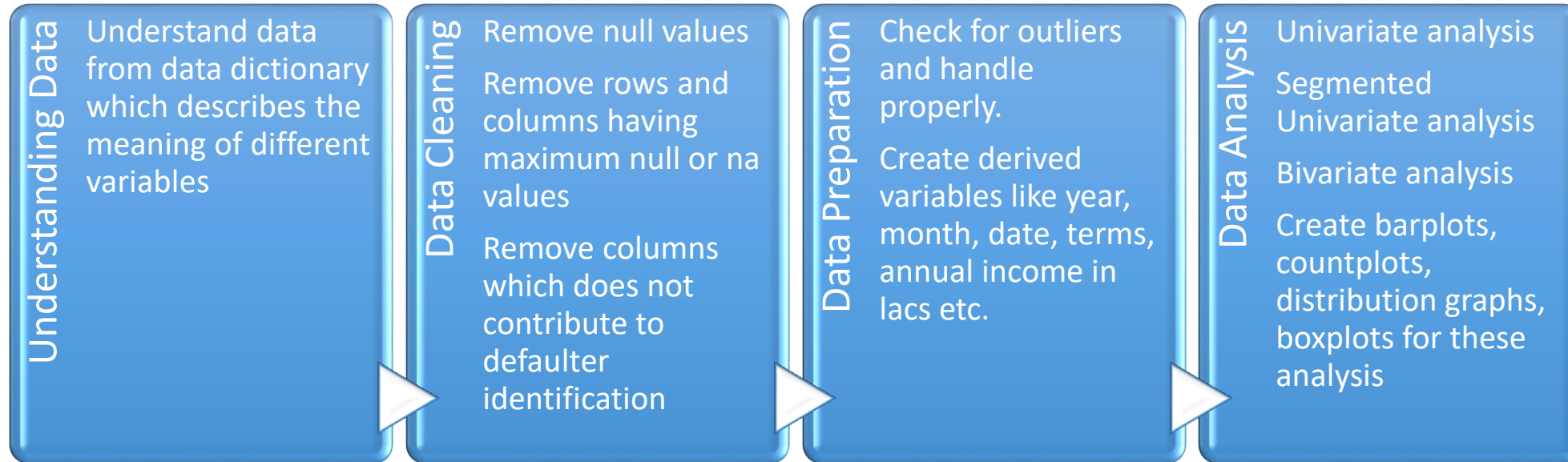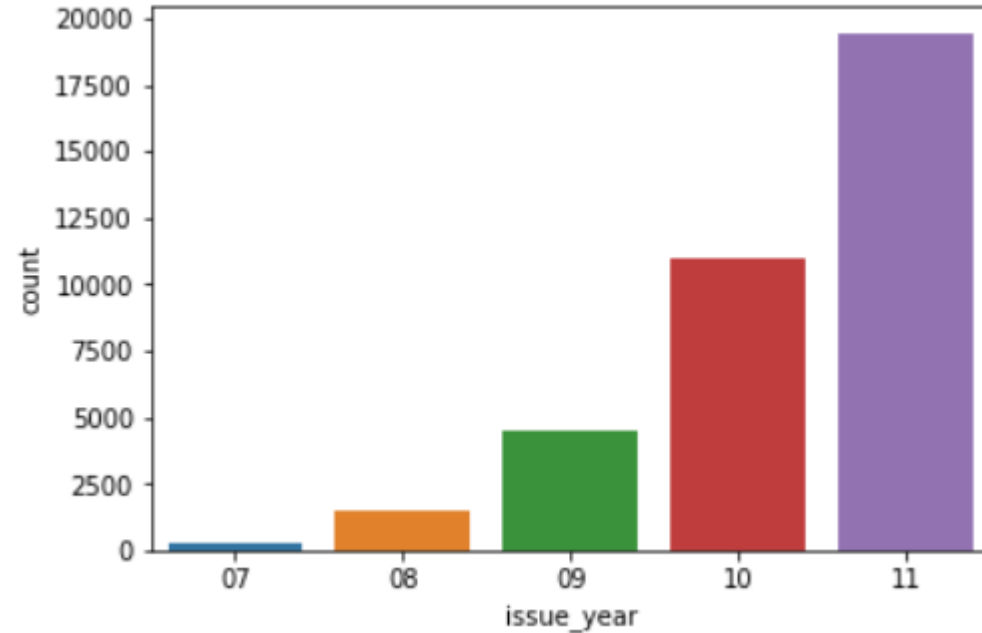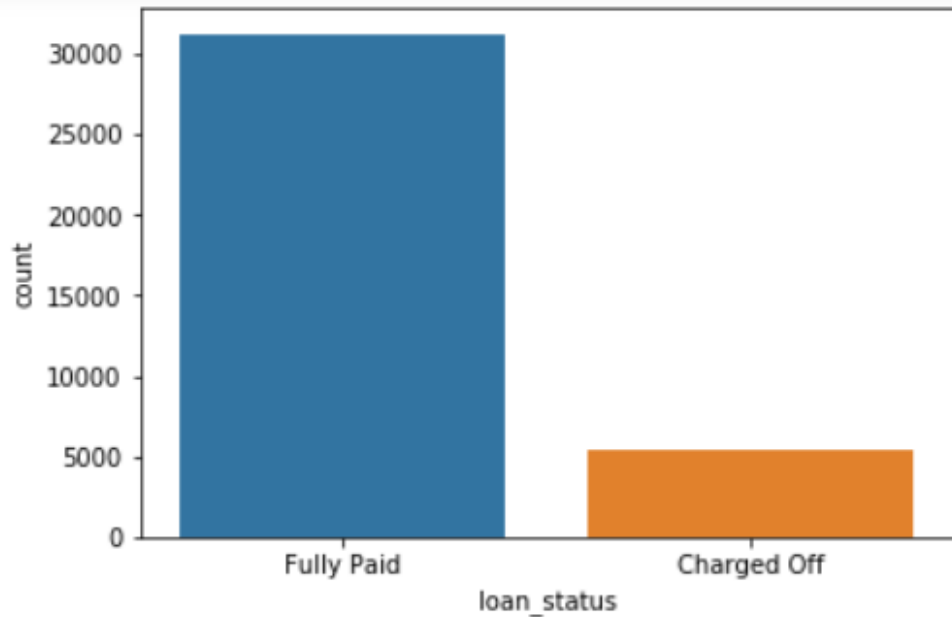# Lending Club Case Study

