



Loan Lending Case Study

BY
KAUSTHUB KESAVADAS

Problem Statement

- ▶ As part of finance team of Loan Lending Company, identify risky applicant based on number of attributes to minimize the amount of credit loss to the Company
- ▶ Use exploratory data analysis and visualize data to find risky applicants.

Analysis Approach

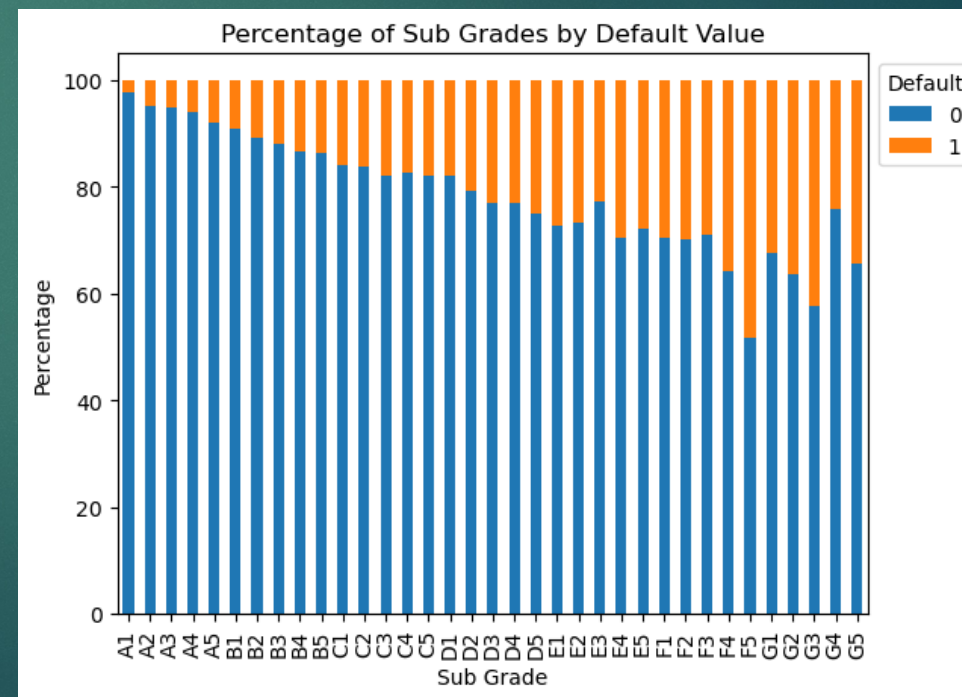
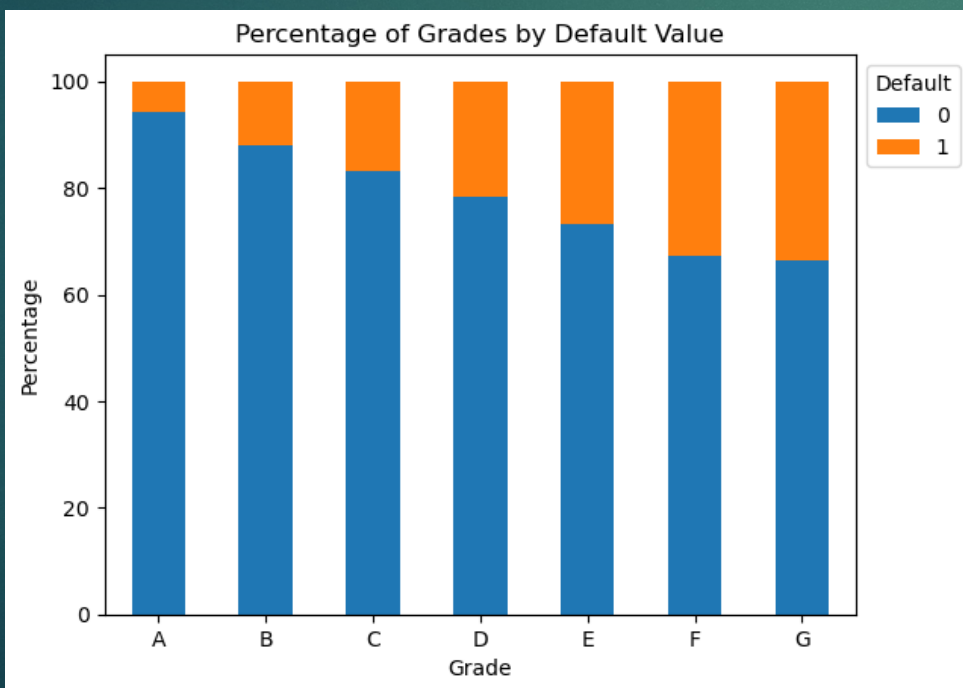
- ▶ Data Cleaning and imputing
 - ▶ From a total of 111 columns cleaned up null value columns, columns with only single value and columns with null values > 10%
 - ▶ Brought dataset down from 39717,111 -> 37543, 42
- ▶ Univariate Analysis performed on
 - ▶ Grade: the grade is the category given to loan applicant based on which the risk of the loan is assessed in a way
 - ▶ Home ownership: whether loan applicant had own, rent, or other kind of house
 - ▶ Verification status: whether income verified, income source verified or income not verified
 - ▶ Term Length: Length of the loan
 - ▶ Purpose : Purpose of the loan
- ▶ Segmented Univariate Analysis on
 - ▶ Interest Rate: Binning the interest rates to find observations
 - ▶ Installment amount: Segmented analysis to identify an new connections

