Lending club case study

❖ Largest online loan marketplace

❖ Facilitating personal loans

❖ Business loans

❖ Financing of medical procedures

**Group Members:**
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Lending club analysis

- Classes are highly imbalanced

- Grades play a major role in default rate

- Percentage of defaulters in grades E,F and G are more as compared to those who paid full

- Loan grade A is assigned assigned to more customers who paid fully as compared to who defaulted. There is a major difference of around 18%
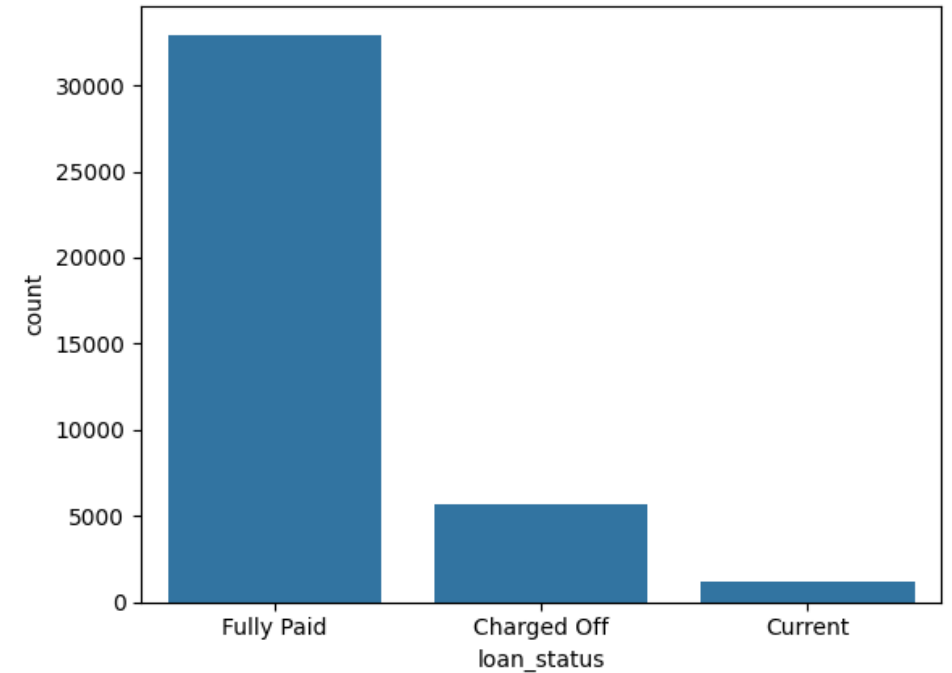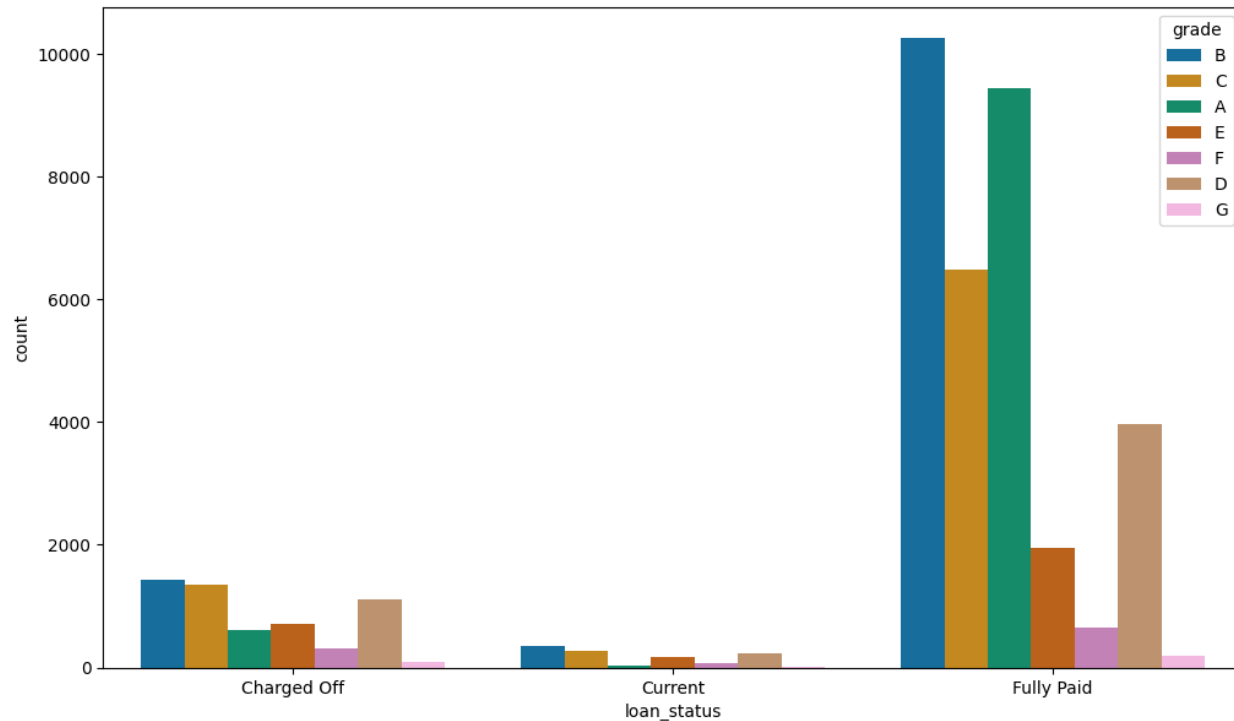
Date and time of loan

- Most of the borrowers got loans issued in the month of Dec and in year 2011

- Most of the borrowers got earliest credit line in 2000, followed by plus minus 5 years

