

# Lending Club Case Study

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# Objective

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The Objective of this case study is to implement EDA technique on a real world problem and understand the insights and present in a business first manner via presentation.

Benefits of the case study:

- Gives a idea about how EDA is used in real life business problems.
- It also develops a basic understanding of risk analytics in banking and financial services.
- How the data is used to minimize loss of money while lending it to clients.
- It improves our understating of visualization and what charts to use for real life data.

# Business Understanding

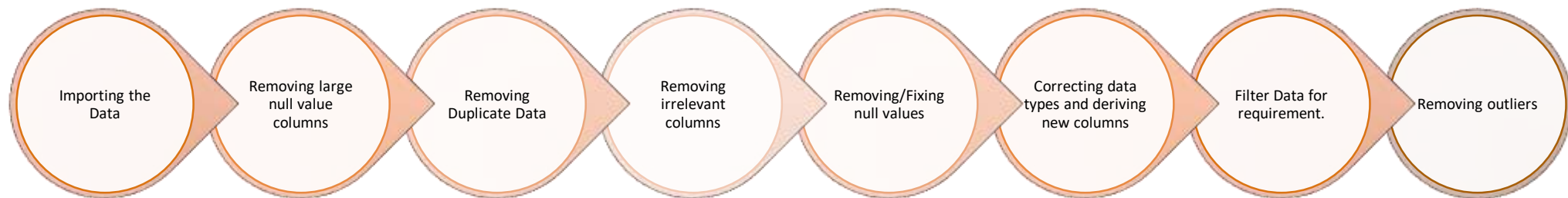
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The business objective is to take a decision whenever they receive a loan application whether to reject or approve based on certain variables.

## Dataset Details:

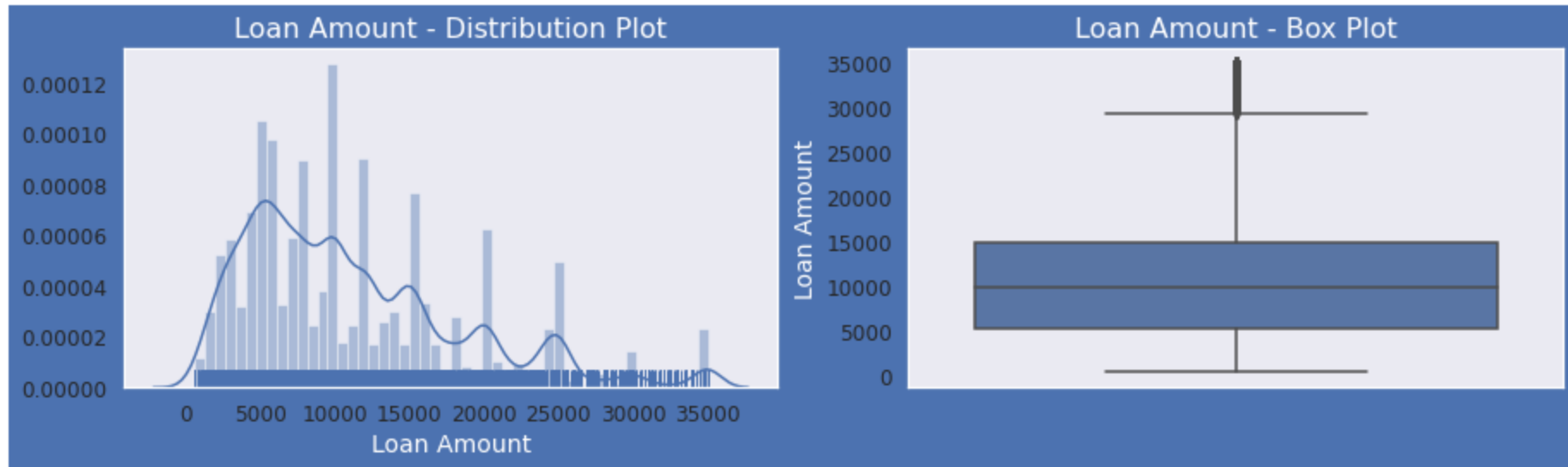
The data given below contains information about past loan applicants and whether they 'defaulted' or not. Data has details regarding approved loan not the rejected ones. It has 3 status of loan which is Fully Paid, Current and Charged-Off.

