

Introduction

Project Name: **Lending Club Case Study**

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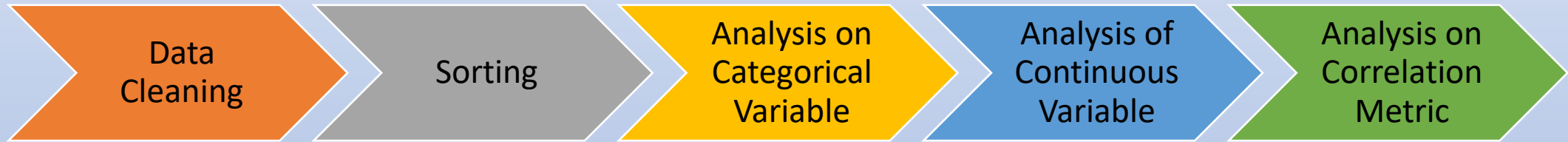
Team Member: **Radha Mishra**

Problem Statement

The given lending company is the largest online loan marketplace, facilitating personal loans, business loans, and financing of medical procedures. Borrowers can easily access lower interest rate loans through a fast online interface.

The company wants to understand the **driving factors (or driver variables)** behind loan default, i.e. the variables which are strong indicators of default. The company can utilise this knowledge for its portfolio and risk assessment.

Analysis Approach:



With the above activity, we came to a Conclusion that the most Charged Off applicants are as mentioned below.

Result of Univariate Analysis:

1. People with 36 months loan term
2. People with Grade B, C, D
3. People with Sub-grade B3, B5, B4, C1, C2, C3, D2 & D4
4. People with employment length of 10+ years & <1 year
5. People whose loan was issued in year 2011
6. People with Home ownership as home, rent & other
7. People with Purpose of small business, renewable energy & education
8. People with 60 months loan term
9. People from NE (Nebraska), NV (Nevada), SD (South Dakota), AK (Alaska), FL (Florida)
10. Main purposes are debt consolidation, credit Card & other.

Result of Bivariate Analysis:

1. As the Grade and the Sub Grades increases, Charged Off Rate increases

1. Top 3 employment length of Charged Off category are 1 year, 0 year (< 1year) & 10 year (> 10 year)

1. Loan amount increases, Charged off rate increases

2. As interest increases, Charged off rate increases

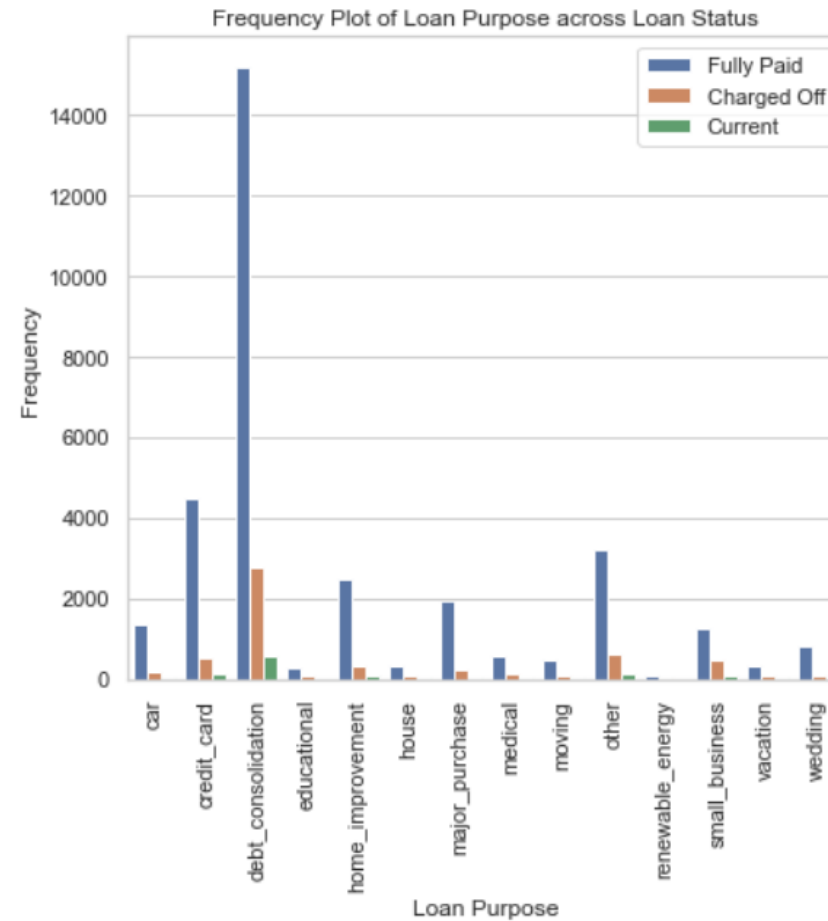
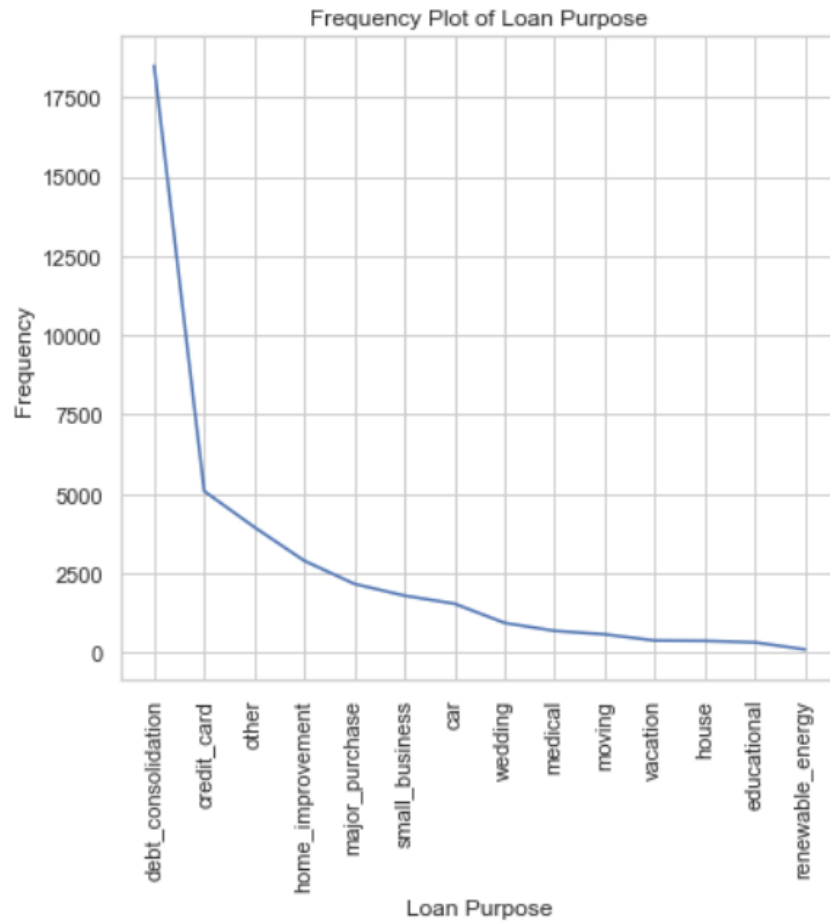
5. As the annual income decreases, Charged off rate increases

6. As the installment rate increases, Charged Off increases

7. As dti value increases, Charged Off rate increases

Top 3 loan purpose are:

- 1) debt_consolidation
- 2) other
- 3) credit card

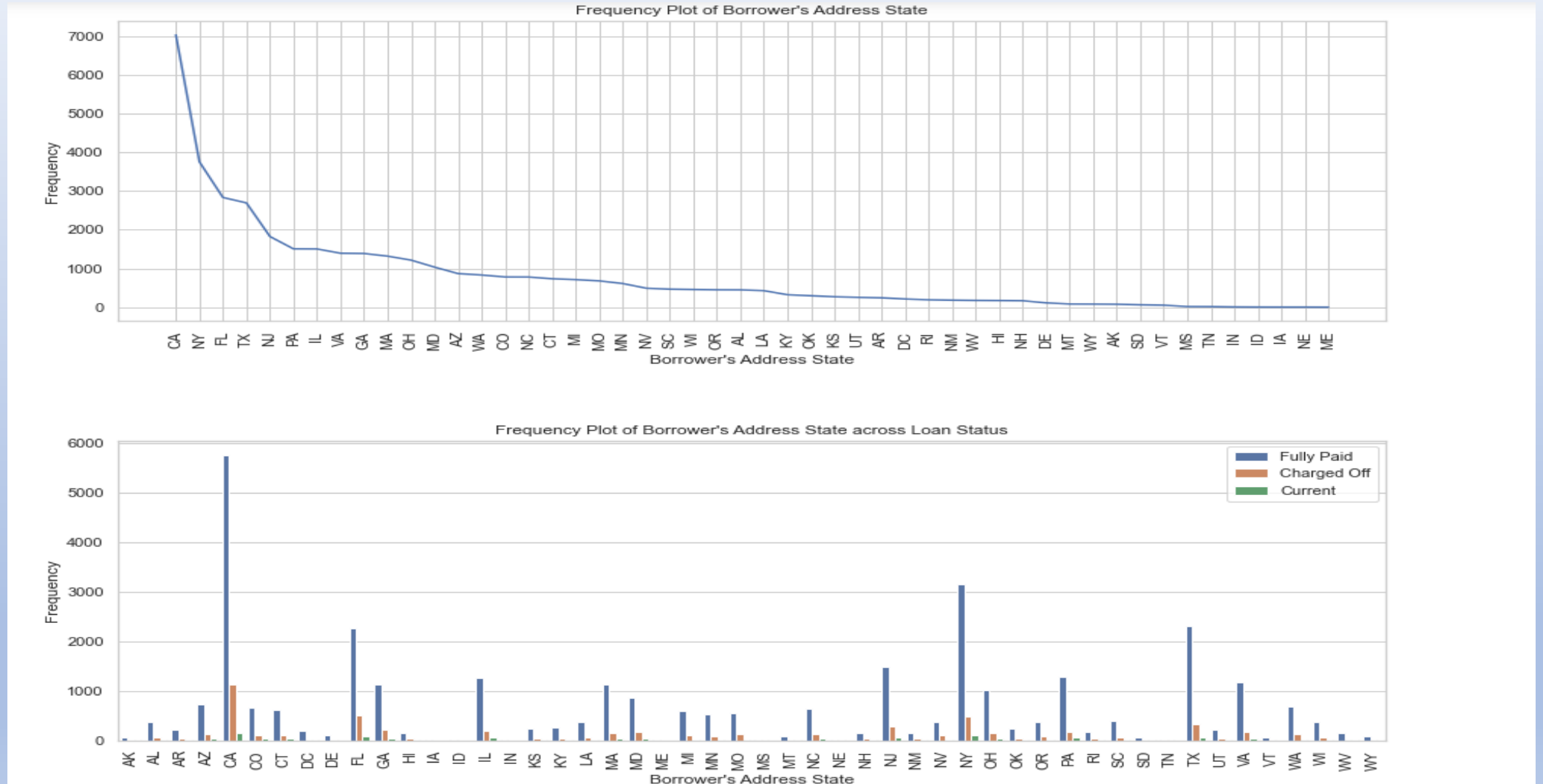


Top 3 Address state of charged off are:

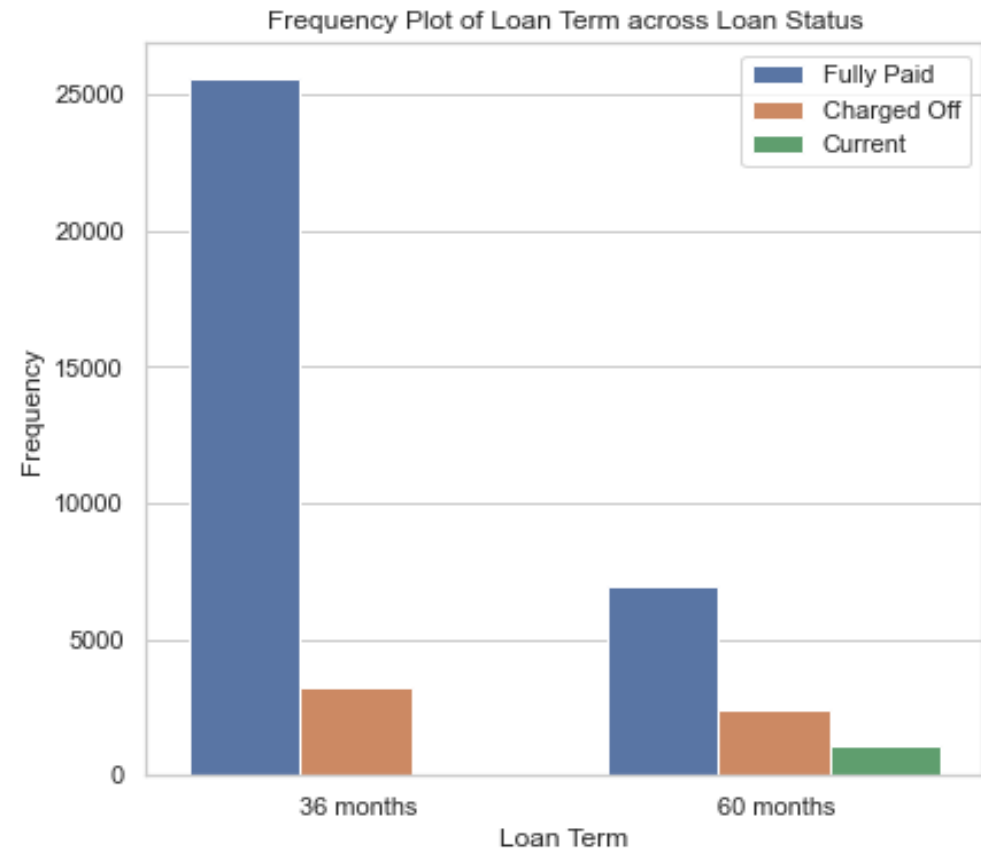
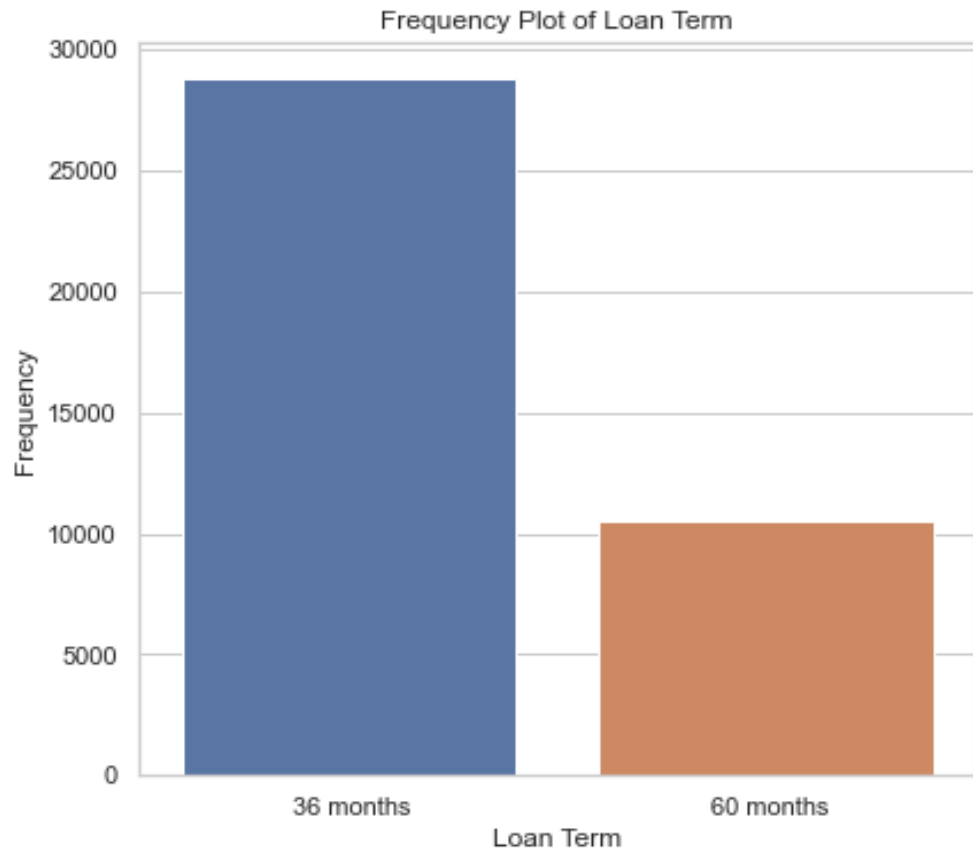
1)CA

2)NY

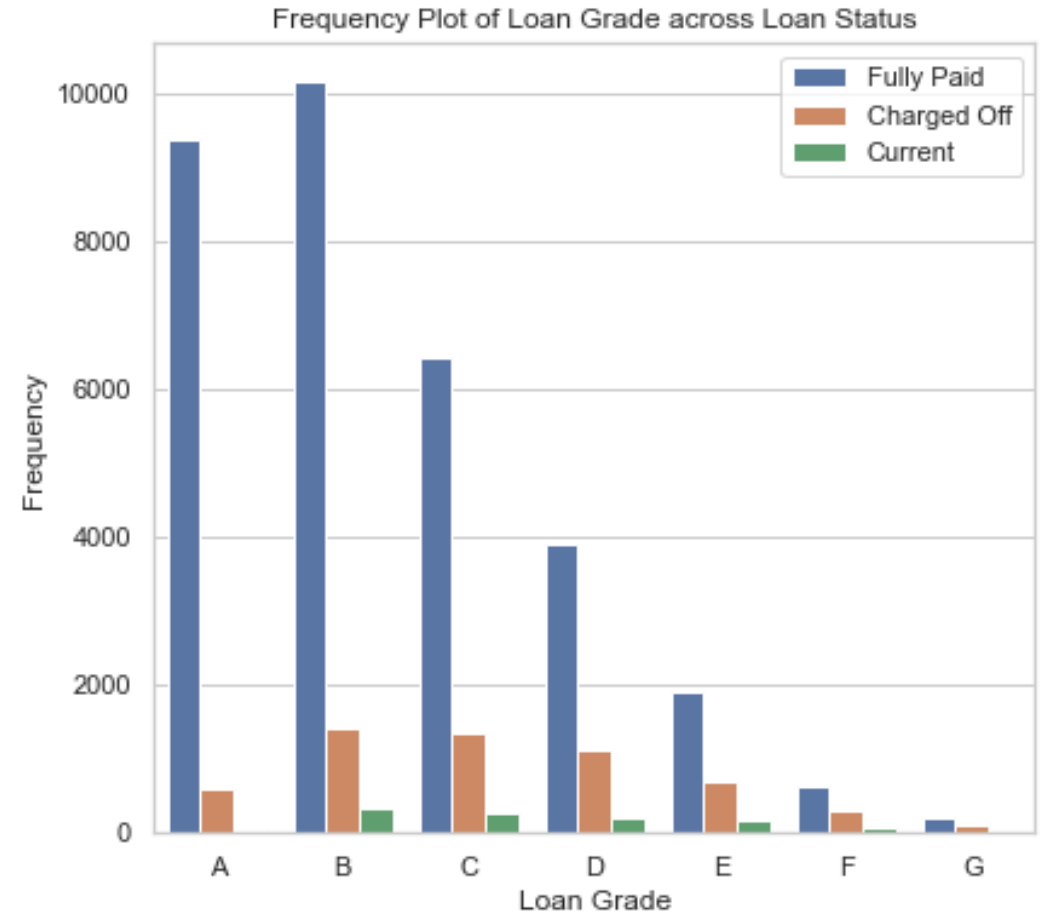
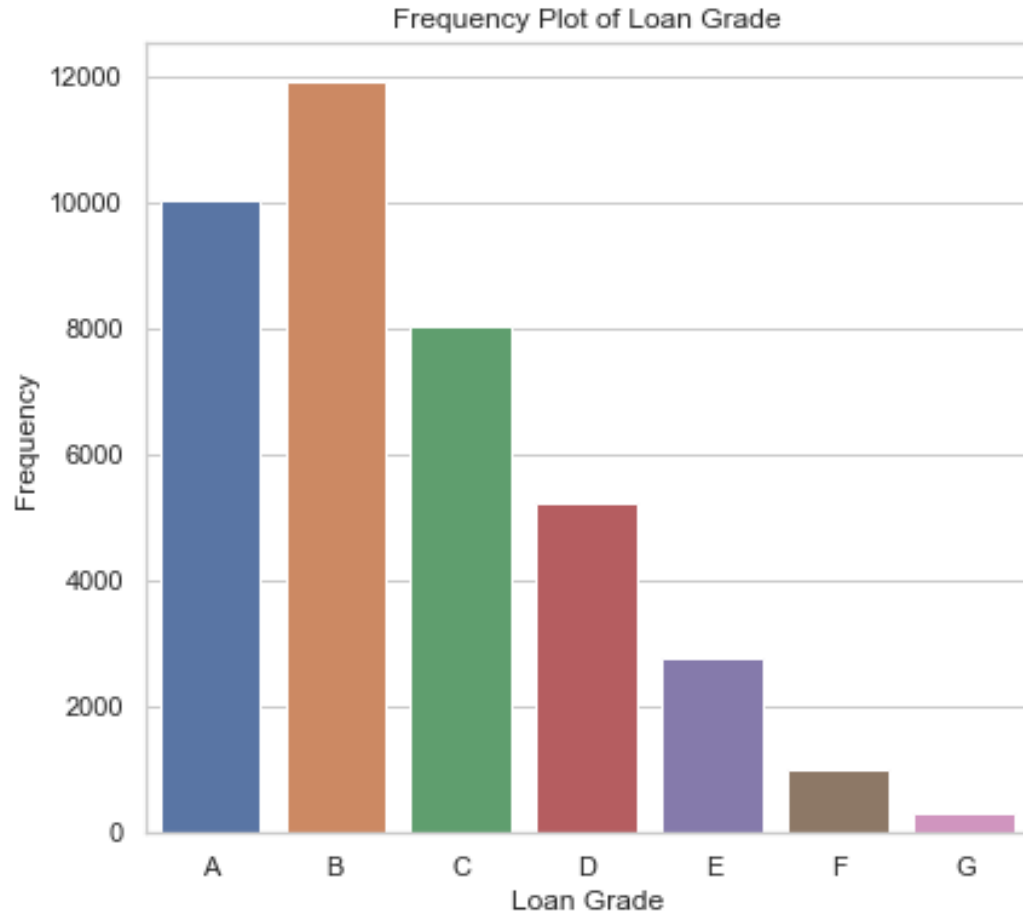
3)FL



