

INVESTMENT ASSIGNMENT SUBMISSION

Name: Shashank Shekhar Lal & Amit Anand

Lending Club Analysis

What is Lending Club

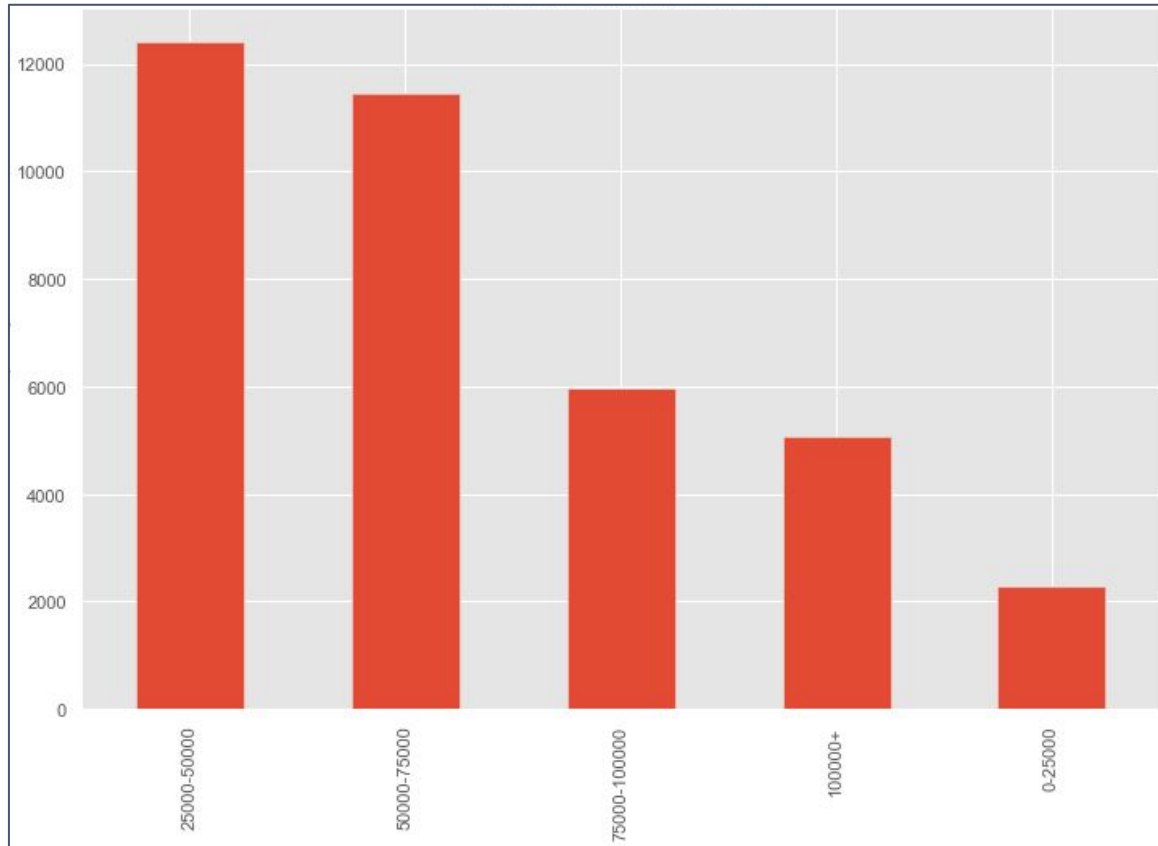
Lending Club enabled borrowers to create unsecured personal loans upto 40,000 . The standard loan period was three years. Investors were able to search and browse the loan listings on Lending Club website and select loans that they wanted to invest in based on the information supplied about the borrower, amount of loan, loan grade, and loan purpose. Investors made money from the interest on these loans. Lending Club made money by charging borrowers an origination fee and investors a service fee.

Problem Statement:

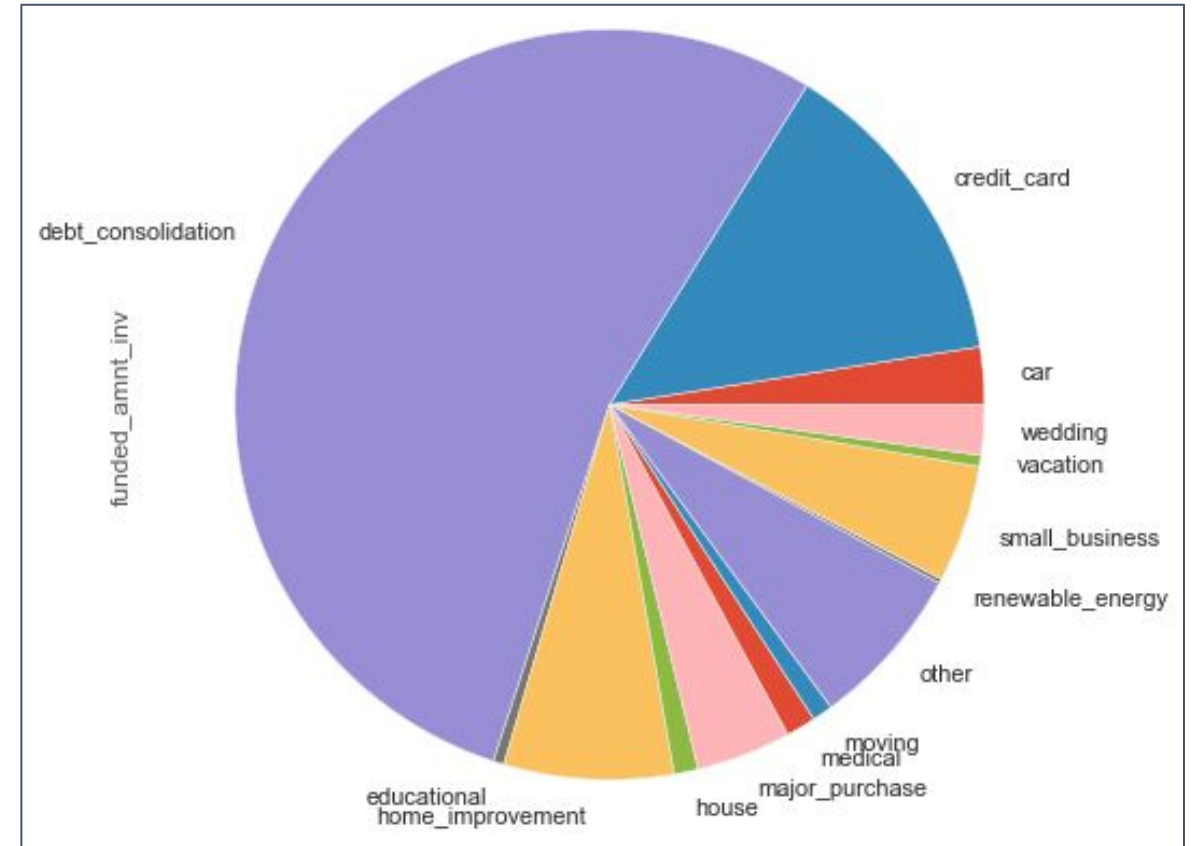
To understand the driving factors which are strong indicators behind loan defaults (Charged-Off) which can be used for new loan requests.

Analysis approach

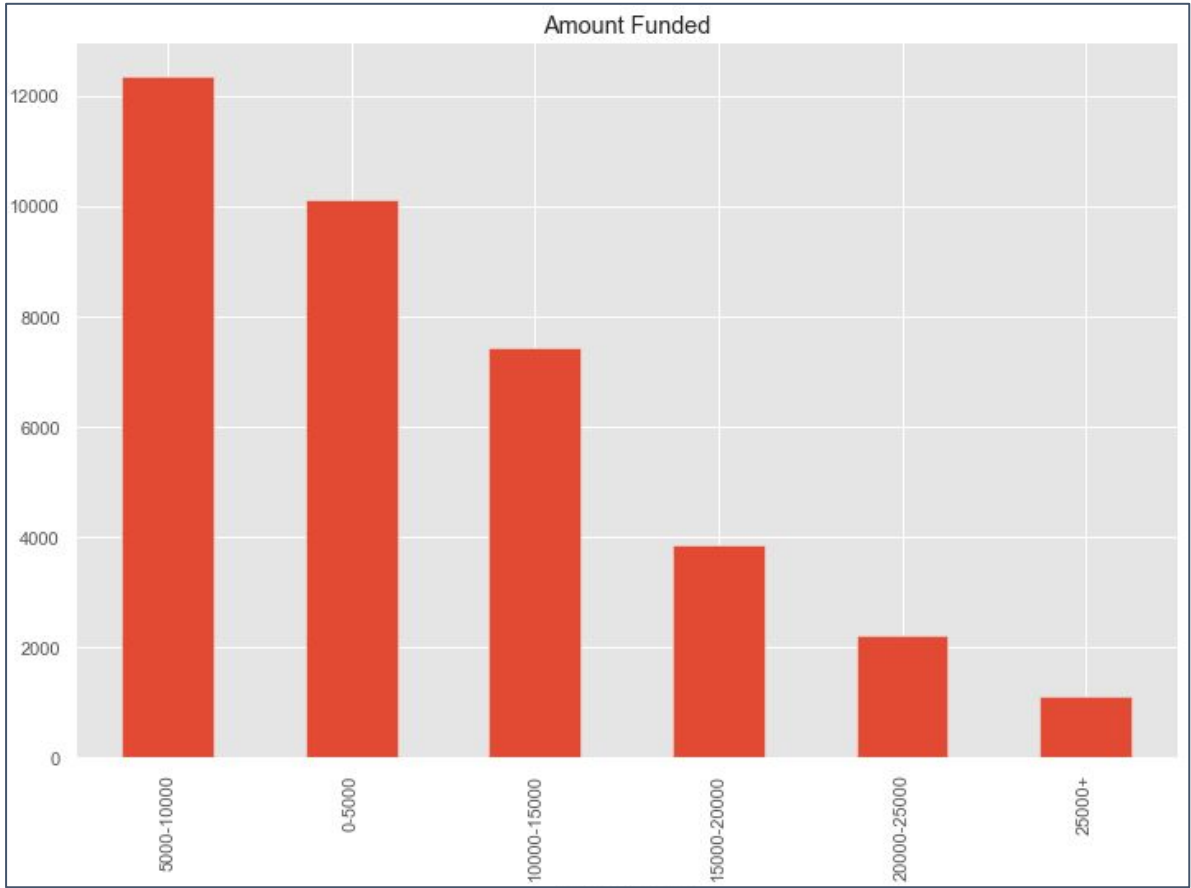
- Drop columns that have 90% NA values
- Drop columns that indicate applicant behaviour post loan approval since that cannot be used as a predictor at the time of applying
- Find correlations between variables that predict loan defaulting
- Analyse and find the values within columns that show patterns of defaulting
- All of this is done using python libraries such as Pandas, Numpy, Matplotlib and Seaborn



