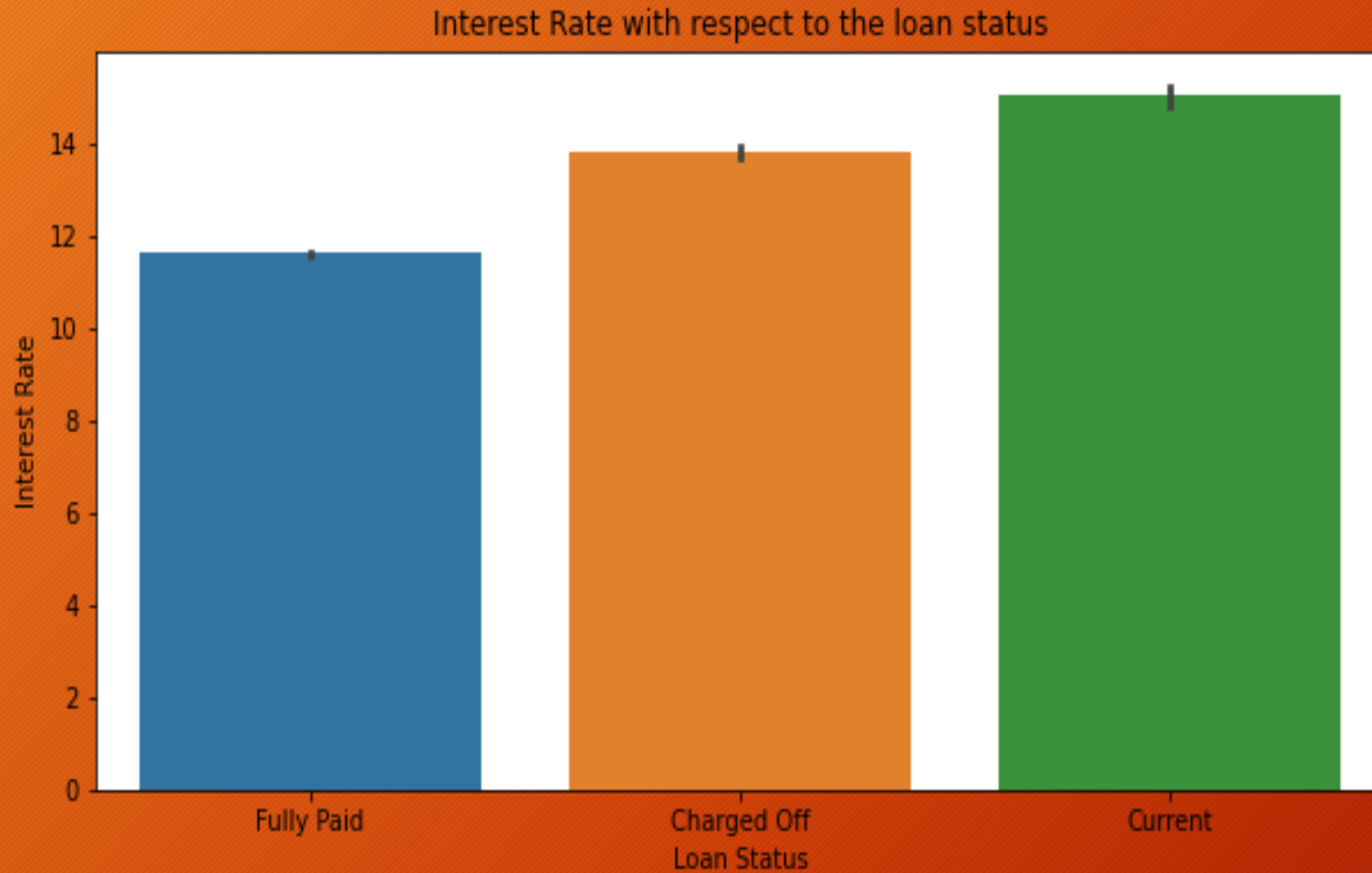
Observations

- The employment length is almost the same in Fully paid and charged off categories