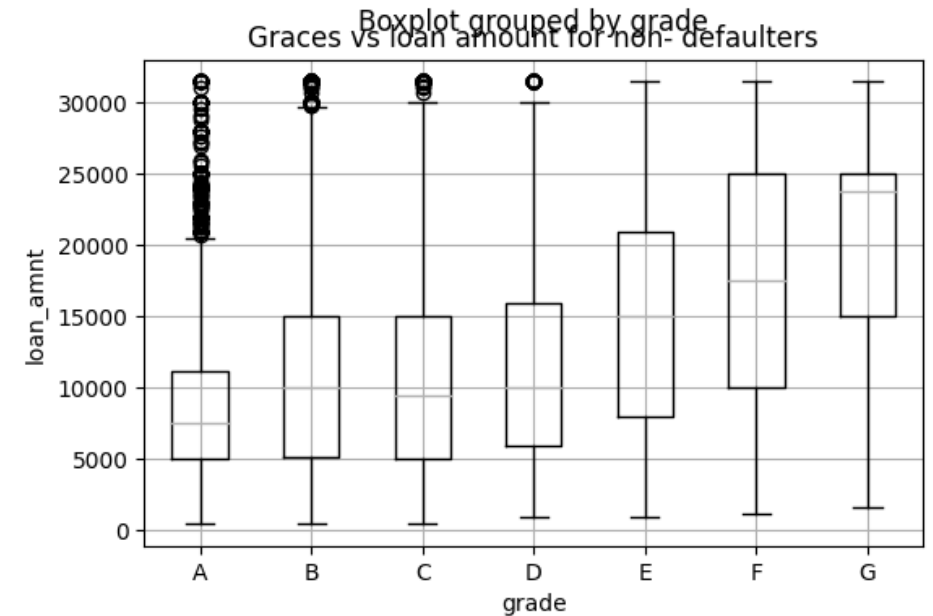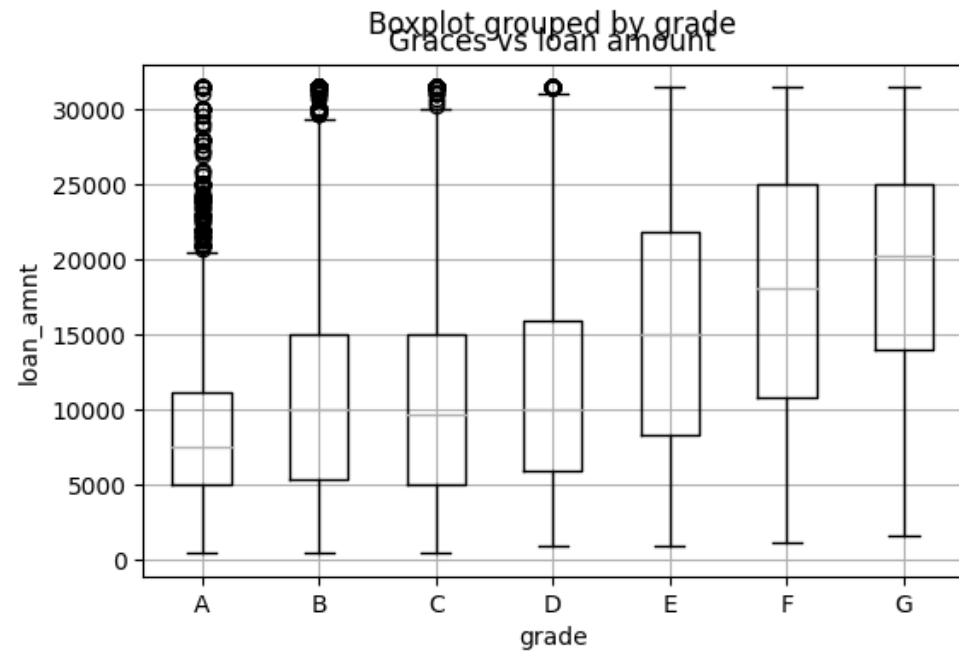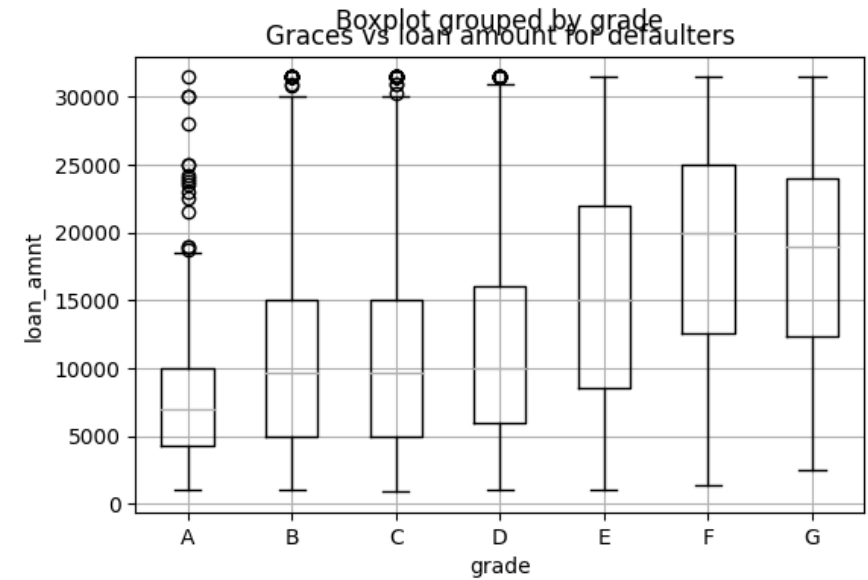- Most of them got credit line in the month of Oct to Jan.
