

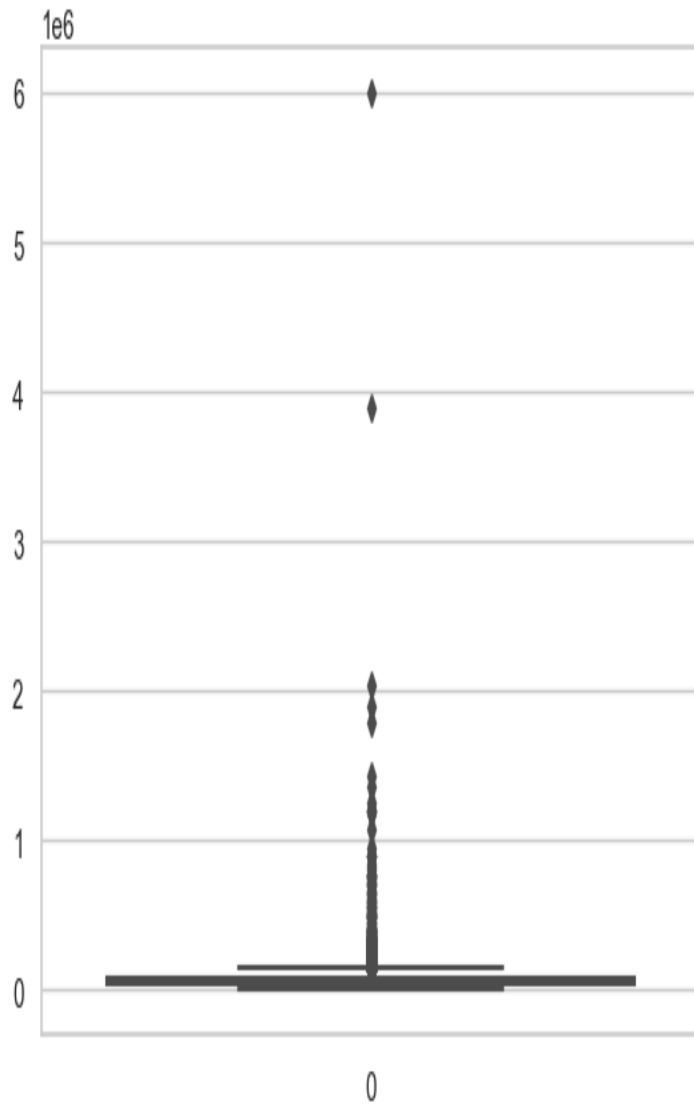


LENDING CLUB CASE STUDY

by
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- **Problem Statement:** The Consumer finance 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
- **Data Focus:** We have narrowed our analysis to focus on informative columns such as debt-to-income ratio (DTI), Annual Income, Loan status, purpose, and house ownership.
- **Data Challenges:** The dataset provided is skewed and contains multiple Null and NA values, which necessitated careful pre-processing.
- **Analysis Overview:** Our analysis involves:
 - Data pre-processing to address skewness and missing values.
 - Exploratory Data analysis of relevant variables.
 - Identifying potential indicators of loan defaulters.

