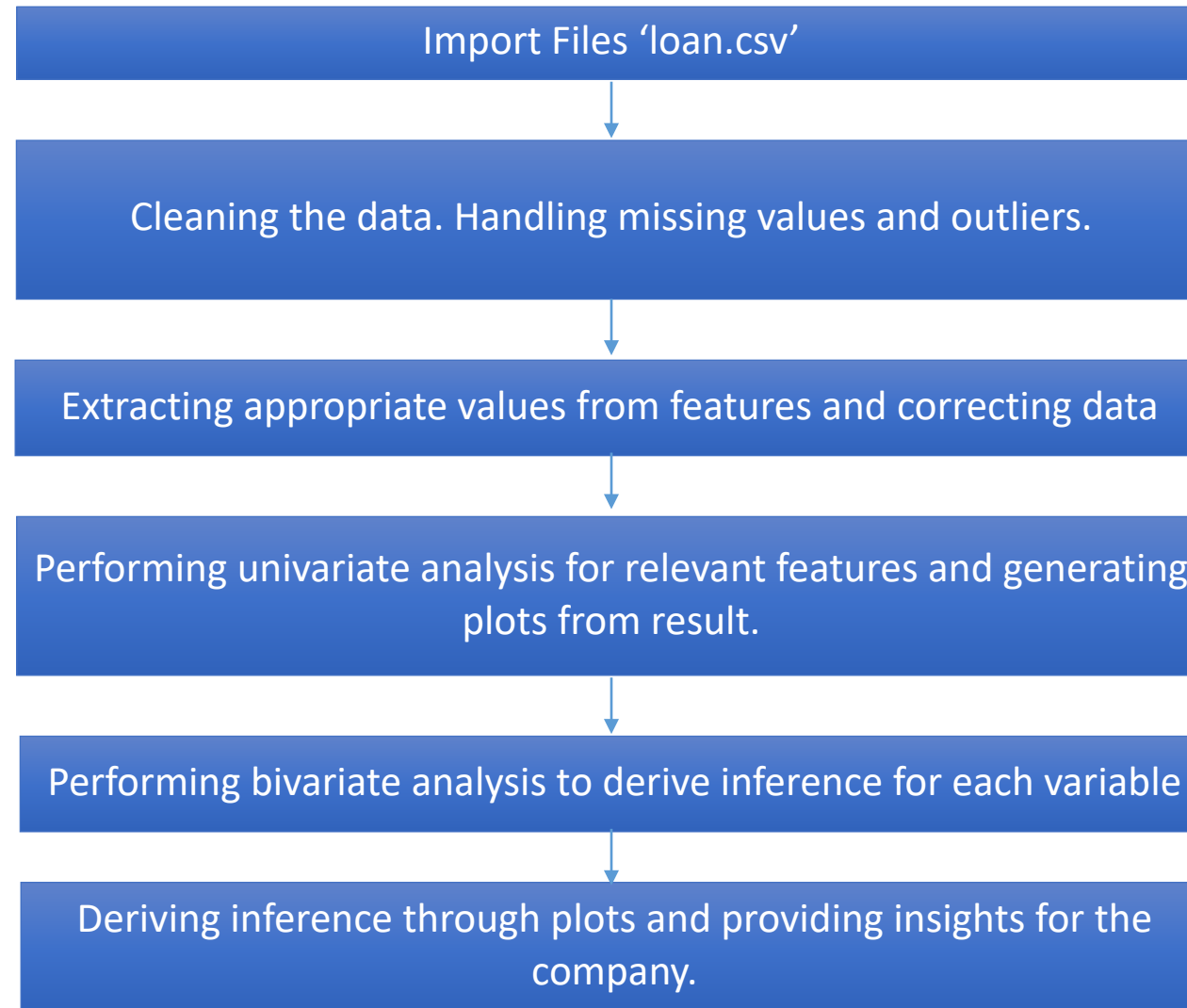


# LENDING CLUB CASE STUDY SUBMISSION

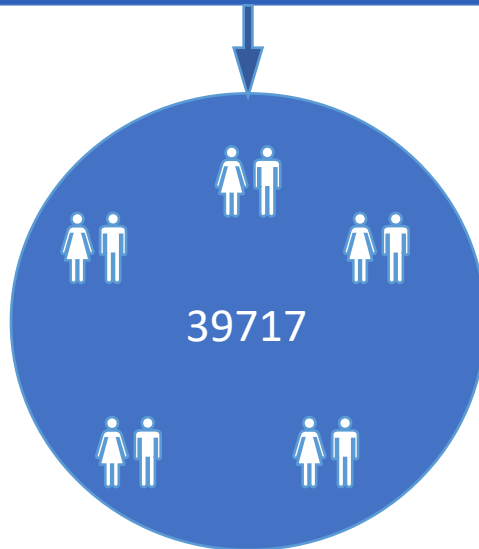
**Group Facilitator Name: Akhilesh Panigrahi**

**Group Member Name : Ashutosh Kumar Pathak**

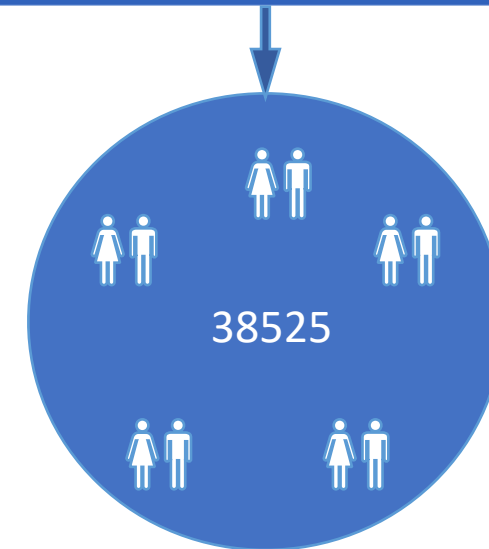
- **Problem Solving Methodology**
- **Initial Analysis**
- **Loan Amount Distribution**
- **Grade-wise analysis**
- **Employee experience analysis**
- **Home ownership and loan purpose**
- **State-wise analysis**
- **Conclusions**