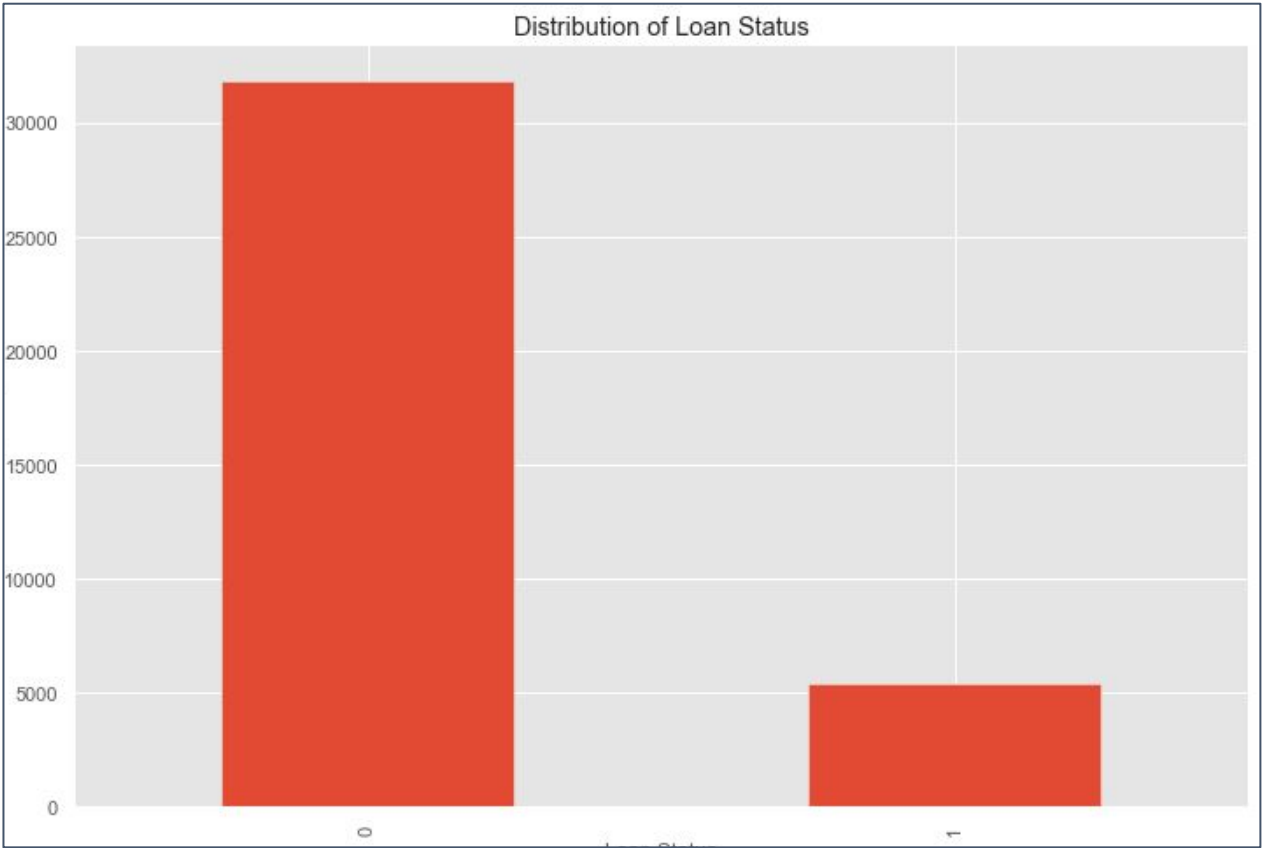
Distribution of Annual Income



