Lending Club Case Study

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Aims and objectives

- To develop a basic understanding of risk analytics in banking and financial services

- To understand how data is used to minimise the risk of losing money while lending to customers

- To understand the driving factors behind loan defaults

Approach

- Read and understand the variables in the dataset

- Data cleaning and manipulation

- Data analysis

  - Univariate analysis

    - Categorical variables

    - Numerical variables

  - Segmented Univariate analysis

  - Bivariate and Multivariate analysis

- Conclusion

DTI

Average dti vs purpose

Average dti vs home ownership
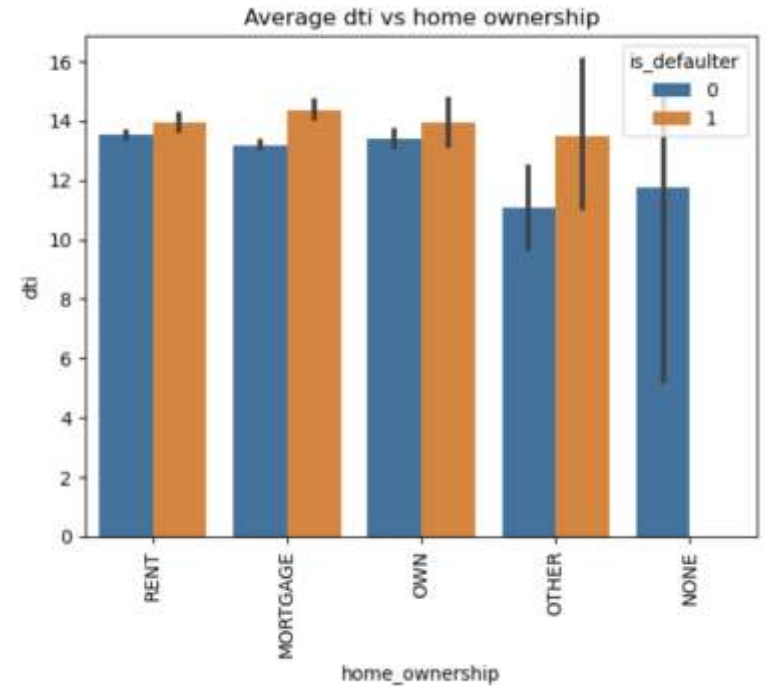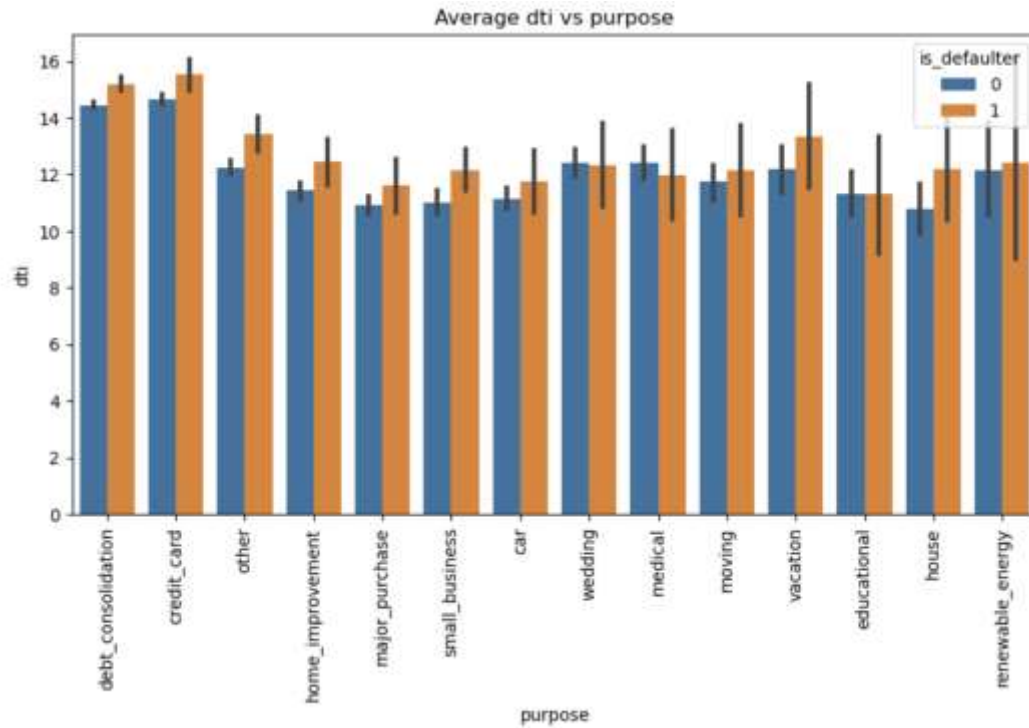
- The average dti for defaulters is higher than non-defaulters across all purposes, except wedding and medical and across all home ownership types.