Number of customers basic data  
available

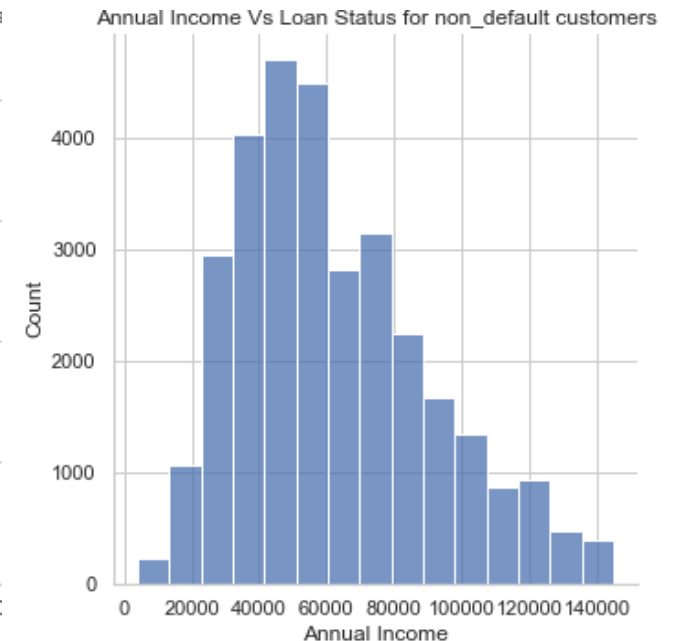
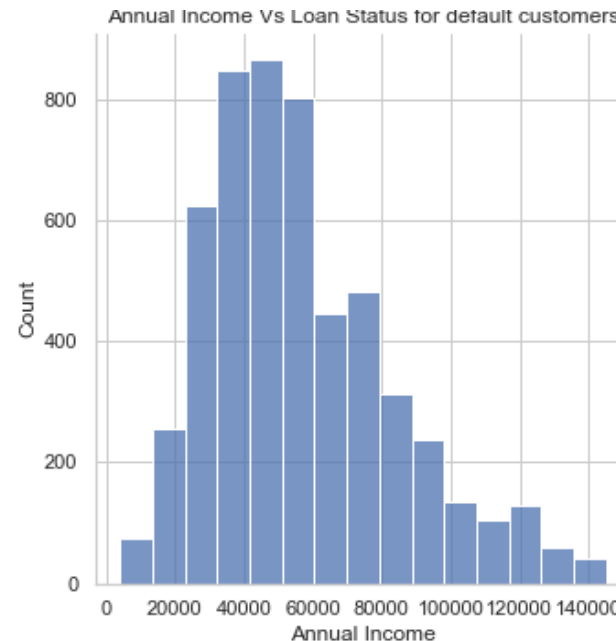
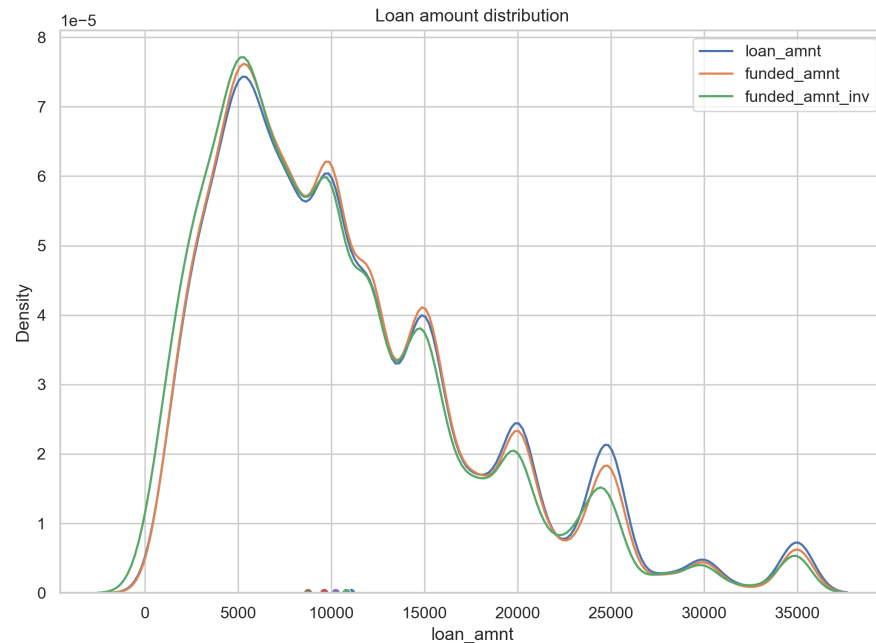


Number of customers data after  
cleaning data



*Number of  
features originally  
available were 111. After  
performing feature  
engineering , 30 features  
are finally used for  
analysis.*

