Lending club case study

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Problem statement

Consumer finance company which specializes in lending various types of loans to urban customers. When the company receives a loan application, the company must make a decision for loan approval based on the applicant's profile.

Two **types of risks** are associated with the bank's decision after accepting the loan application.

Non-Default:

Applicant is likely to **repay the loan**,

then not approving the loan results in

a **loss of business** to the company.

Default:

If the applicant is **not likely**

to repay the loan, i.e. he/she is likely

to default, then approving the loan

may lead to a **financial loss** for the

company.
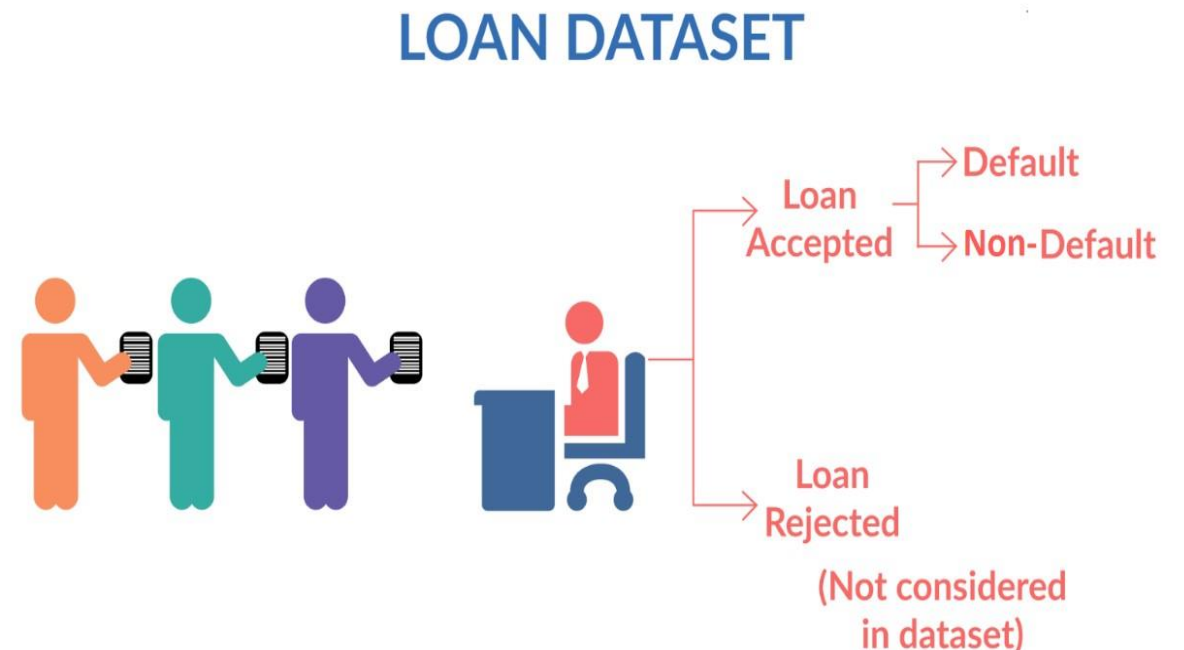
Data Inspection and Data cleaning

It is observed that there are lot of columns which has "null" values, so dropped those columns.

Single value columns wont help in analysis to decide whether member is defaulter or not, hence we have dropped single value columns.

Columns Id ,Member_id , Url , Tital , Emp_title,Zip_code , Last_creeddit_pull_d,address state ,desc doesn't contribute to loan defaulting so dropped those columns.
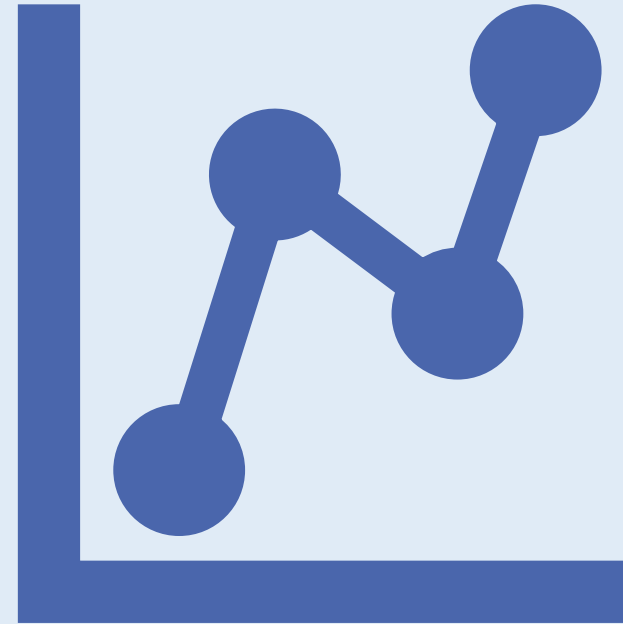
Data Inspection and Data cleaning continued…

Number of defaulters and fully paid members in percentage.