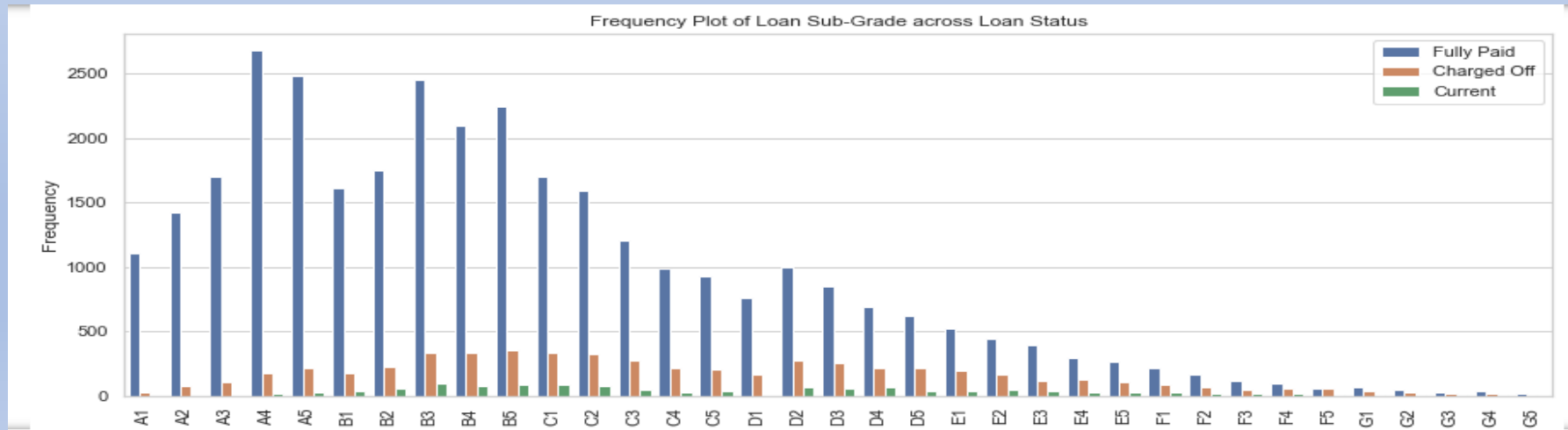
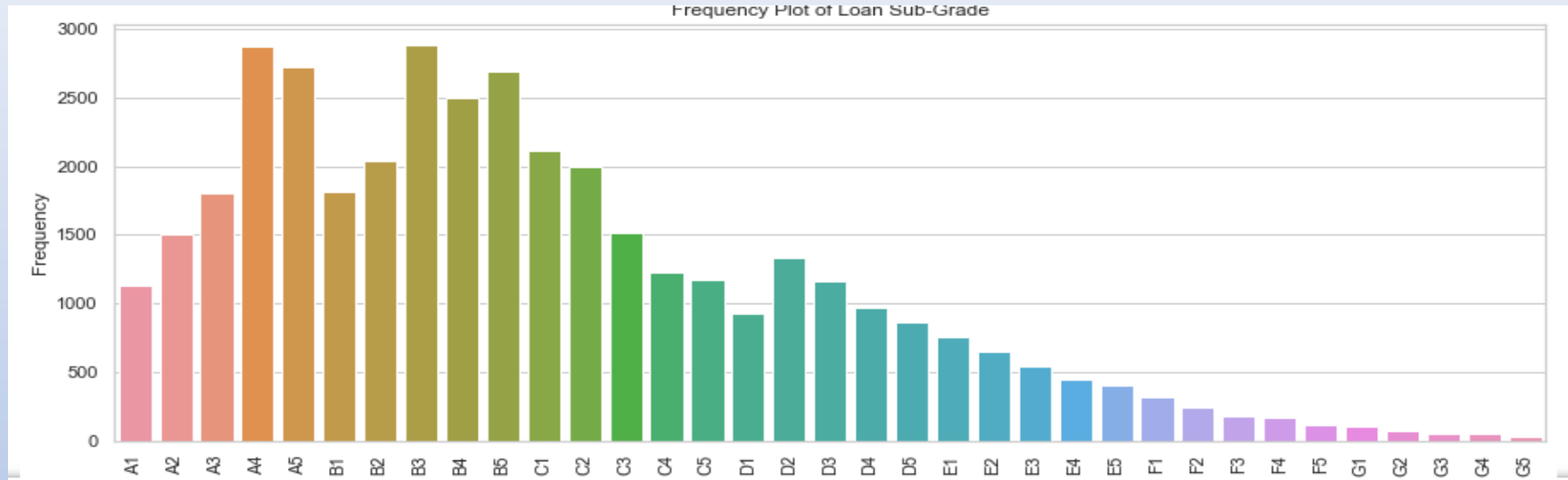
Charged Off applicants are from 36 months loan term



B,C,D Grade have more number of Charged off



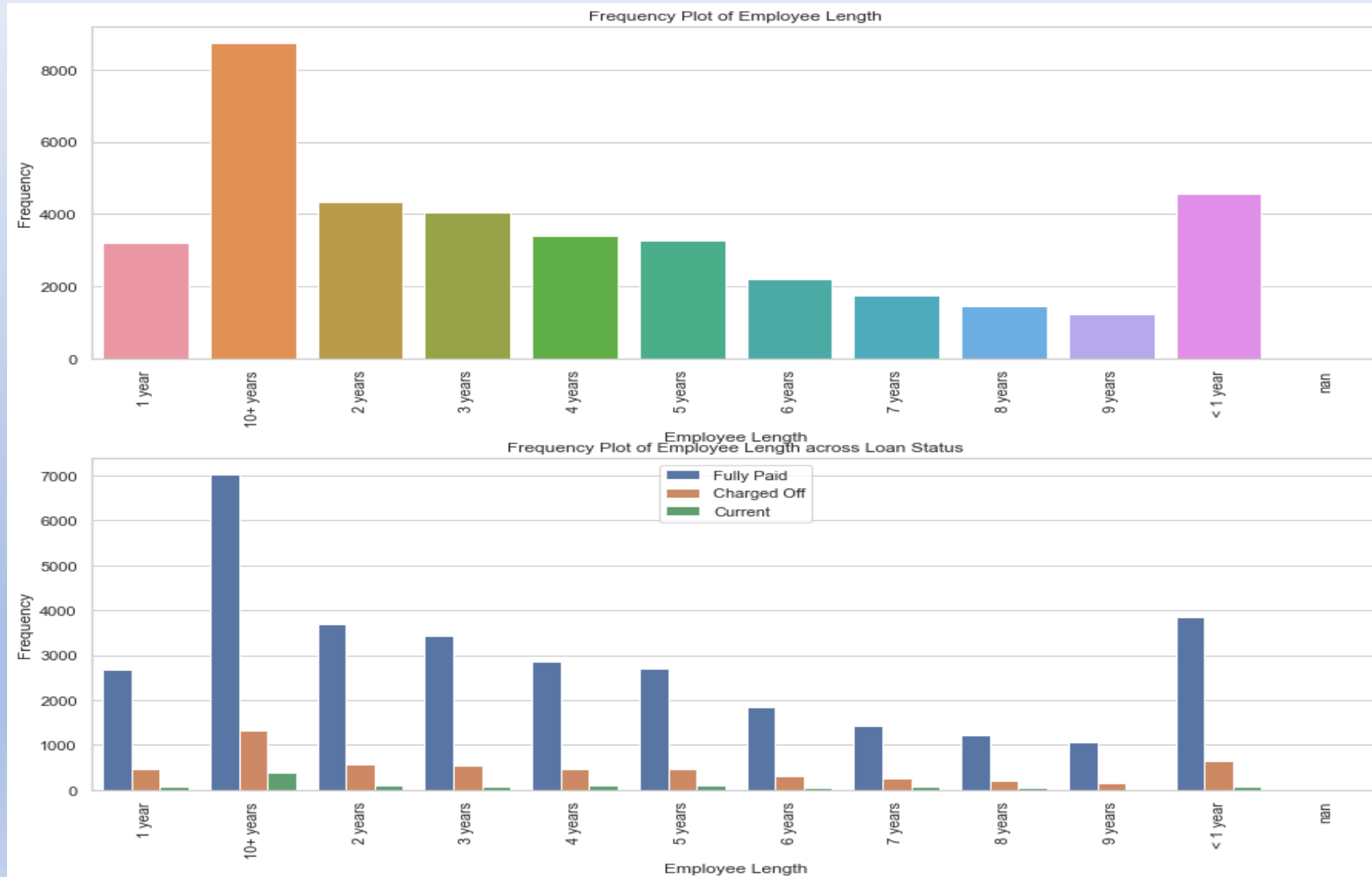
In Grade B,C and D most of the Charged off applicants belong to Sub Grades: B3, B5, B4, C1, C2, C3, D2 & D4



