

# Lending Club Case Study

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# Problem Analysis

- Problem Description :

Lending club is the largest peer-to-peer market place connecting between borrowers with lenders. Borrowers apply loan through an online platform where they have assigned an internal score .Lenders decide :

- 1) whether to lend
- 2) Terms of loans such as interest rate , monthly installment , tenure etc.

Some popular products are credit cards, debt consolidation loans, house loans etc.

## Business Objective :

To Identify Variables which can indicate lenders about default and capability of approving/rejecting loans based on certain criteria / decision.

# Problem solving methodology

- Data consists of :

- Type 1 - Customer / Applicant Demographic details
- Type 2 - Loan related information
- Type 3 - Customer Behavior (if loan is granted)

- Type 1 data, consists of Employment related data like Employment Life, Employment Length , Annual Income ,Zip code , description etc.
- Type 2 data consists of Loan related data like Loan Amount, funded Amount,Interest rate , Loan status , Grade etc.
- Type 3 data consists of Recoveries , Application Type , Loan purpose etc.

# Continued...!

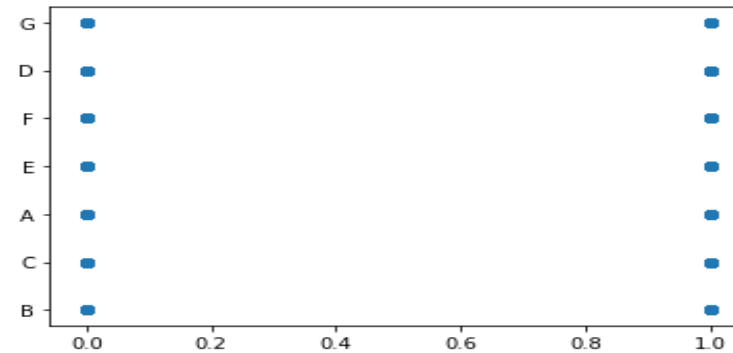
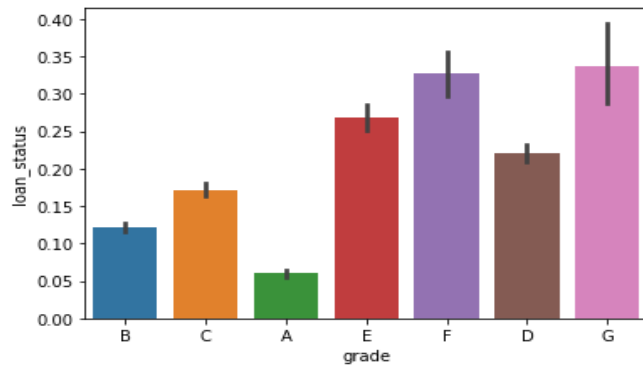
Based on above types , we have filtered data with certain constraints like :

- Unnecessary columns like Zip code, Description etc.
- Columns having Null data and Missing values.
- Where Loan status of a customer is not equal to Current.
- By Dropping Duplicates columns/values.

Using these basic conditions we have plotted few graphs, which helps us in concluding of Loan status.

# Univariate Analysis

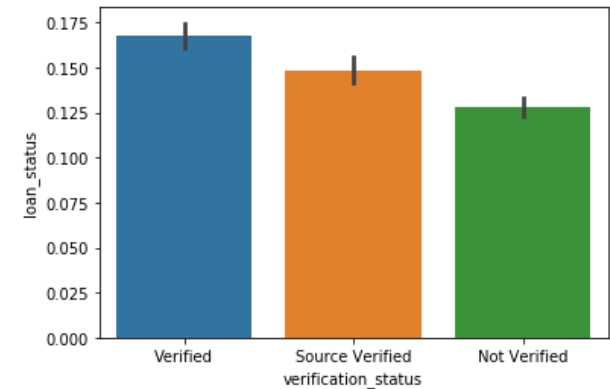
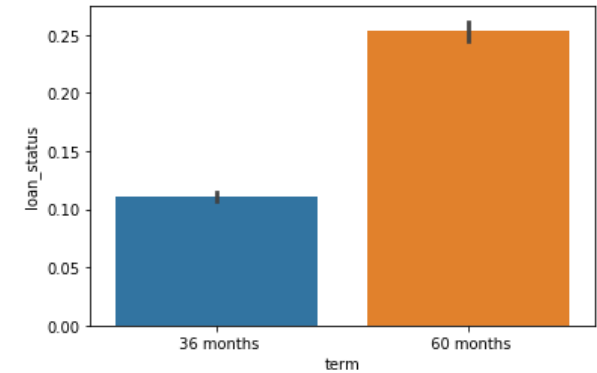
- Univariate analysis between Loan Status and Grades
- Below Box plot and scatter plot shows that category G people will more likely to default