Overall Observations

- People with a weaker grade (C,D,E,F,G) of loan are more likely to default on the loans.
- People with weaker subgrades (C5,D5,E5,F5,G5) are more likely to default on the loans
- People with higher interest rates are more likely to default on loans
- Even if the income is verified, there is likelihood of the person defaulting on loans
- As term value increases the chances of the person defaulting increases

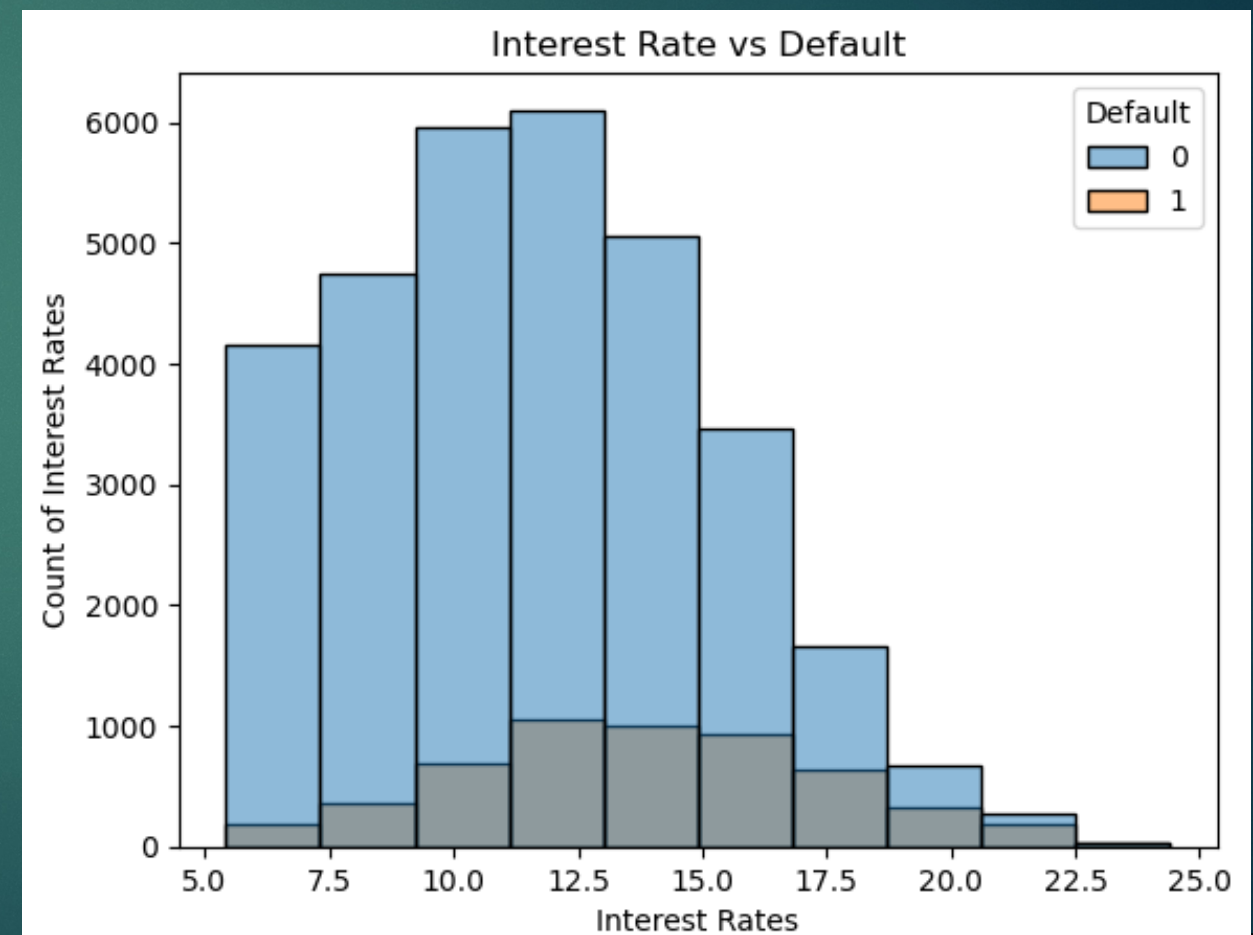
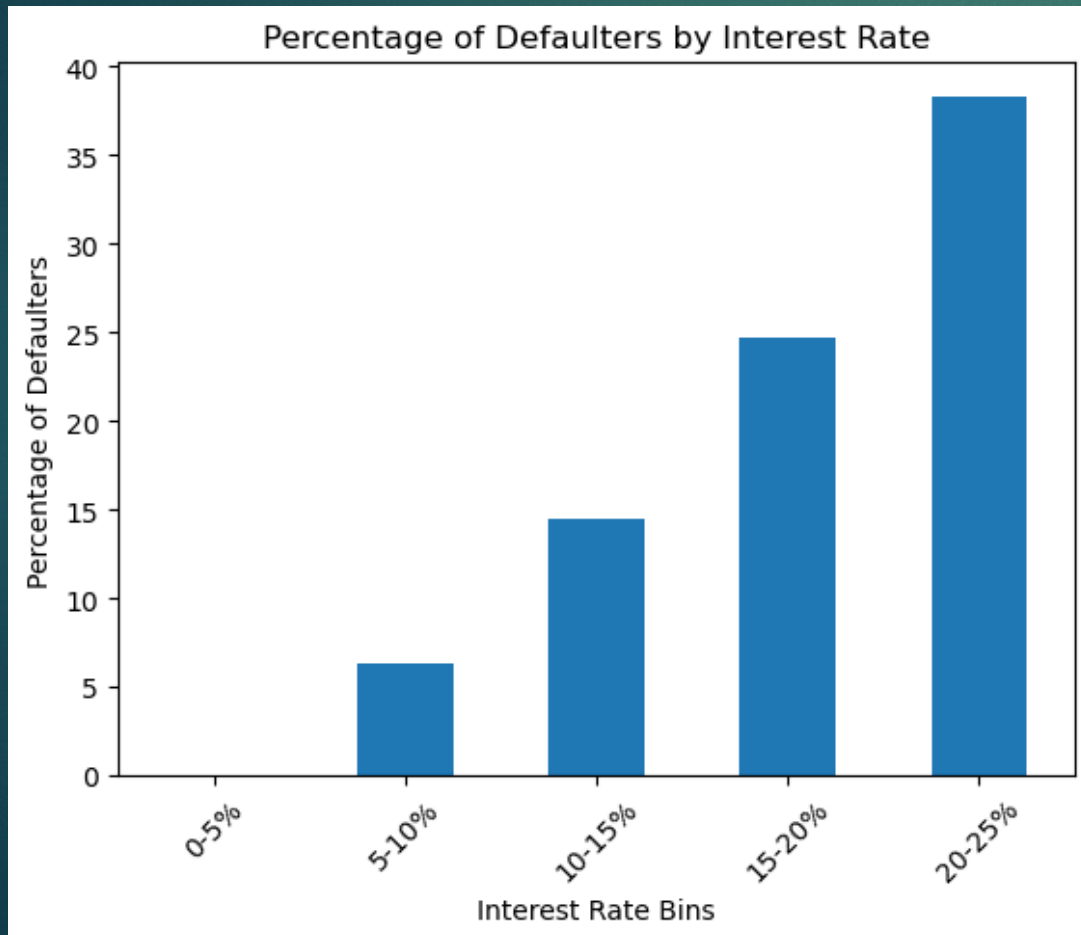
Grade Analysis