Fully Paid   82.96%

Charged Off   14.16%
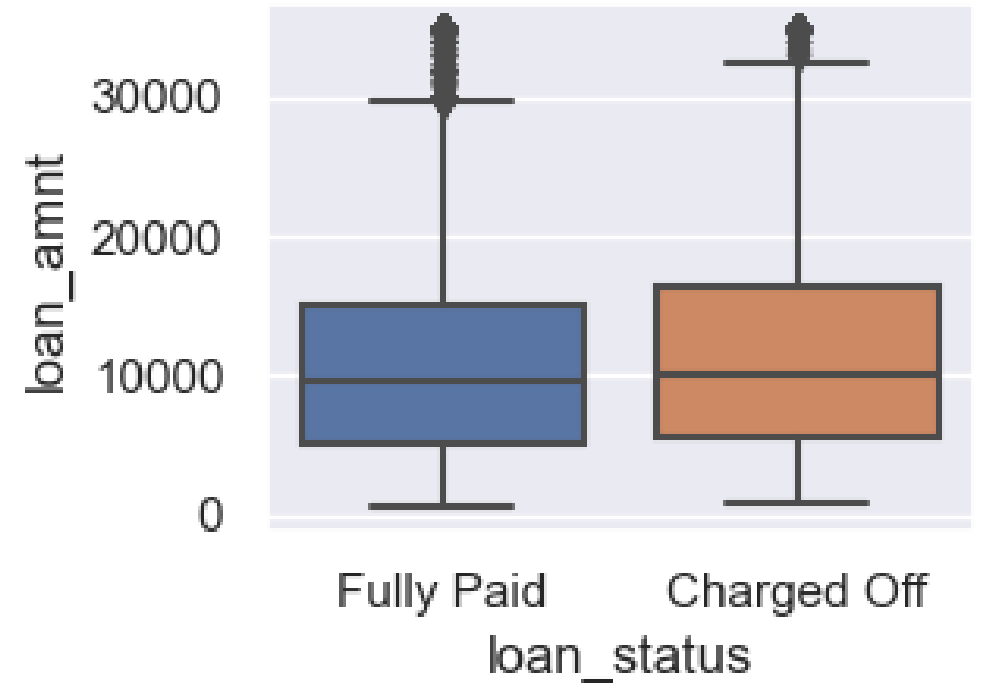
Current   2.87%

Since we are more interested in "charged off" and "fully paid" values, so dropped members with loan status as "current".
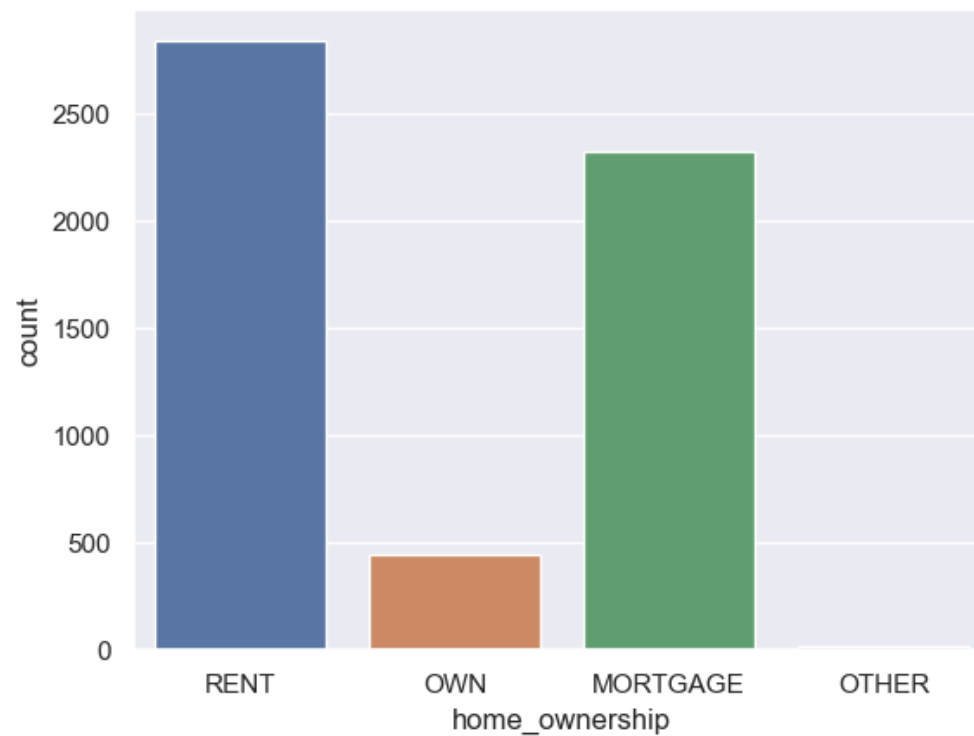
Analysis