DATA UNDERSTANDING

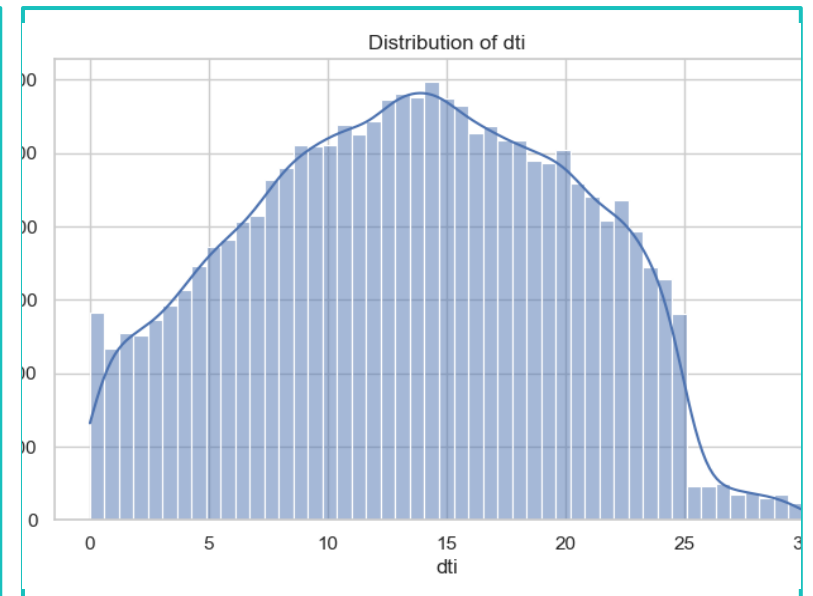
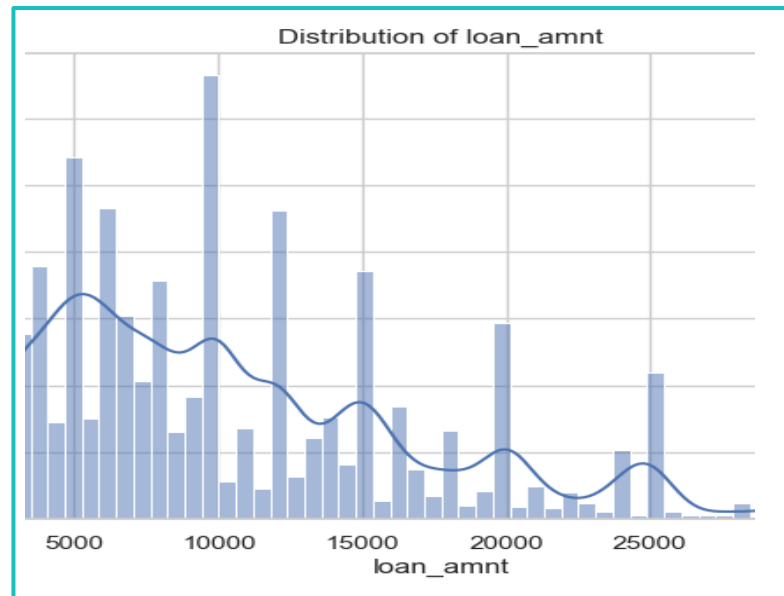