- ▶ Analysing Grade and Sub Grades: There is a significant correlation between Grades. The weaker the grade the more likelihood of defaulting on the loan. Grades. Grades D,E,F,G showed around 20%+ chance of defaulting on the loan
- ▶ Within the same grade Subgrades with higher numbers have higher defaulting chances



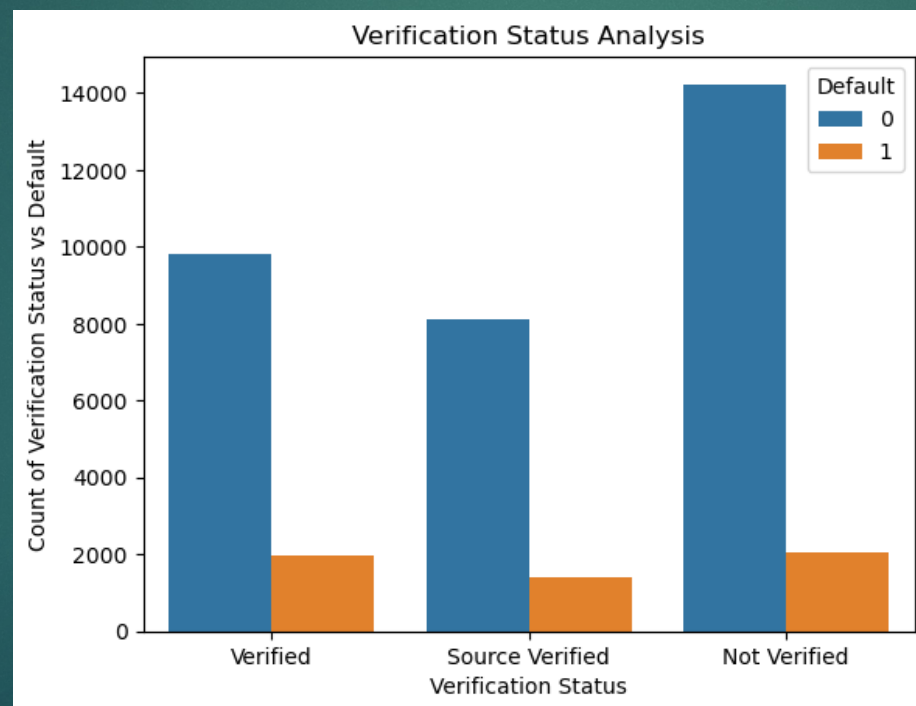
Loan Interest Rate Analysis

- ▶ As the interest rates go higher the applicants tend to default on the loans
- ▶ Interest Rates having 12.5% or higher have higher chances of defaulters