Fully paid v/s Charged off

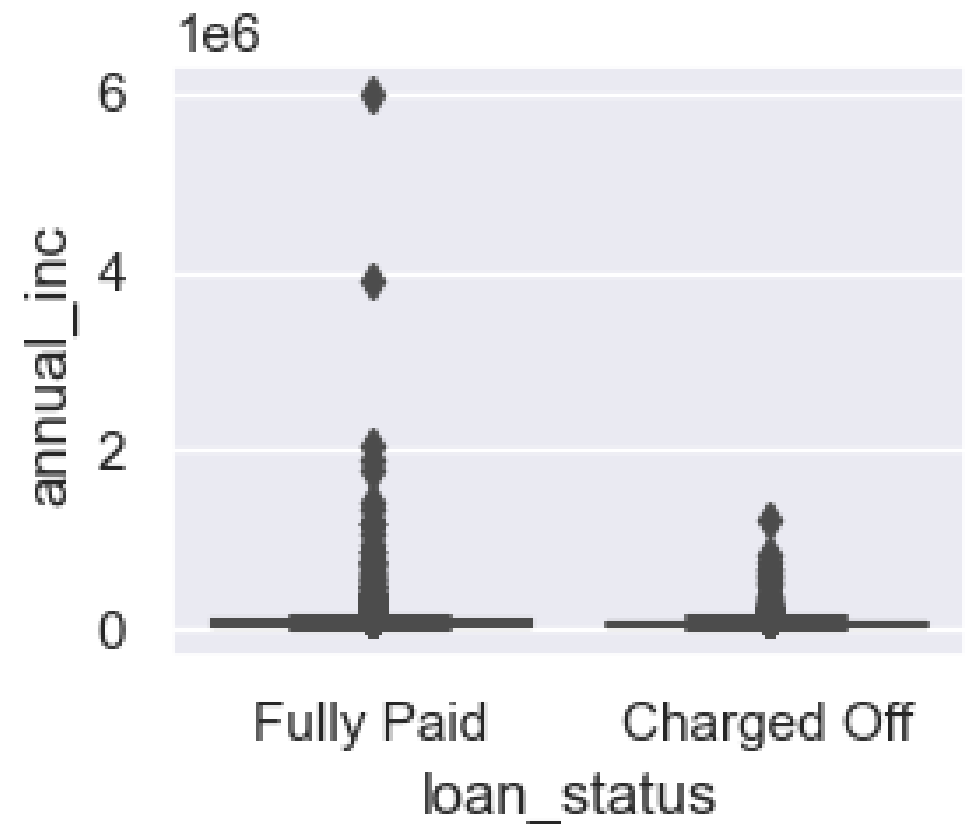**This plot concludes that higher the loan amount, chances of getting defaulted is more.**