- People that fall in Grade B will be less likely to default followed by Grade C, A, E , F and D.

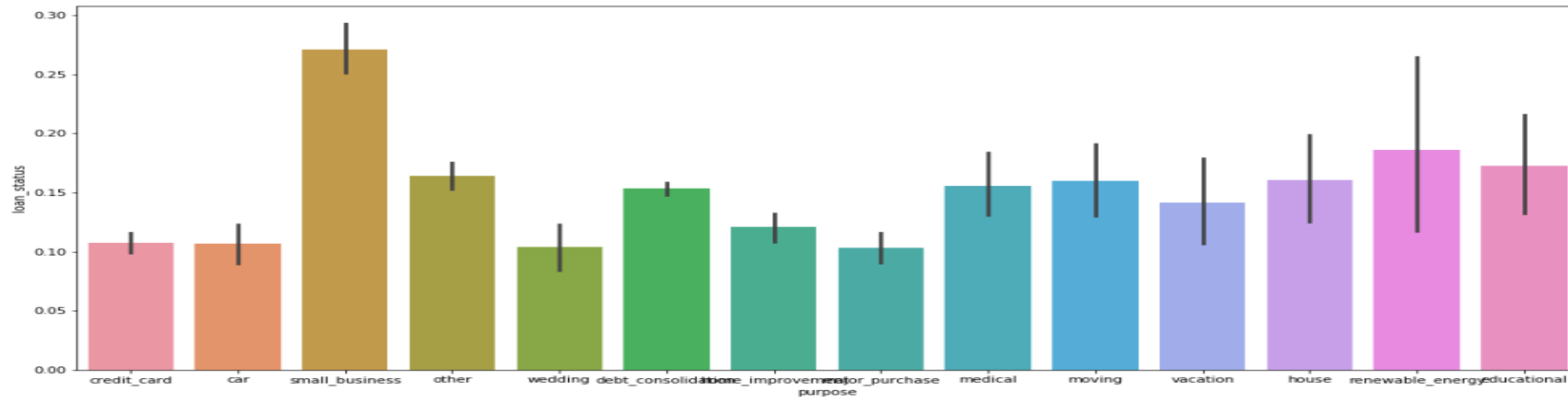
# Univariate Analysis

- Univariate analysis between Loan Status and loan tenure is shown.
  - The longer term loans of 60 months will be get defaulted more as compare to 36 months loans.
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- Analysis between the Loan Status and Verification Status show some thing very interesting
  - Those people that get verified will be more likely to default that the Not Verified one.



