

Gramener Case Study
on
Loan defaulters analysis



-SOMA SEKHAR REDDY

Introduction

- Working on Loan defaulters analysis case study which specializes in lending various types of loans to urban customers. When the company receives a loan application, the company has to make a decision for loan approval based on the applicant's profile.

Two types of risks are associated with the bank's decision:

- If the applicant is likely to repay the loan, then not approving the loan results in a loss of business to the company.
- 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.



Objectives:

- we have to find out what kind of customers are likely will not pay the loan. which leads to loss for the organization.
- It can clearly showing that higher amount people are not liable to pay the amount and leaving as defaulters

Data representation



Types of variables:



- Data consists of three types of variables:



- Customers information: Employment length, employment title, annual income etc;



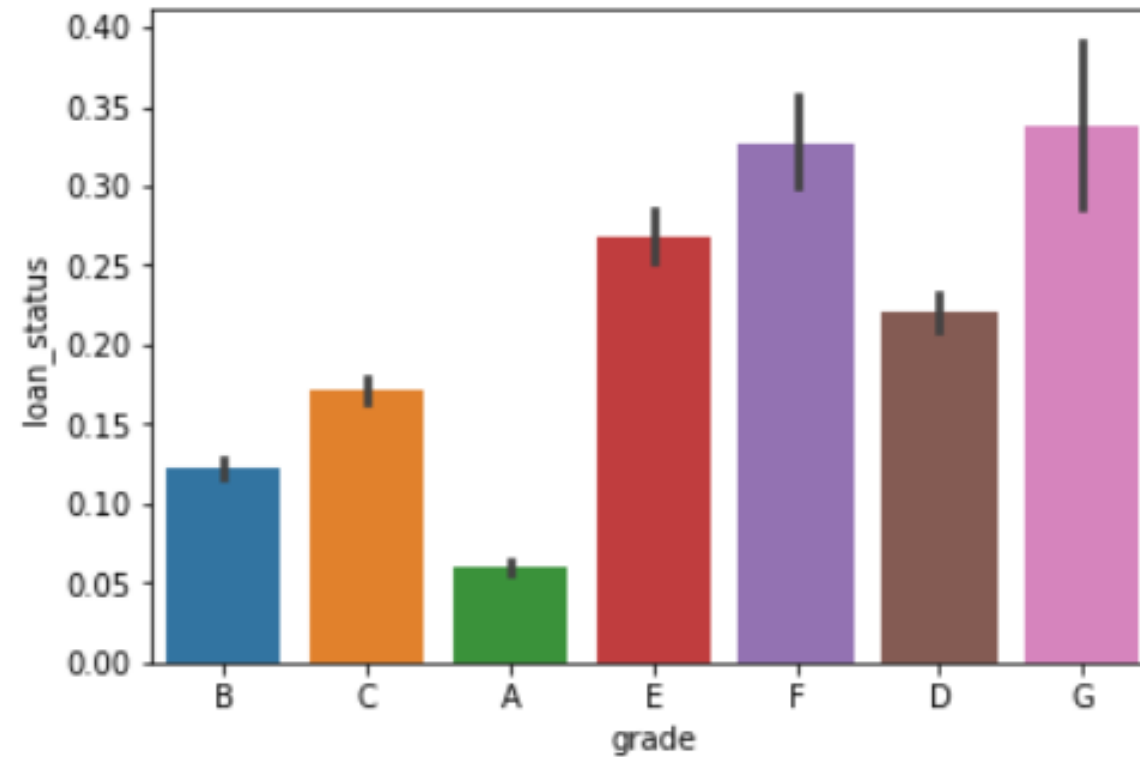
- Loan information loan amount ,interest rate, loan status ,loan grade etc;



- Customers behavior variables revolving balance, application type, recoveries, loan purpose