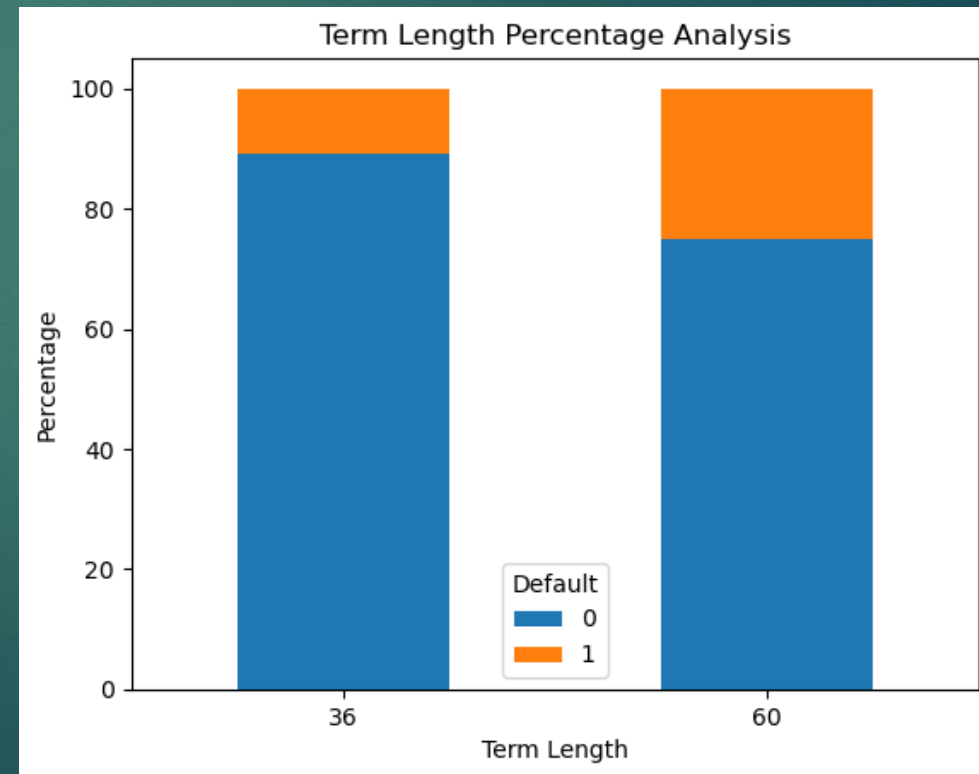
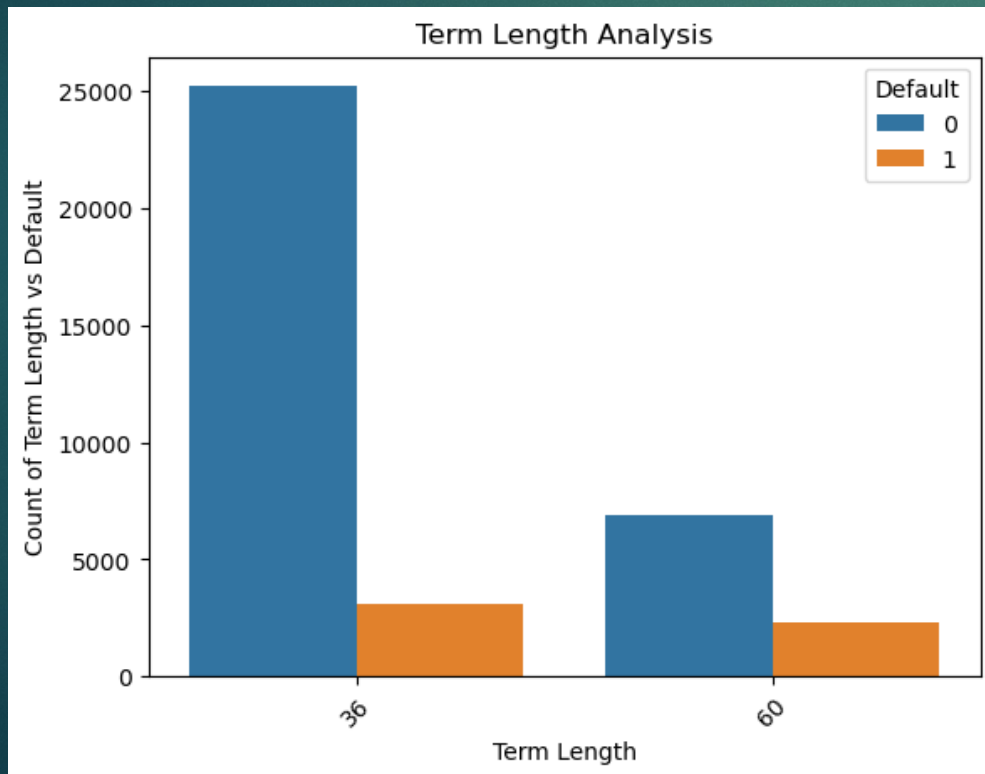
Verification Status

- ▶ Verifying the income or the income source does not prevent the applicant from defaulting on the loan



Term Length

- ▶ The higher the term length the more chances of the applicant defaulting on the loan



Final Observations

- ▶ People with a weaker grade (C,D,E,F,G) of loan are more likely to default on the loans.
- ▶ People with weaker subgrades (C5,D5,E5,F5,G5) are more likely to default on the loans
- ▶ People with higher interest rates are more likely to default on loans
- ▶ Even if the income is verified, there is likelihood of the person defaulting on loans
- ▶ As term value increases the chances of the person defaulting increases