Loan Amount

Average loan amounts vs purpose
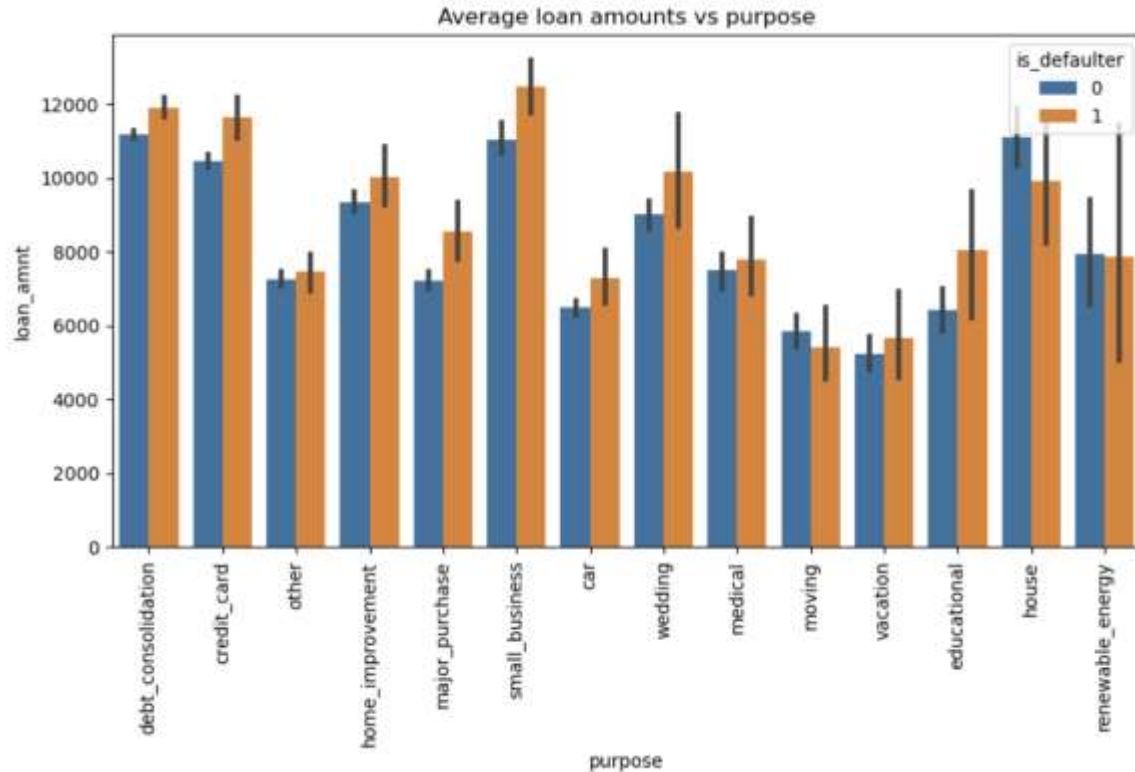
- Across all purposes (except house, moving and renewable_energy), the average loan amount is larger for defaulters compared to non-defaulters.