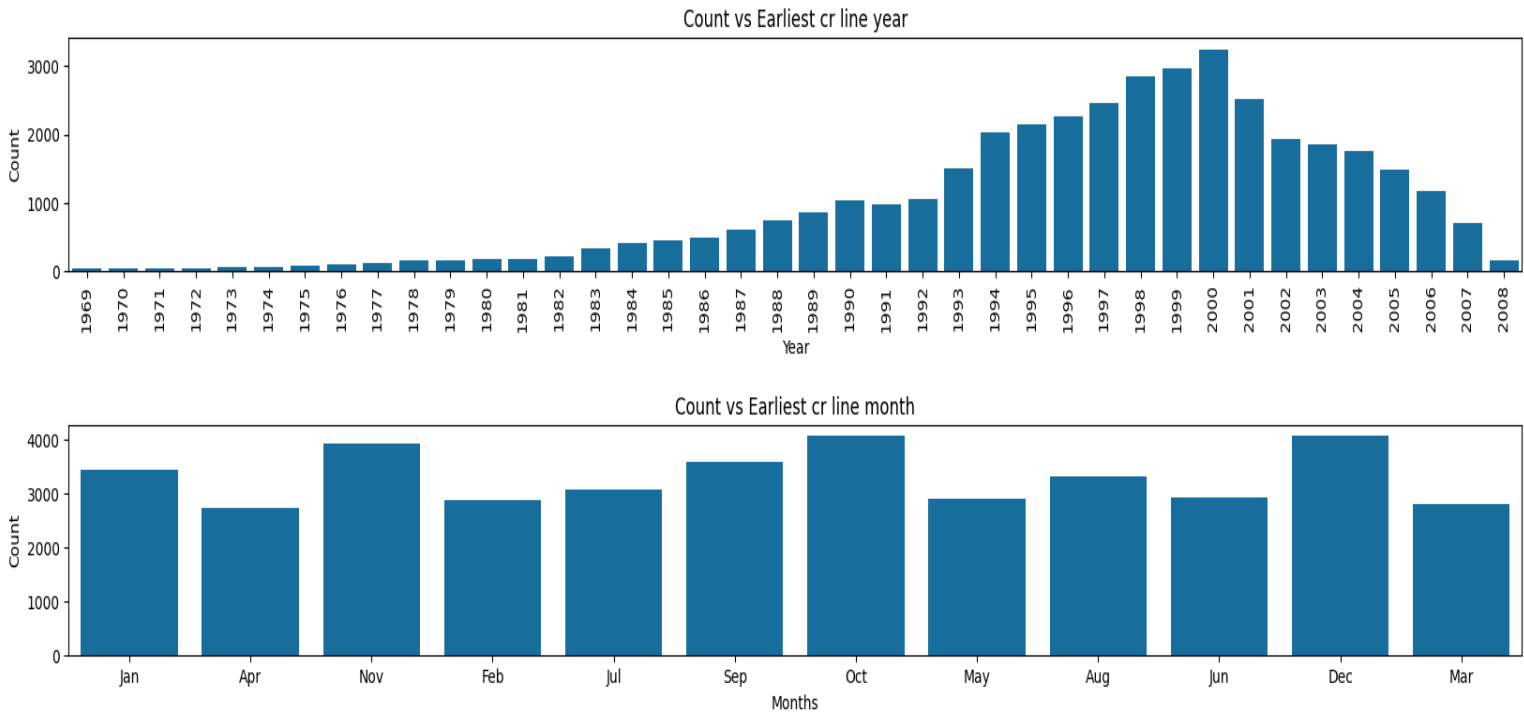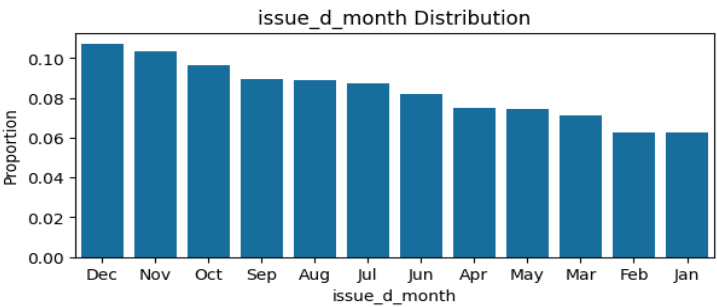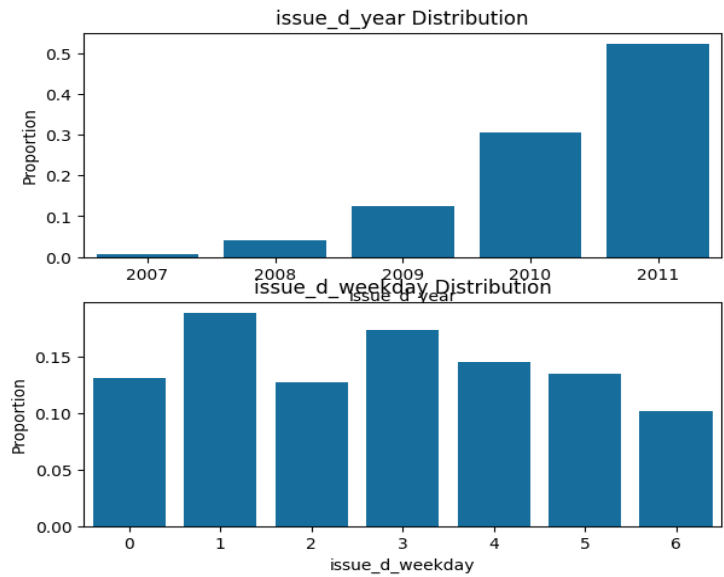
Grades and subgrades analysis