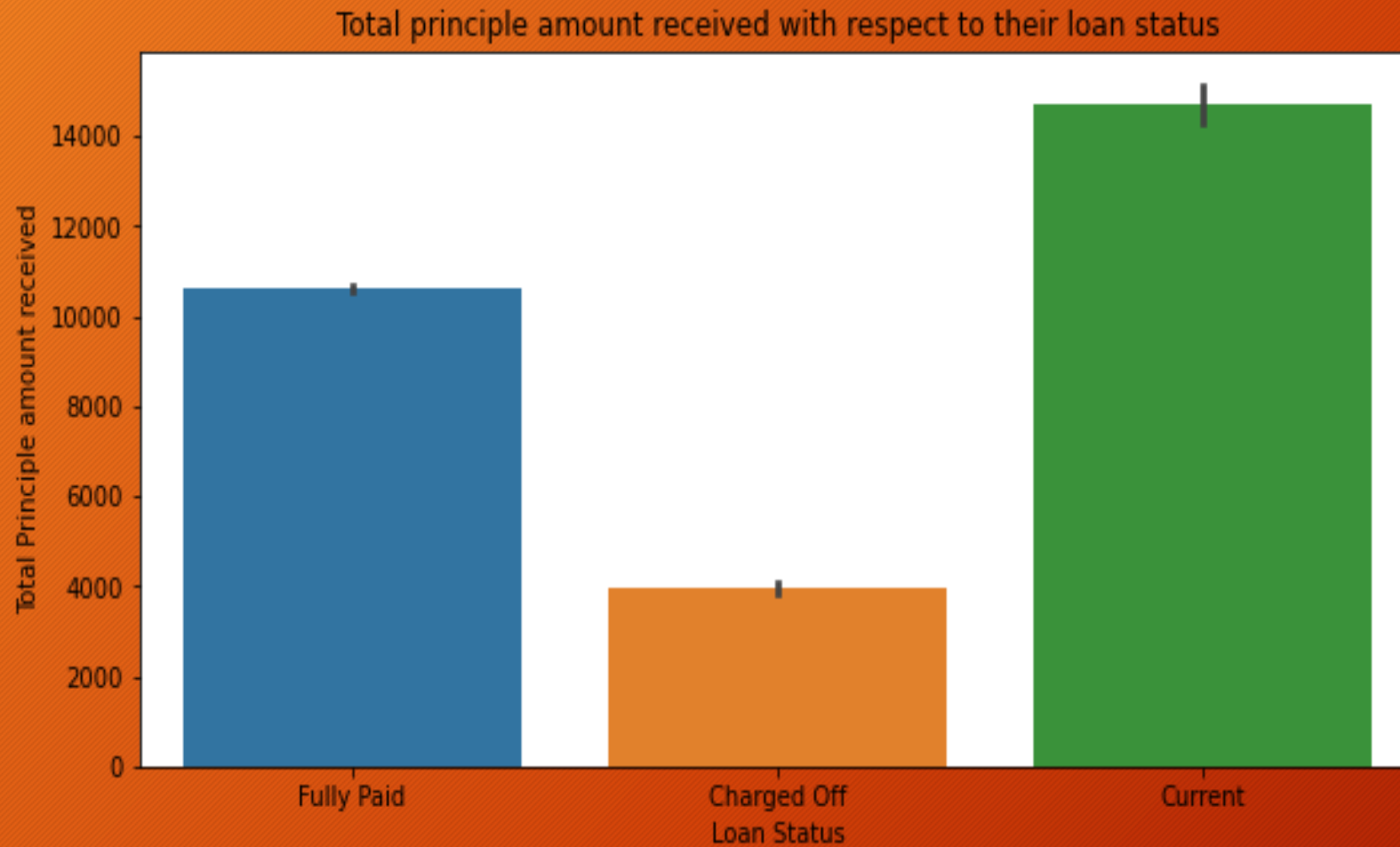# Distribution of Interest Rate of the applicants Vs their loan status