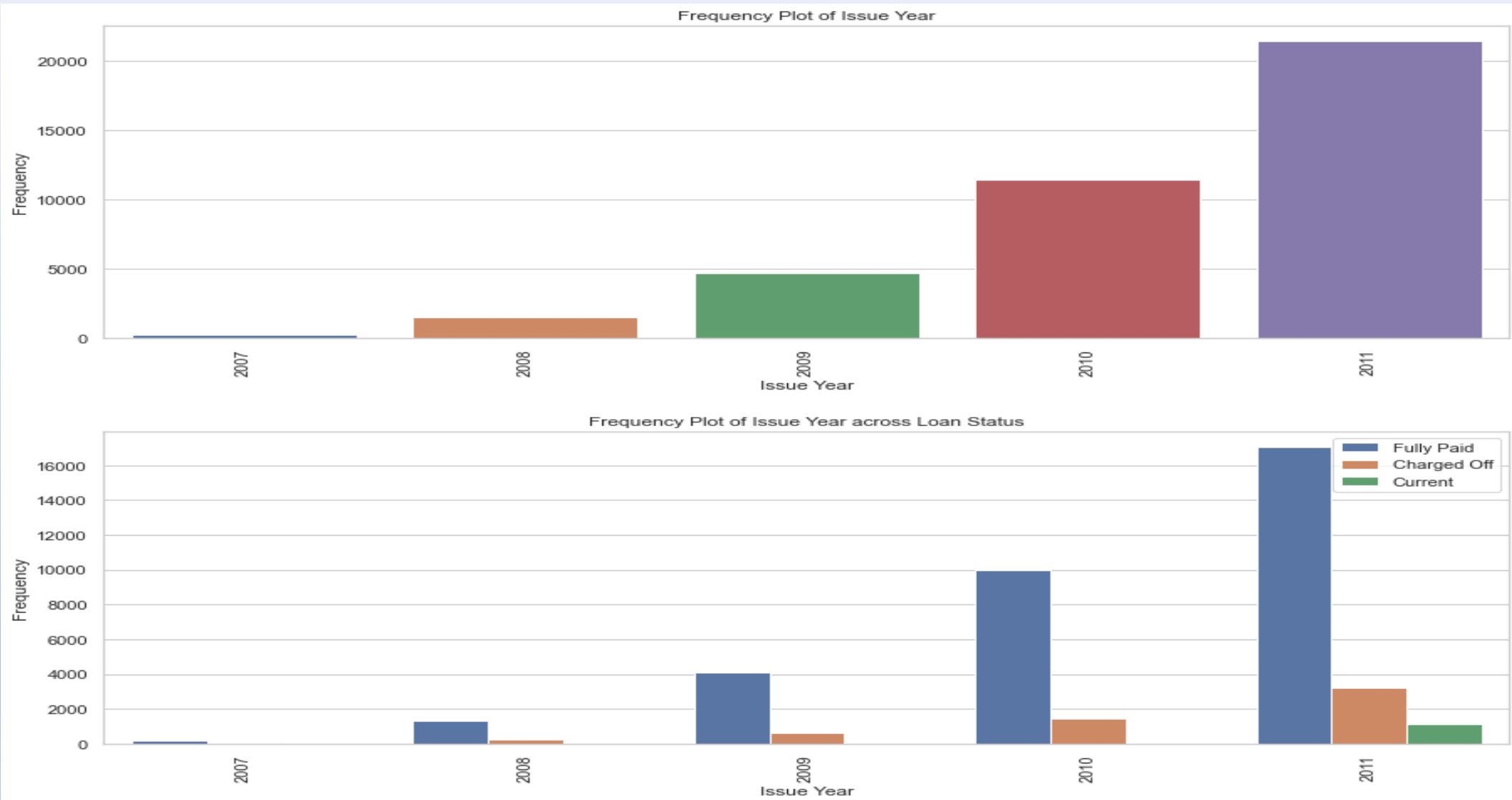
Charged Off borrowers has employment length :

1) 10+ years

2) <1 Years



Charged Off applicants are more in the loan issued year 2011

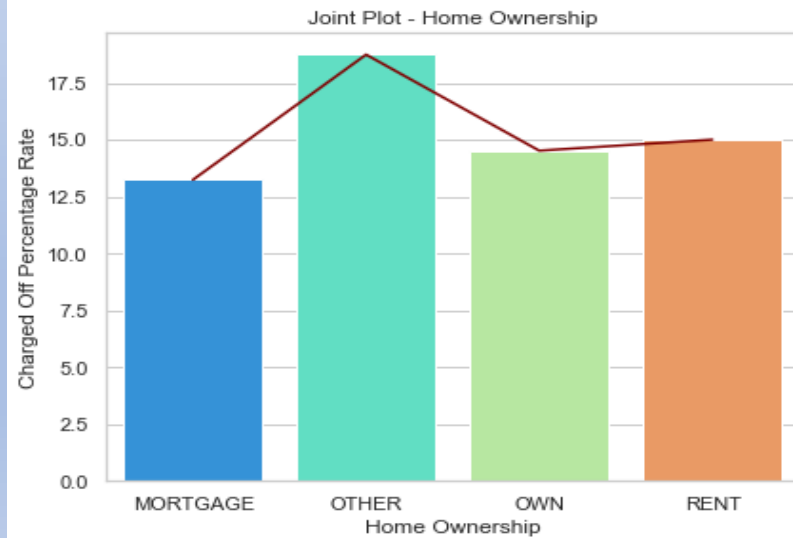
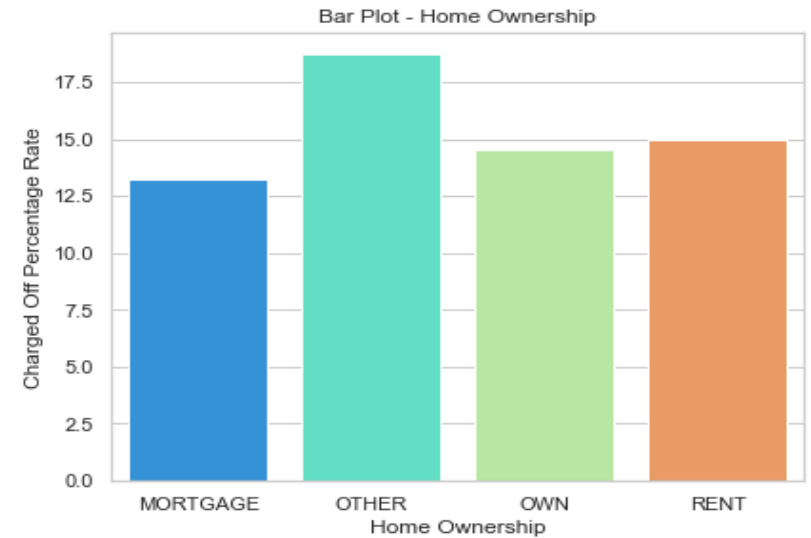
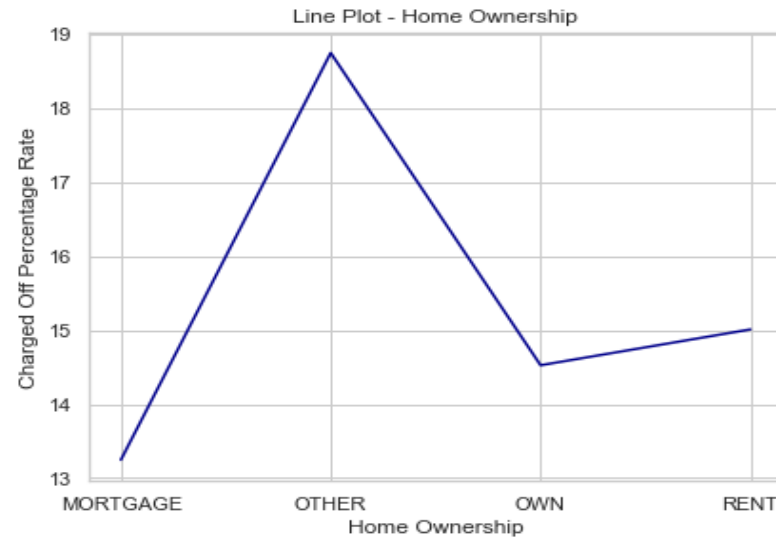


Charged Off Rate of Top 3 Borrower's Home Ownership are:

1. OTHER = 18.75%

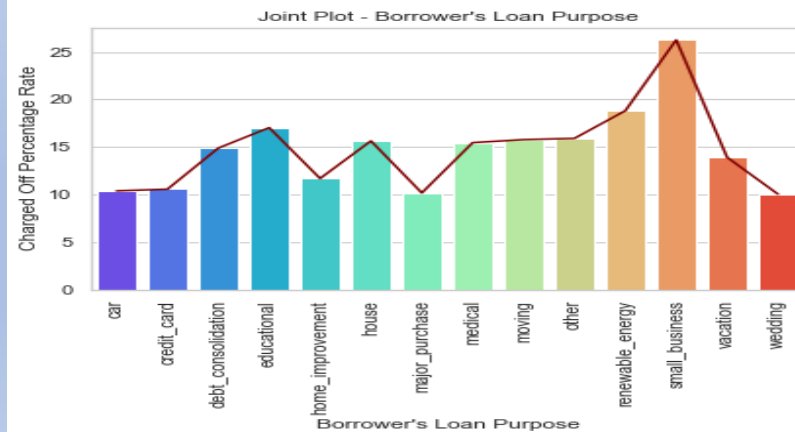
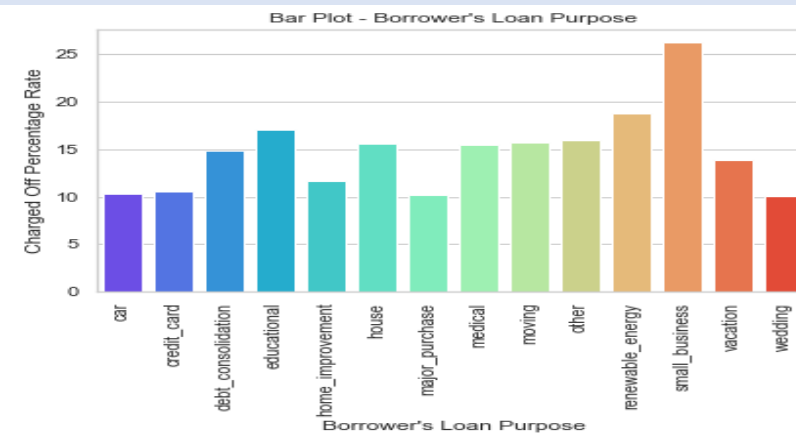
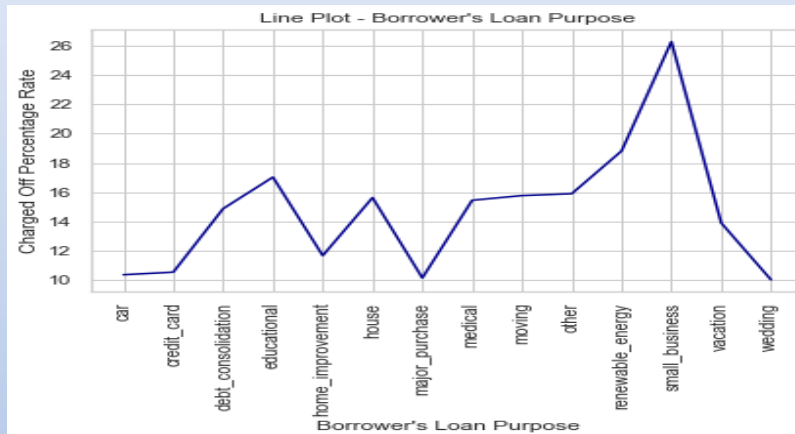
2. RENT = 15.01%

