



# Lending Club Case Study

**Course : MS AI/ ML**

**Case Study : EDA - Lending Club Case Study**

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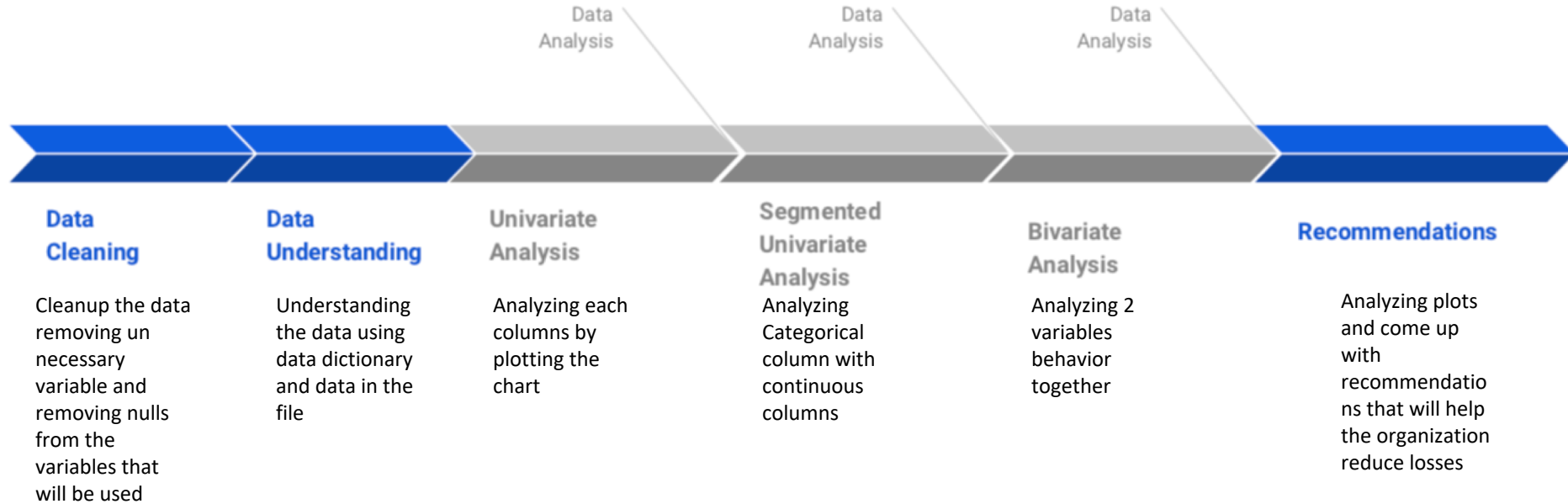
# Case Study Objectives

Understand the driving factors behind the loan default

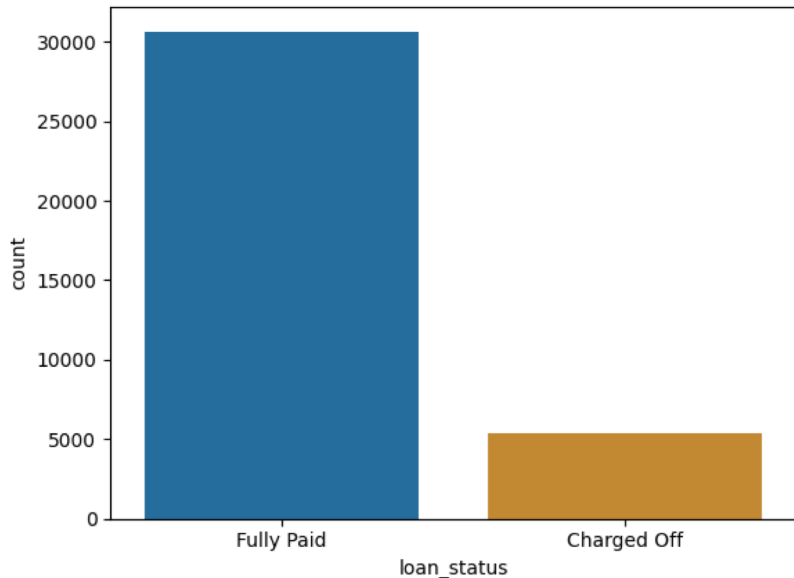
Use the information from past loan applicants to understand the traits that tend to defaults

Use this information to enable the organization to identify the applicants that may default in future.