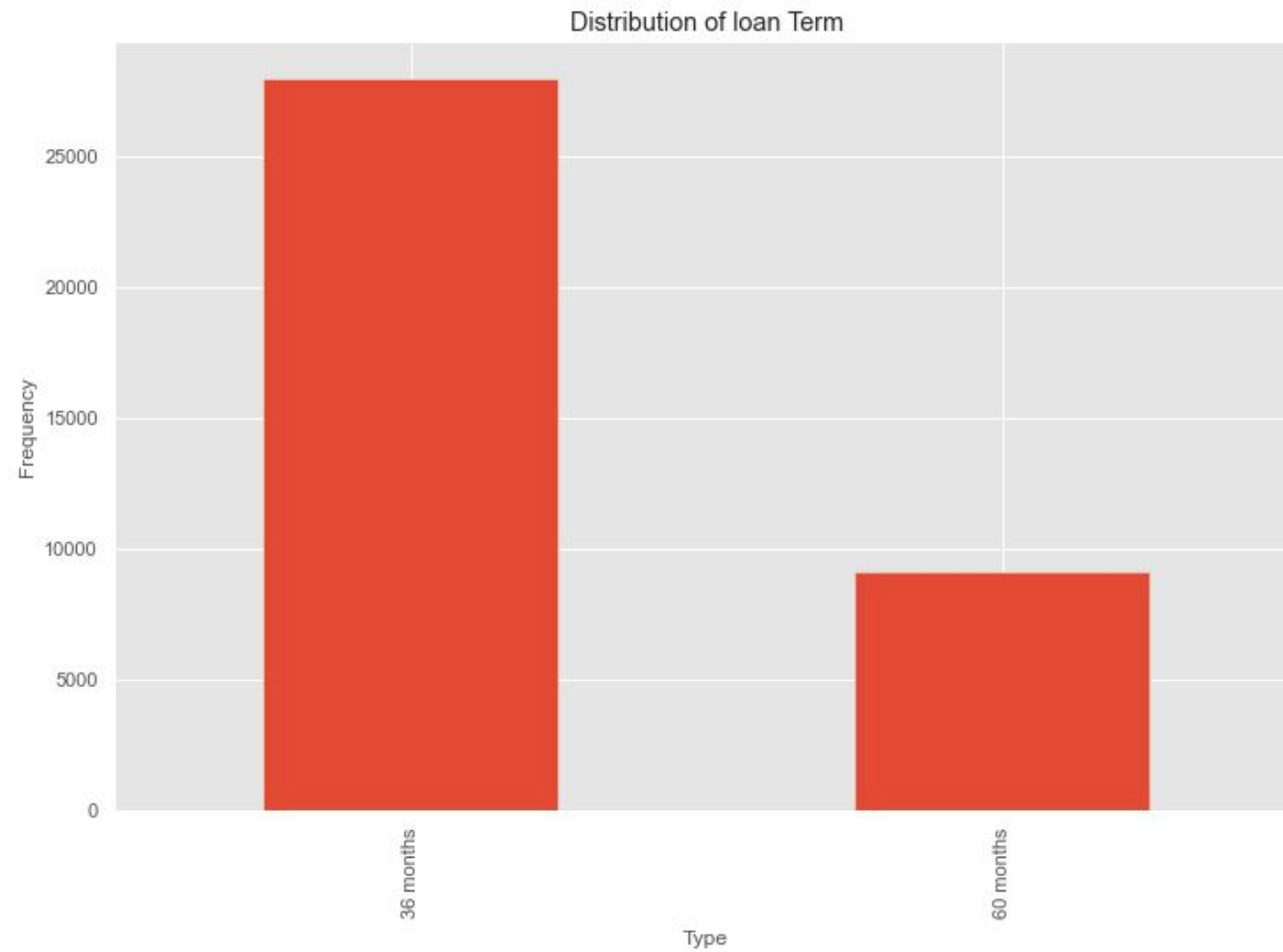
Proportion of funds towards different purposes