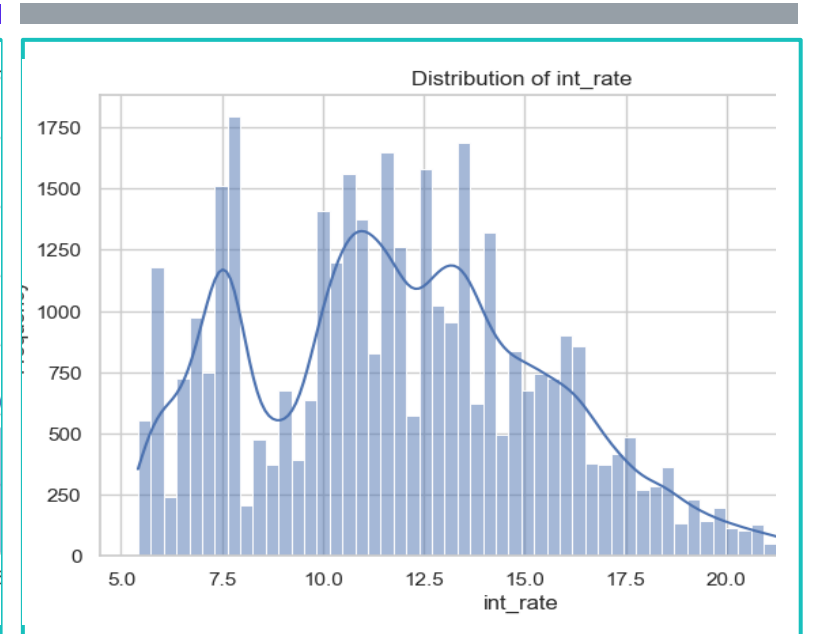
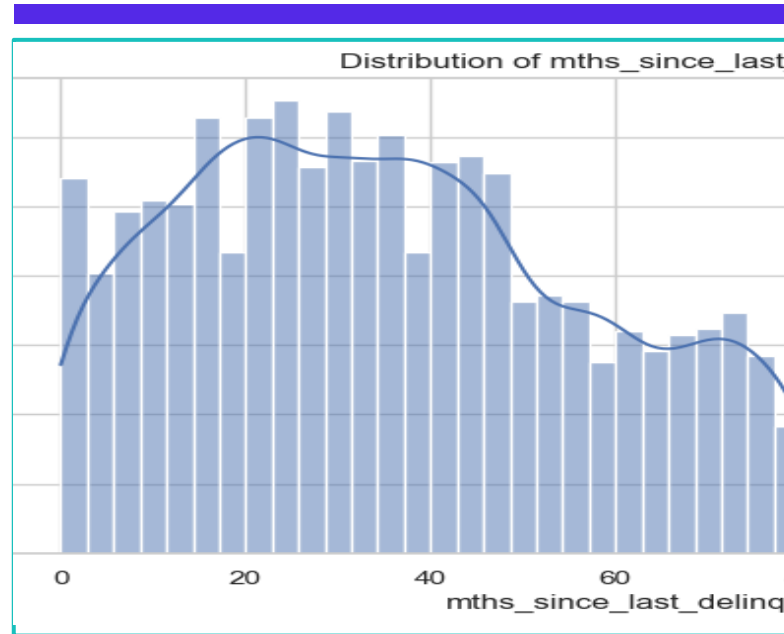