Observations

Interest Rate with respect to the loan status

- Majority of the purpose for availing loan is for paying off credit card bills

Distribution of Total Principle Received Vs their loan status
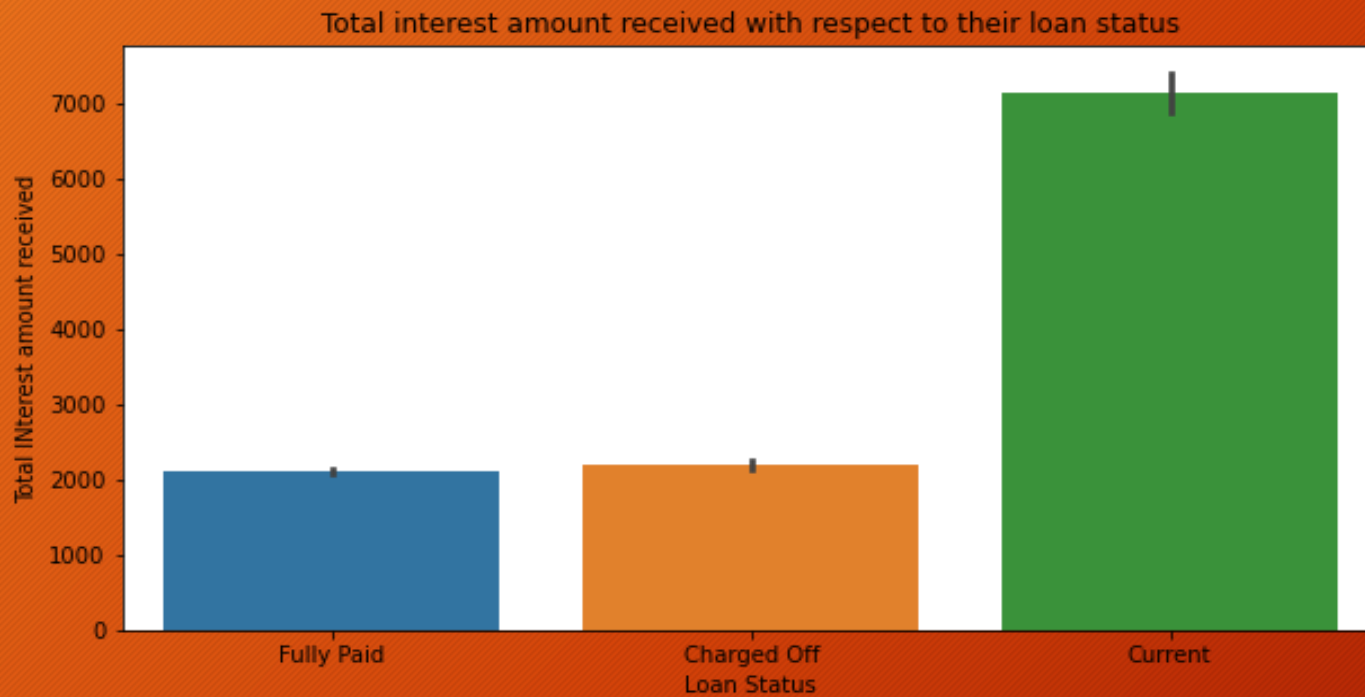
Observations