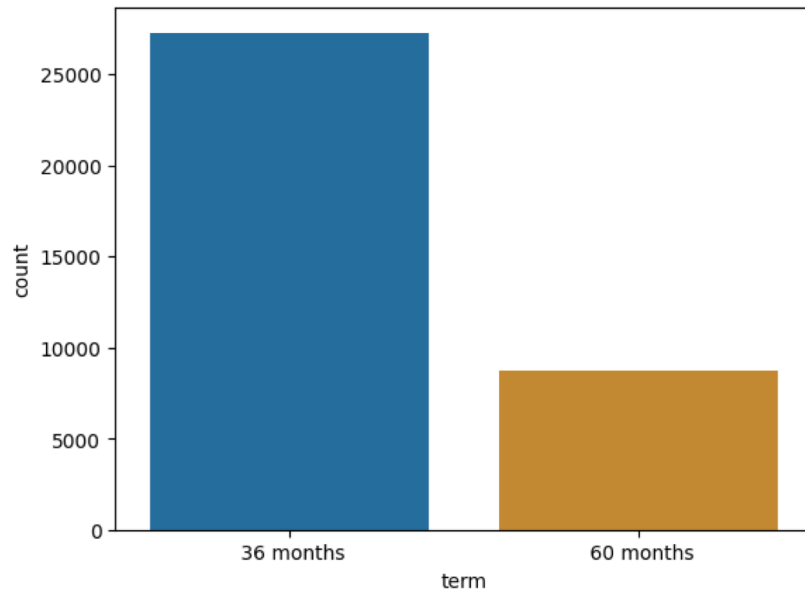
# Problem Solving Methodology



# Analysis

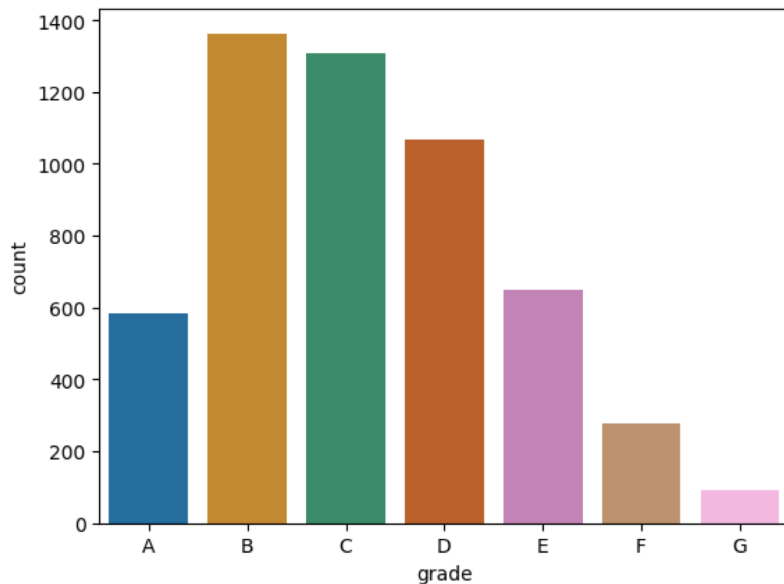


By looking at chart we can say, its an imbalanced data set as majority of the data set (>80%) belongs to Fully paid status

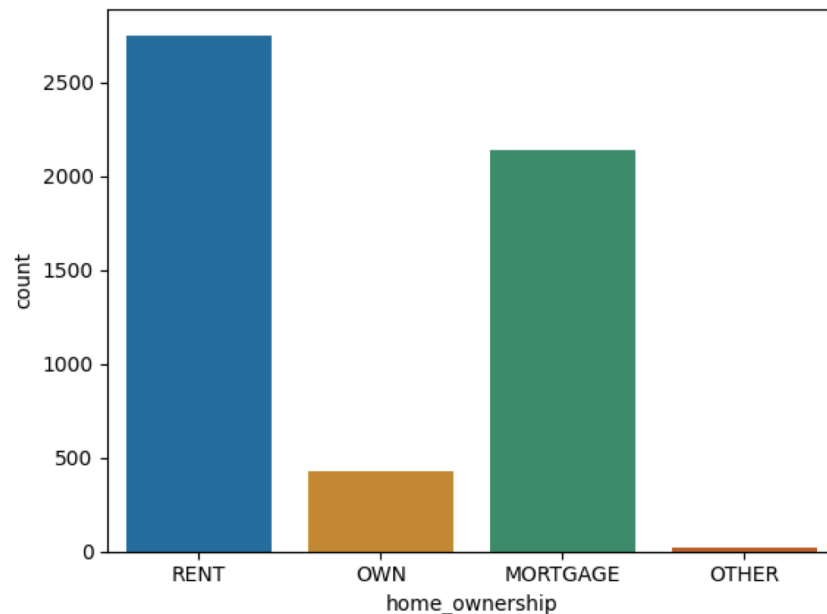


By looking at chart we can say, there are only 2 terms , 36 month and 60 month and most of the loans disbursed are for 36 month term (>75%)