3. OWN = 14.53%



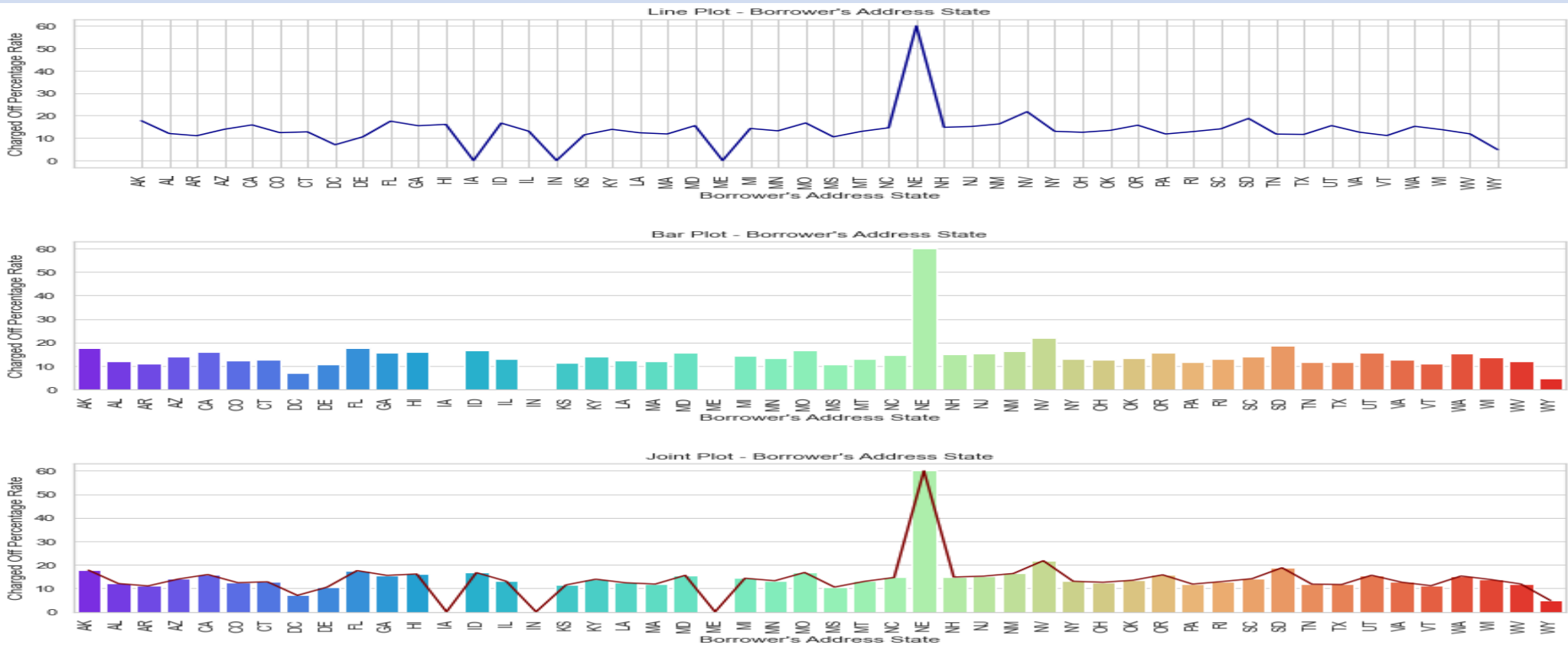
Charged Off Rate - Top 3 Borrower's Purpose:

1. small_business = 26.27%
2. renewable_energy = 18.81%
3. educational = 17.03%



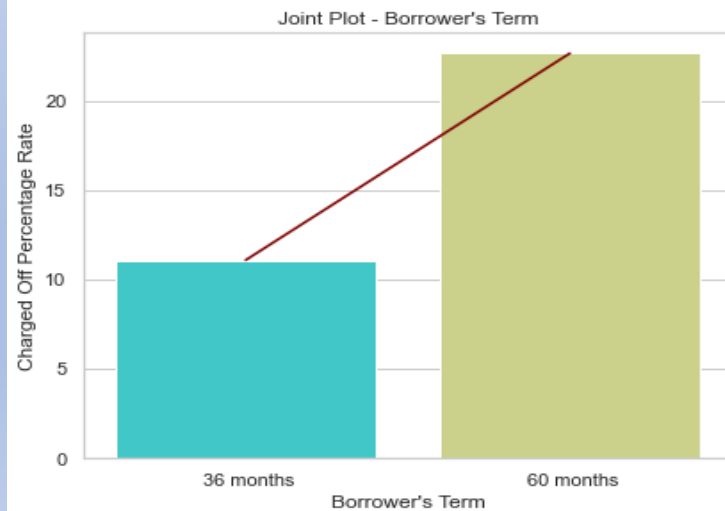
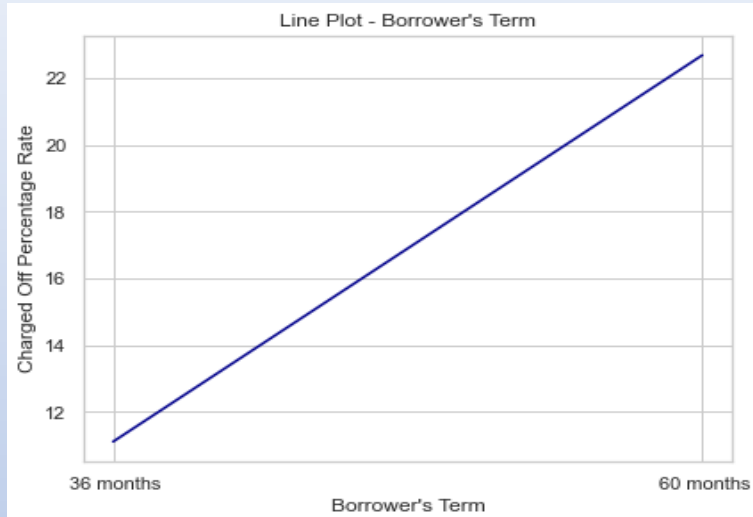
Charged Off Rate of Top 5 Borrower's Address State are:

1. NE (Nebraska) = 60.00%
2. NV (Nevada) = 21.75%
3. SD (South Dakota) = 18.75%
4. AK (Alaska) = 17.72%
5. FL (Florida) = 17.54%

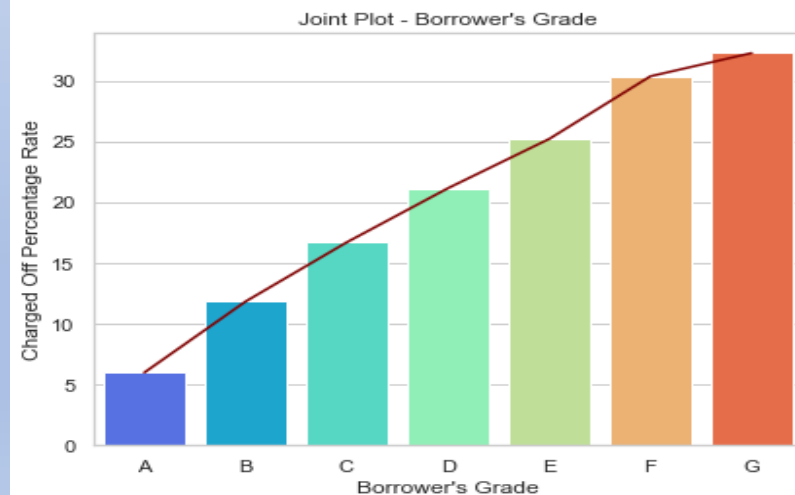
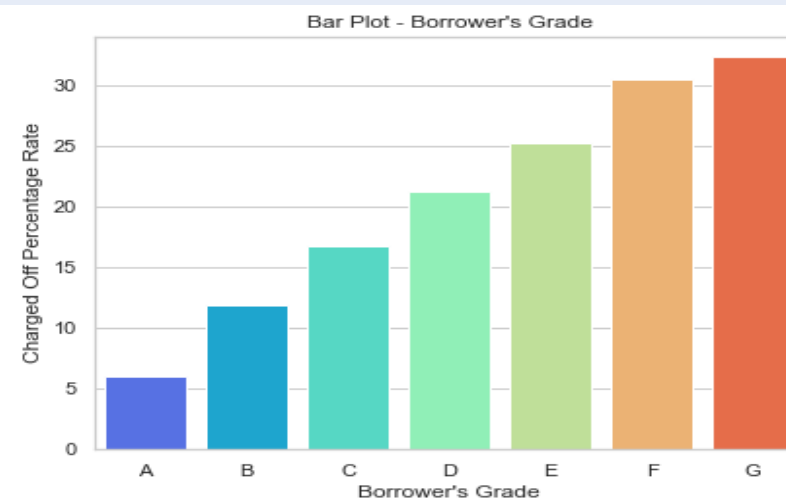
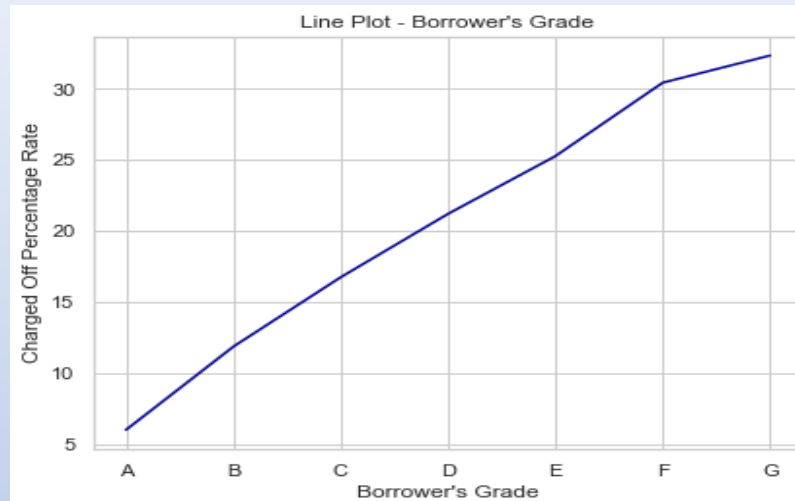