Total principle amount received with respect to their loan status

- The total principle received is lesser from Charged off customers

Bivariate Analysis

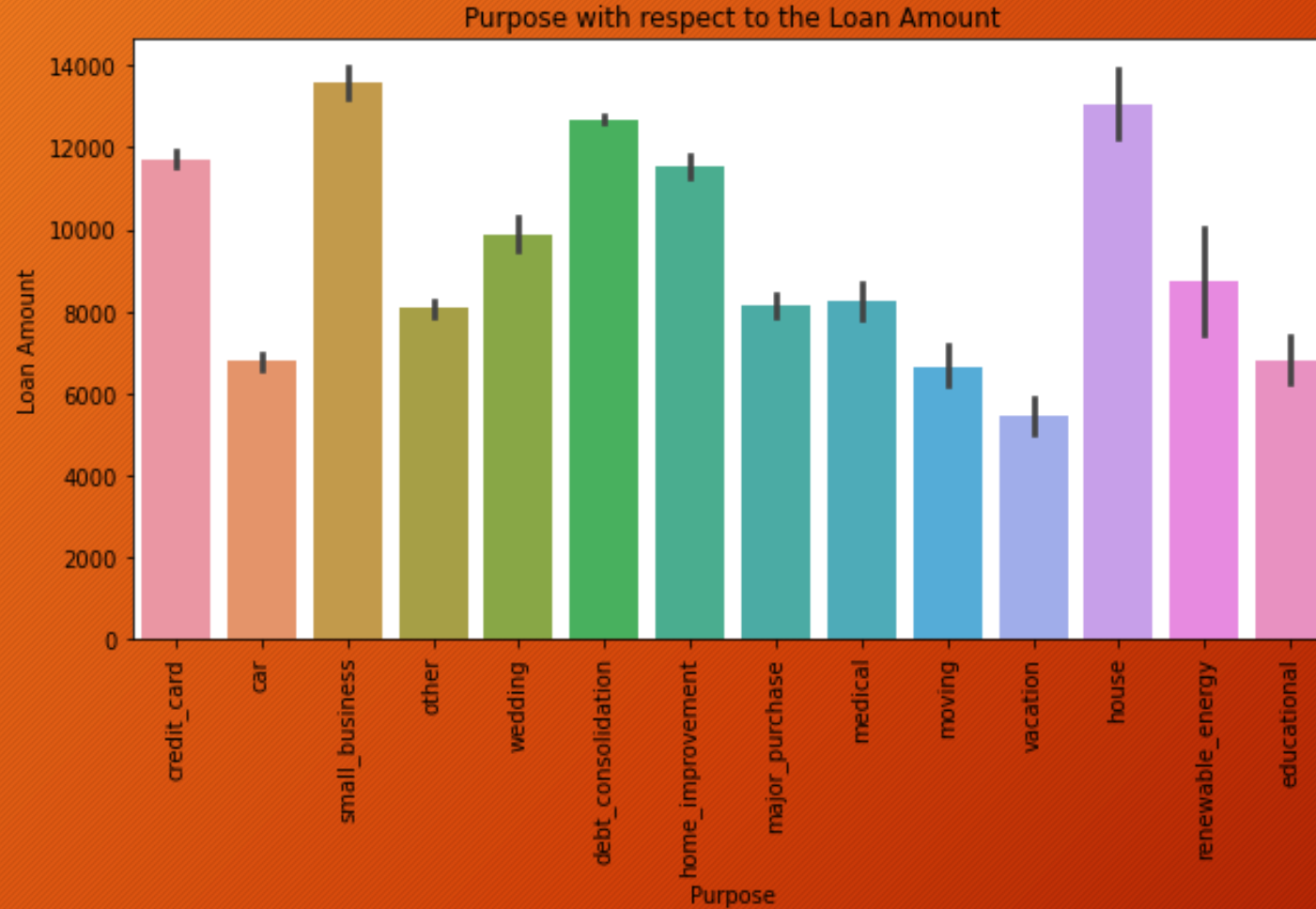Distribution of Interest Rate of the applicants Vs their loan Term

