

Lending Club Case Study

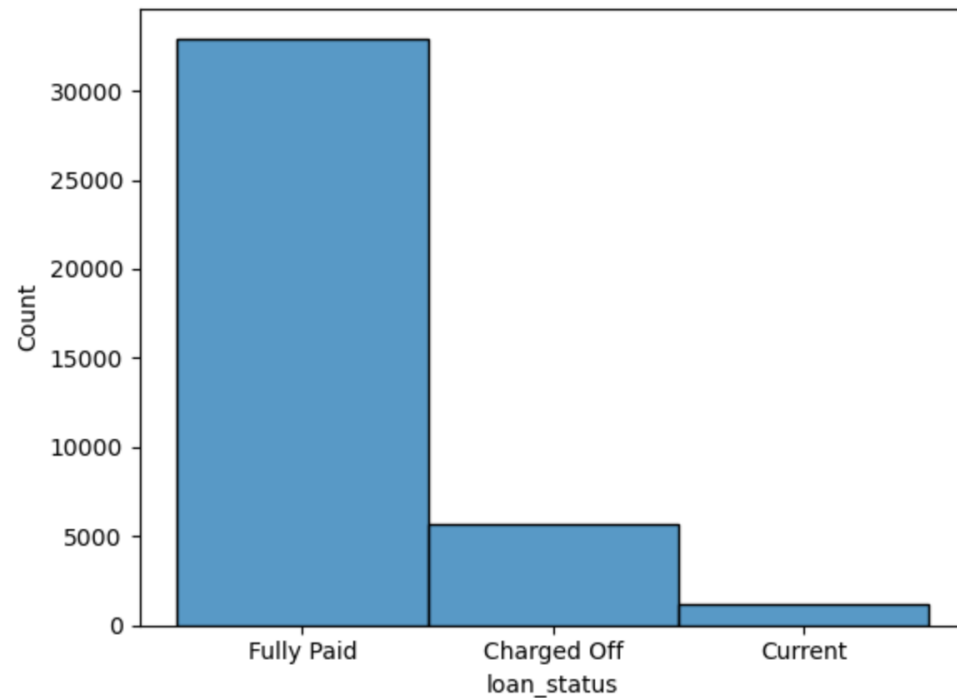
By - Shubham Saxena

Objective of the Case Study

- To find driving factors behind loan default from lending club data

Univariate analysis of target variable loan status

- Percentage of defaulters : 14.17 %



Loan status	Count
Charged Off	5627
Current	1140
Fully Paid	32950

Univariate analysis of member id and bivariate analysis of member id and loan status