## Data Clean-up and preparation process:



# Loan Amount

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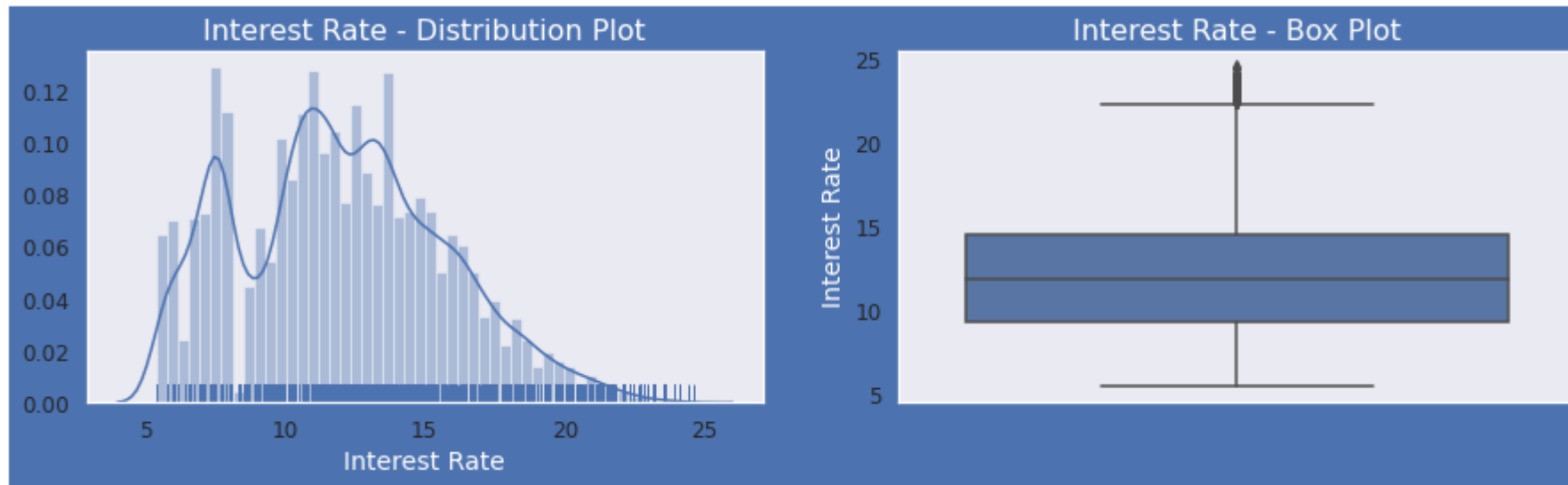


- **Loan Amount:**

Above plot show that most of the Loan amounts are in range of 5000 - 15000

# Interest Rate

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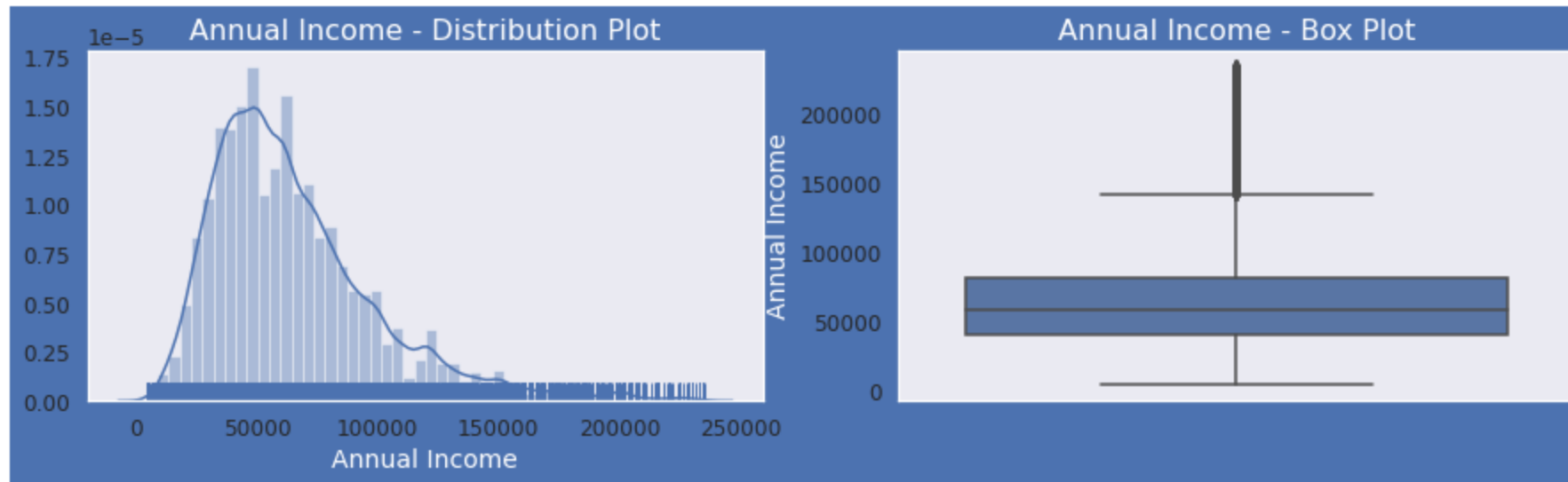