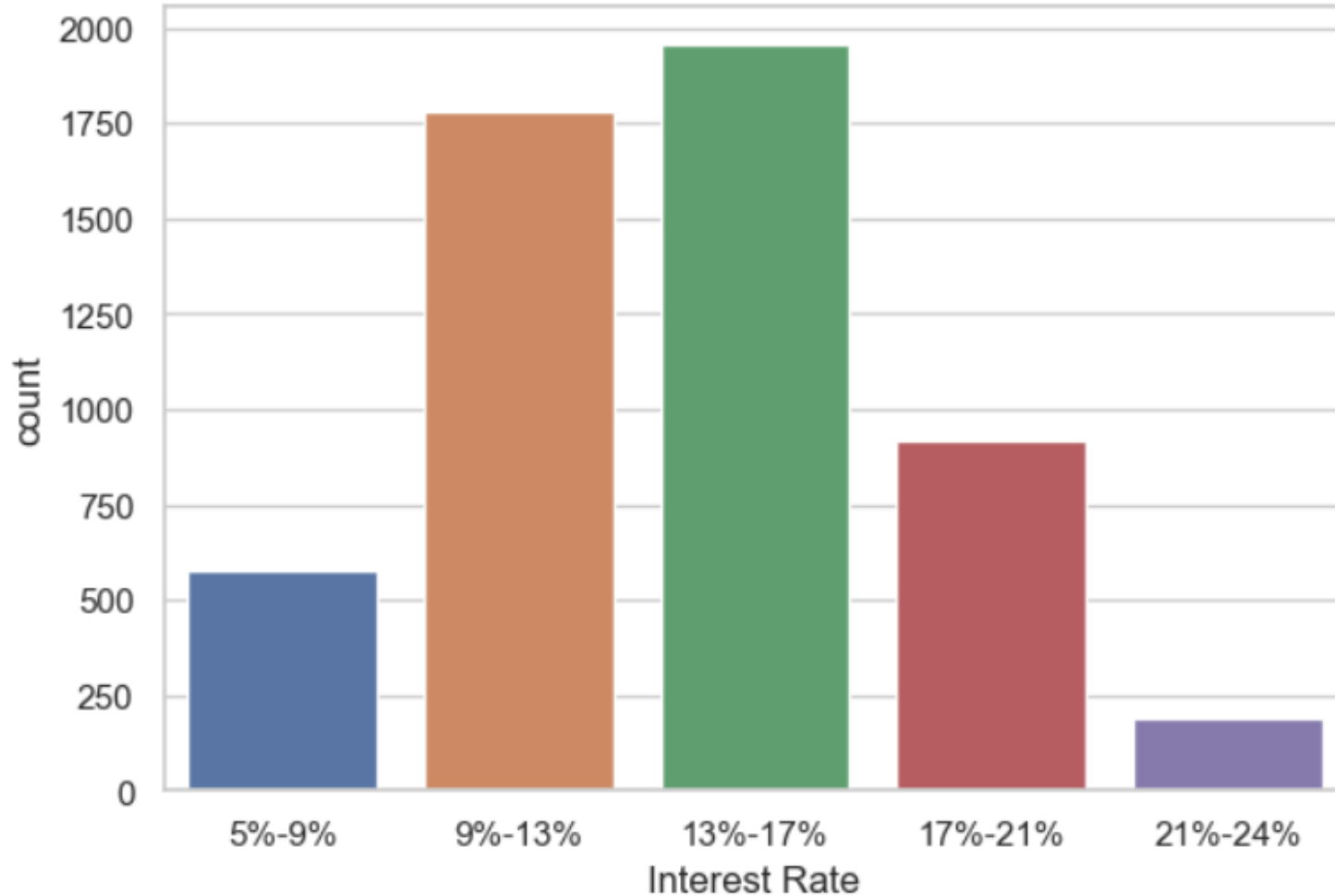
DATA CLEANING

- Converted 'issue_d' column to datetime format.
- Extracted 'issued_date' and 'issued_year' into new columns.
- Converted multiple columns to numeric.
- Checked for and handled missing values.
- Removed unnecessary columns.
- Dealt with outliers using a 0.95 threshold.
- Removed records related to "Current" under Loan status for focused analysis.