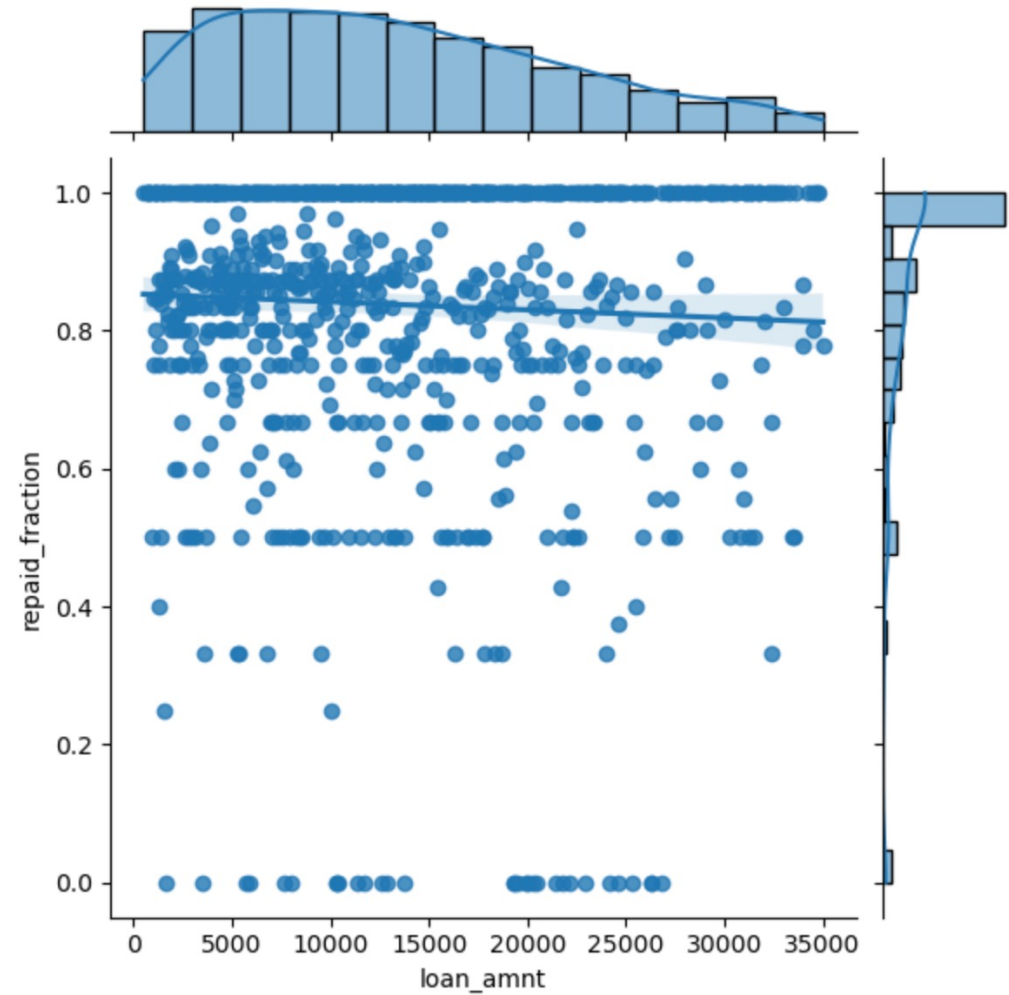
- All member ids are unique and occur exactly once
- 14.17% of members have defaulted
- Member ids of defaulters are noted in python notebook

Bivariate analysis to find driving factors for loan default