- Loan sub grade 1 is assigned to more customers who paid fully as compared to who defaulted for grade A

- Loan sub grade 5 is assigned to more defaulters as compared to those who fully paid for grade A
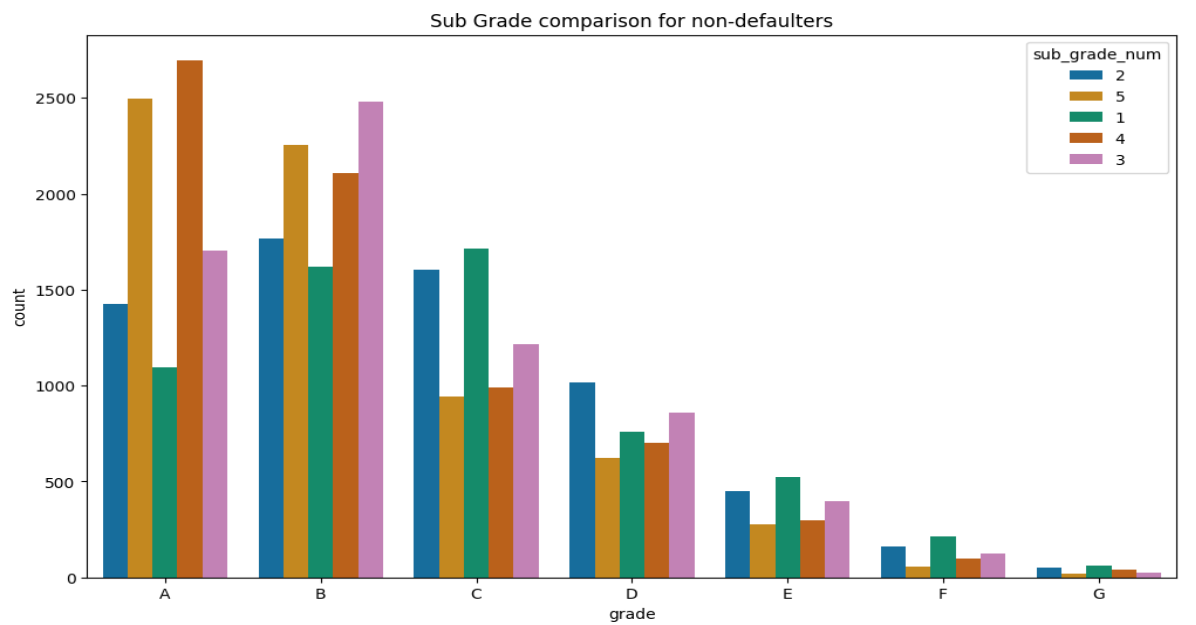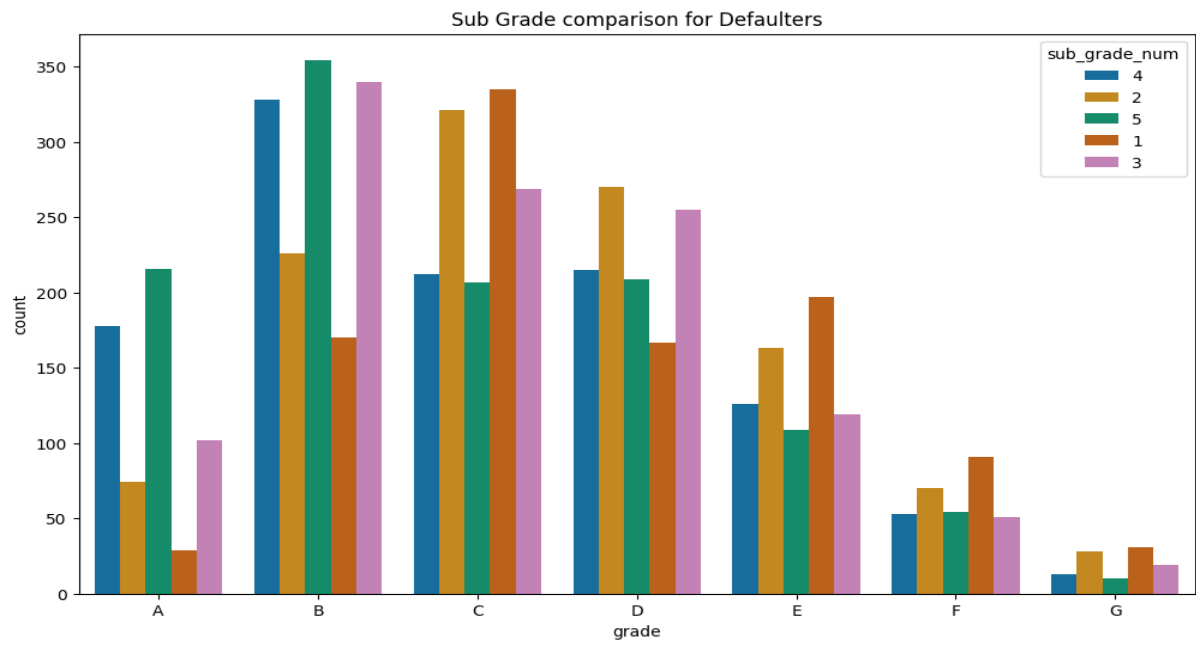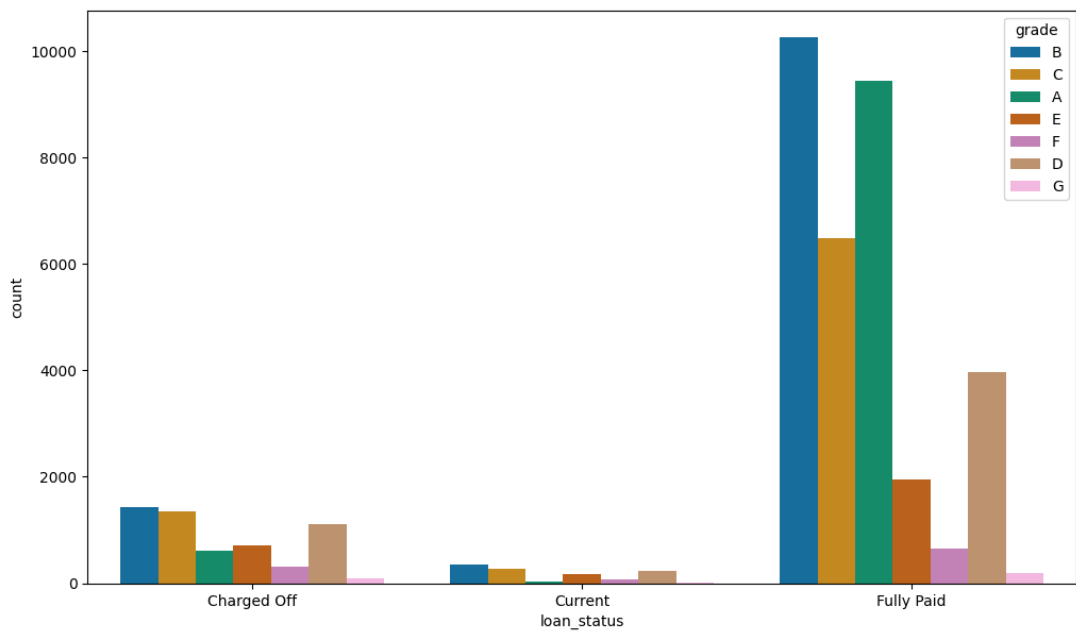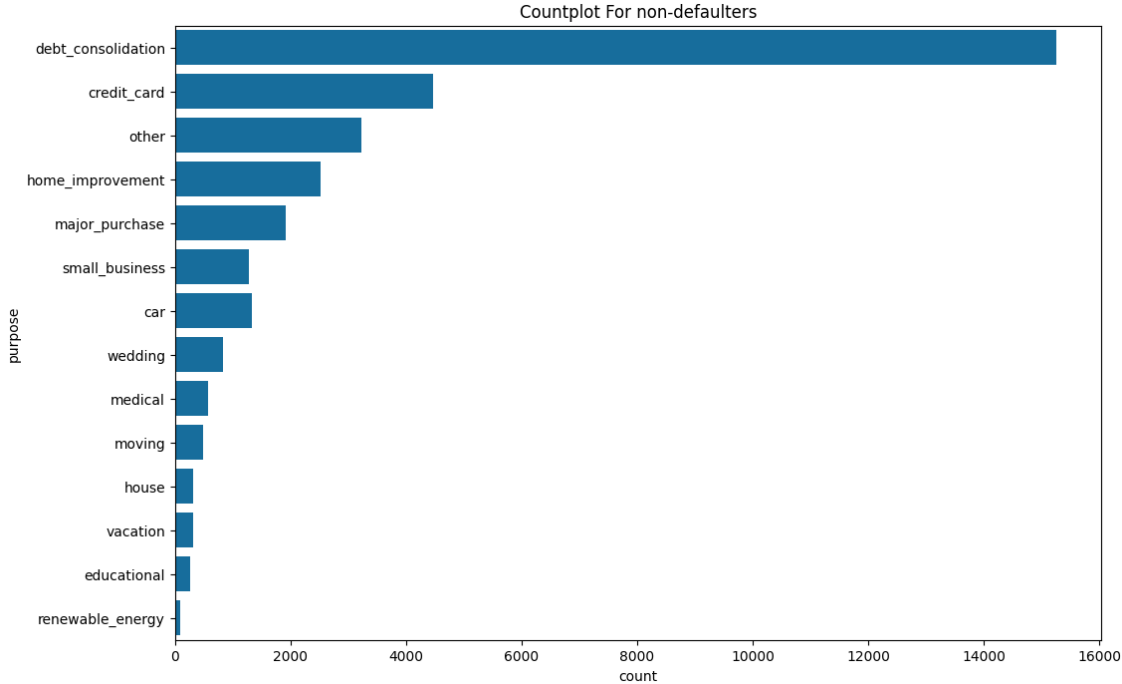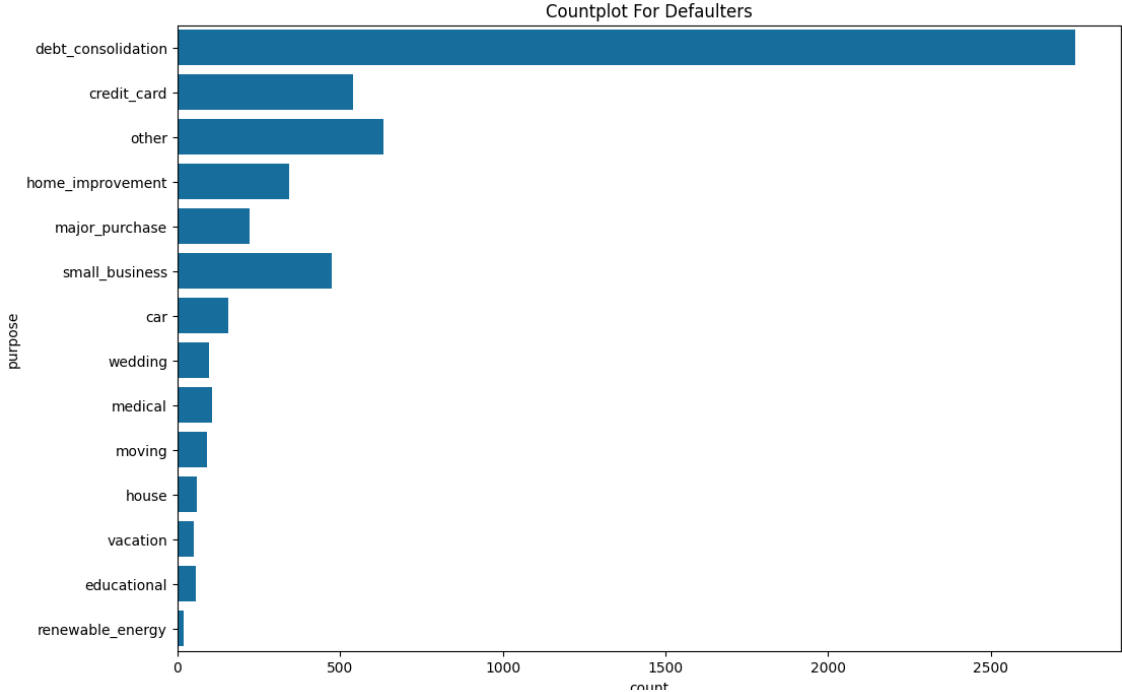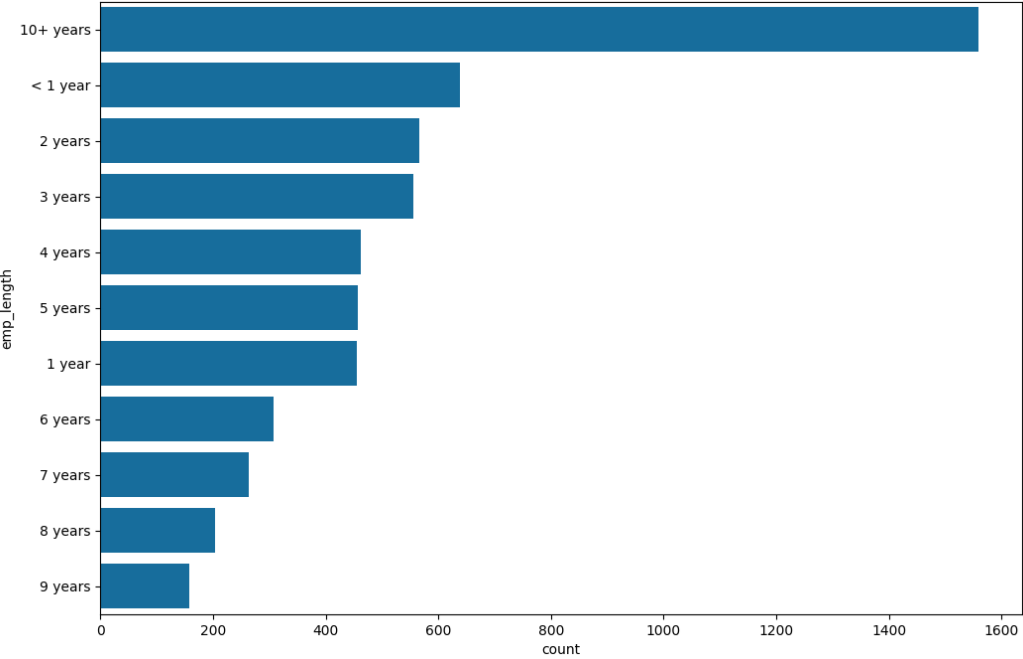
Grades vs loan amount