UNIVARIATE ANALYSIS

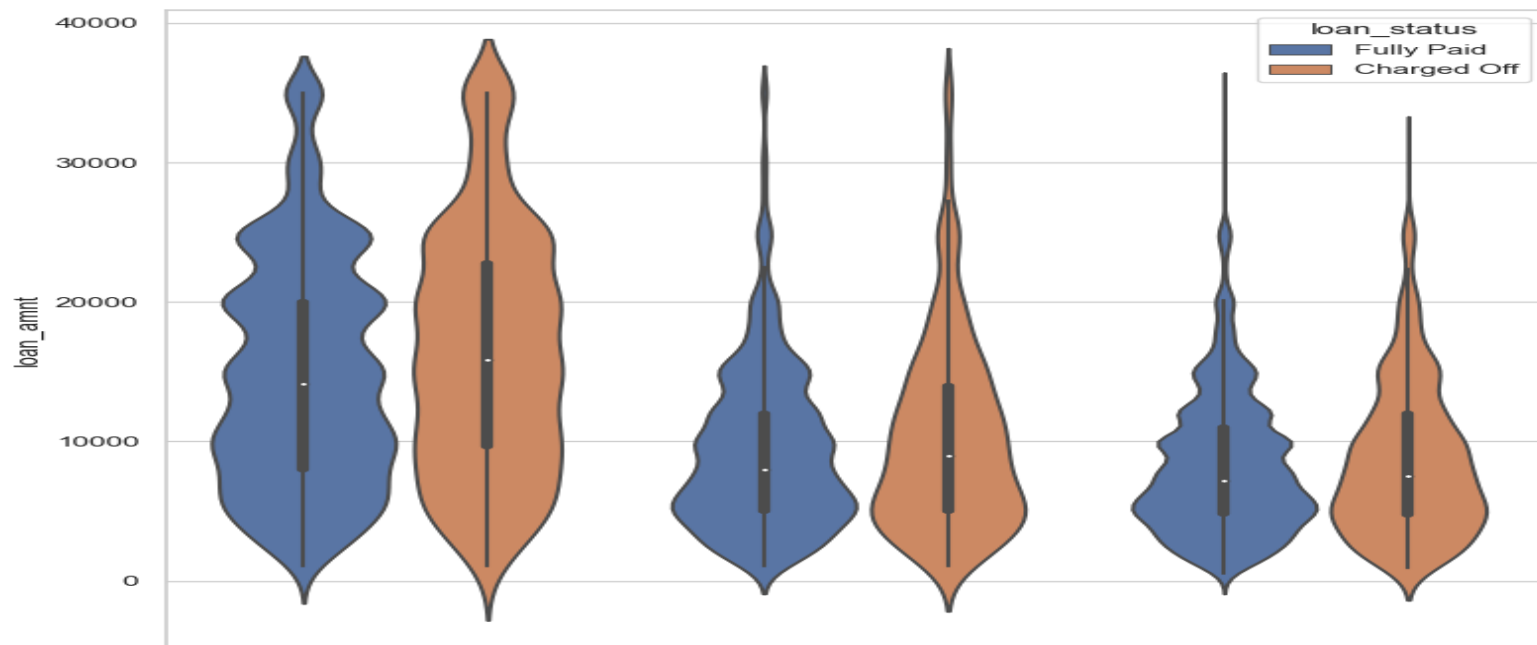
- Conducted univariate analyses for key columns, including 'loan_amnt,' 'funded_amnt,' 'funded_amnt_inv,' 'int_rate,' 'annual_inc,' 'dti,' 'delinq_2yrs,' 'inq_last_6mths,' and 'mths_since_last_delinq.'
- Utilized statistical measures and visualization techniques to explore the distribution, central tendency, within each column.