# Univariate Analysis

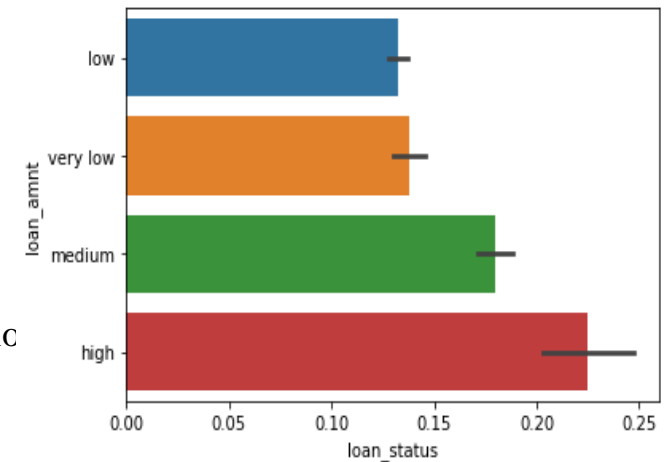
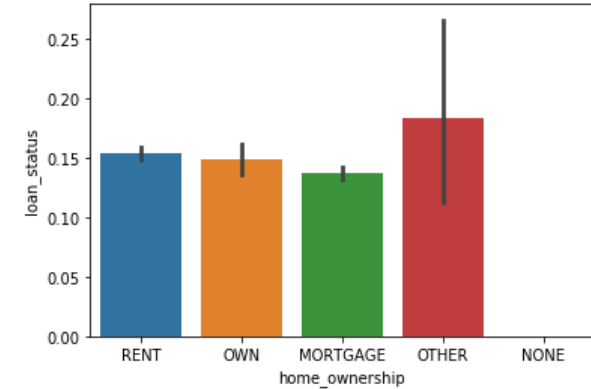
- Univariate analysis between Loan Status and purpose for which loan is given is shown.
- The people with Small Business will more likely to default than who is taking loan for Credit Cards or cars.



- Even people take secure housing loan will default on payment to those who take loans for Medical and Wedding .

# Univariate Analysis

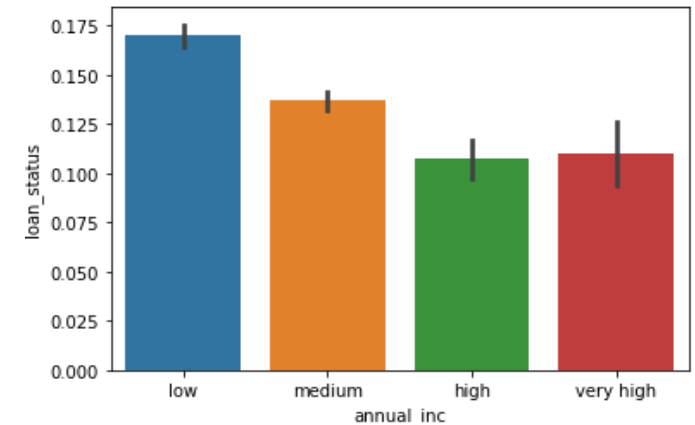
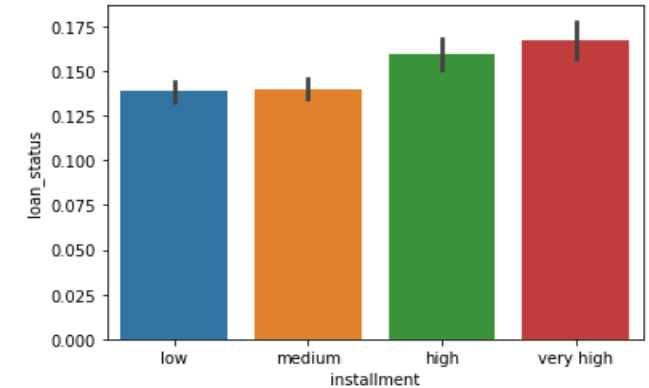
- Analysis between Loan Status and home ownership is shown.
  - Those who lie category of Others in home ownership will more likely to default.
  - The people who have their house Mortgage will less likely to default.
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- Analysis between the Loan Status and loan amount.
  - We have divided the loan amount into segments of Very Low having loan amount < 5k, Low those loan amount in range 5k- 15k, Medium have loan amount range of 15k -20k and High have loan amount range of 25k and above.
  - Those who have take loan in high range (25k and above) will default more that the people that have taken lc of less than 5k.





# Univariate Analysis

- Analysis between Loan Status and Instalment of loan.
  - Those who have instalment of more than 600 will default more than have instalment of less than 200.
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- Analysis between the Loan Status and Annual income.
  - Those people that have income less than 50K will more likely to default then the people with very high income of 150k and above,



## Conclusions

Based on Above Graphs and Data :

1. Small Business have high risk of moving toward defaulters.
2. Higher the Loan amount , High risk of moving towards Defaulters.
3. Higher the tenure ,high risk of moving towards Defaulters.