Homeownership v/s Defaulters

This plot shows that, most of the defaulters are staying in Rented house and people whose houses are in Mortgage.
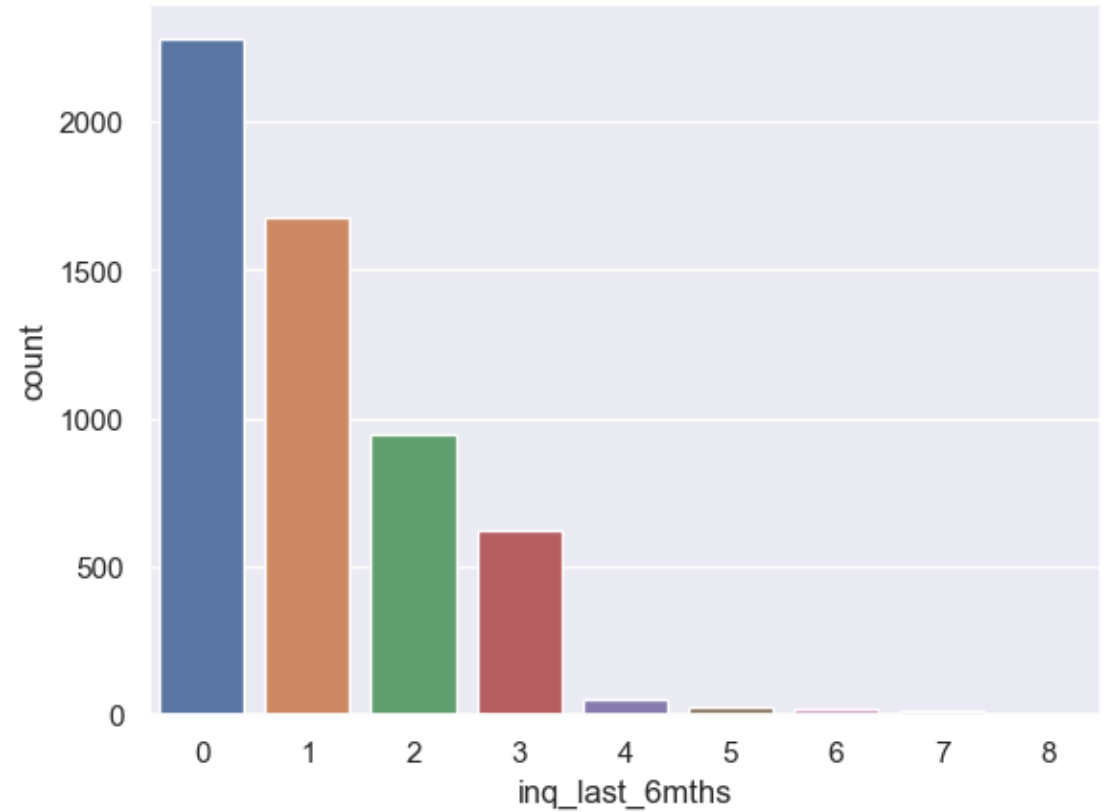
Loan status with Annual Income

This plot shows that, higher the income lower the chance of getting charged off
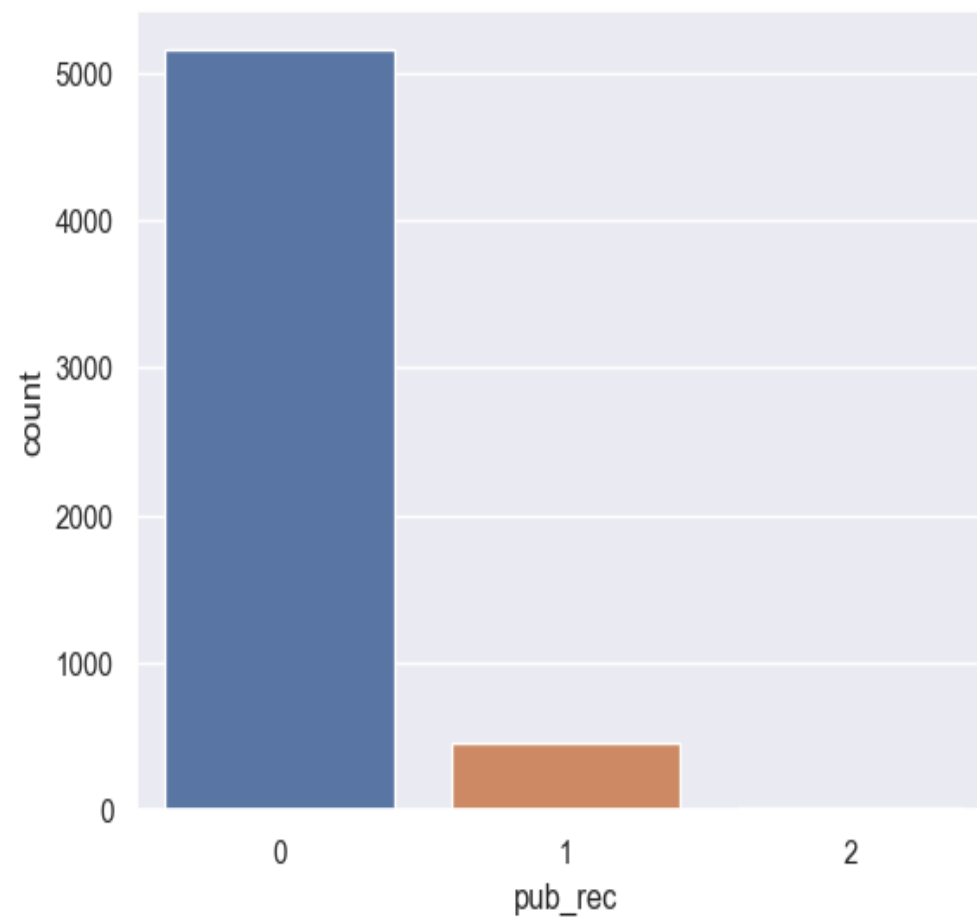
Number of inquiries in past 6months