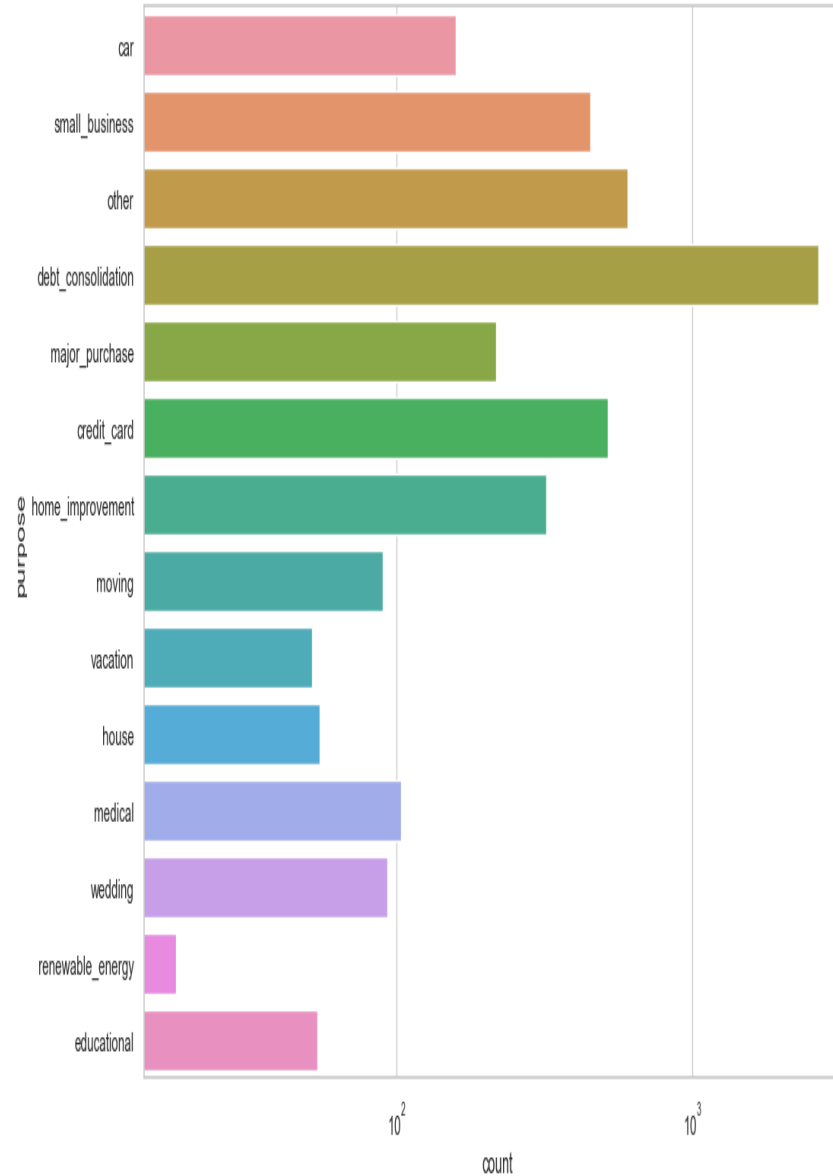
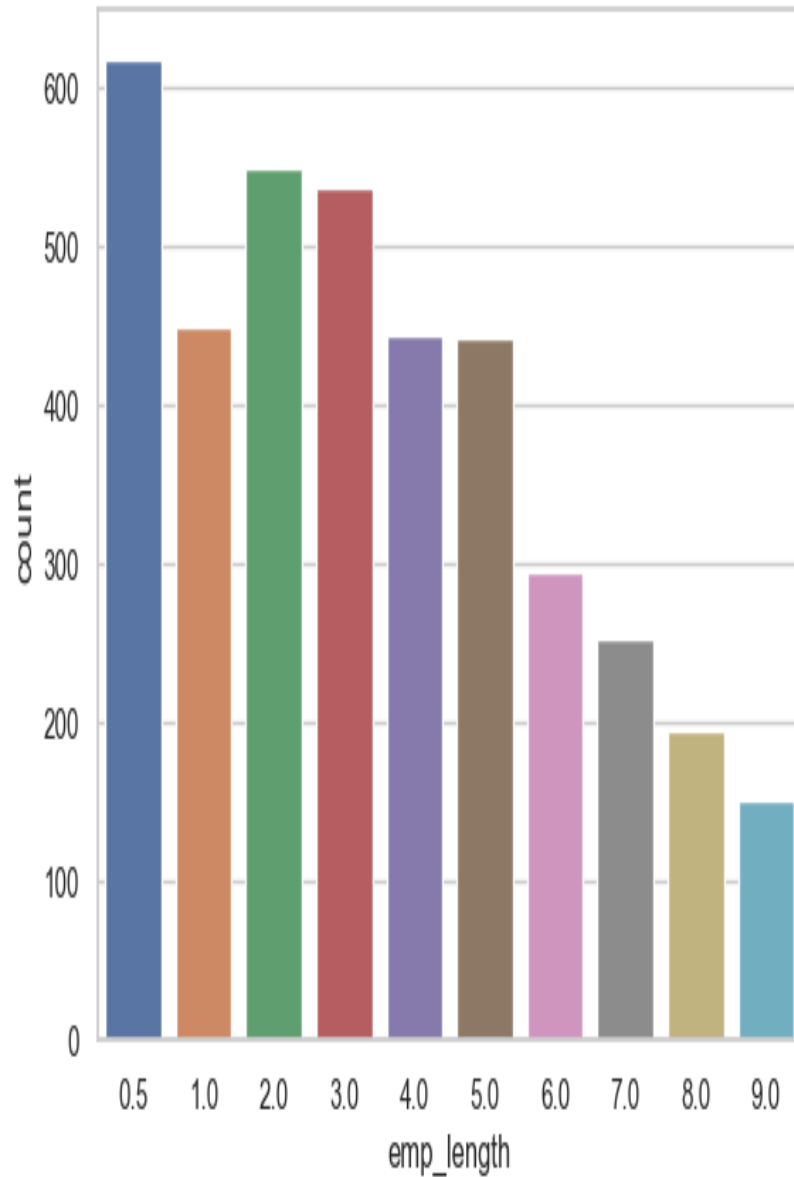
SEGMENTED ANALYSIS