Objectives

- Identify the loan borrowers who tend to default the loan.
- Identify the driving factors which are the strong indicators behind loan default.
- Utilize the knowledge for portfolio and risk assessment.

Solution Approach

| Understanding Data	Data Cleaning	Data Preparation	Data Analysis
Understand data from data dictionary which describes the meaning of different variables	Remove null values Remove rows and columns having maximum null or na values Remove columns which does not contribute to defaulter identification	Check for outliers and handle properly. Create derived variables like year, month, date, terms, annual income in lacs etc.	Univariate analysis Segmented Univariate analysis Bivariate analysis Create barplots, countplots, distribution graphs, boxplots for these analysis

Analysis on Loan Status

Conclusion
- ✓ Most of the loans are Fully paid
- ✓ Charged Off loan is only 14.78% of total loans
- ✓ Total number of Charged-off loans are increasing every year.
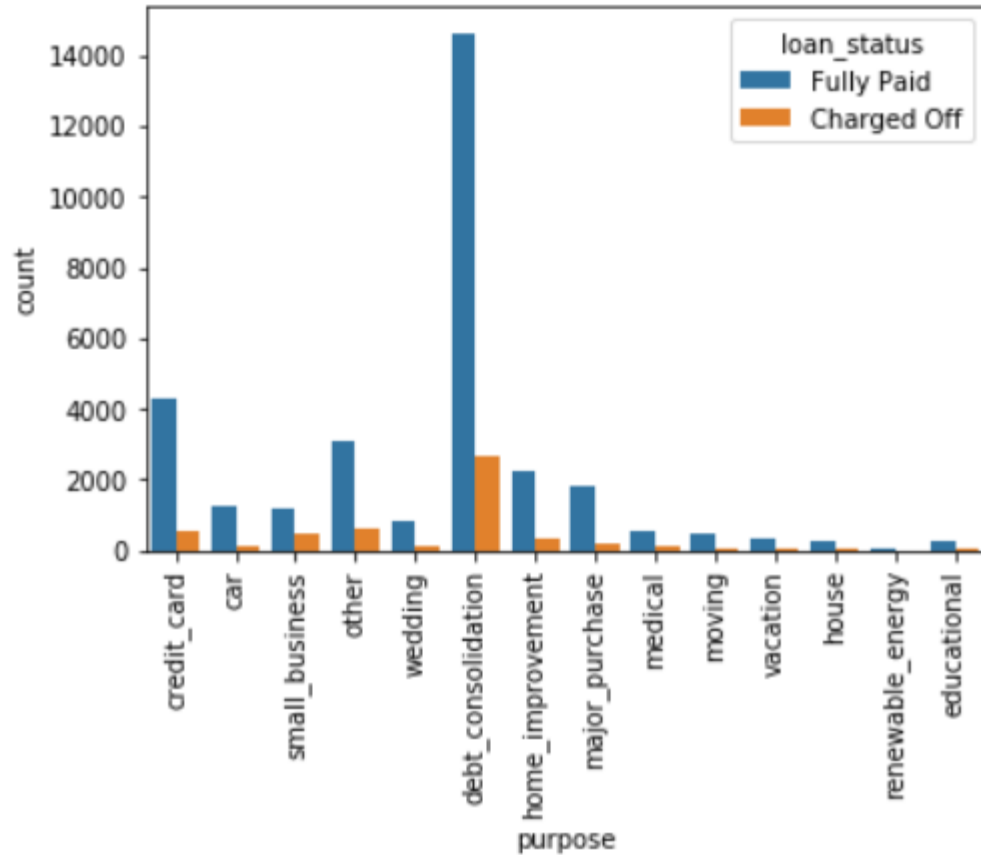
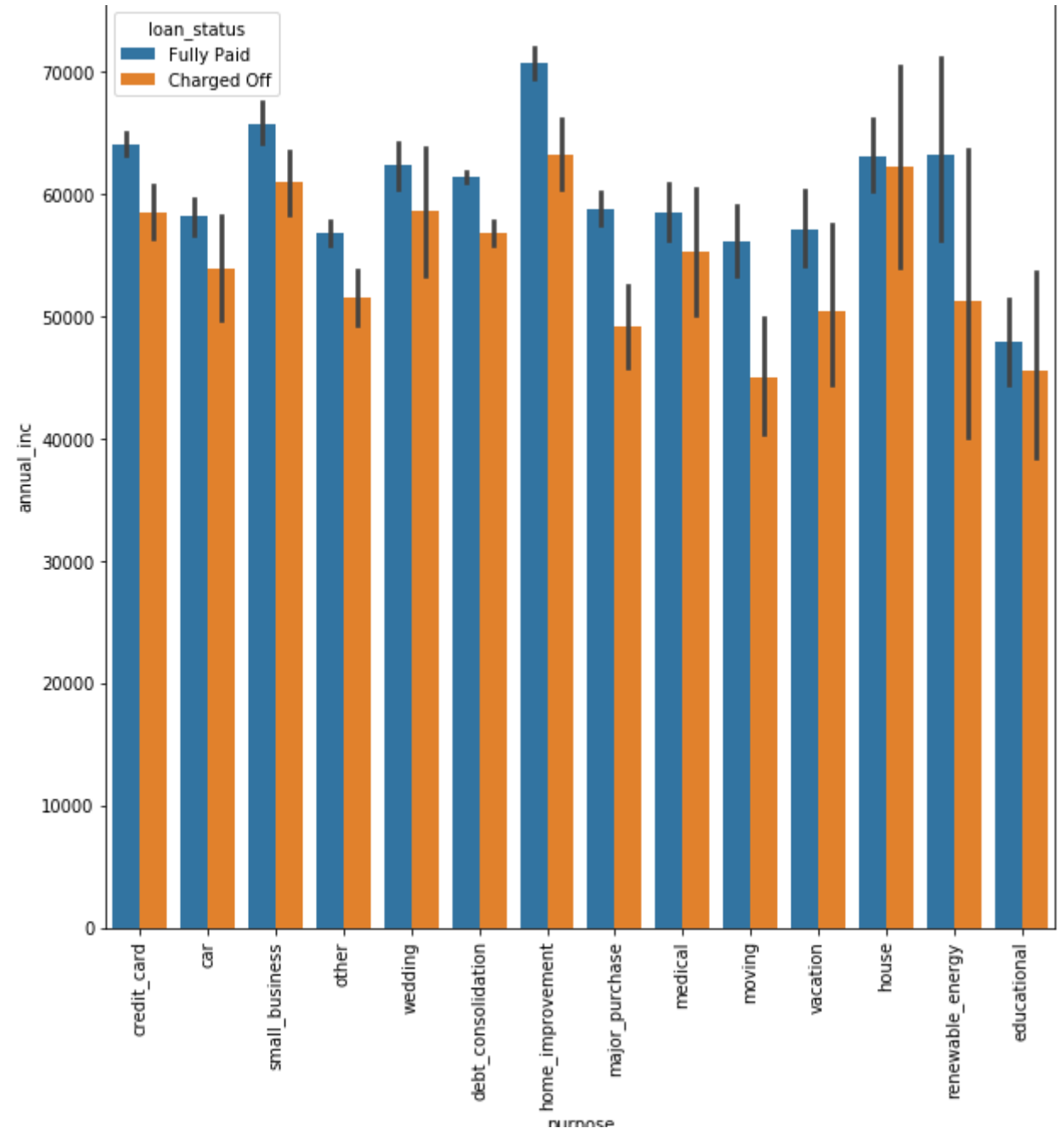# Effect of Employee work experience
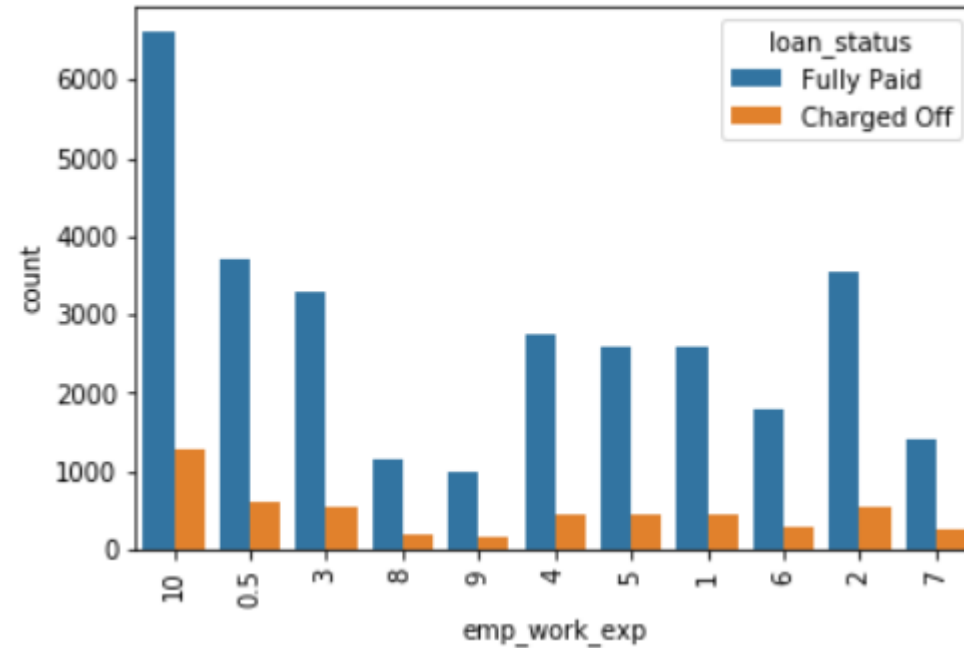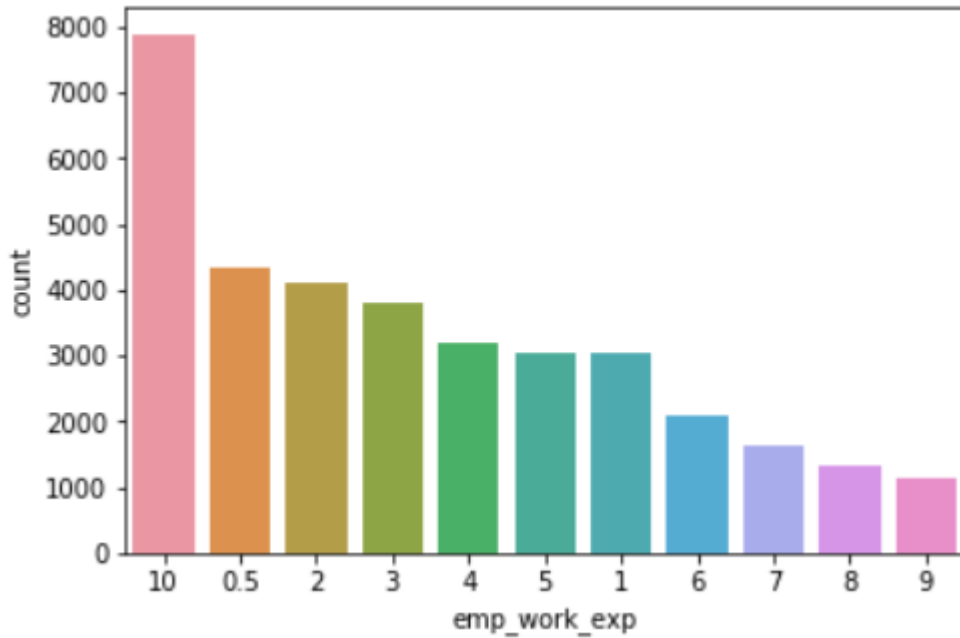
Conclusion
- ✓ Employees having 10 or more years of experience are having most number of loans
- ✓ Most of the employees having 10 or more years experience have fully paid the loan.