- **Interest Rate:**

Above plot show that most of the Interest Rates on loans are in range of 10% - 15%

# Annual Income

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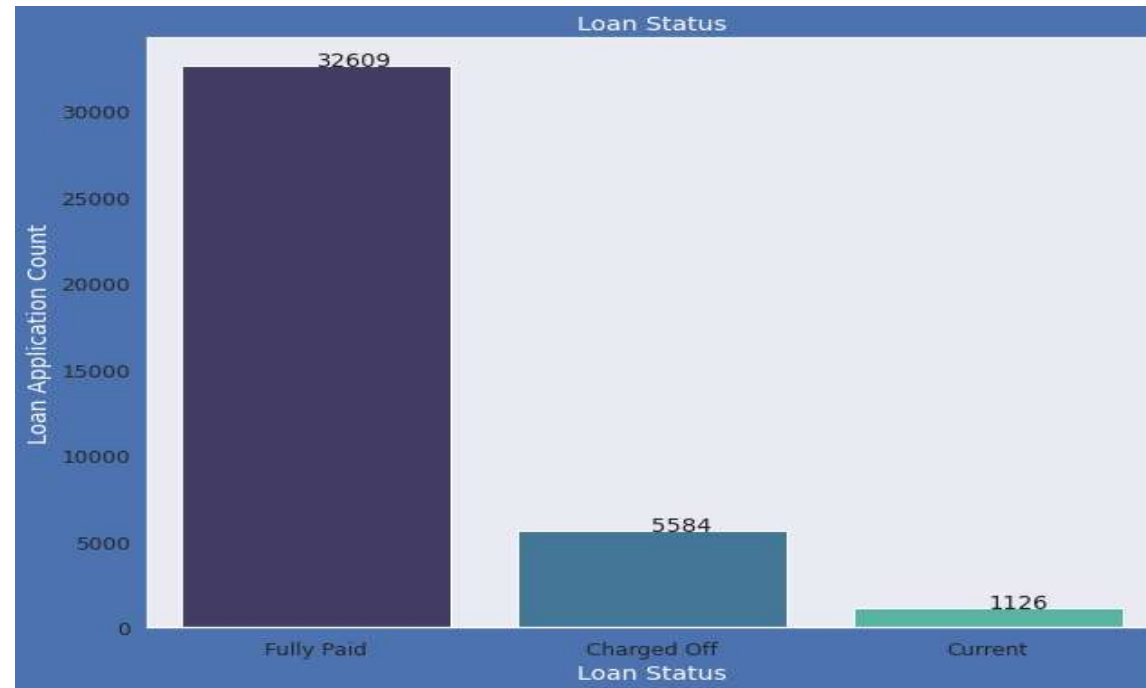


- **Annual Income:**

Above plot show that most of the borrower's Annual incomes are in range of 40000- 80000