- We have considered the Interest rates by grouping them to understand where we see the highest Charged off loans.
- It was observed that the loan applicants who are having 13% -17% interest rates are the ones who has highest charged off loan amounts.



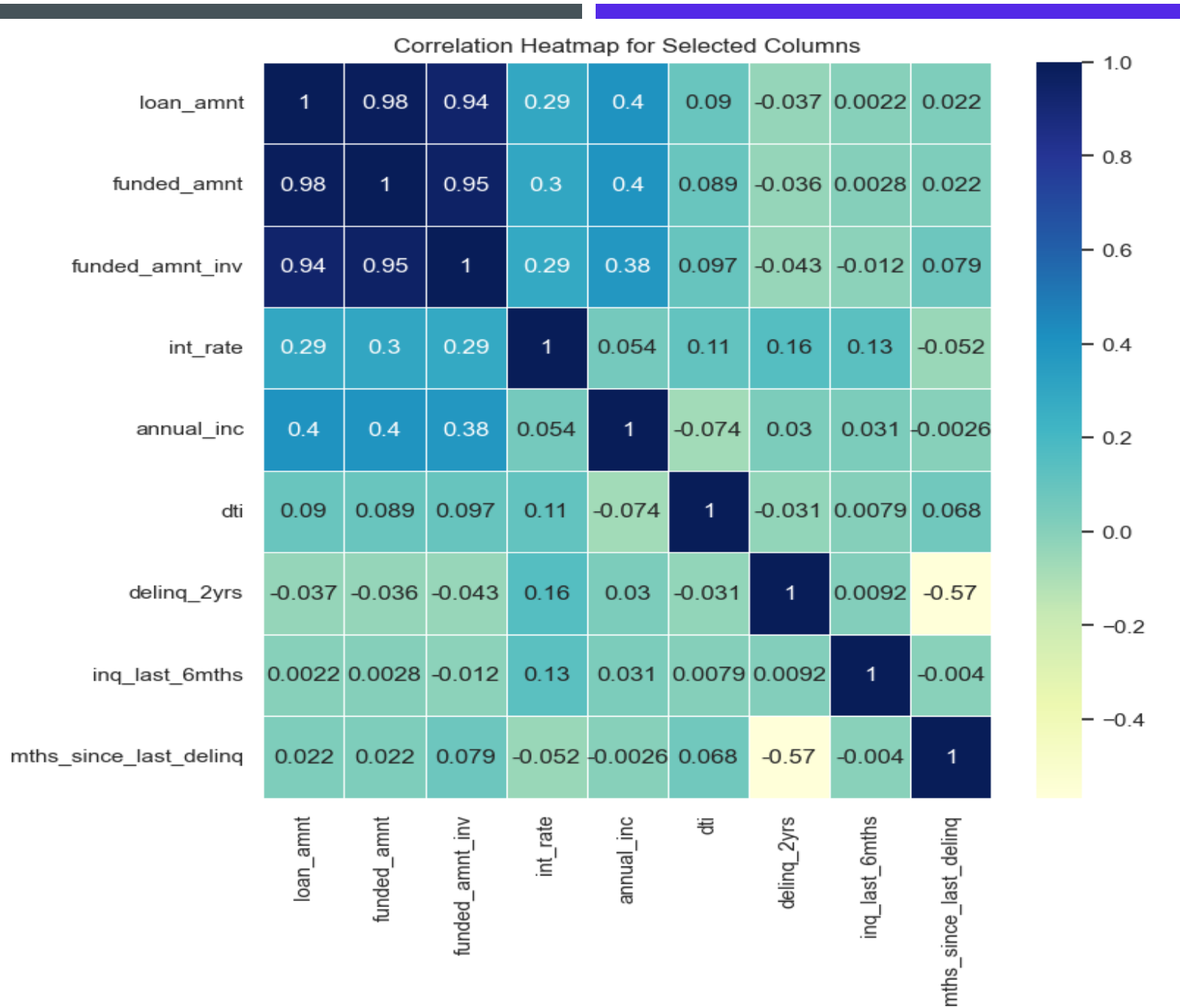
BIVARIATE ANALYSIS

- **Variables:** We examine two variables - loan amount and home ownership - in relation to loan status (charged off).
- **Purpose:** Identify patterns and insights that can help predict loan defaulters and minimize risk.
- **Analysis:** We had performed bivariate analysis to understand how loan amount and home ownership influence loan status.
- **Outcome:** We observe a significantly higher likelihood of default among individuals with 'RENT' and 'MORTGAGE' as their housing status.



BIVARIATE ANALYSIS

- **Variables:** We examine two variables – purpose and emp length- in relation to loan status (charged off).
- **Purpose:** Identify patterns and insights that can help predict loan defaulters and minimize risk.
- **Analysis:** We had performed bivariate analysis to understand how employee length and purpose influence loan status.
- **Outcome:** Individuals with employment lengths less than 1 year and 3 years, as well as those with the purpose of debt consolidation and credit card usage, exhibit a higher propensity for defaulting on loans.



CORRELATION

- The primary correlation observed indicates that loan amount, funded amount, funded amount invested, and annual income are closely interrelated.

The Company must start considering a few points while approving the loan amount to its customers.

- If the applicant is applying loan based on the Purpose of Debt _Consolidation.
- If the applicant's Employee length or tenure of the job is below 1 year
- If the applicant's term of the loan is 36 months
- If the applicant's home ownership is "Rent"
- If the applicant is from CA (California)
- If the applicant's Grade is B
- If the Loan status of the applicant is "Not Verified"
- If the applicant's interest rate is 13-17%
- If there are 0 enquiries in the last 6 months
- If the applicants who have an income of range 31,000 - 58,500
- If the applicants Loan amount is in between 5,500 - 10,500
- If the applicants monthly installments are between 140 - 275
- If the applicants applying loan for 'home improvement' whose income is between 60k -70k
- If the Dti is in between 12-18

FINAL ANALYSIS



THANK YOU