Distribution of Total Funded Amount



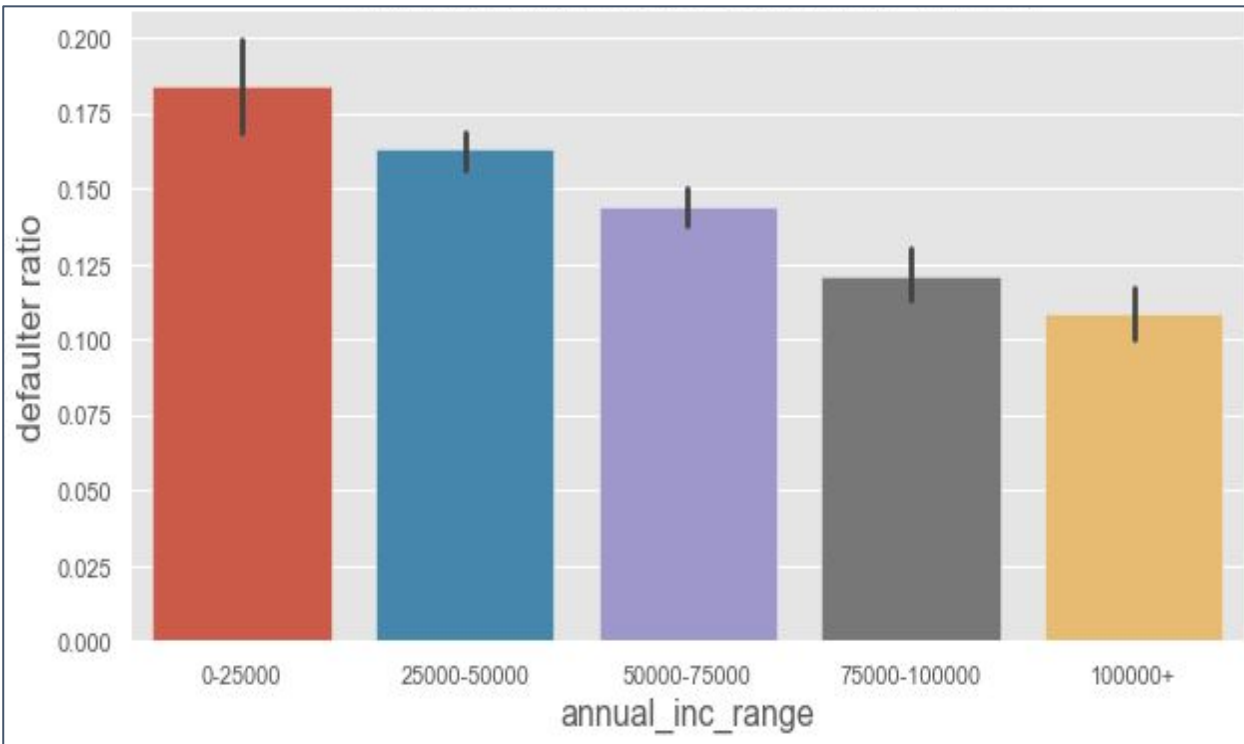
Proportion of loan status



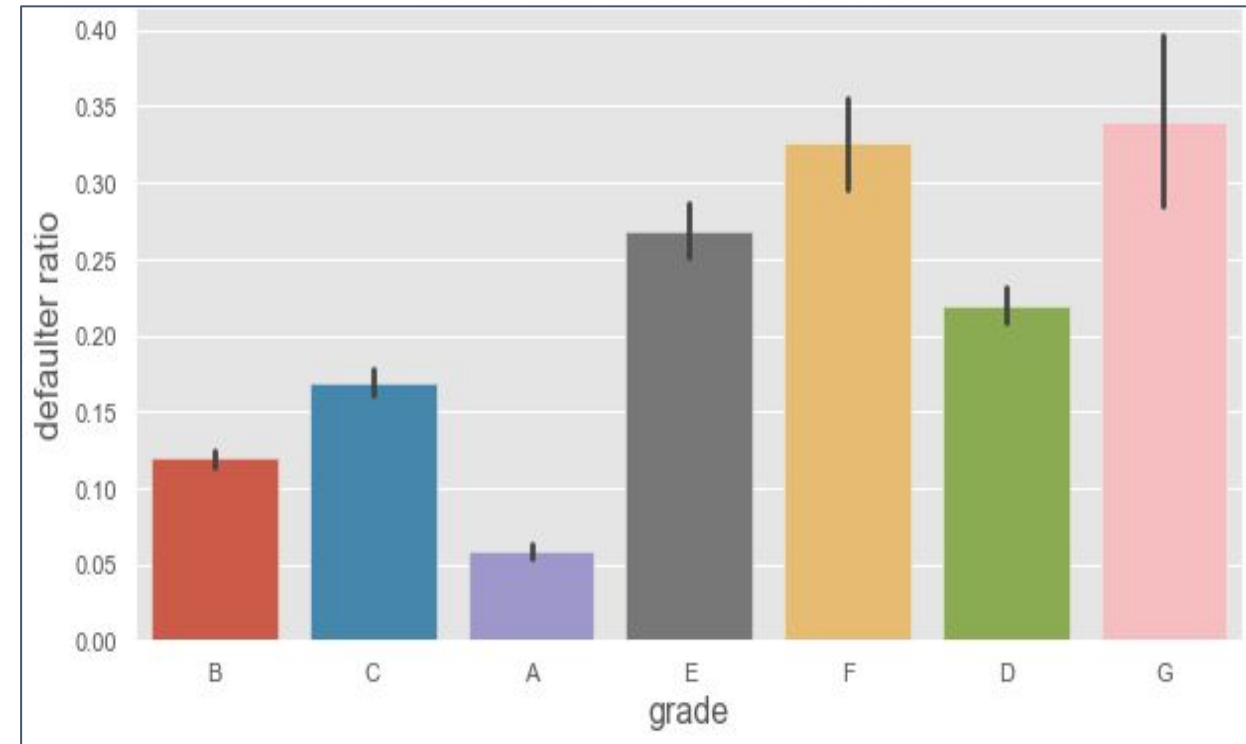