# Analysis

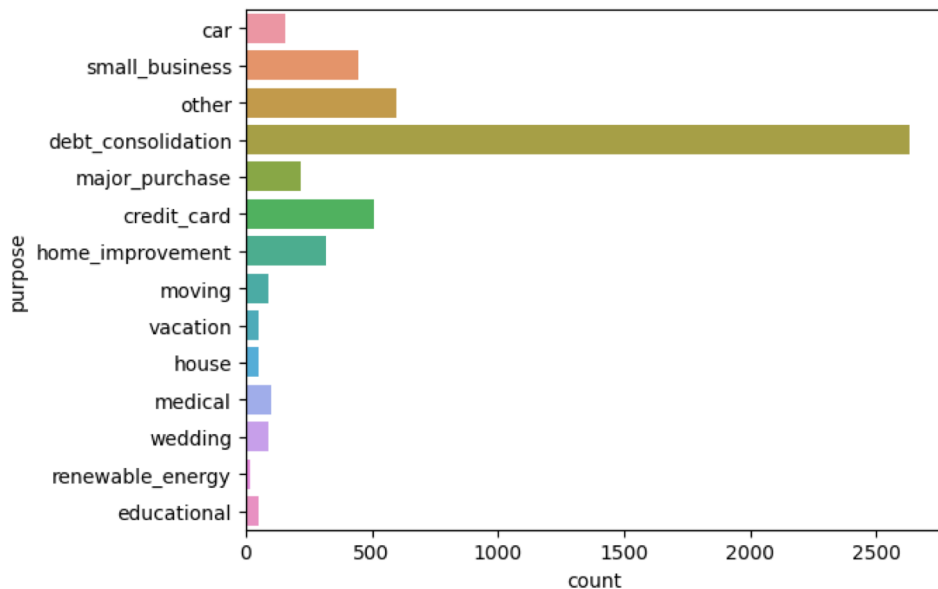


By looking at chart we can say, majority of loans defaulted belongs to B&C Category

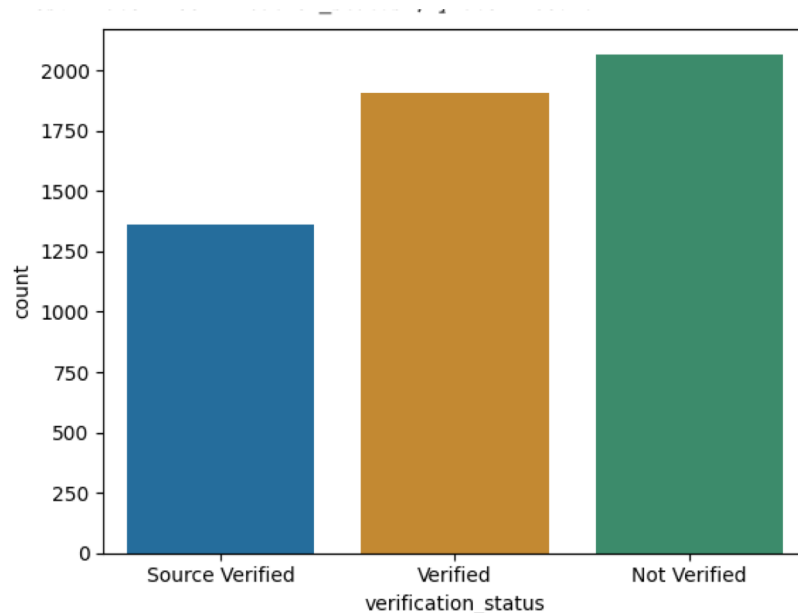


By looking at chart we can say, when customer is having rented home, chances of default are higher