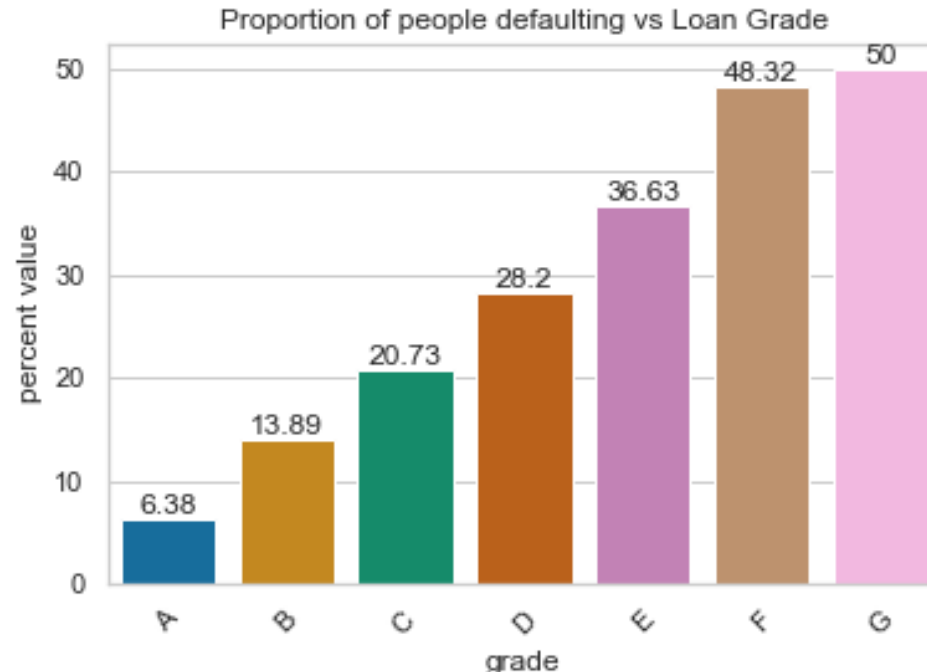
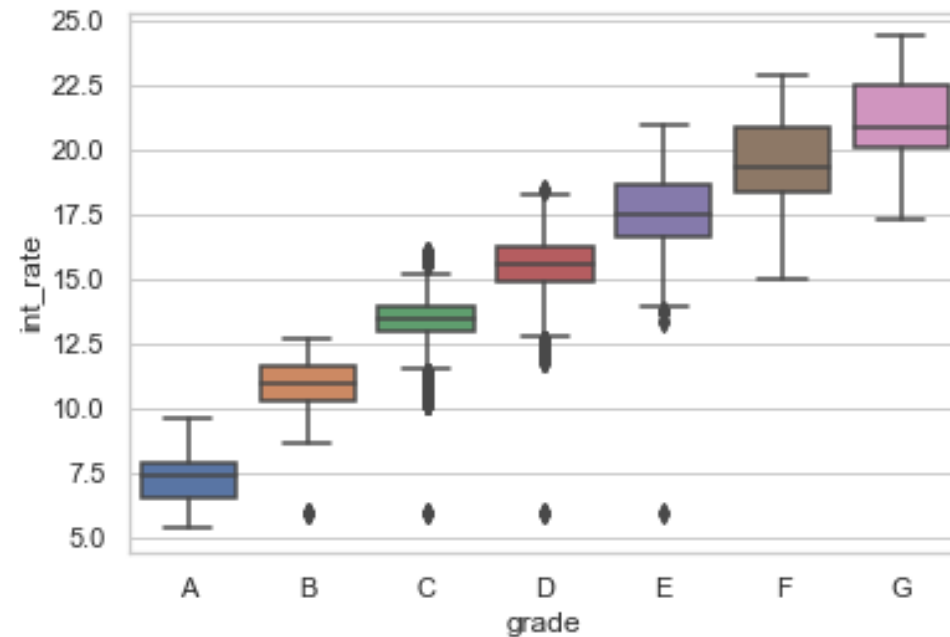




- Most common loan amount disbursed is around 5000 dollars.
- There is no significant difference between the applied loan amount and approved amount.

The distribution of income for defaulters and non-defaulters are similar. The tendency to default against loan is similar for all income groups.



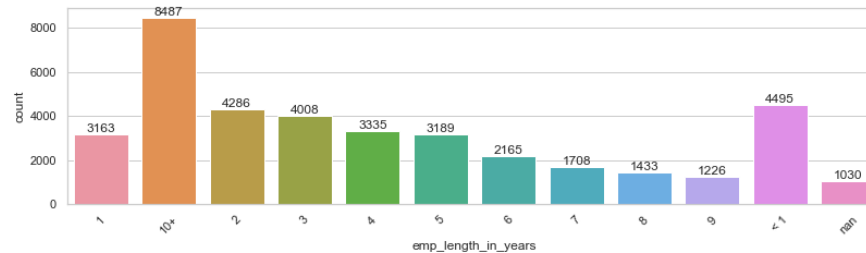


- For lower interest rate the proportion of people defaulting on loan is less.
- As the interest rate moves above 12-13%, the proportion of people defaulting on loan increases.