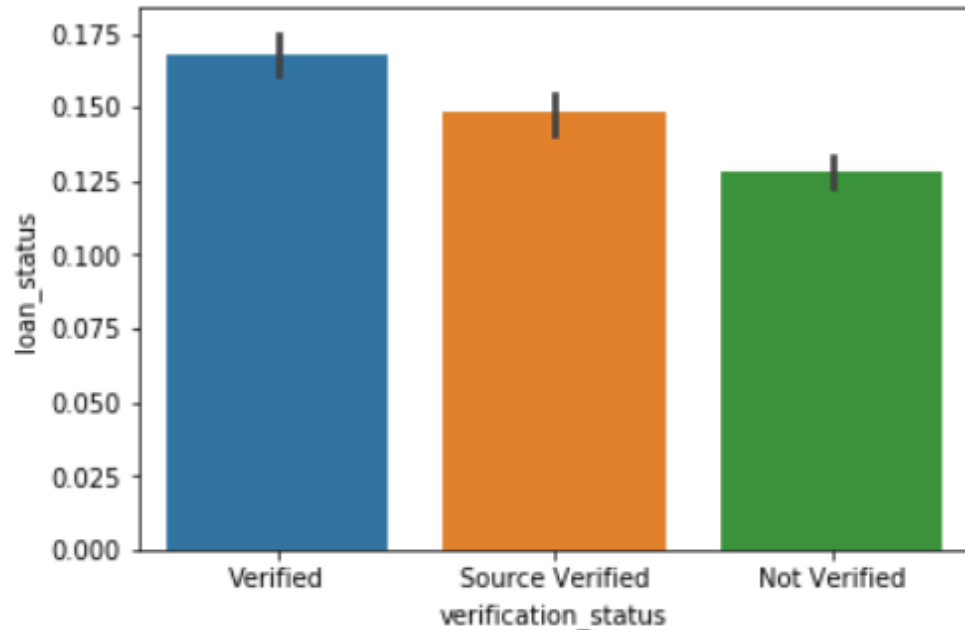
- Bar plot of Default rates across grade of the loan and loan status

```
#Plotting default rates across grade of the loan  
sns.barplot(x='grade', y='loan_status', data=Loan)  
plt.show()
```