# Analysis

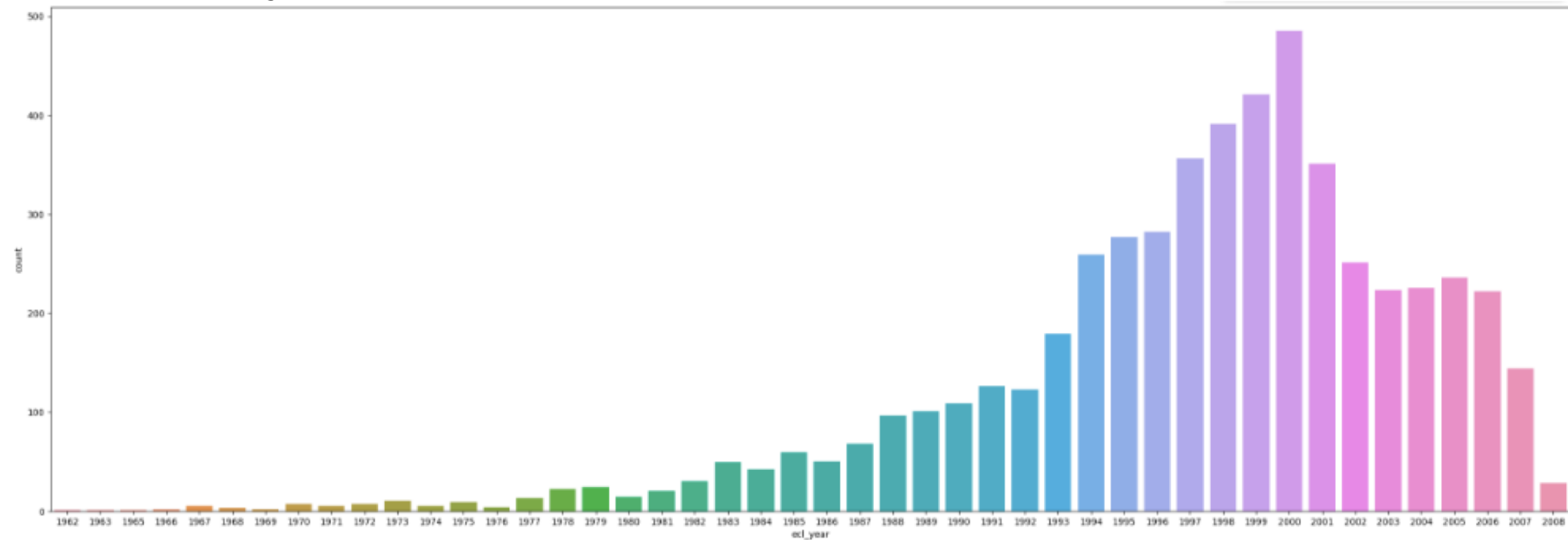


By looking at chart we can say, majority loans defaulted were taken for debt consolidation purpose



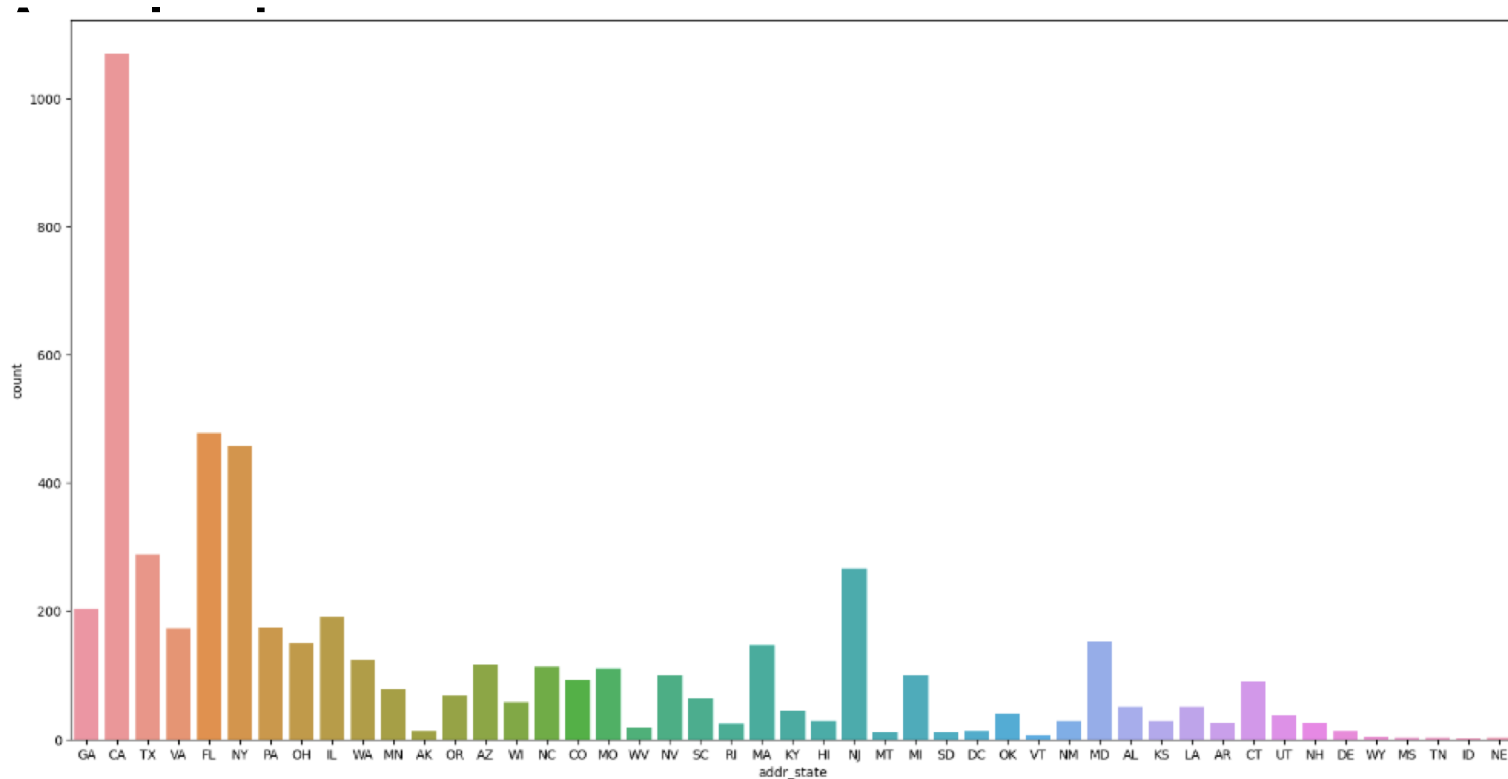
By looking at chart we can say, when customer is not verified, chances of default are higher