For loan grade F and G, almost half of the people have defaulted on their loan.

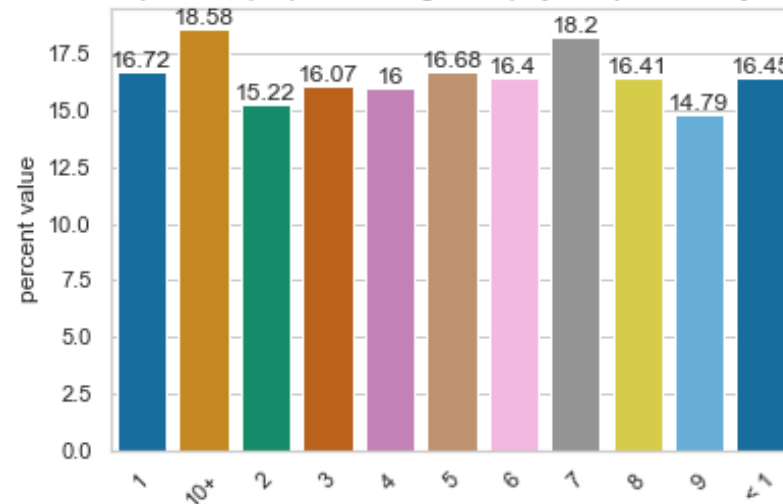


Count of customer based on experience



- Employee having experience more than 10 years show highest default rate of 18.58%. defaulting on loan increases.
- Employees having experience of 7 years also shows high default rate when compared to others (18.2%).

Proportion of people defaulting vs Employee experience in years

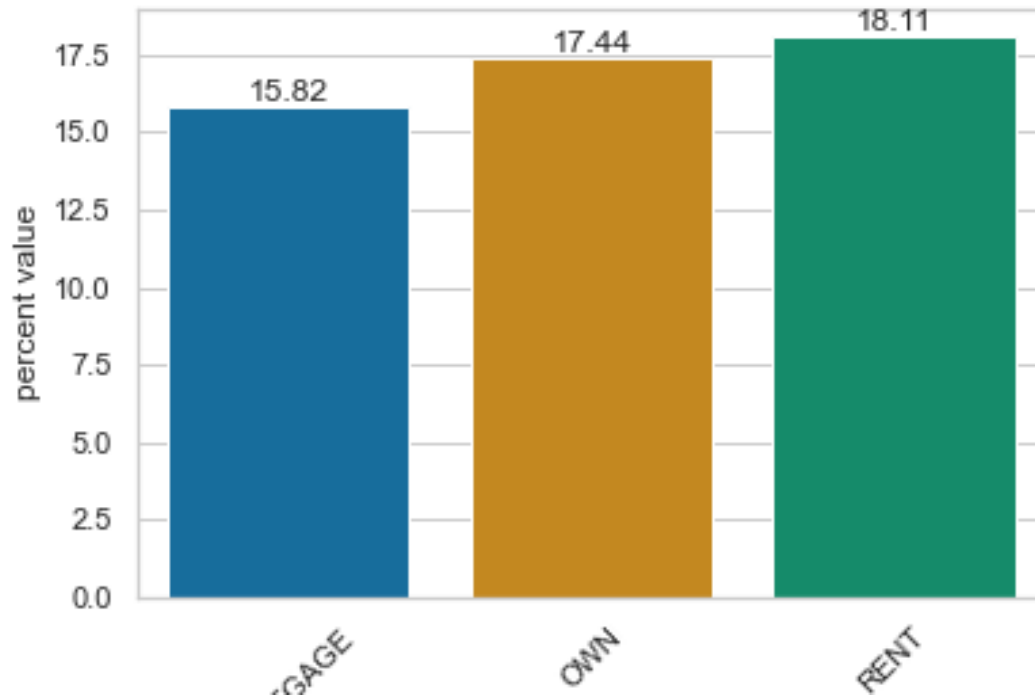


There is small difference in the people defaulting on loan based on their years of experience. The people with more experience or a newly joined professional show higher tendency to default compared to others.