- Only in case of grade G, the median loan value is significantly higher in default as compared to non-defaulters

Boxplot grouped by grade
Graces vs loan amount for defaulters

Boxplot grouped by grade
Graces vs loan amount

Boxplot grouped by grade
Graces vs loan amount for non- defaulters

Employee length and purpose of loan for defaulter's vs non-defaulters

- The major difference is in terms of small business. The percentage of defaulters are more in small business as compared to those who fully paid

- Employee_length doesn't play much role as a deciding factor for defaulters

Grades and loan amount deep dive

- Borrowers who applied for loan amount less than amount 5600, they have equal default rate as compared to non-defaulters(~47%). This is the most high-risk zone

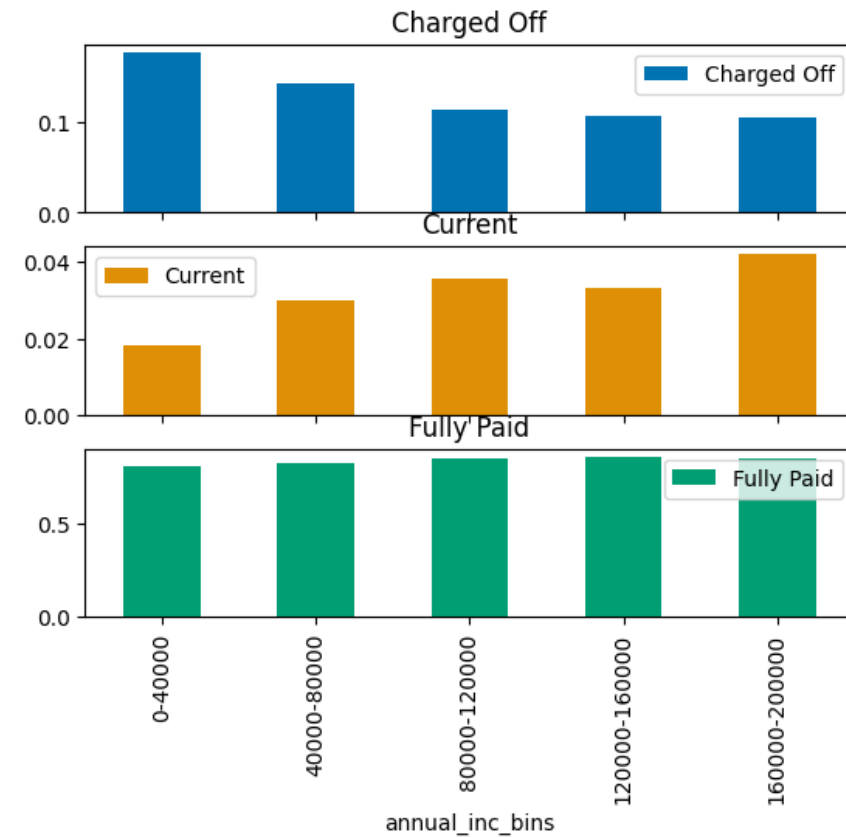- Percentage of defaulters increase for high loan amount
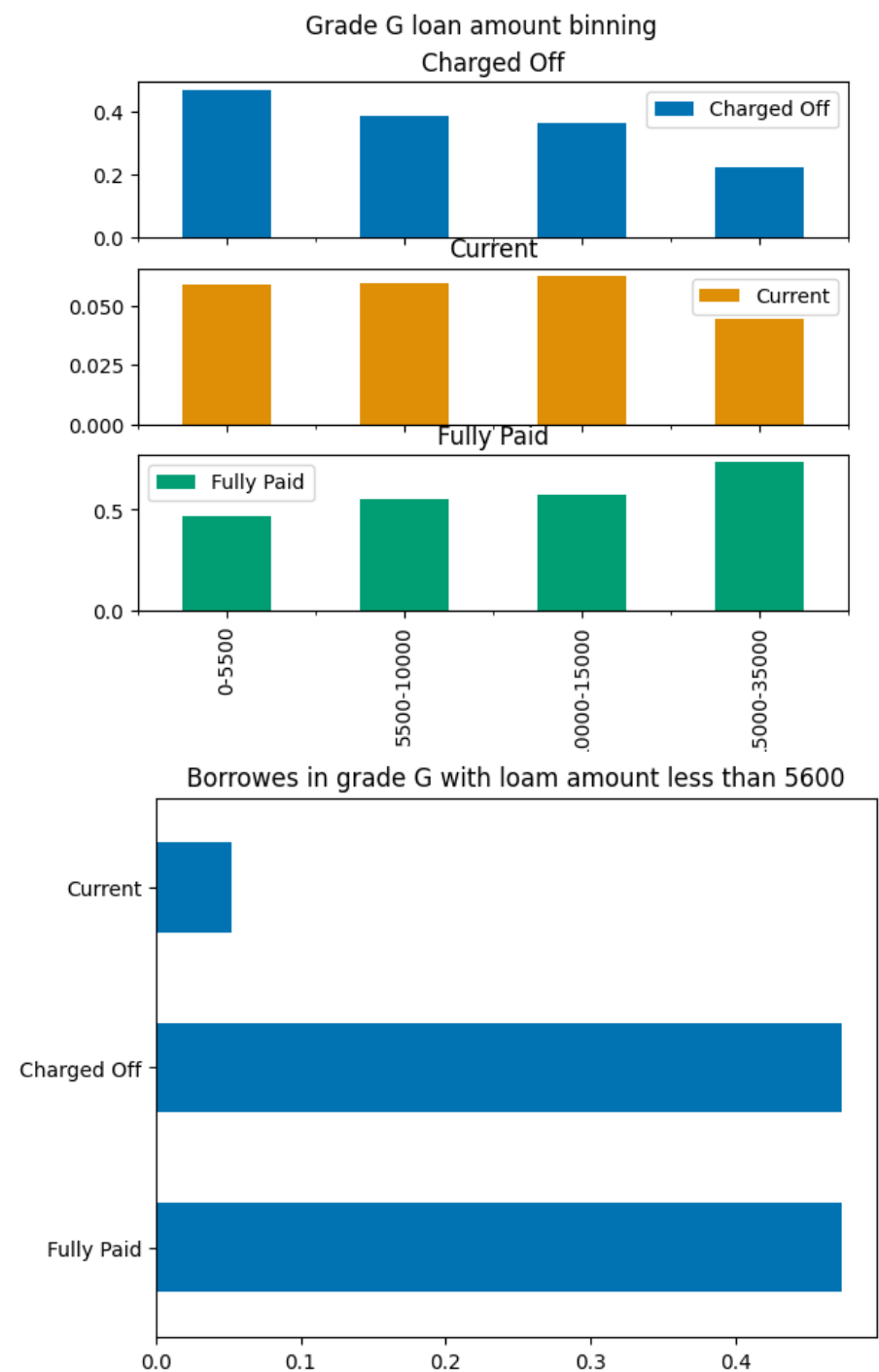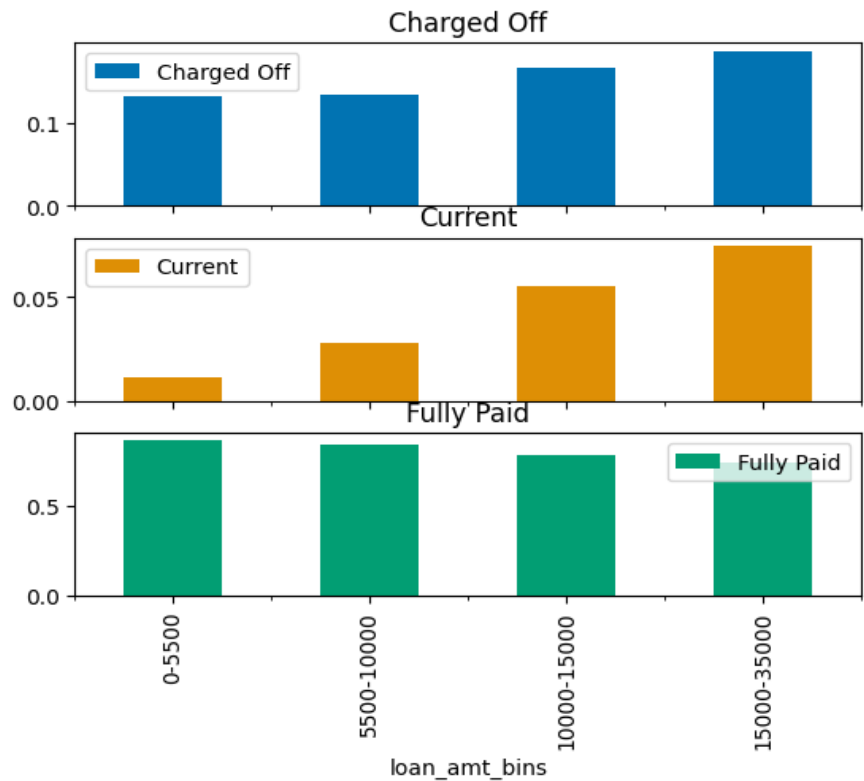
Salary and interest rate analysis