Charged Off Rate of Borrower's Top Loan Term are:

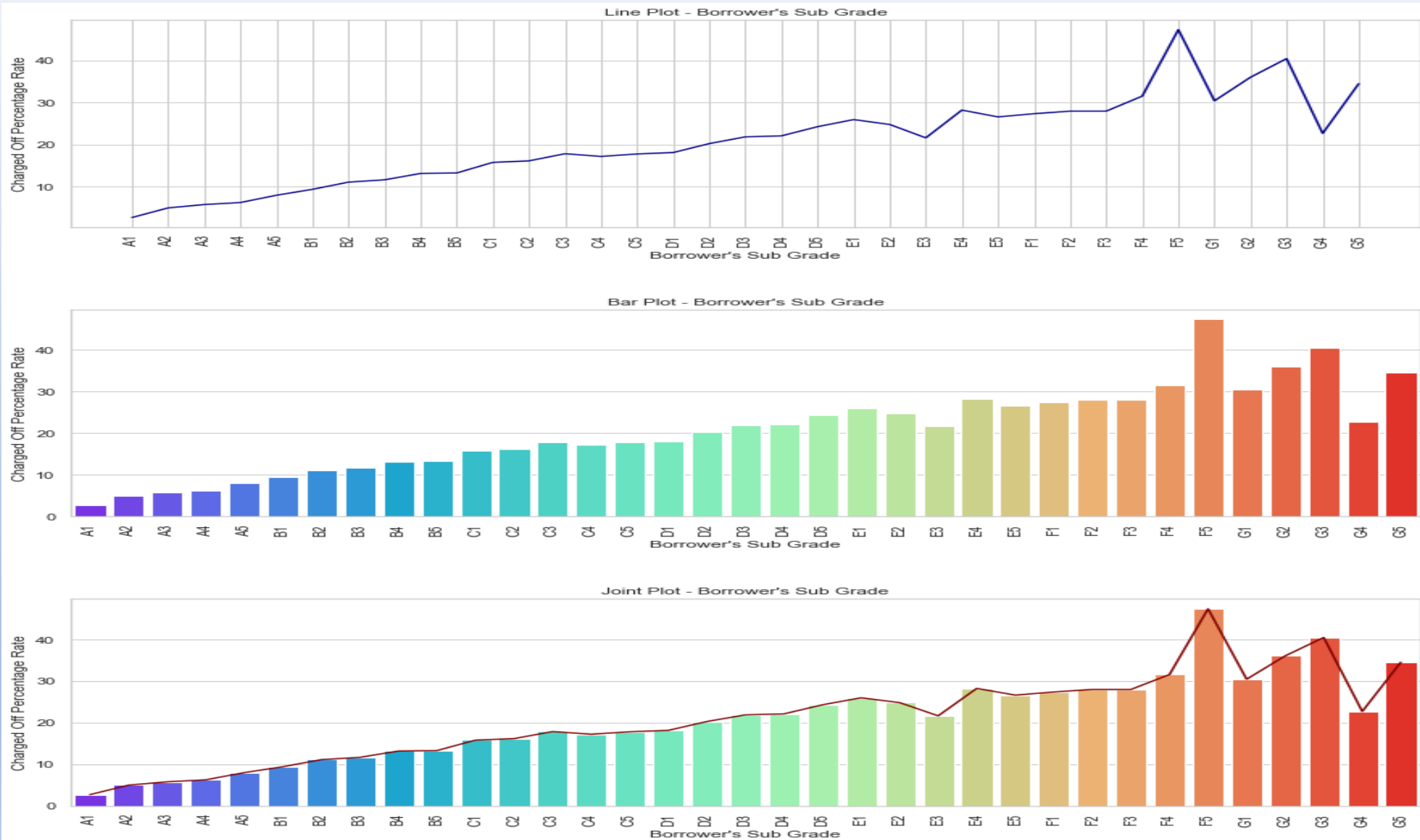
1. 60 months = 22.70%



As the Grade increases, Charged Off Rate increases.

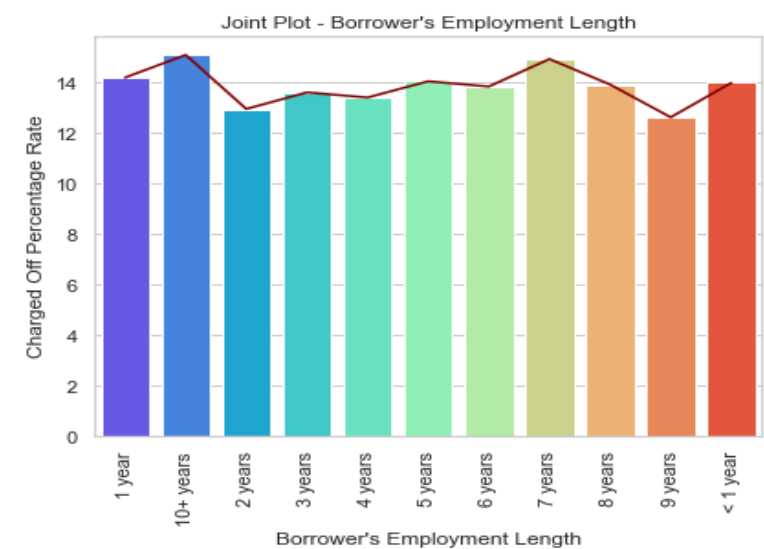
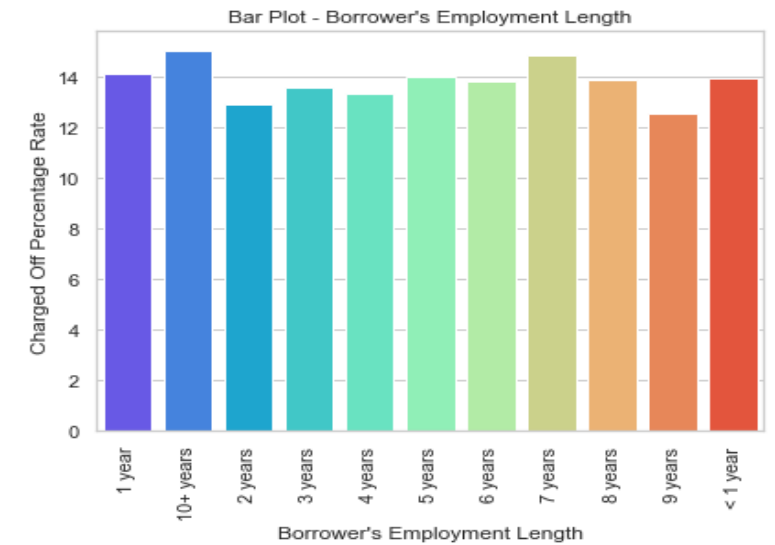
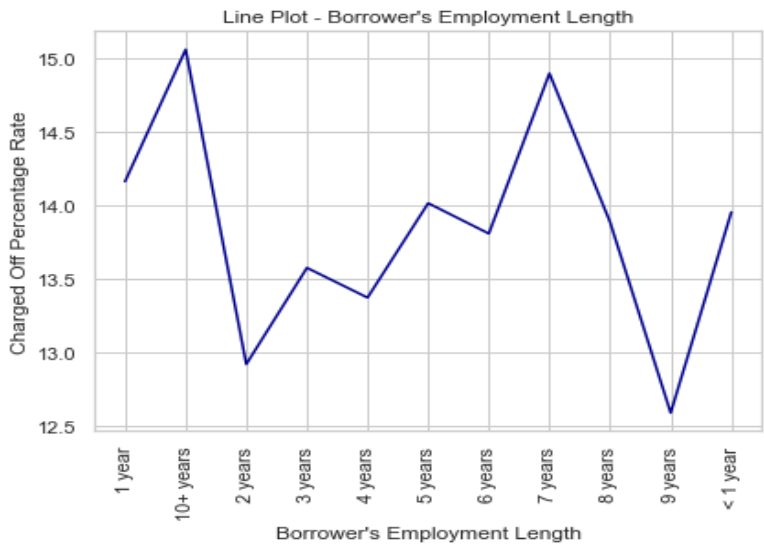


As the Grade and the Sub Grades increases, Charged Off Rate increases



Top 3 employment length belonging to Charged Off category :

- 1. 1 year
- 2. 0 year (< 1 year)
- 3. 10 Years (> 10 years)

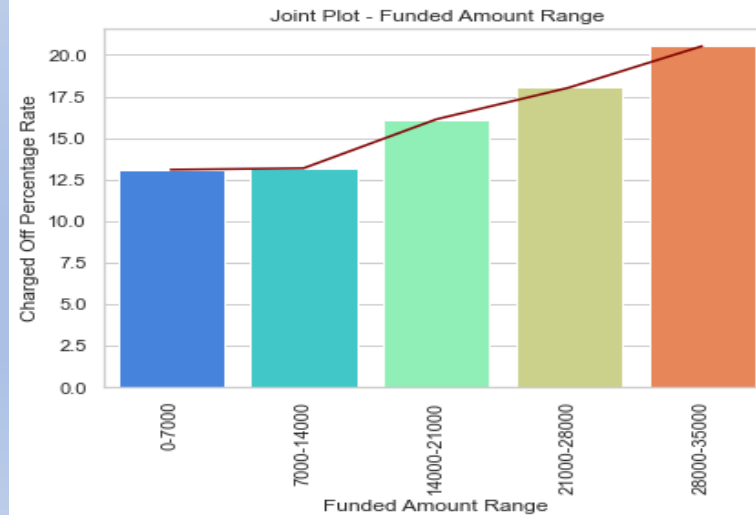
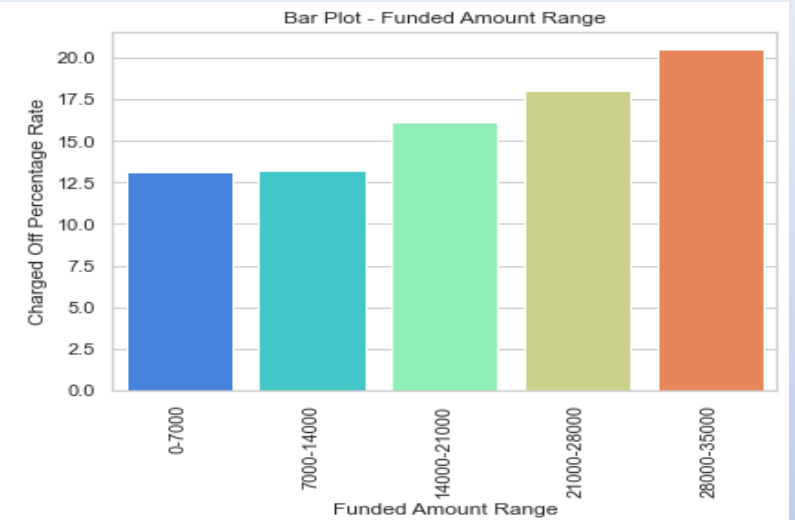
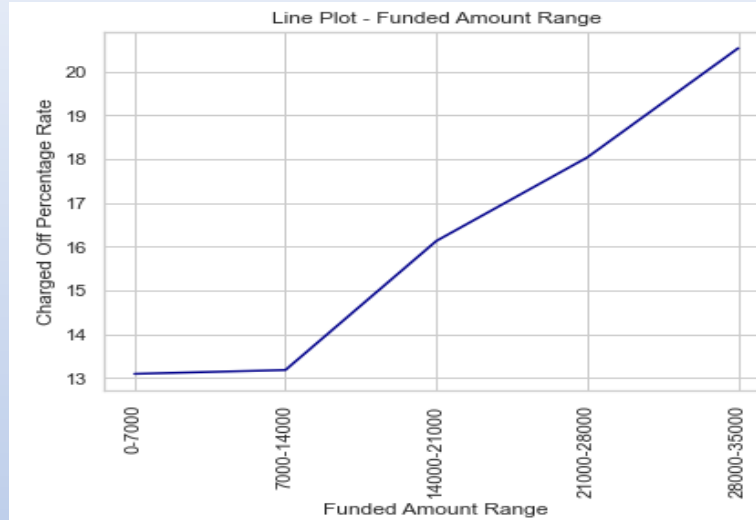


