Problem Statement:

You work for a **consumer finance company** that specialises in providing various types of loans to urban customers. When the company receives a loan application, it has to decide whether to approve or reject it based on the applicant’s profile. Two **types of risks** are associated with the bank’s decision:

If the applicant is **likely to repay the loan**, then not approving the loan results in a**loss of business** to the company.

If the applicant is**not likely to repay the loan**, i.e., they are likely to default, then approving the loan may lead to **financial loss** for the company.

The data given below contains information about past loan applicants and whether they ‘defaulted’. The aim is to identify patterns indicating that a person is likely to default, which may be used to deny the loan, reduce the loan amount, lend (to risky applicants) at a higher interest rate, etc.

In this case study, you will use EDA to understand how **consumer attributes** and **loan attributes** influence the tendency of defaulting.

The following image depicts the decisions that could be undertaken by the firm.

Diagram, waterfall chart

Description automatically generated

Data Understanding :

|  |
| --- |
| Customer Data |
| 1. Emp Length (How many years customer is working) |
| 1. Annual Income |
| 1. Employee Title |

|  |
| --- |
| Loan Information |
| 1. Loan Amount |
| 1. Funded Amount |
| 1. Term (number of months) |
| 1. Interest Rate |
| 1. Loan Status |
| 1. Loan Grade |

|  |
| --- |
| Customer Behaviour data |
| 1. Earliest credit line |
| 1. Recoveries |
| 1. Application Type |
| 1. Loan Purpose |

Calculating the overall default rate:

Chart, bar chart

Description automatically generated

It can be clearly seen that there are less % of default rate in the entire dataset.

The default rate is 14%.

Chart, bar chart

Description automatically generated

Time Frame of Data:

Increase in number of applicants by year.

2011 has highest number of applicants for loan.

**Loan Purpose Distribution : Debt Consolidation Loan is the most popular**

**Chart, bar chart

Description automatically generated**

**Default rates with respect to purpose of loan and term period – Both 36 months and 60 months has debt consolidation as highest default rate.**

**Chart, bar chart

Description automatically generated**

**Default rates with respect to grade – As Grade increases default rate increase A1 with low default rate A2 and goes on .**

**Chart, bar chart, histogram

Description automatically generated**