Plan opted by applicant

Key Findings

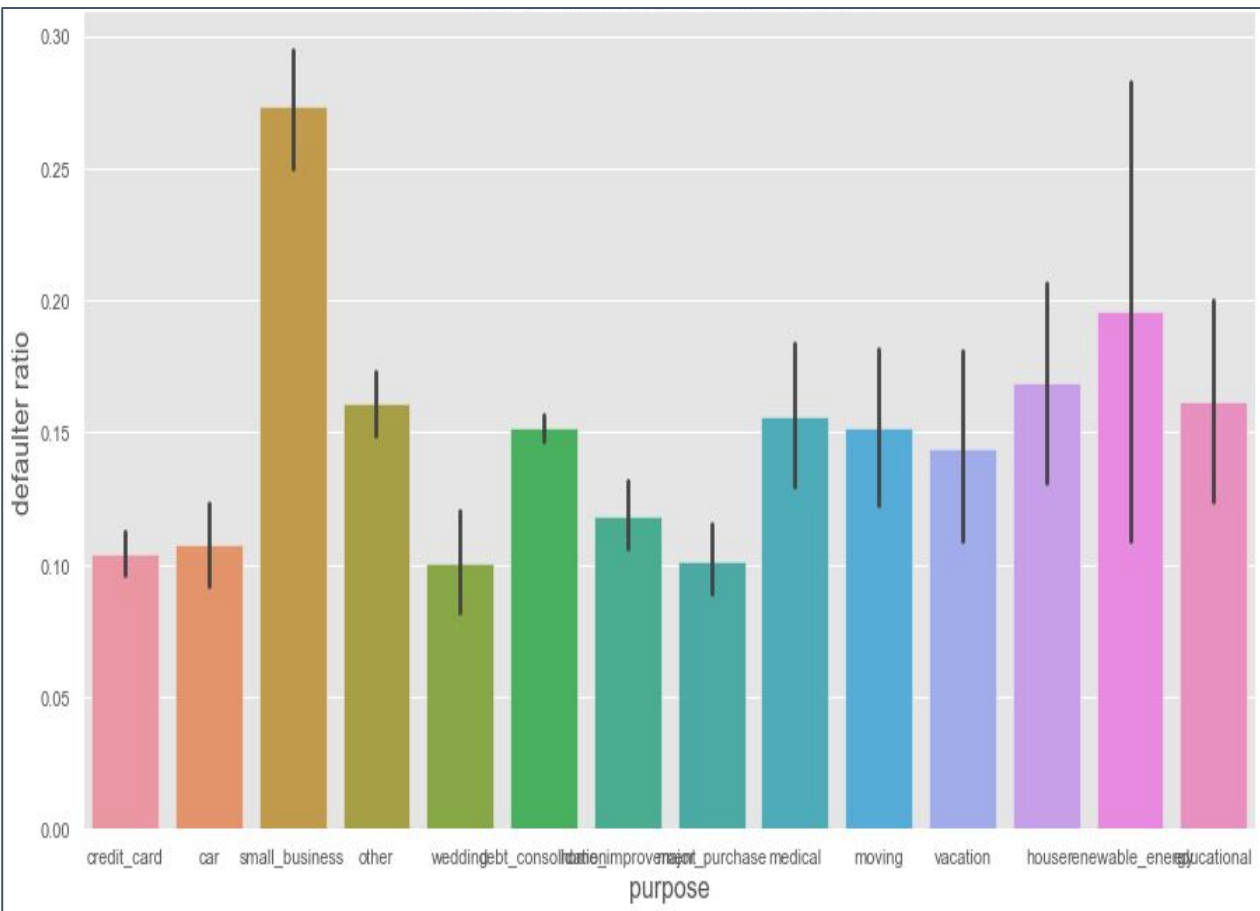
The Following variables show clear patterns of risky applicants