This plot shows when number of inquiries are more it helps in reducing the defaulters.
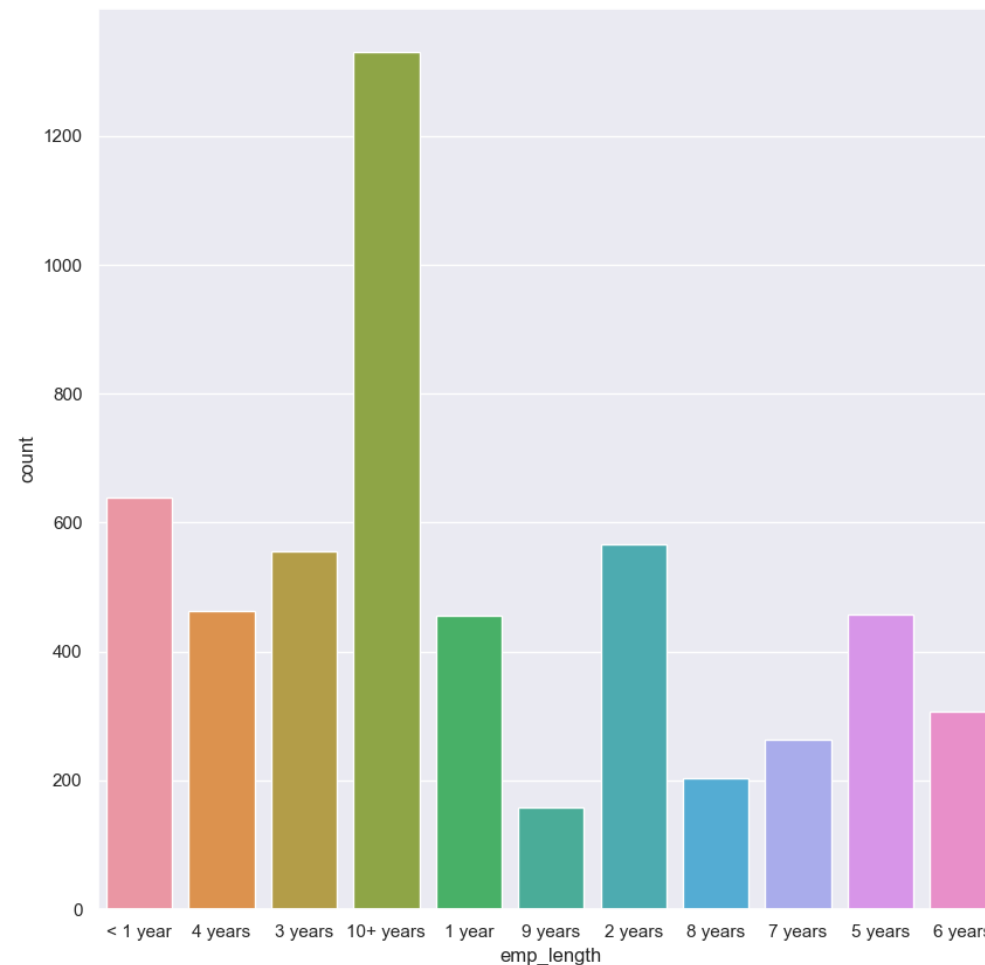
Public Bank bankruptcies of defaulters