Annual Income
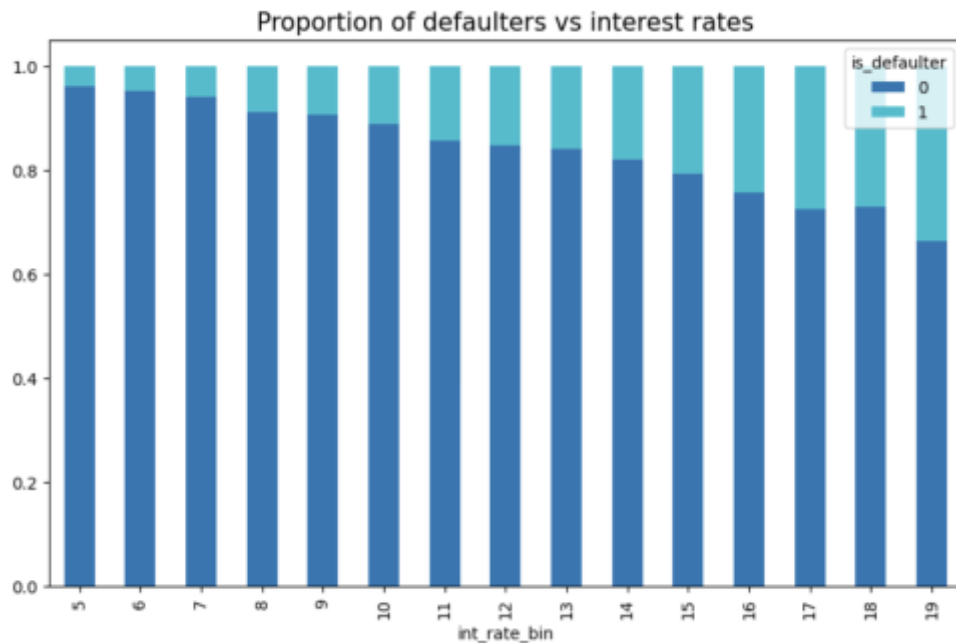

Average annual incomes vs grades
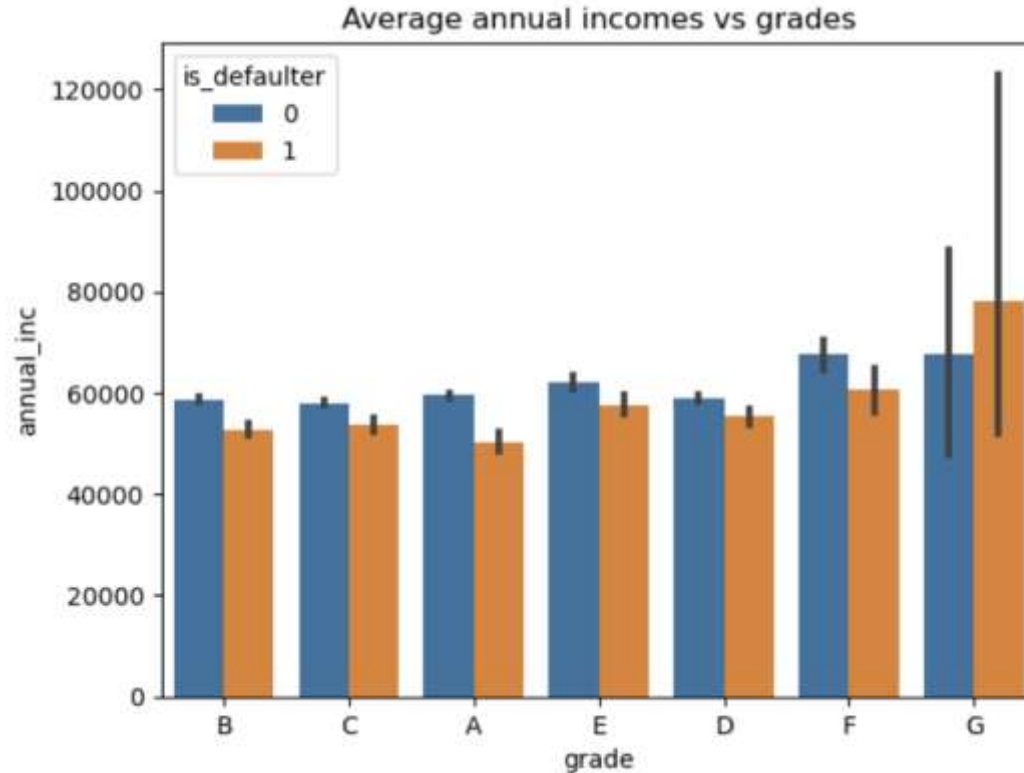
- The average annual income of defaulters is lower than that of non-defaulters across different grades.