- Loan amount vs loan status
- Term vs loan status
- Interest rate vs loan status
- Installment vs loan status
- Grade vs loan status
- Subgrade vs loan status

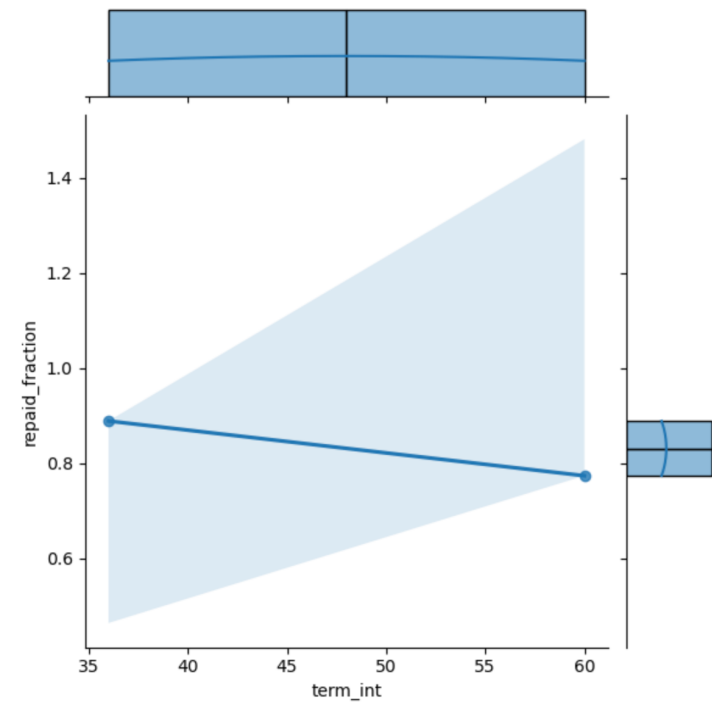
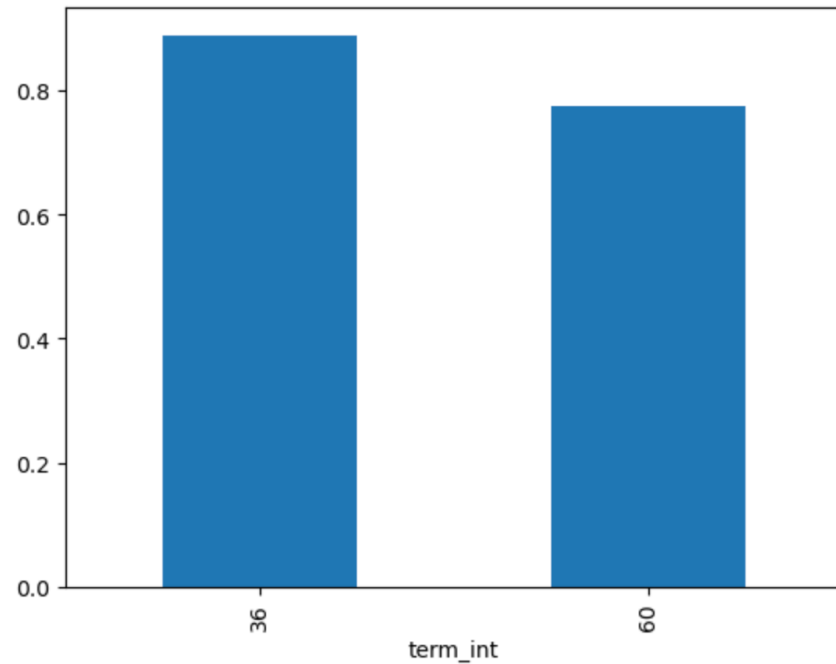
Loan amount vs loan status