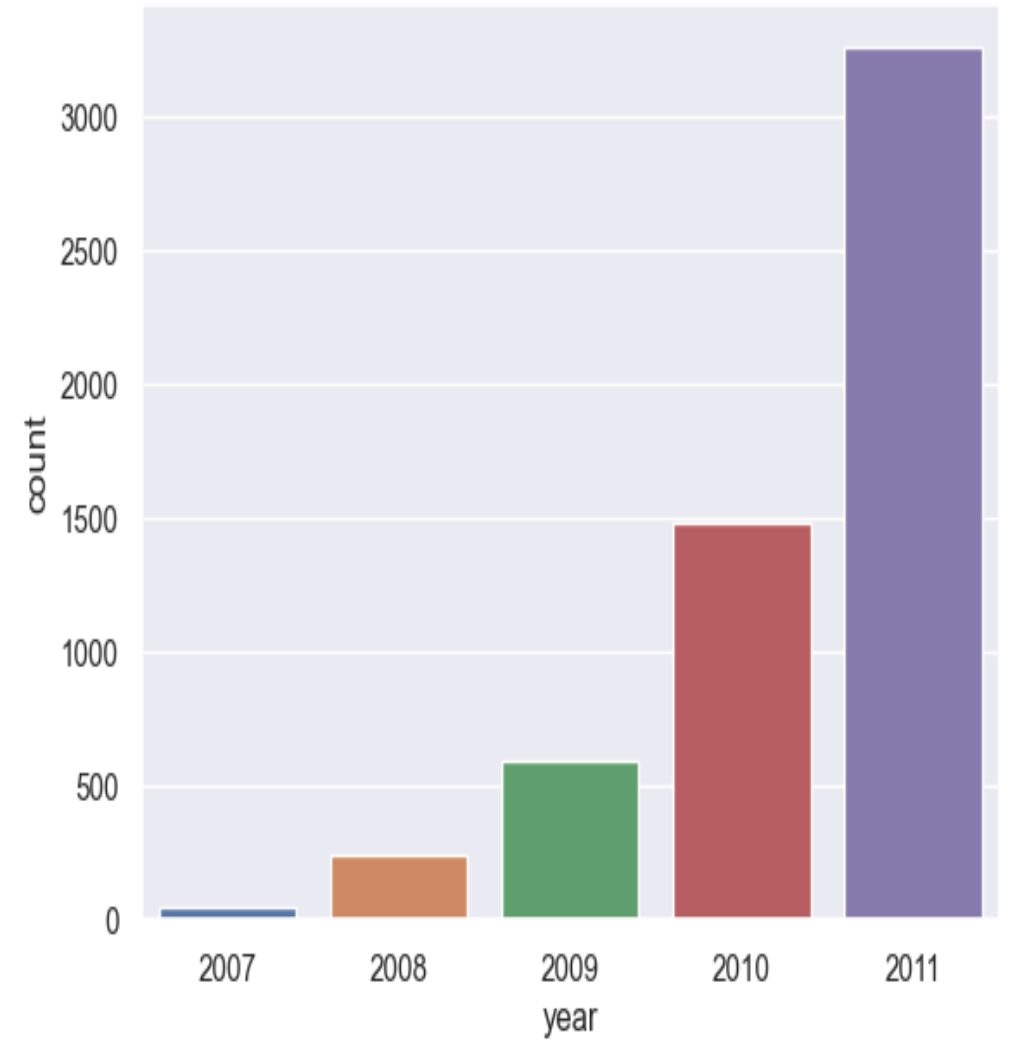**As expected, people who have derogatory public records are more in defaulters list.**