- Interest rate more than 20% has more than 30% default rate
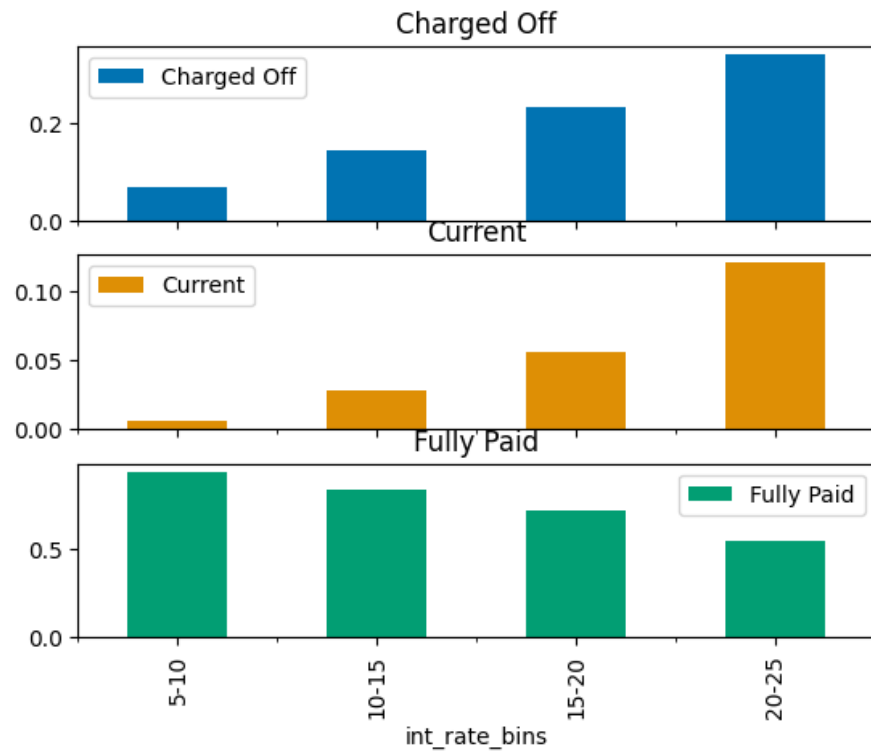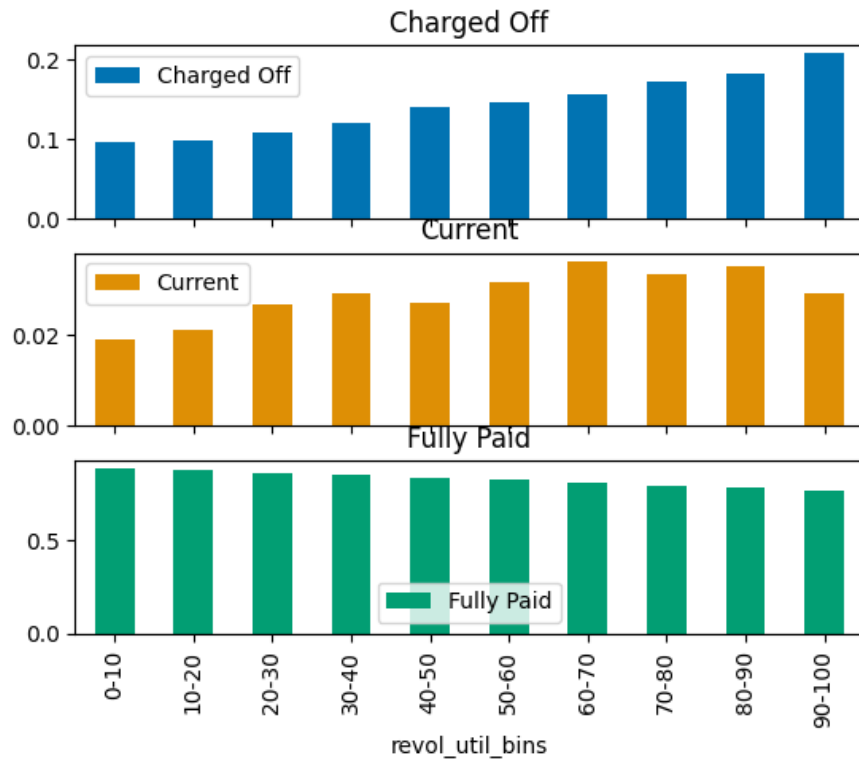
- Salary below 40000 has more default rate as compared to salary above 160k
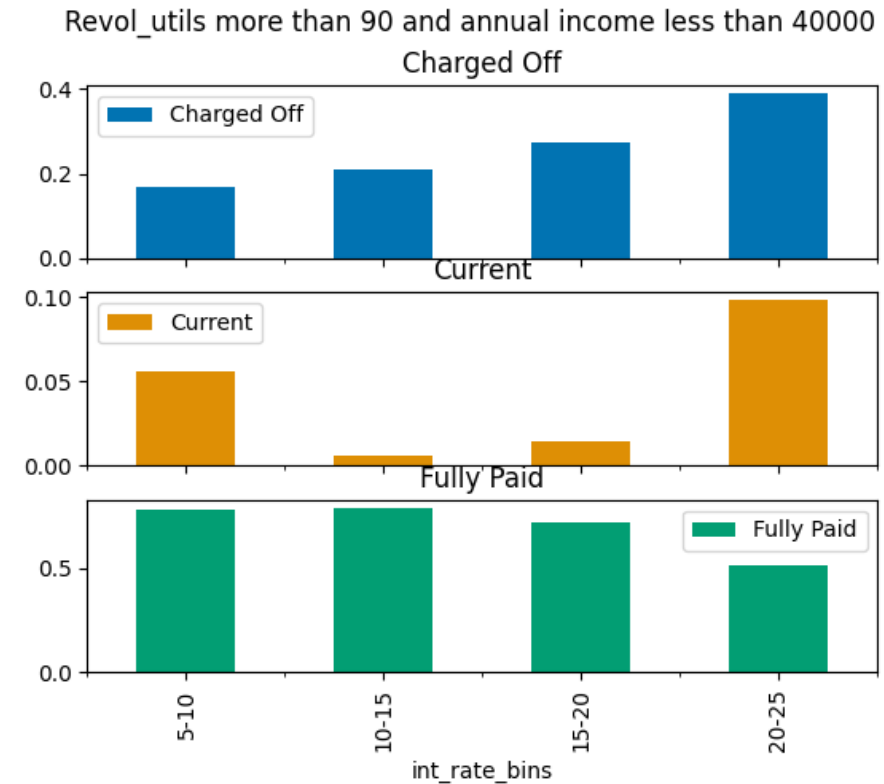
Revol_utils and interest rate deep dive