Effect of Purpose

Conclusion
- ✓ Most of the loans are given for debt_consolidation purpose. Also most of them are fully paid.
- ✓ Employees having higher salary opted for loan for home_improvment, small_business, credit_card, house, renewable_energy purposes.
- ✓ There are comparatively more defaulters who took loan for home_improvement and house purposes.

Effect of Loan Amount
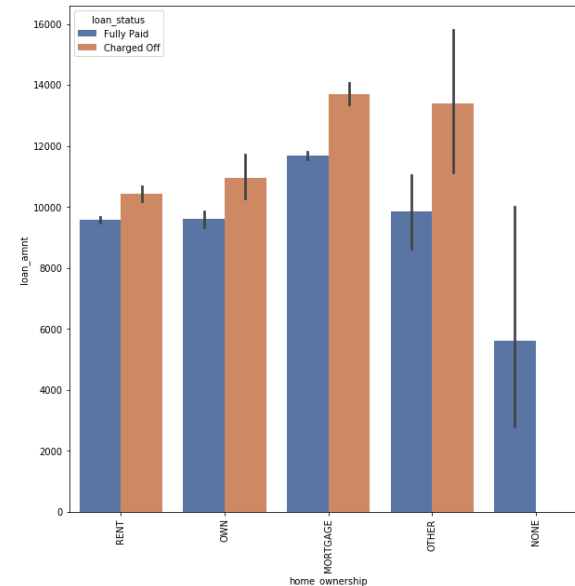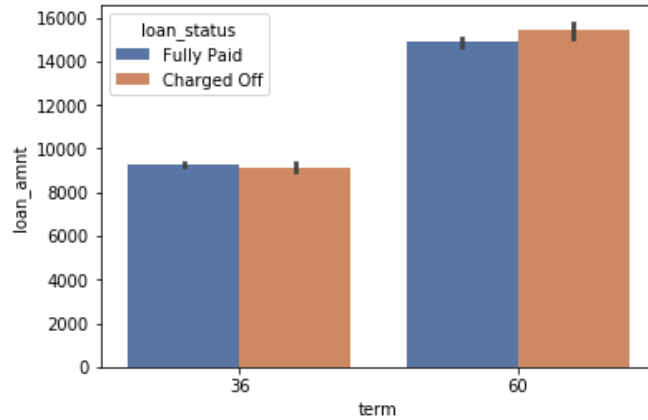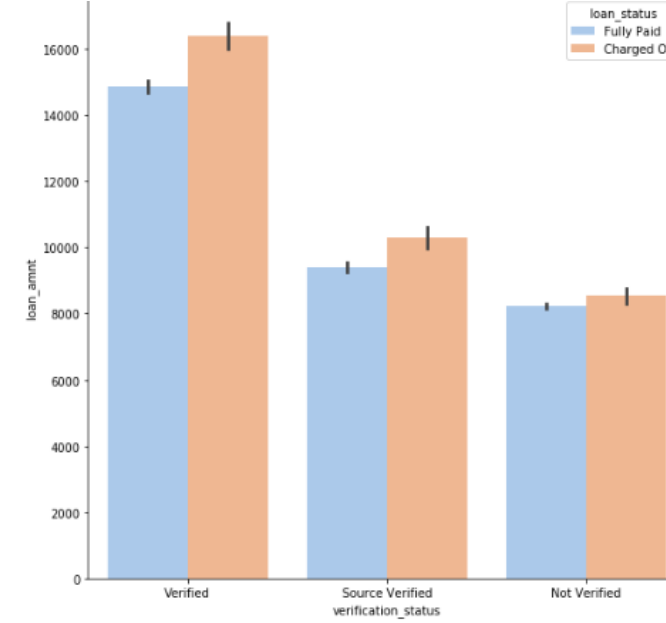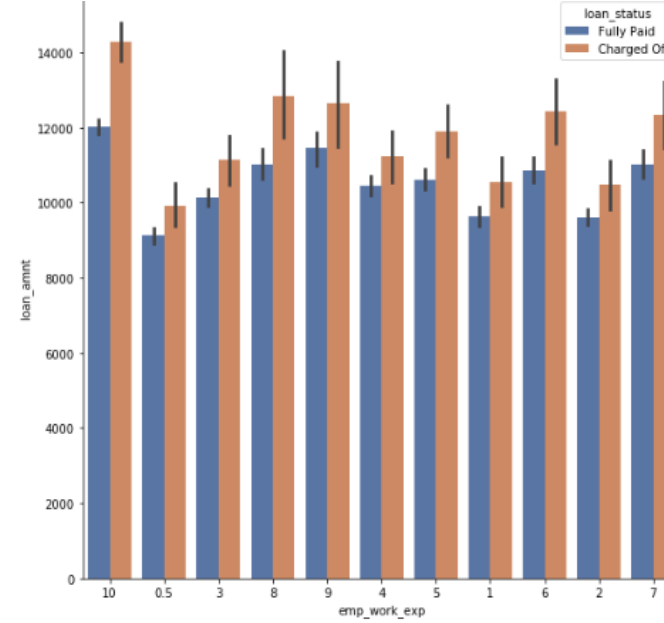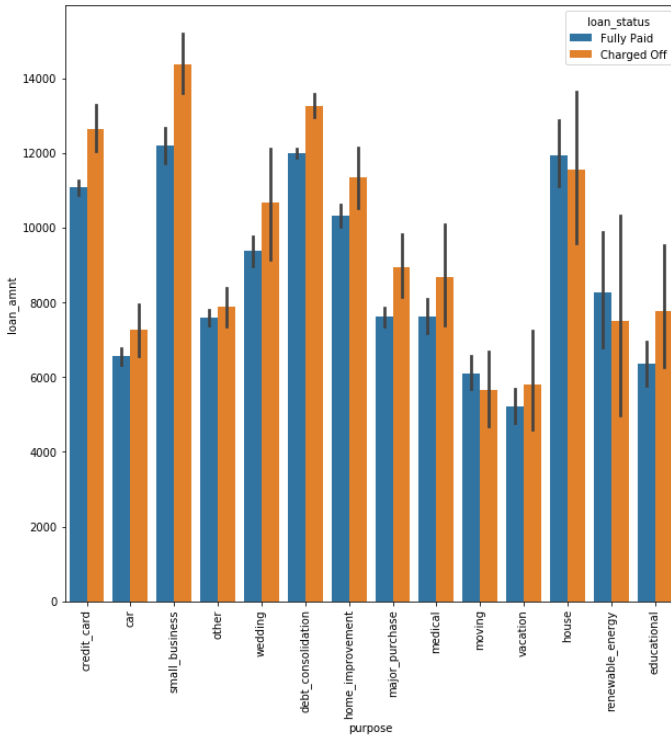
Conclusion
- ✓ Higher loan amounts are approved for small_business, credit_card, debt_consolidation and house purposes. There are more defaulters also for these purposes
- ✓ Employees having more experience are getting loan for higher amount, but there are high chance of loan being defaulted. Accordingly, verified applicants are getting loan of high amount, but the probability of defaulting the loan is high.
- ✓ Most of the applicants opting for high amount of loans having 60 months or more terms are defaulting more than loans taken against small terms
- ✓ Applicants having home_ownership as Mortgage have high chance of defaulting.