# Loan status

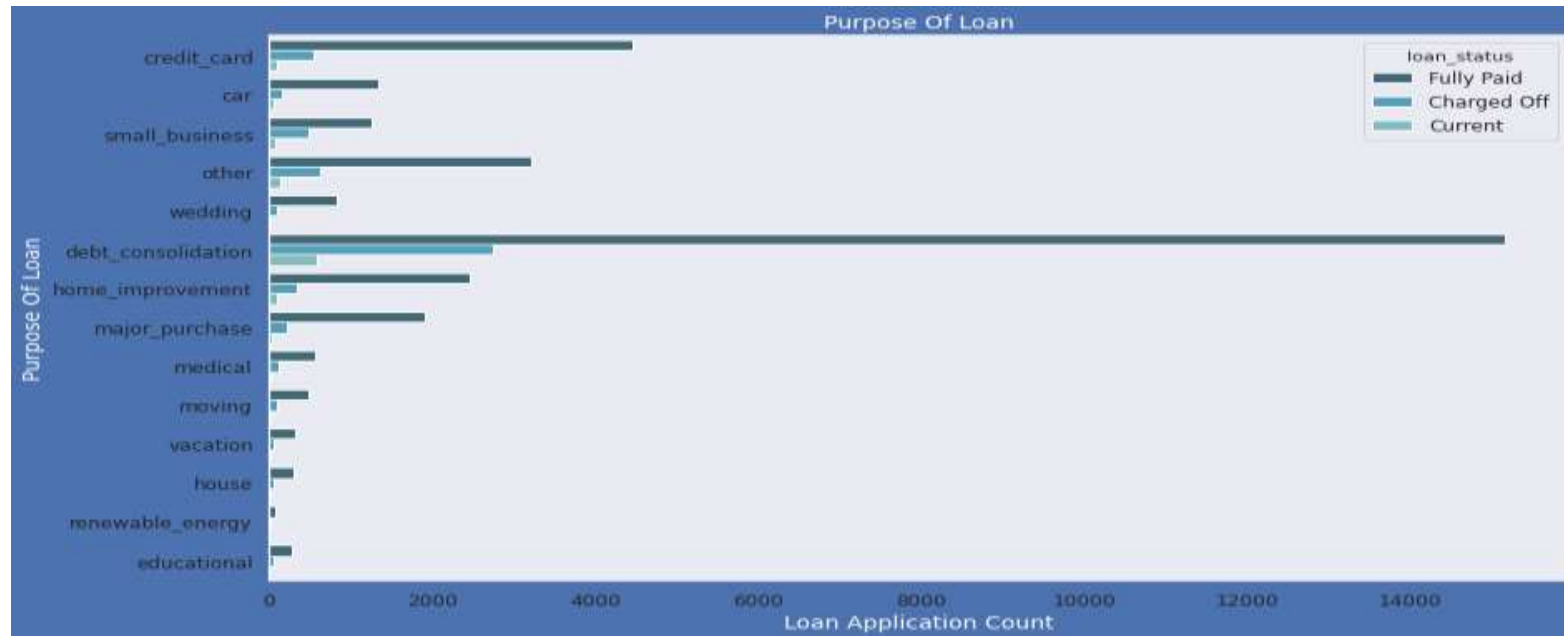
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- **Annual Income:**

Above plot show that close to 14% loans were charged off out of total loan issued.