- Loan repaid fraction decreases slowly with increase in loan amount i.e. loan default increases with loan amount



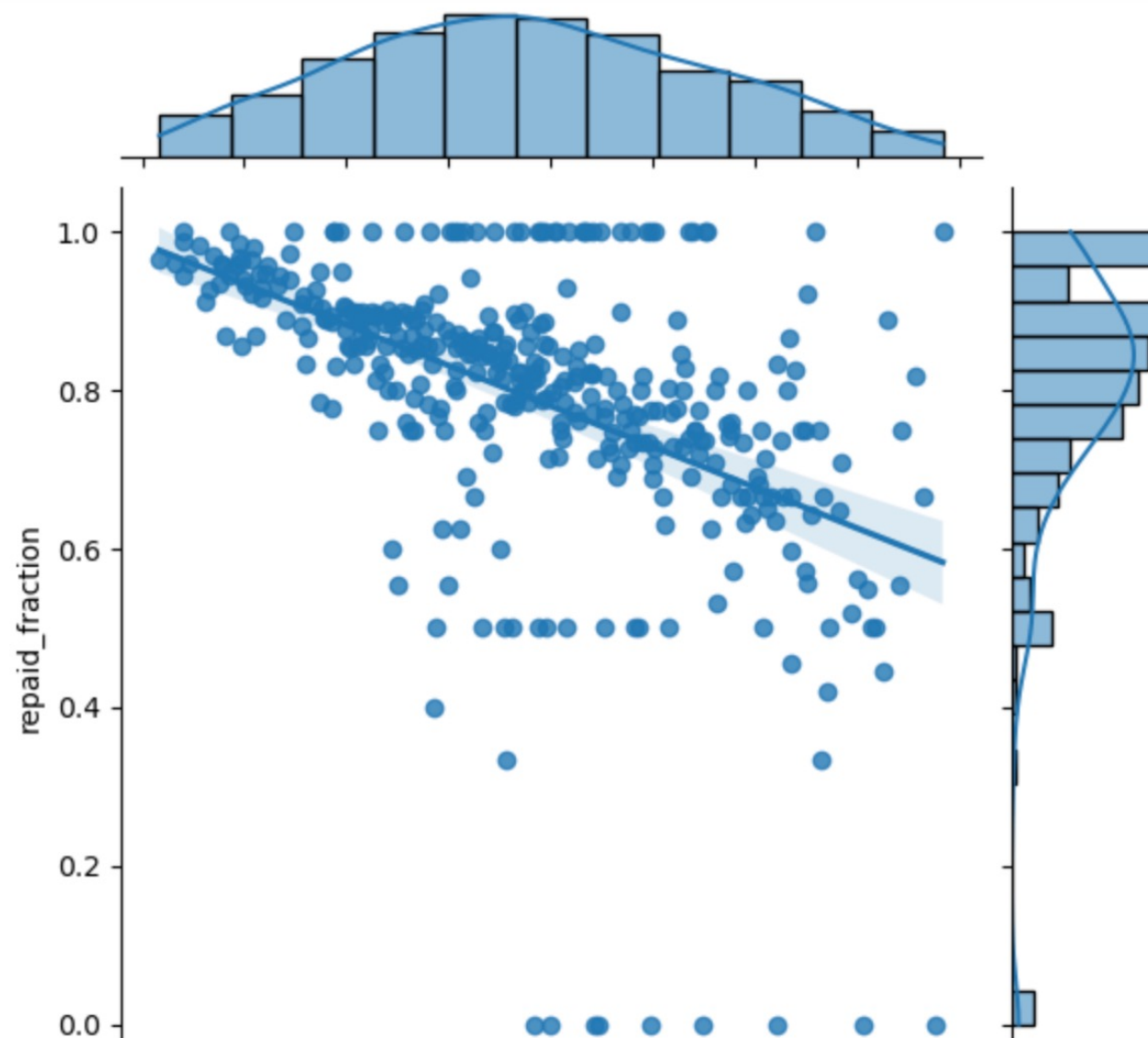
Term vs loan status

- Loan repaid fraction decreases with increase in term length
i.e. loan default increases with term length