# Analysis



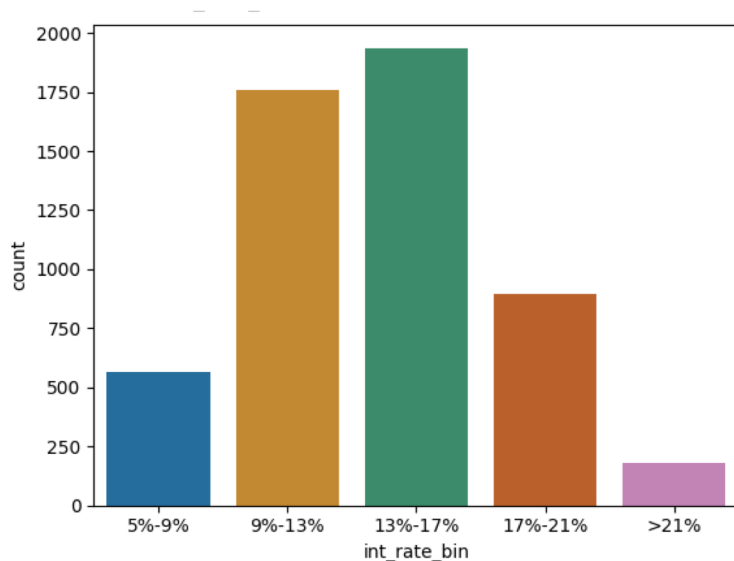
By looking at chart we can say, when earliest credit line was from year 1997 to 2001, defaults were higher



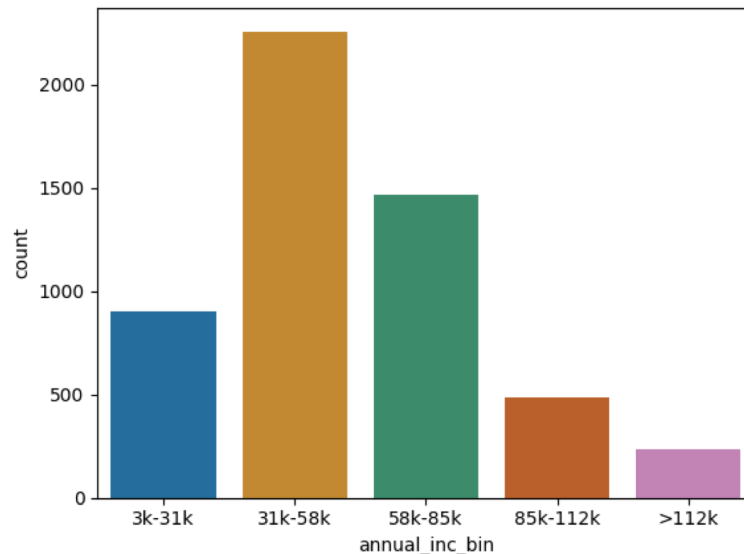


By looking at chart we can say, loan defaults were highest in the state of California (CA)

# Analysis



By looking at chart we can say, majority loans defaulted were having interest rate between 13 to 17 %