- Percentage of defaulters increase for for high revol_utils. Above 80 has 20% default rate
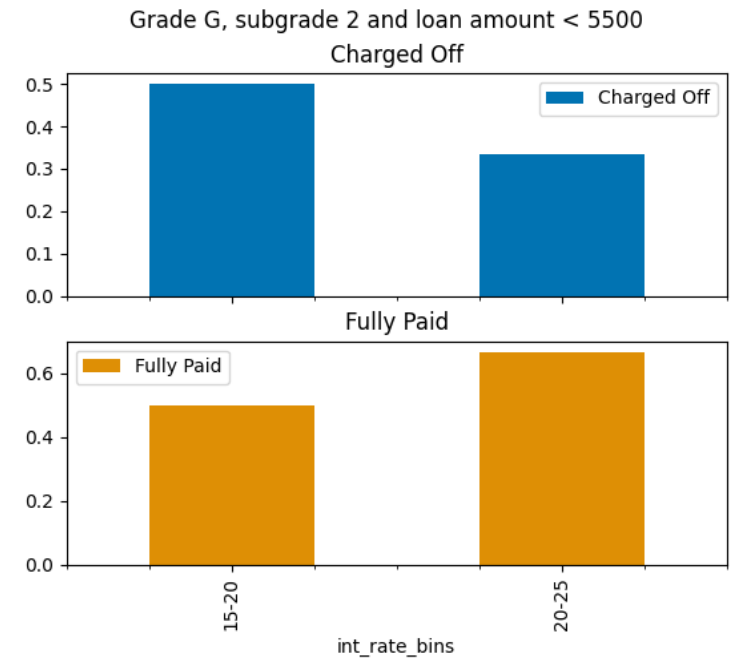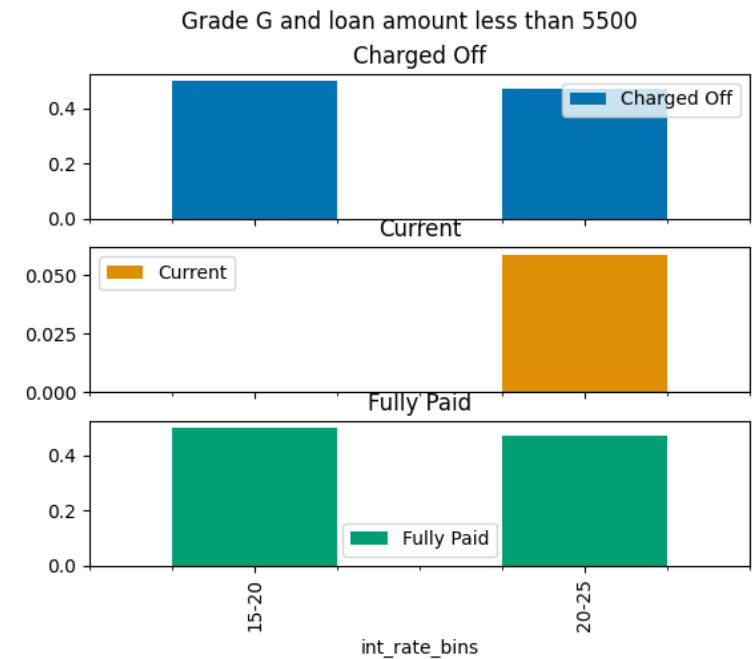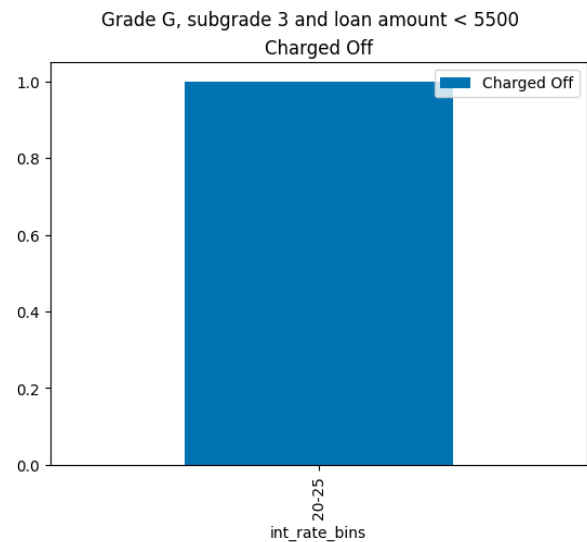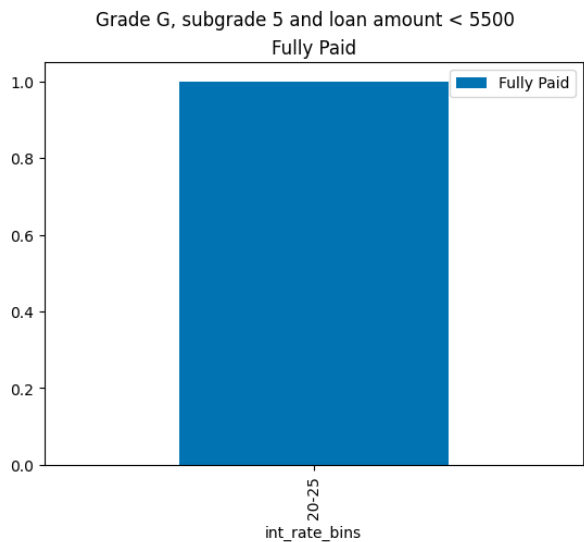
- More than 40% default rate when annual income is less than 40000 and revol_utils more than 90

50% default rate when Grade is G and loan amount is less than 5500

- Around 40% default rate for interest rate more than 20%. Even when interest rate is more than 5%, the default rate increased from 5 % to around 20%

- 50% default rate when Grade is G and loan amount is less than 5500.

- Interest rate is also above 15% for grade G and loan amount less than 5500

- Almost everyone defaulted when subgrade is 3 for grade G and loan amount is less than 5500

- No one defaulted when subgrade is 5 for grade G and loan amount is less than 5500

Grade G and loan amount less than 5500

Grade G, subgrade 2 and loan amount < 5500

Grade G, subgrade 5 and loan amount < 5500

Grade G, subgrade 3 and loan amount < 5500

Conclusions

- Small business loans re defaulted more. Lending clu should reduce issuing loans to them

- Grades are good metric for detecting defaulters

- Lending club should reduce giving loans to Grade G with loan amount less than 5500

- Definitely loan should not be given to individuals when grade G, subgrade 3 and loan amount is less than 5500

- Loan can be given to individuals in grade G with subgrade 5

- Lending club should stop giving loans to individuals when annual income is less than 40000 and revol_utils more than 90