Grade

Average interest rates vs grades
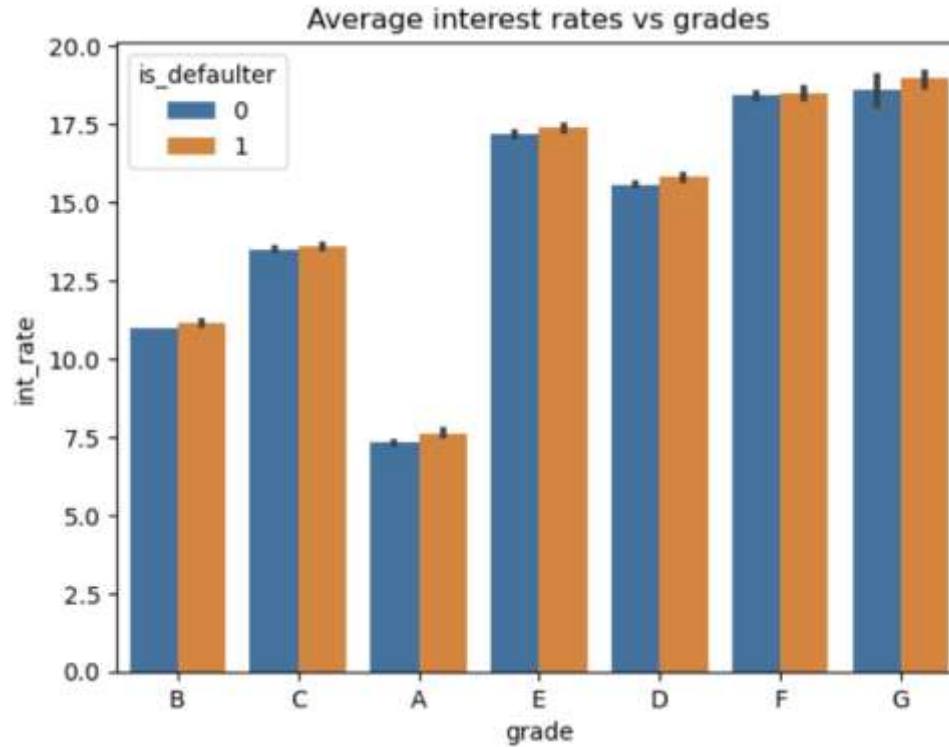
- With poorer grades, interest rates increase.

Interest Rate

Proportion of defaulters vs interest rates

- The proportion of defaulters increase with increase in interest rates.

Conclusion

- If the dti of an applicant is greater than the average dti for non-defaulters for a certain category, the applicant is more likely to default on the loan.

- If the loan amount of an applicant is larger than average loan amount of non-defaulters for most of the purposes, the applicant is more likely to default on the loan.

- People with annual income lower than the average annual income of non-defaulters are more likely to default.

- People with poorer grades are more likely to default.

- People with higher interest rates are more likely to default compared to those with lower interest rates.

Recommendations

- Check dti of applicant, it should be lower than average of non-defaulters for any category

- The loan amount of an applicant should be lower than average of non-defaulters

- The annual income of the applicant should be at par with average of non-defaulters

- The grade of the applicant should be good for loan approval