Observations

- Interest Rate is higher for longer term of loans

Total interest amount received with respect to their loan status

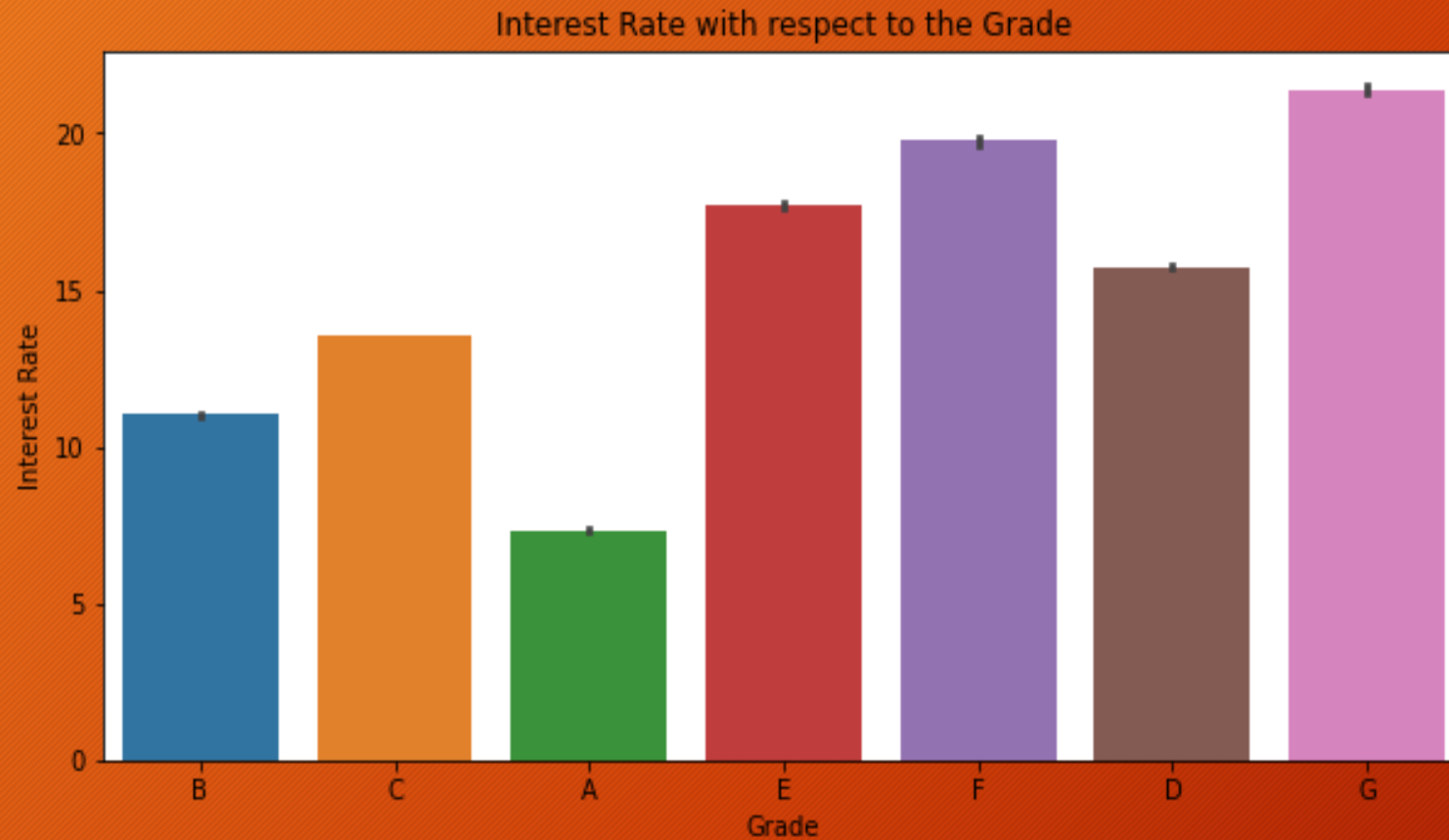# Distribution of Purpose with respect to Loan Amount