Effect of State on Loan Status
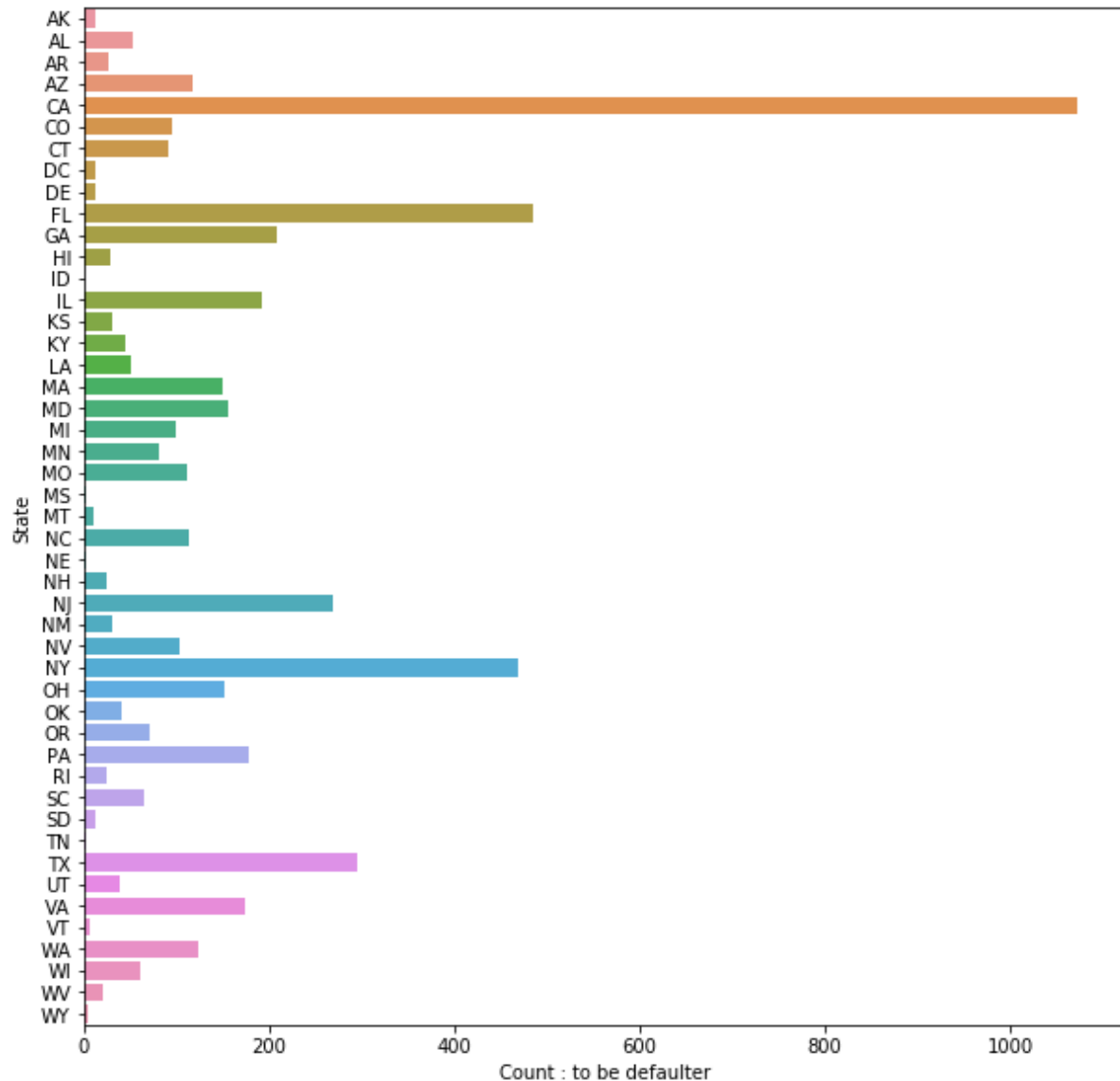
Conclusion
✓ Applicants staying in CA state have the high chance to be loan defaulter.

Conclusion

➢ Applicants having high experience tend to take most of the loans. There is slightly higher tendency of defaulting the loan for these applicants since they are also getting loan for higher amount than others.

➢ Most of the loan applications are for debt_consolidation purpose, but applicants with high income tend to take loan for home_improvement and small_business purposes. As a result, these applicants have higher tendency of defaulting the loan.

➢ Applicants having small_business tend to default the loan.

➢ Loan applications for Mortgage have high probability to get Charged-Off.

➢ High loan amount have been granted for 60 months, but these applications tend to be defaulted.

➢ Applicants applying for higher loan amount needs to be verified properly before approving loan.

➢ Loan applications from state CA have high chance of defaulting loan.