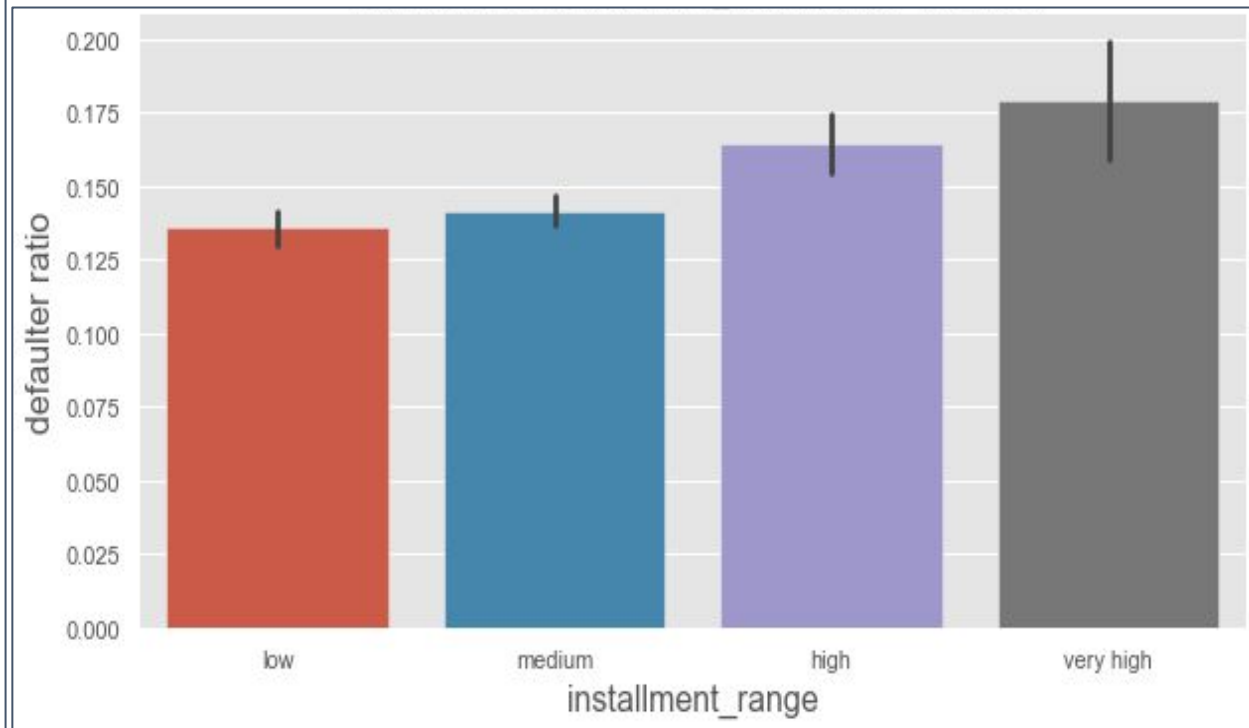
Proportion of defaulters with respect to **Annual Income**



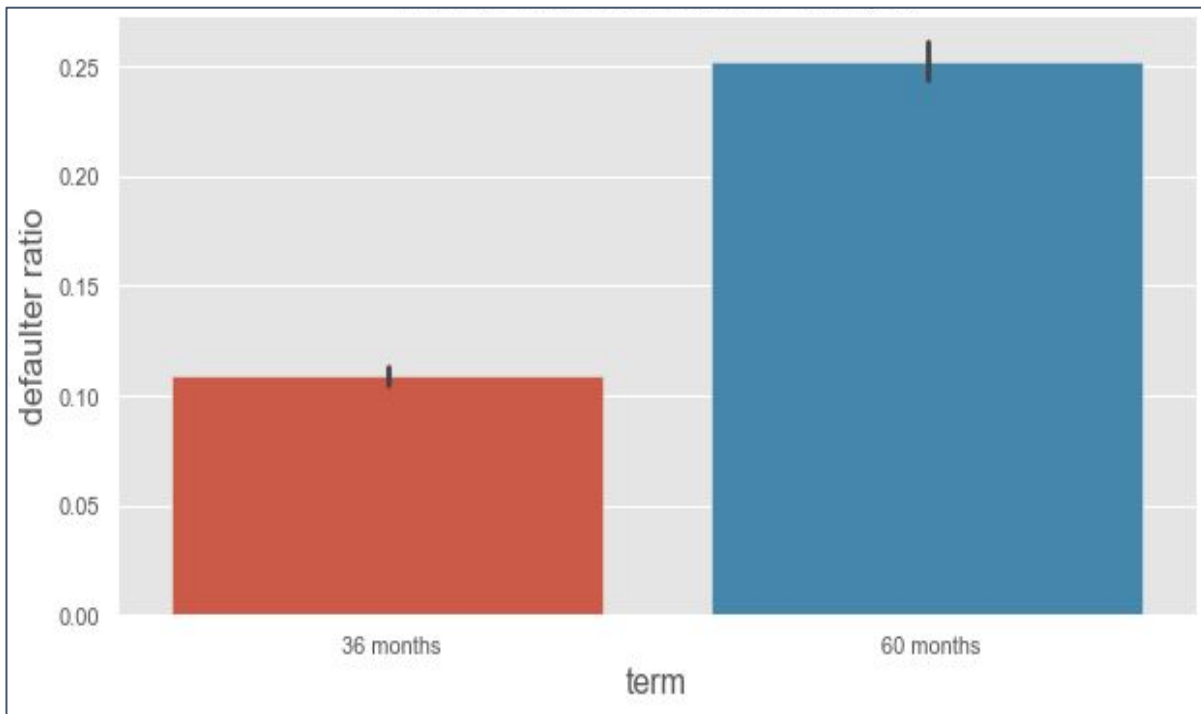
Proportion of defaulters with respect to **Grade**