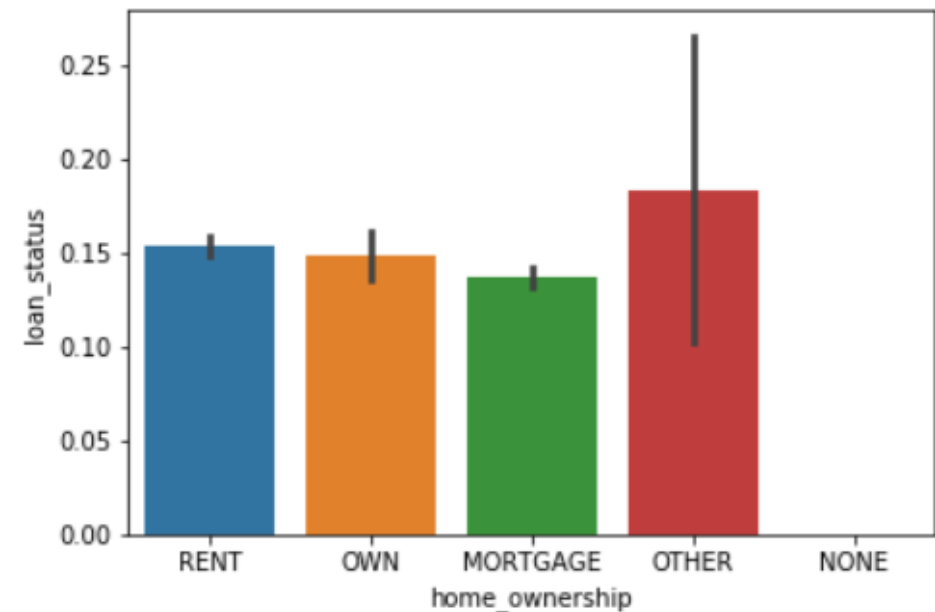


Loan default of Verified and Non verified and Home ownership Status

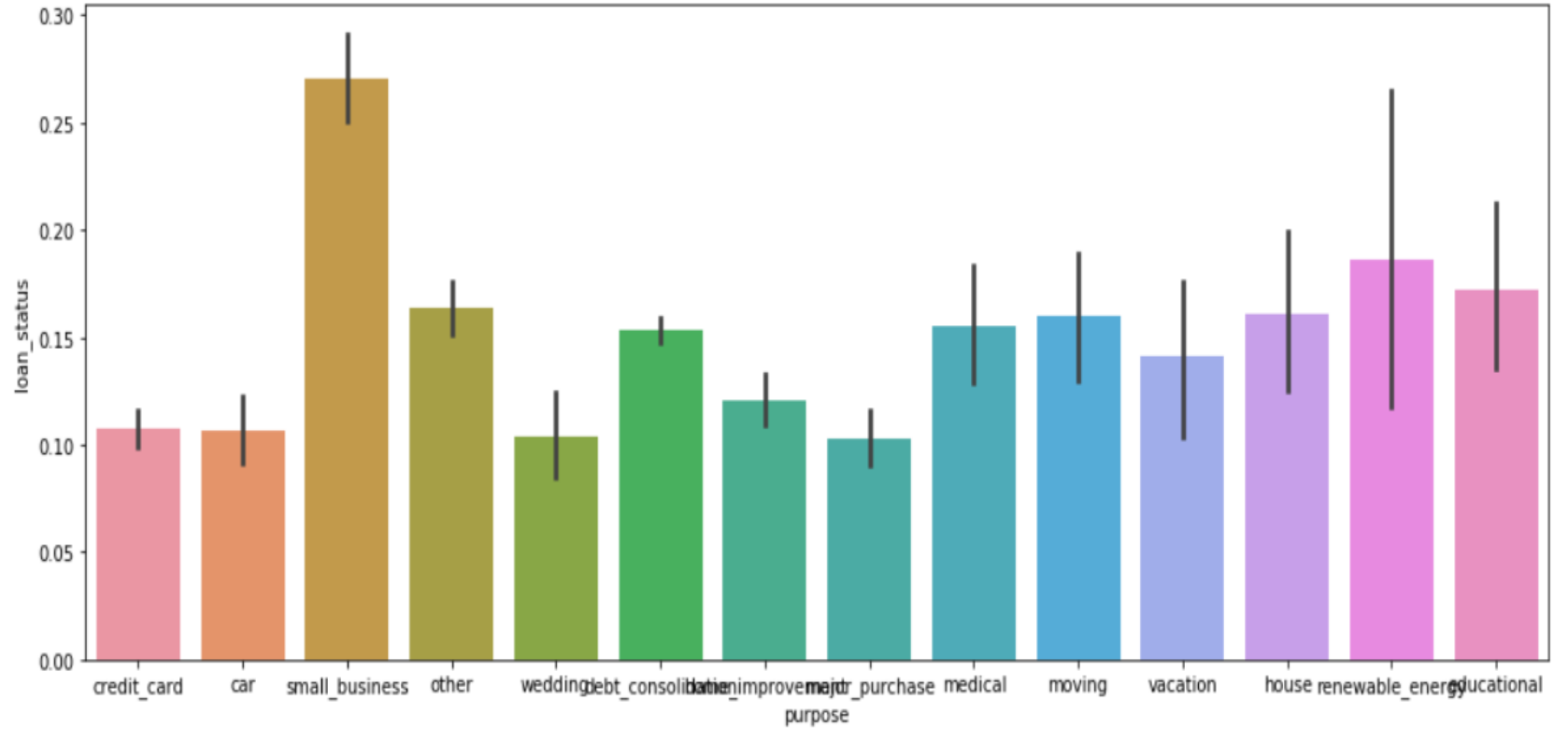
```
#Verified Loans default are more than not verified  
plot_cat('verification_status')
```



```
#Slight difference in home ownership default rate  
plot_cat('home_ownership')
```