# Purpose of Loan

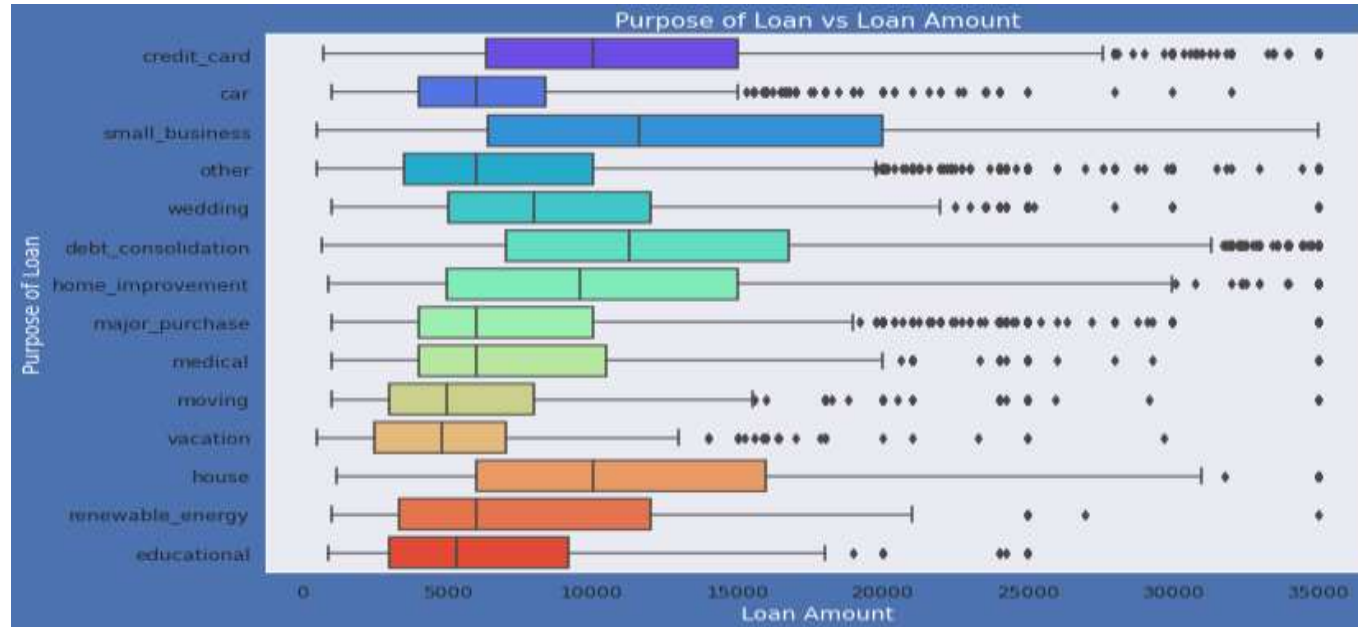


## ■ Purpose of Loan:

Above plot show that most of the loans were taken for the purpose of debt consolidation & paying credit card bill.



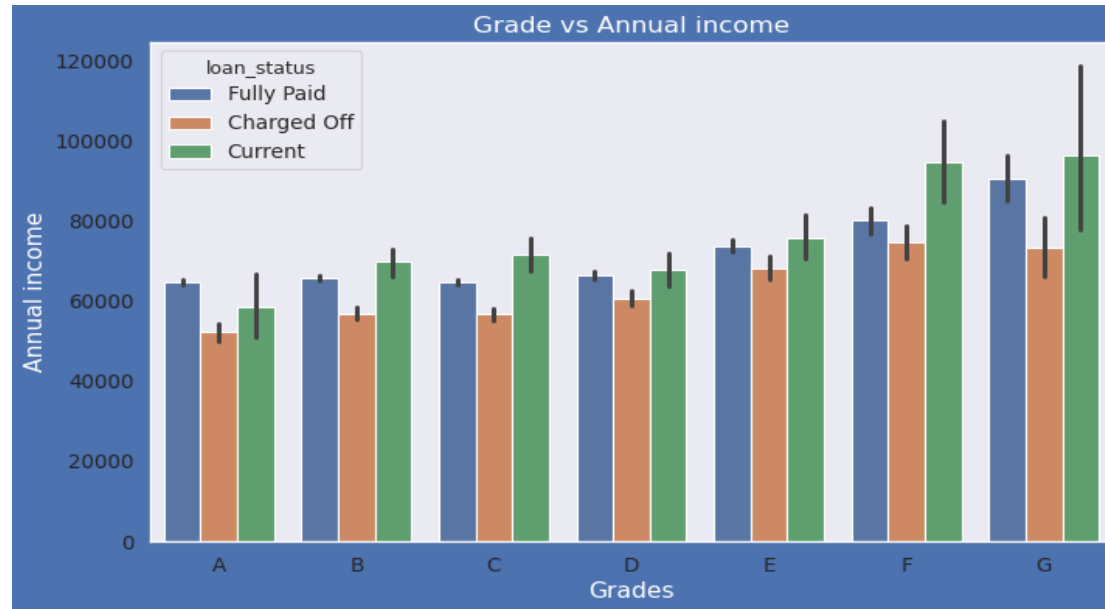
# Purpose of Loan vs Loan Amount



## Purpose of Loan vs Loan Amount:

- Median, 95th percentile, 75th percentile of loan amount is highest for loan taken for small business purpose among all purposes.
- Debt consolidation is second and Credit card comes 3rd. Debt consolidation is second and Credit card comes 3rd.

# Grade vs Annual Income



## Grade vs Annual Income:

- From this we can conclude that the ones getting 'charged off' have lower annual incomes than the ones
- who 'paid fully' for each and every grade (i.e. at same interest range)

# Recommendations

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## Recommendations

Major Driving factor which can be used to predict the chance of defaulting and avoiding Credit Loss:

1. DTI
2. Grades
3. Verification Status
4. Annual income

Other considerations for 'defaults' :

1. Borrowers having annual income in the range 50000-100000.
2. Borrowers having Public Recorded Bankruptcy.
3. Borrowers with least grades like E,F,G which indicates high risk.
4. Borrowers with very high Debt to Income value.
5. Borrowers with working experience 10+ years.