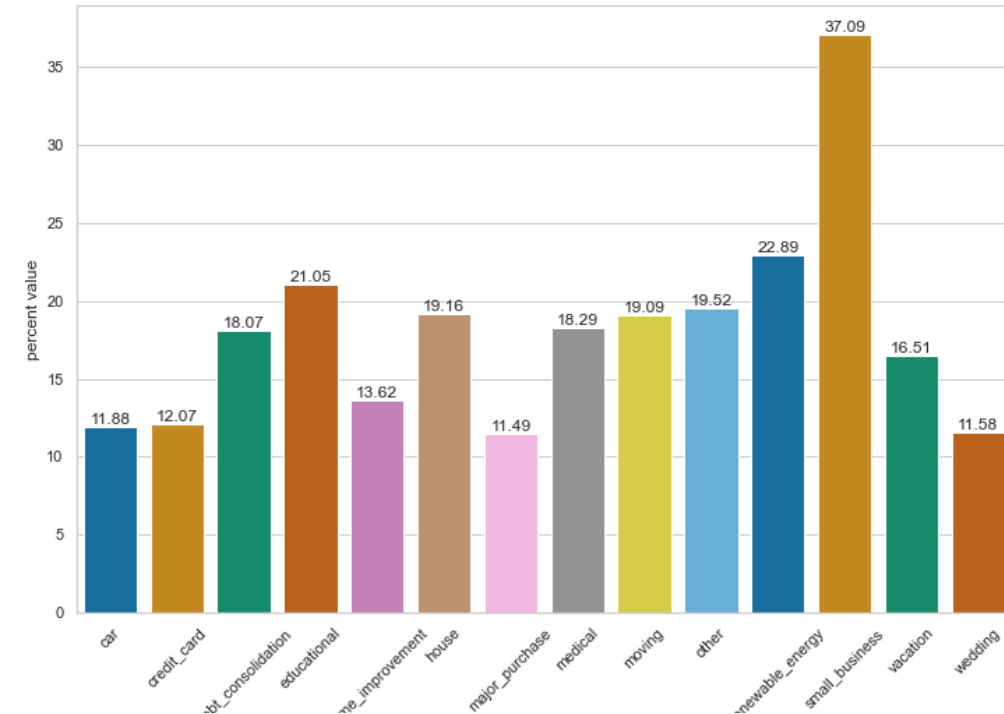




Proportion of people defaulting vs Home Ownership



Proportion of people defaulting vs Purpose of loan

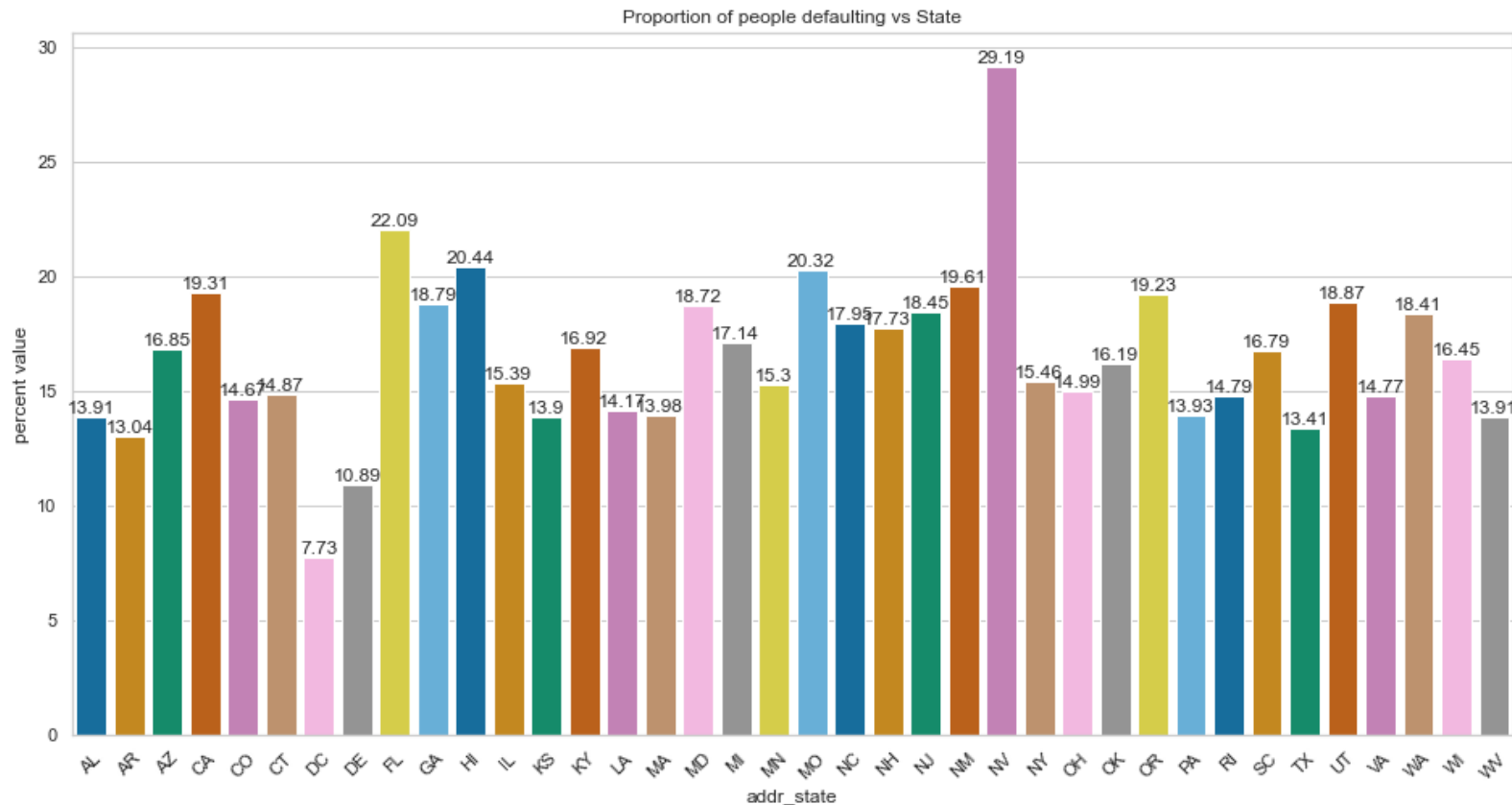


- People who are in rent have higher tendencies to default on loan.
- People who have taken loan for purpose of small business show maximum default rate of 37.09%. It is followed by renewable energy (22.89%), and for educational purpose (21.05%).

People taking loan for car, credit card, major purchase and wedding show least tendency to default on loan.







The plot shows the proportion of defaulter against non-defaulters for each state with a minimum of 100 customers.

- State of Nevada(NV) shows highest proportion of defaulter (29.19%).
- Other states with prominent default rates are Florida (22.09%), Hawaii(20.44%) and Missouri (20.32%).
- State of Washington DC and State of Delaware shows lowest default rate with 7.73% and 10.89% respectively.



- Loan issued for grade C and above have higher tendency to default on loan.
- The company should be careful to give loan to people living on rented apartment and taking loan for purpose of small business.
- The people from the state of Nevada has high 'charge off' rate. The applicant from Washington DC and Delaware are potential customer, as they have historically provided lesser defaulter proportion.