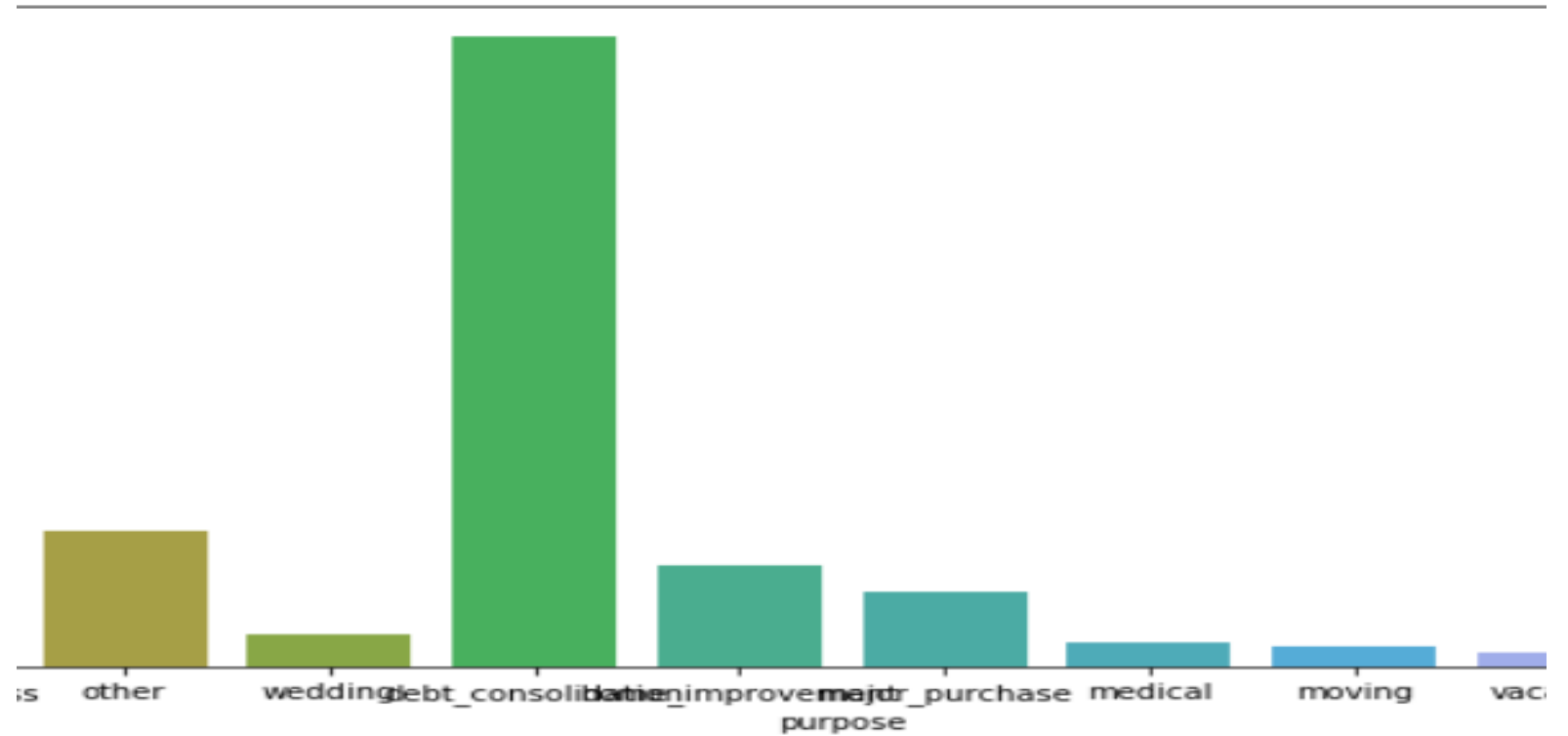


Plotting related to "Purpose"