By looking at chart we can say, when customer having annual income 31k to 58 k had highest chances of default

# Observations Based on Univariate Analysis

Chances of default are most when,

grade - B,C,D

State - California (CA)

home\_ownership = Rent

purpose = debt\_consolidation

term = 36 Months

verification\_status is Not Verified

inq\_last\_6mths = 0

issue\_year = 2011

Issue month = Dec

pub\_rec = 0

earliest\_cr\_line year = 1997 to 2001

earliest\_cr\_line month = Dec

int\_rate = Between 13% to 17 %

open\_acc = 2 to 10

revol\_util = 60 to 80

total\_acc= 20 to 37

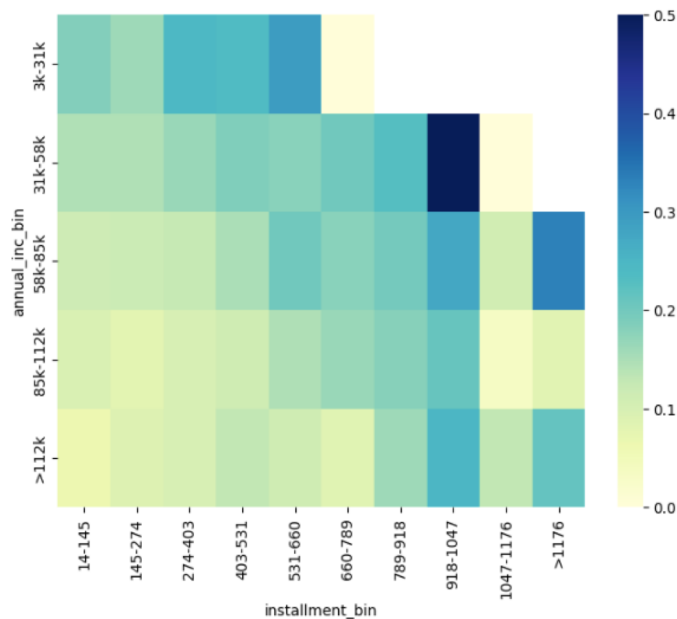
annual\_inc= 31k to 58k

Instalment = 145 to 274

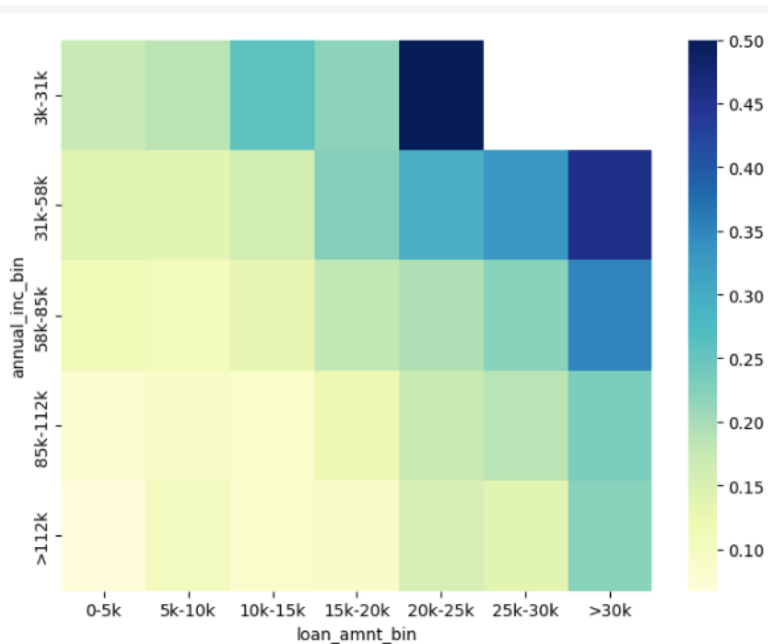
loan\_amnt=5k to 10k

dti= 12 to 18

# Analysis

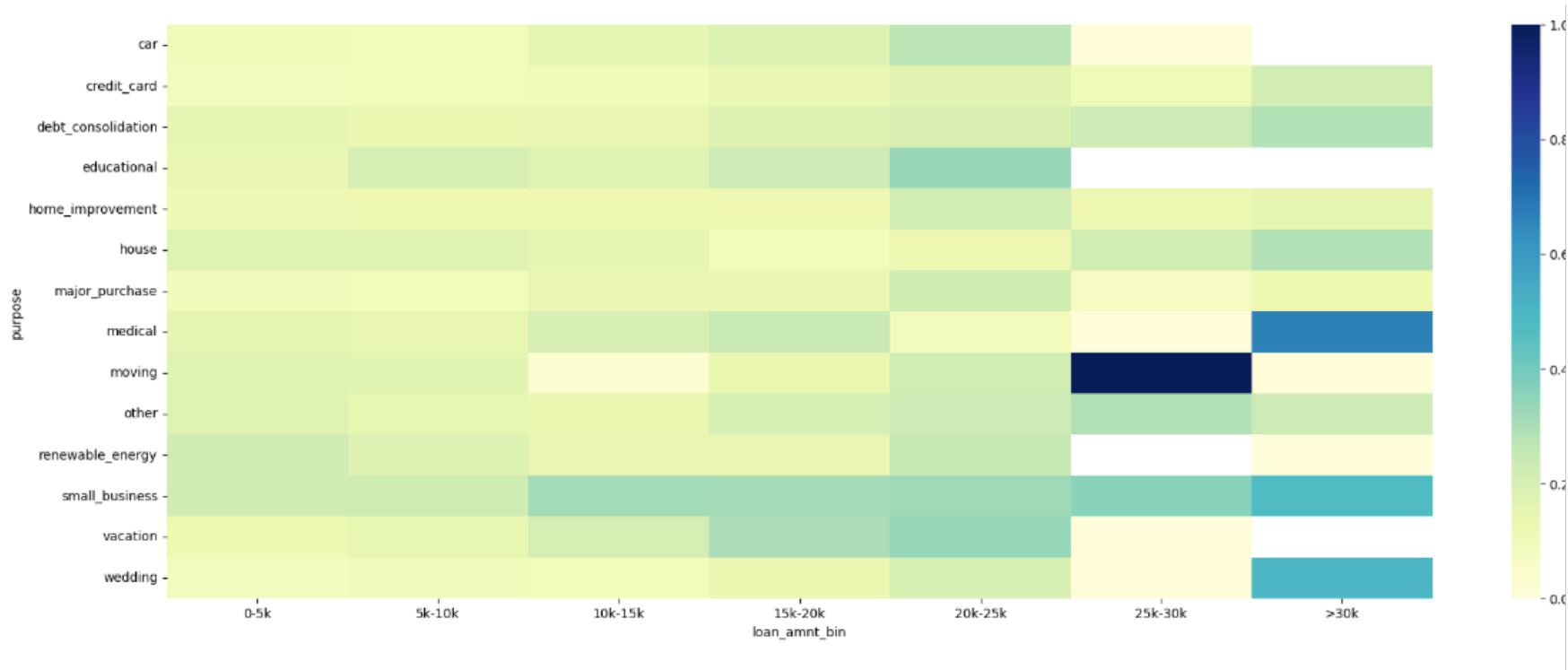


By looking at chart we can say, majority loans defaulted were having installment range 918-1047 and annual income range 31k to 58k



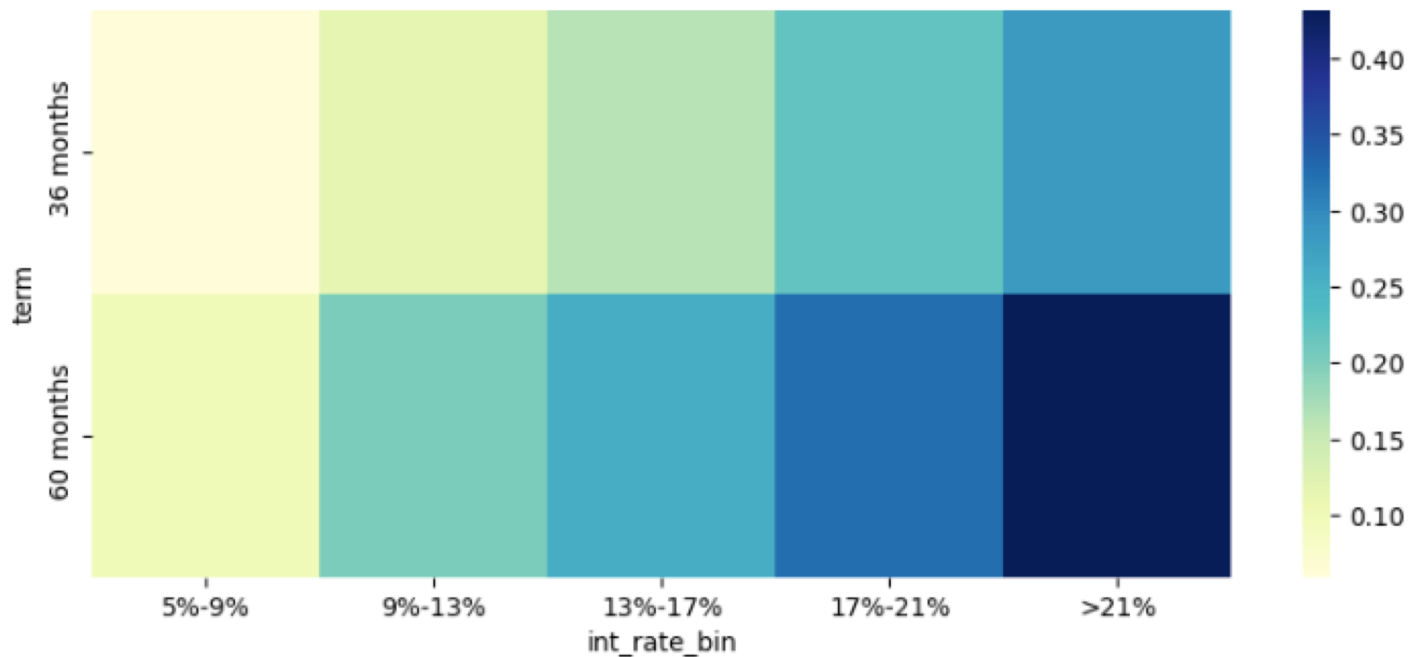
By looking at chart we can say, when annual income is less and loan is high, customer tends to default. Chart shows highest defaults for 20-25k loan and 3k to 31k income range