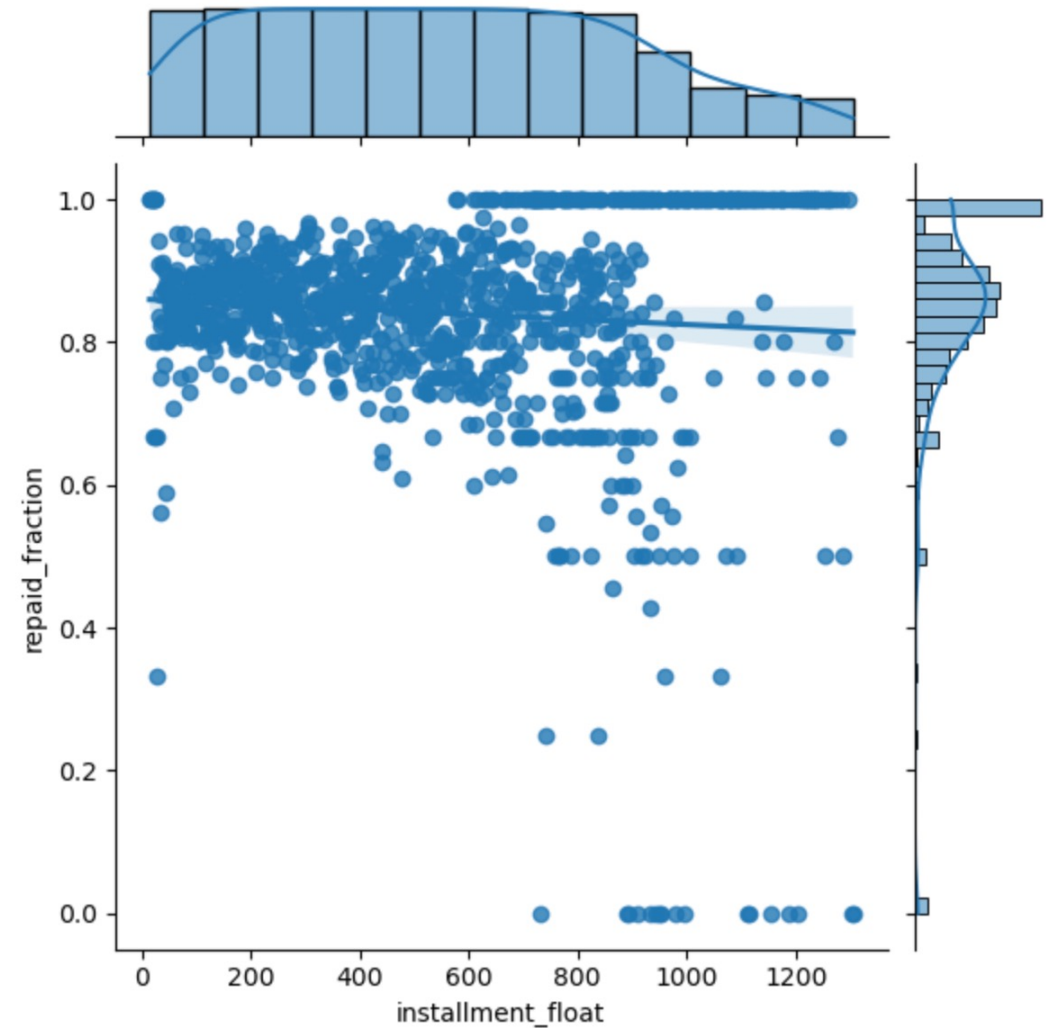
Interest rate vs loan status

- Loan repaid fraction decreases sharply with increase in interest rate i.e. loan default increases with interest rate



Installment vs loan status

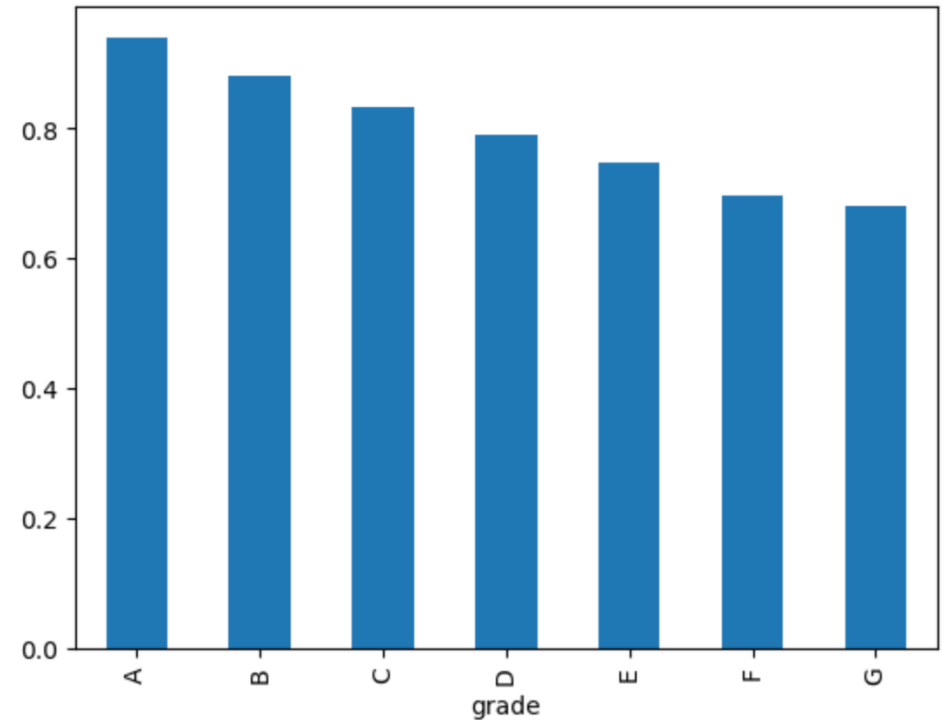
- Loan repaid fraction decreases slowly with increase in installment size i.e. loan default increases with installment size