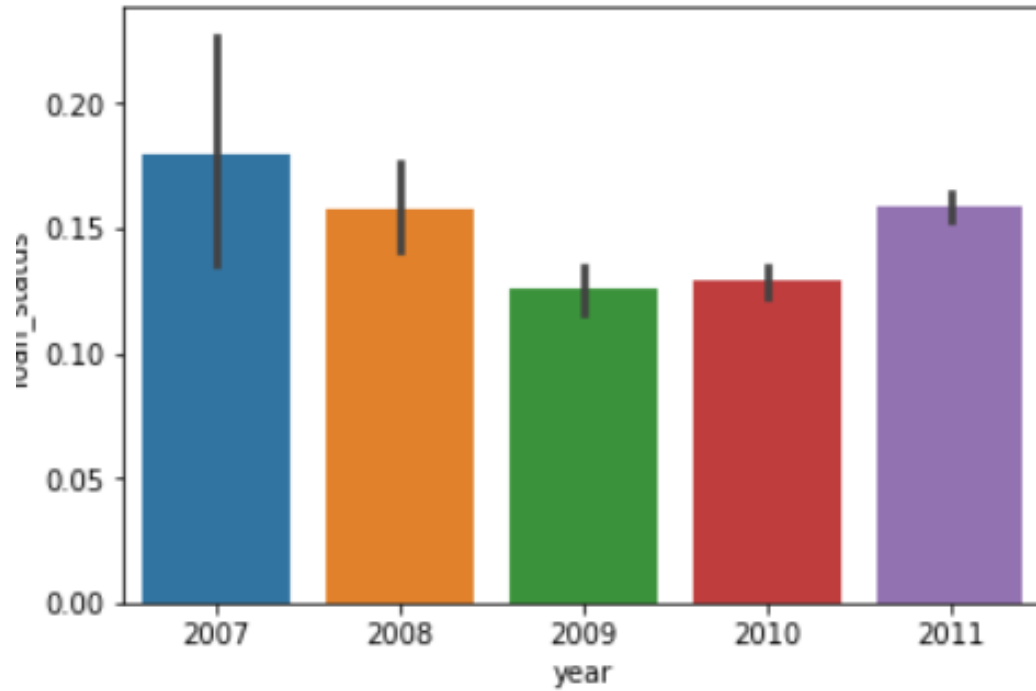
- Small business loans are default are more than the renewable energy and education