Charged Off Rate of Top 3 Loan Funded Amount Range are:

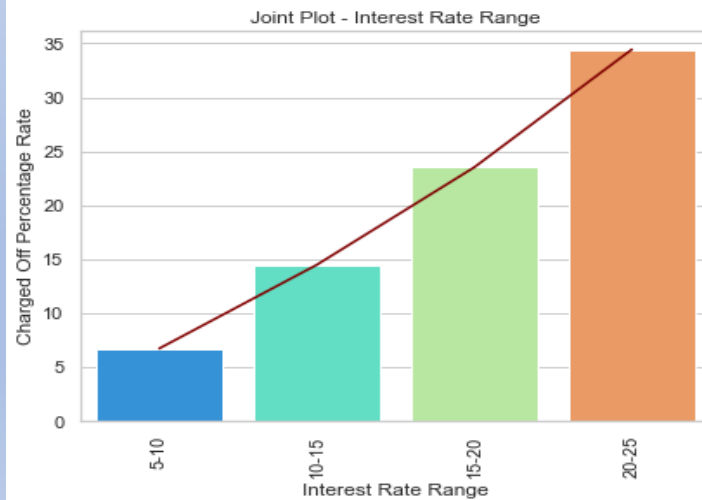
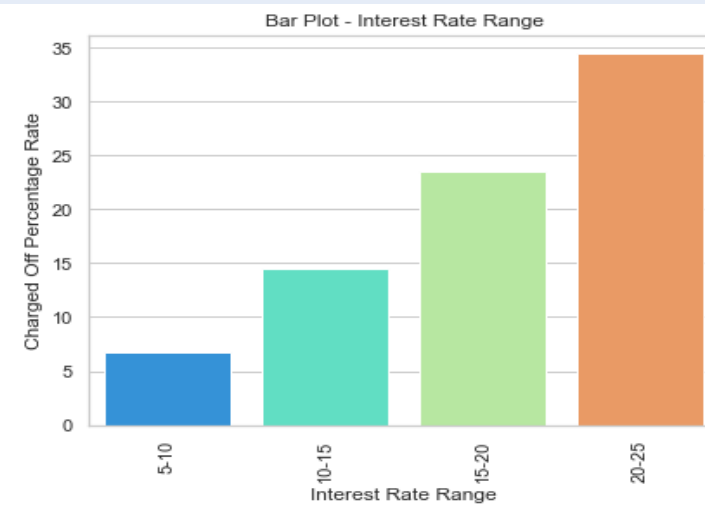
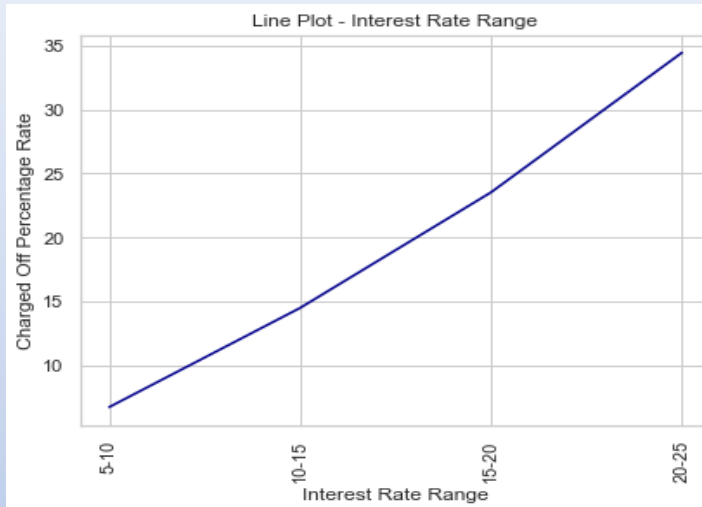
1. 28000-35000 = 20.53%