Observations

- Higher loan amounts have been availed for small business and house

- People avail lower loan amount for vacation and moving

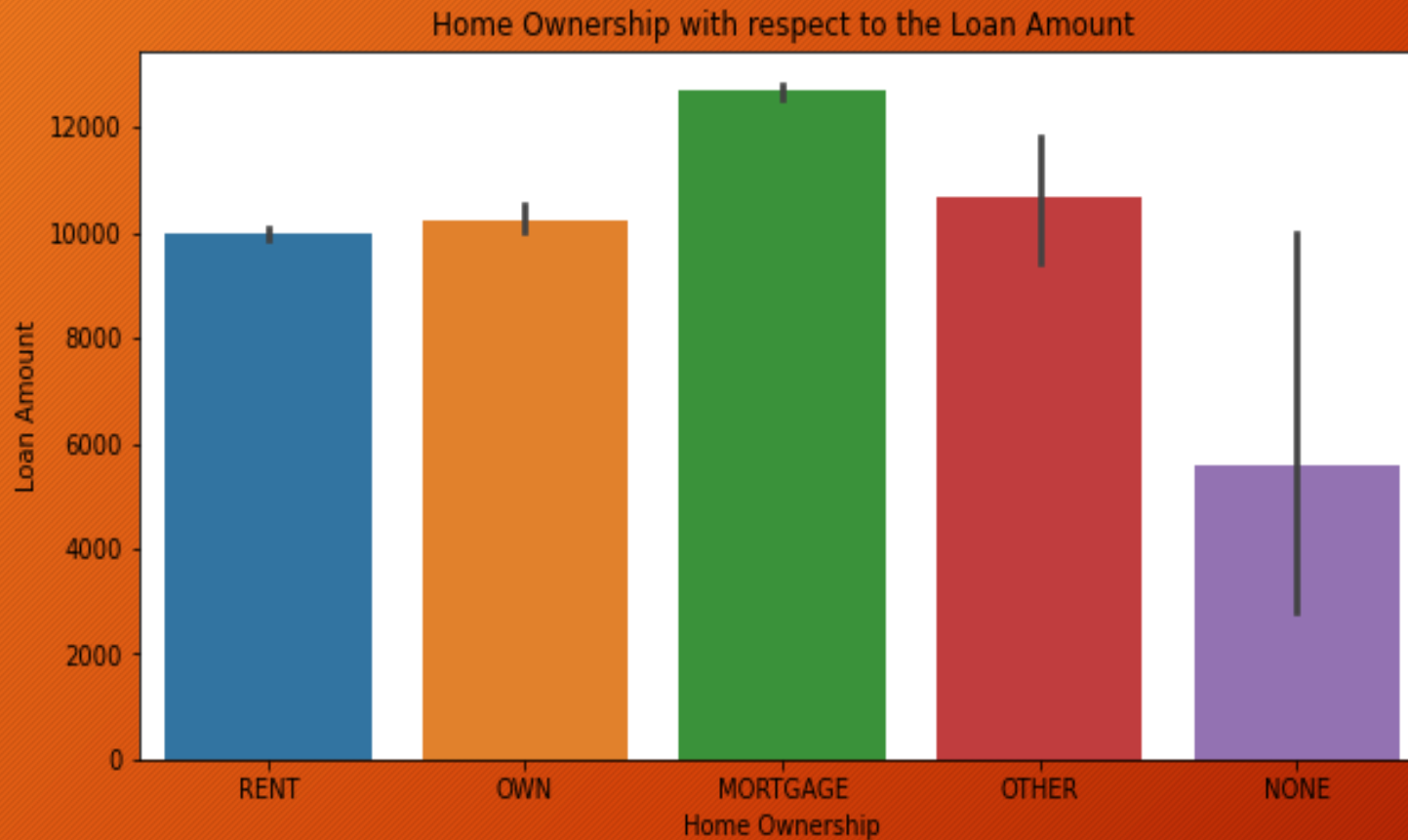# Distribution of Interest Rate with respect the Grade

Observations

Interest Rate with respect to the Grade

- Interest rate is lower for higher grade (A being the highest G being the lowest)

Distribution of Ownership of home with respect to Loan Amount

Observations

- High loan amounts are availed by people who have mortgaged their homes

- Home is also the second highest amount for availing loan

Heat Map

Analysis

- The loan amount and interest rate is mostly decided based on the Grade

- Total payment, including to the investors are almost promptly being paid by the current borrowers

- Payment of credit card is the most chosen purpose for availing the loan

- Good grades depend upon the annual income, employment length and previous repayment history.

- Maintaining a DTI of <=30% can reduce the risk of default

Thank You