Grade vs loan status

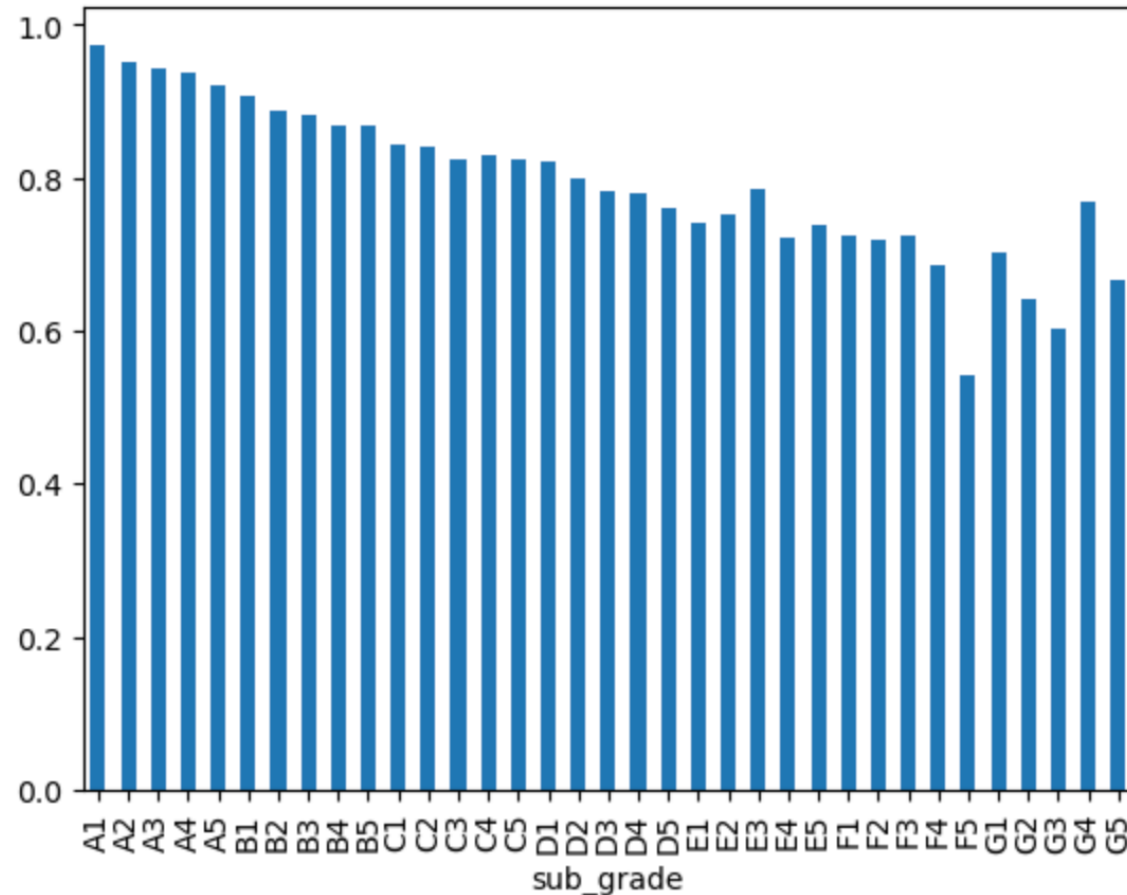
- Loan repaid fraction decreases as grade increases i.e. loan default increases with grade

grade	
A	0.940307
B	0.881448
C	0.833663
D	0.789335
E	0.748417
F	0.695901
G	0.680380



Subgrade vs loan status

Loan repaid fraction
decreases as sub grade
alphanumeric increases
i.e. loan default
increases with subgrade



sub_grade	
A1	0.973661
A2	0.950928
A3	0.943094
A4	0.938323
A5	0.920861
B1	0.906557
B2	0.889159
B3	0.883099
B4	0.869029
B5	0.868343
C1	0.842697
C2	0.840378
C3	0.823414
C4	0.828479
C5	0.824621
D1	0.820623
D2	0.798961
D3	0.781756
D4	0.780836
D5	0.760870
E1	0.740498
E2	0.751524
E3	0.784810
E4	0.722467
E5	0.737981
F1	0.723404
F2	0.718876
F3	0.724324
F4	0.684524
F5	0.542373
G1	0.701923
G2	0.641026
G3	0.604167
G4	0.767857
G5	0.666667

Conclusion

- Major driving factors behind loan default are :
- Grade – default increases with grade
- Subgrade – default increases with subgrade
- Interest rate – default increases with interest rate
- Term – default increases with term
- Loan amount – default increases with loan amount
- Installment – default increases slowly with installment

Thank You