2. 21000-28000 = 18.04%

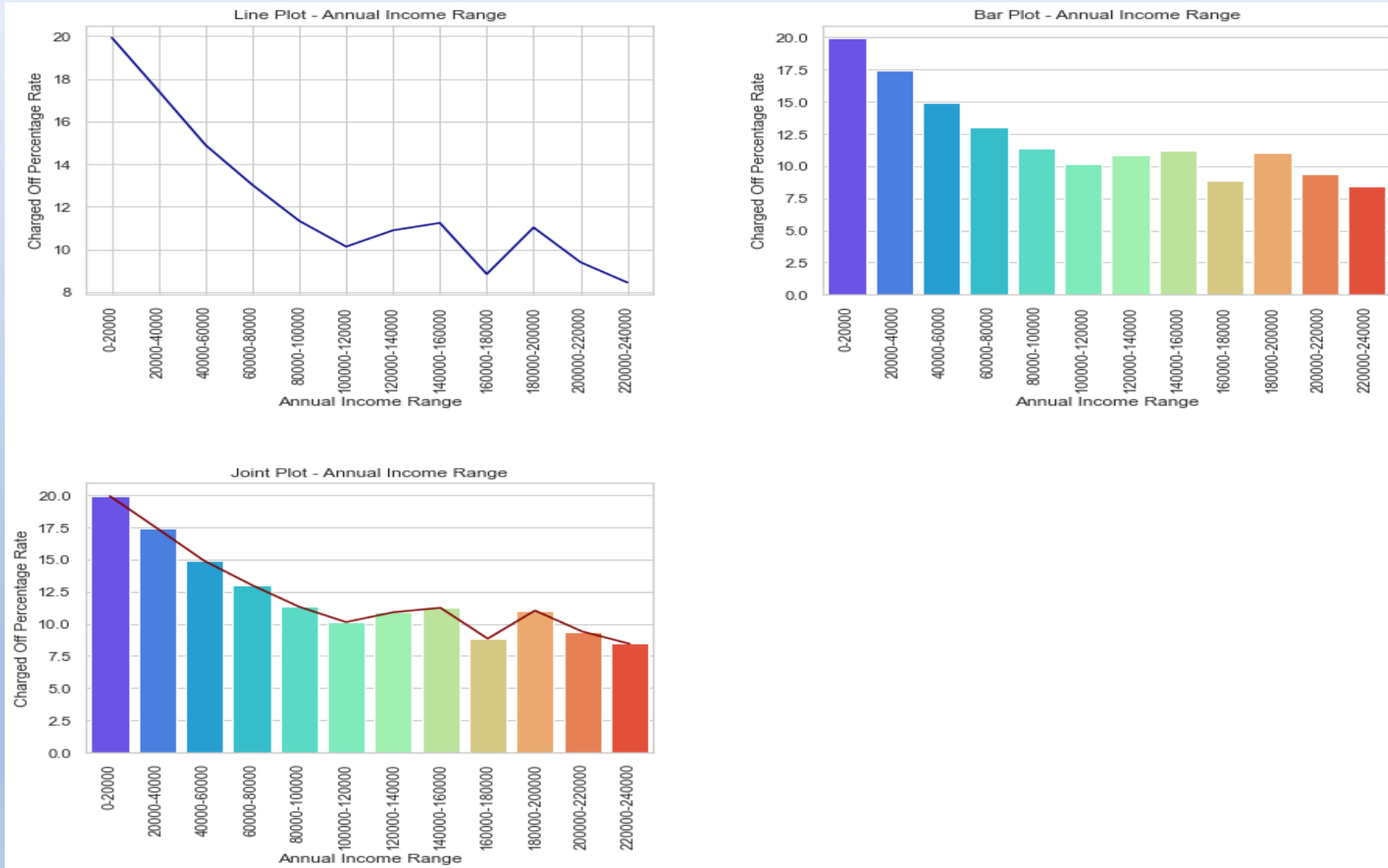
3. 14000-21000 = 16.13%



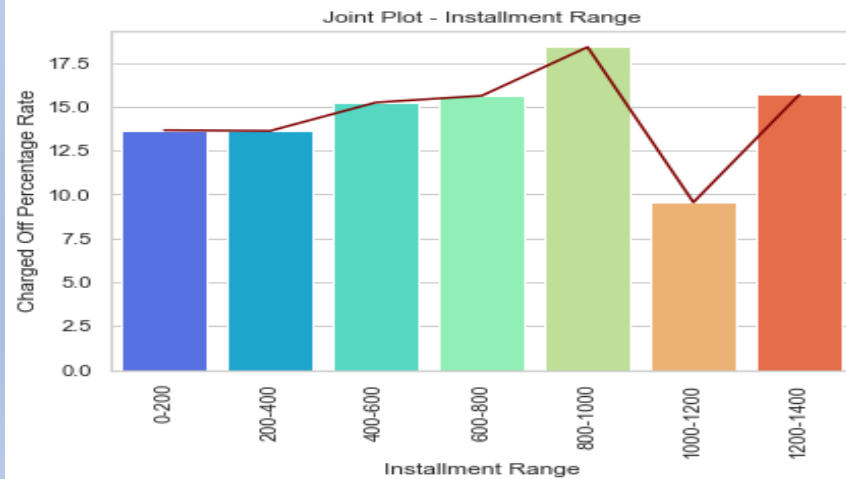
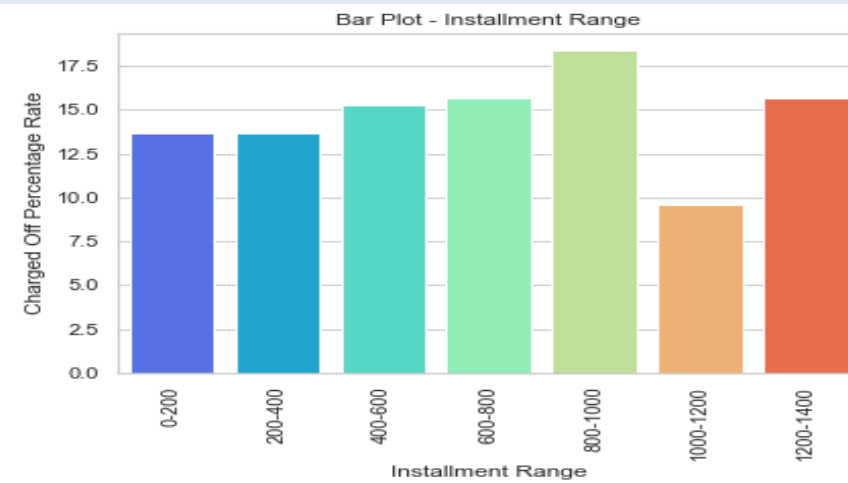
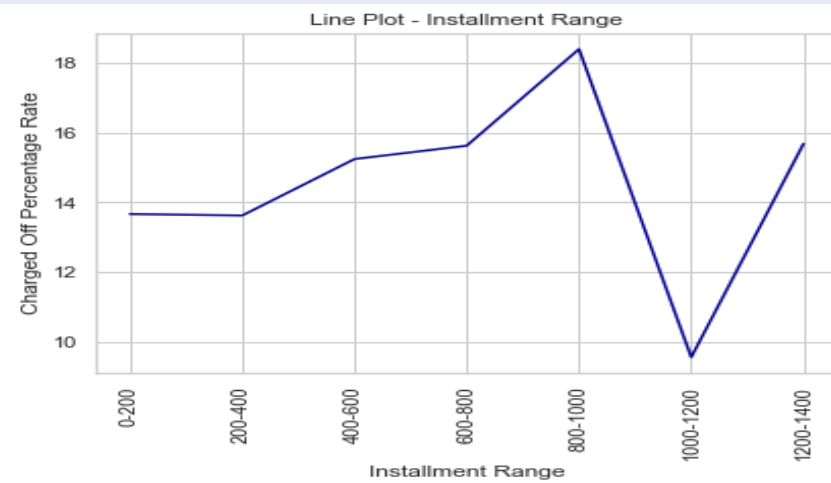
As the Interest Rate increases, Charge Off Rate Increases



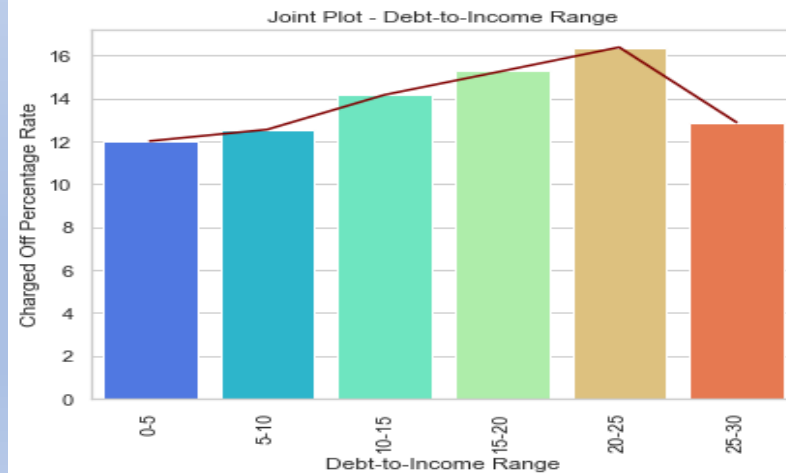
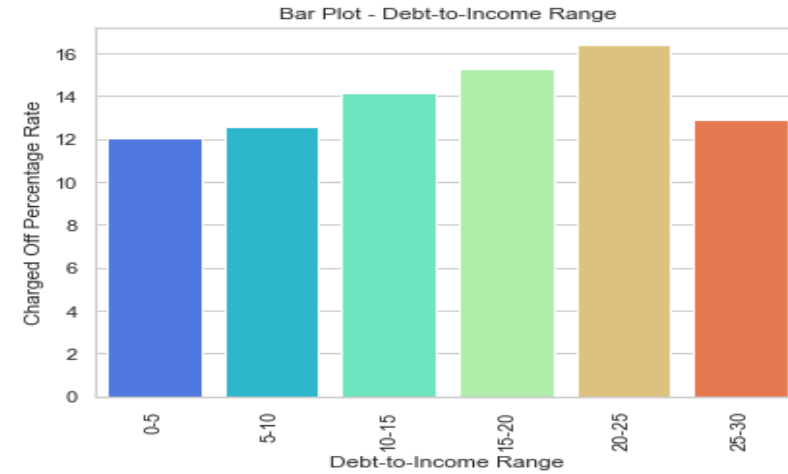
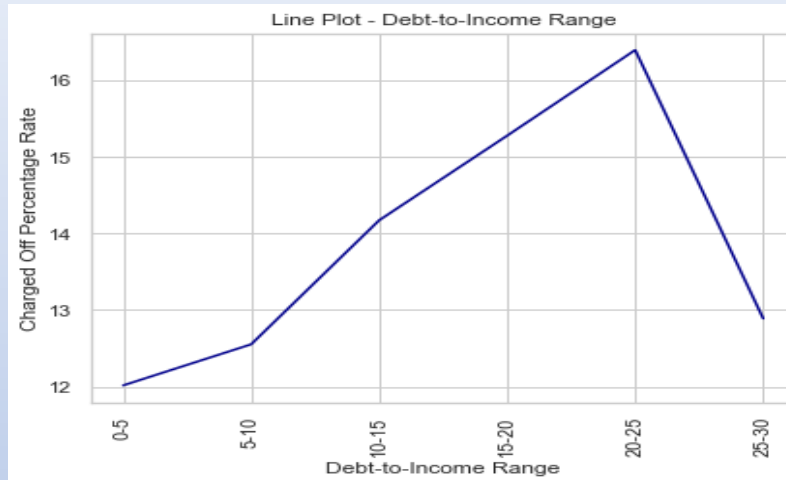
As the Annual Income decreases, Charge Off Rate Increases



As the installment increases, Charged Off Rate increases

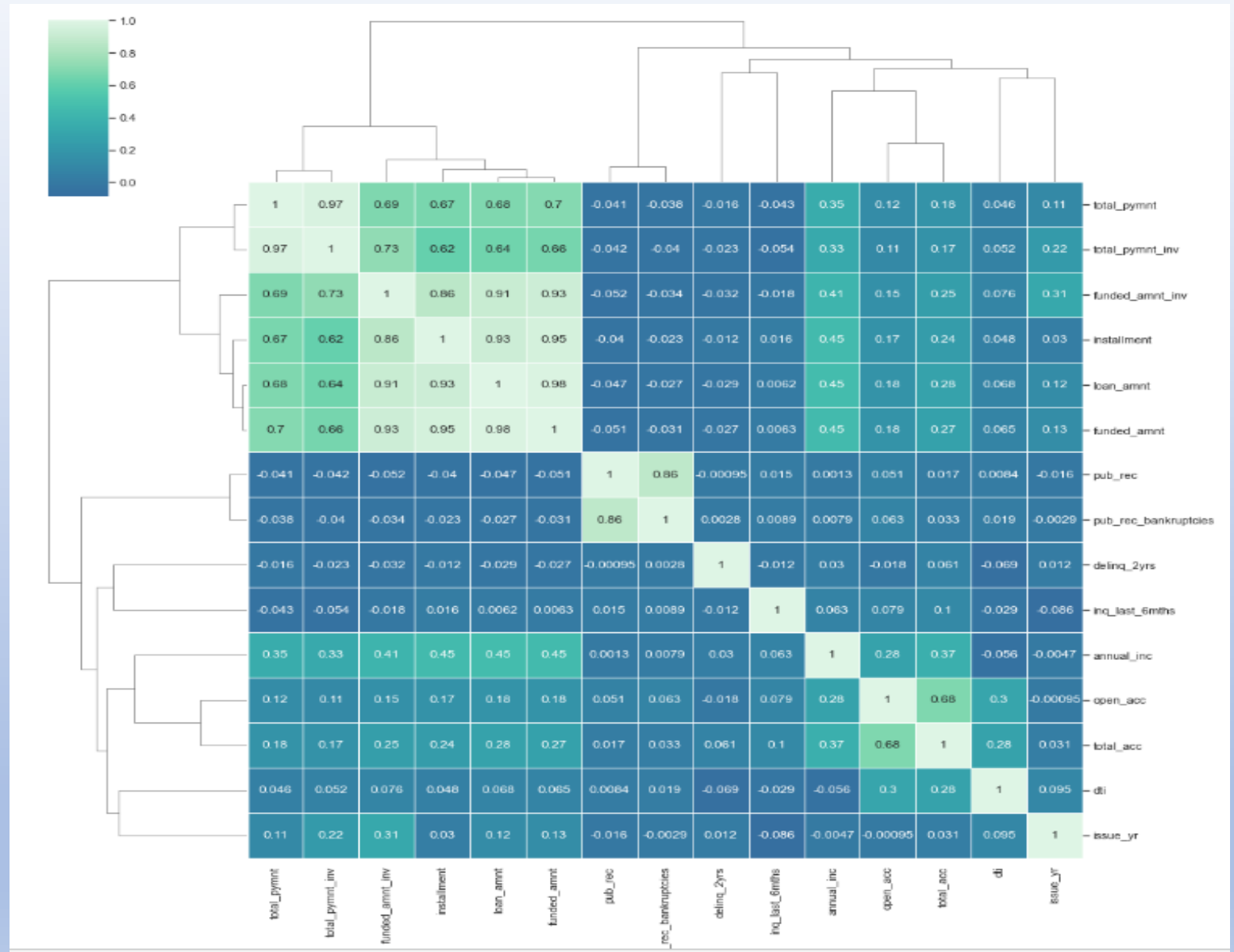


As dti (Debt-to-Income) value increases, Charged Off Rate increases



From the above Correlation metric, we can infer:

- installment, funded_amnt, loan_amnt and funded_amnt_inv are highly correlated (positive) to each other. They form a cluster.
- dti (Debt-to-Income Ratio) is highly correlated (positive) to issue_yr and vice-versa.
- int_rate_percent is negatively correlated to total_acc.



Thank You!