Loan Purpose Distribution

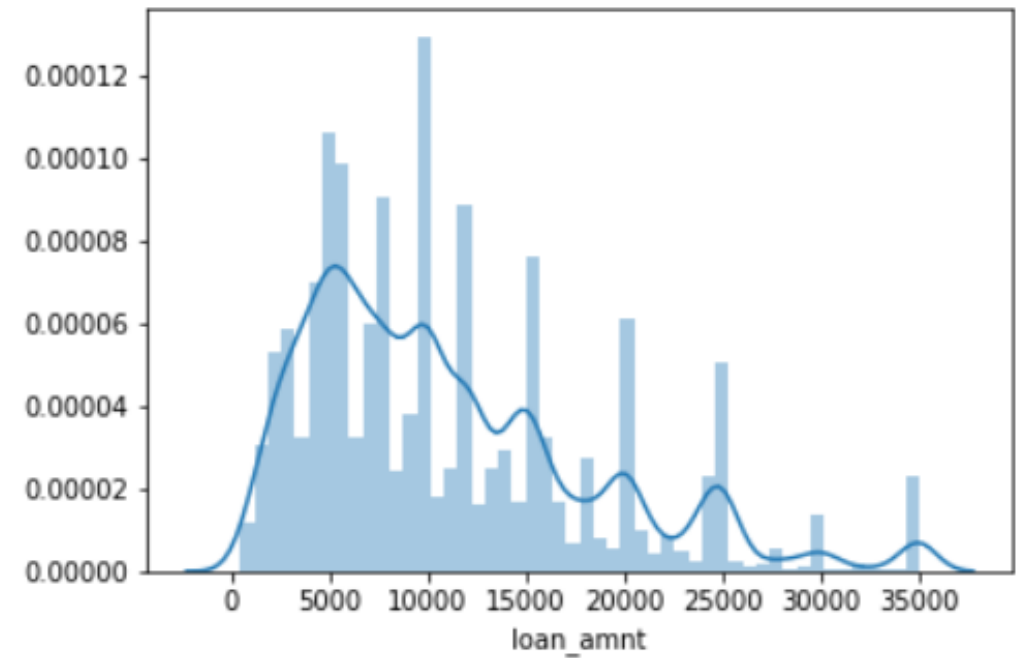


Debt consolidation loans are more popular:

- 46.8% of debt consolidation of loans are taken
- 13% of credit card loans
- 7.5% home improvement loans
- 5% major purchase loans

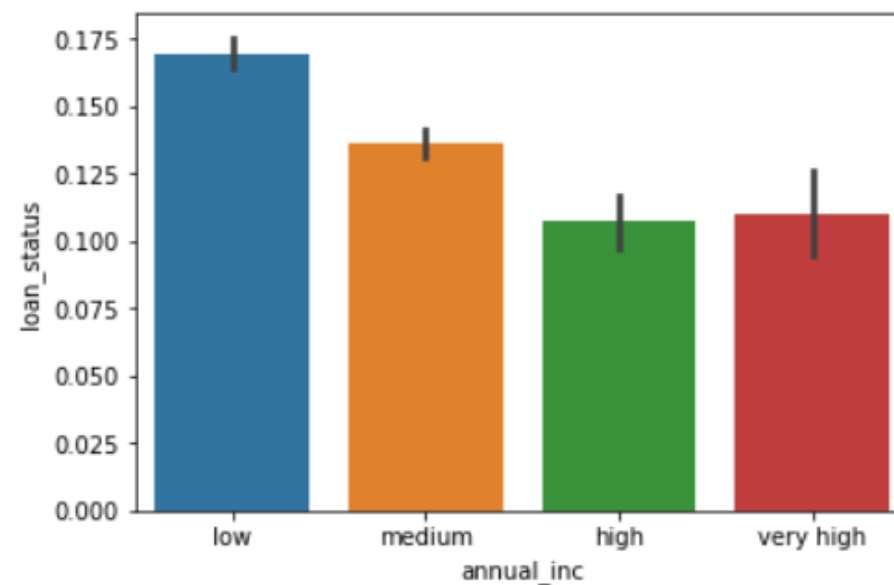
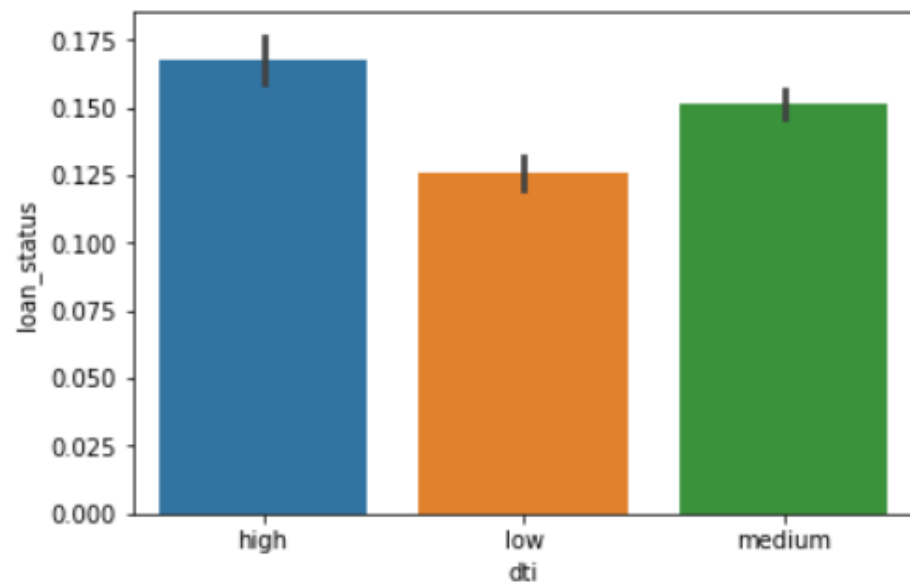