Defaulters based on employment length

This plots shows people who have 10+ years of experience are more in defaulters list.
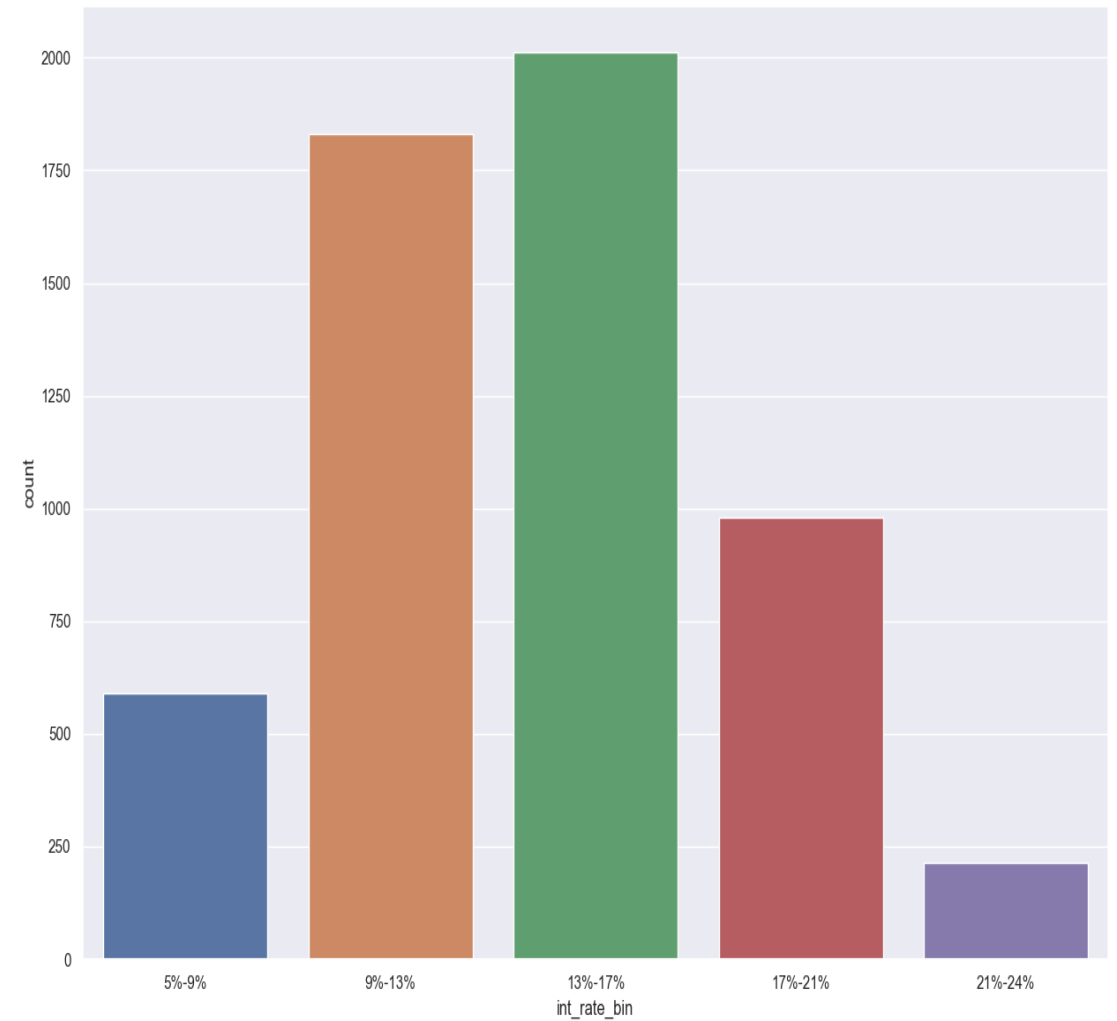
Loan issued year v/s Defaulters

This plot shows, year 2011 has more defaulters and it may be due to external factors like recession/economic slow down.

Interest rates v/s defaulters

This plot shows people with interest rates b/w 13-17% are more in defaulters list.

Conclusion

- People who have derogatory public records are more in defaulters list.

- If the loan amount is more then chances of defaulting is more.

- People with interest rate b/w 13-17% has more defaulters.

- Most of the defaults are in Rented house and people whose house is in Mortgage.

- Higher the income lower the chance of getting charged off.

- When number of inquiries are more it helps in reducing the defaulters.

- People who have 10+ years of experience are more in defaulters list.

- Year 2011 has more defaulter list, it may be due to external factors like recession/economic slow down.