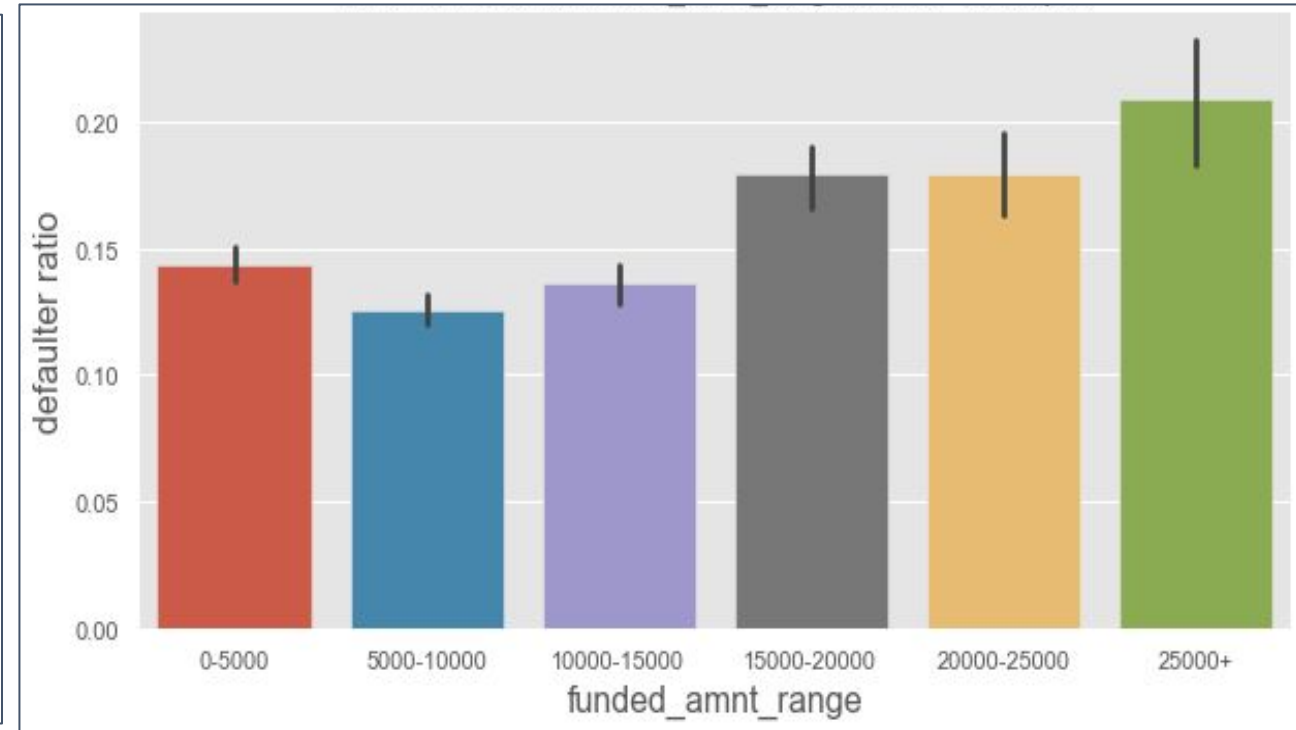
Proportion of defaulters with respect to **Purpose**



Proportion of defaulters with respect to monthly **Installment Range**



Proportion of defaulters with respect to **Term** length



Proportion of defaulters with respect to **Funded_amnt_inv**

Conclusions

The following are the variables have been identified as driving factors behind loan default.

- **Annual Income (annual_inc)** - Lower the income, higher chance of defaulting
- **Interest rate (int_rate)** - Higher the interest rate, higher chance of defaulting
- **Purpose** - Loans for the purpose of small businesses have a higher risk of defaulting
- **Term** - Loans that are taken for 60 months have twice the chance of defaulting
- **Loan received (funded_amnt_inv)** - Higher the loan borrowed, higher the chance of defaulting
- **Installments** - Higher the monthly installments, higher the risk of defaulting
- **Grade**- Lower the grade (such as "F" and "G"), higher the risk of defaulting.