Plot of Loan status for year to year fluctuations.

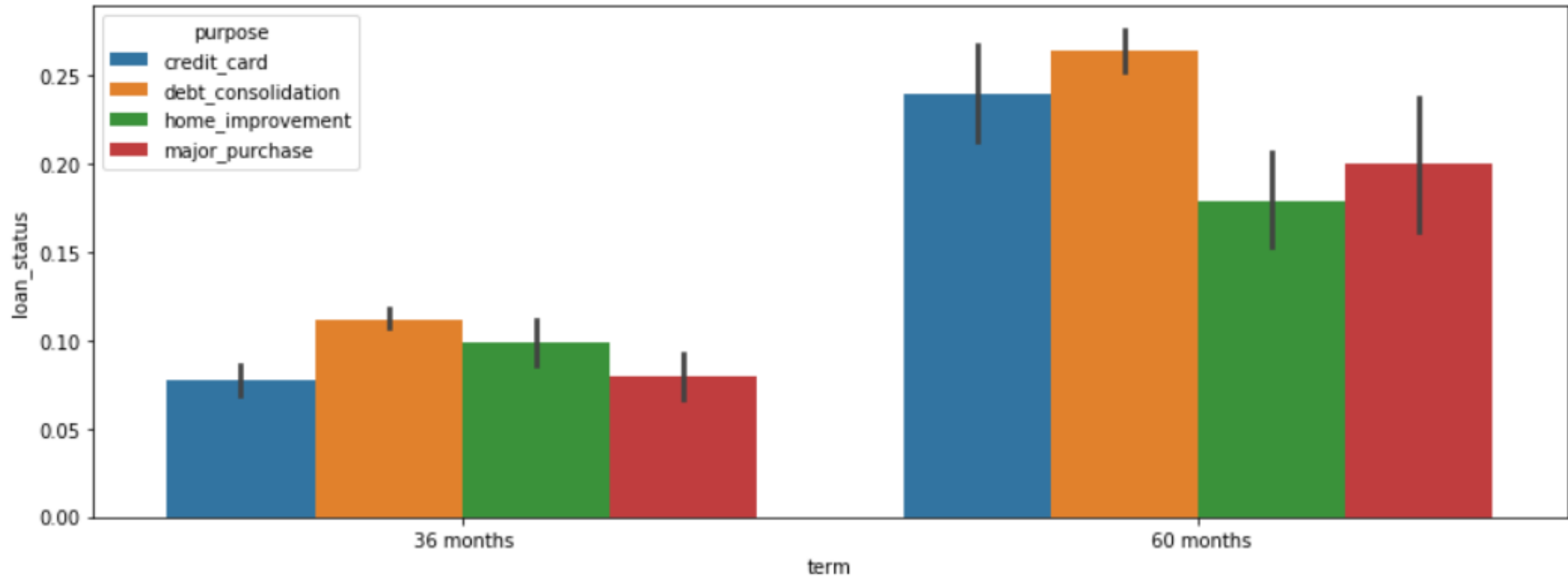


Plot of the median of loan amount is around 10,000.

comparing default rates across debt to income ratio
and the annual income.



Compare the default rates of two types of categorical variables



funded amount vs home ownership and home ownership vs default relationship