# Analysis



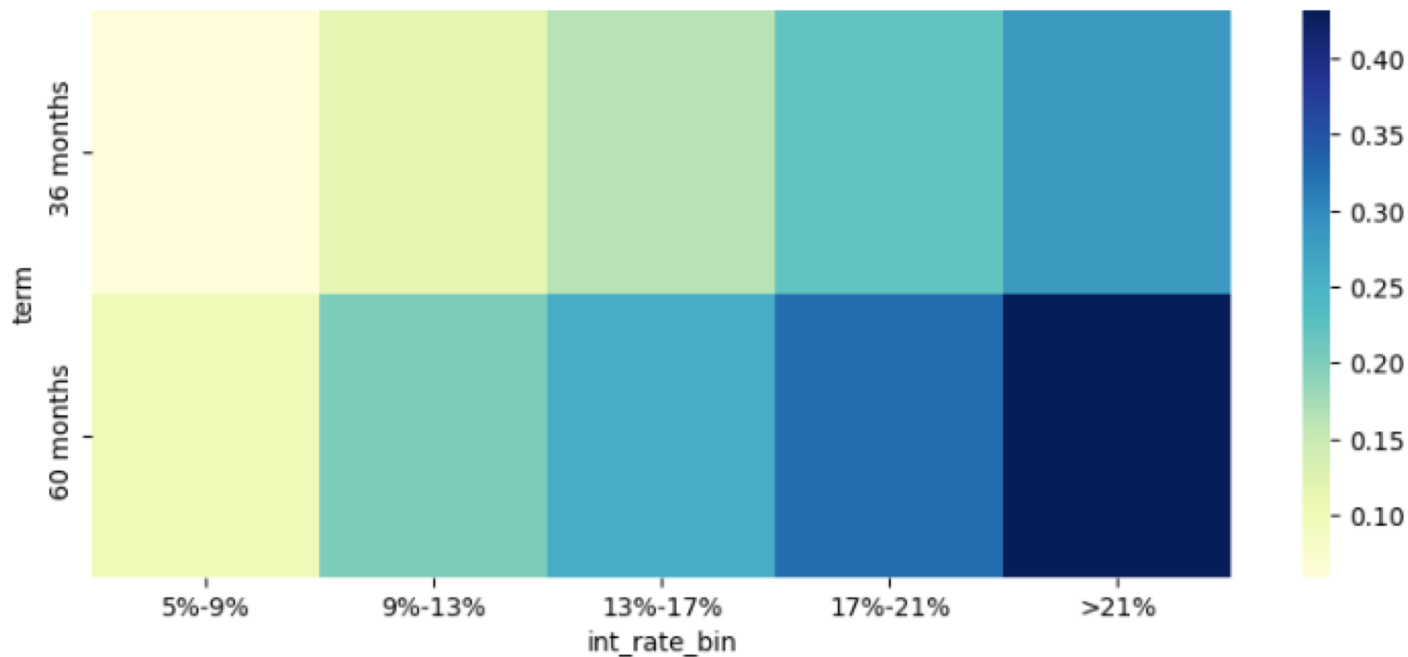
By looking at chart we can say, when purpose of loan is moving and loan amount is 25k-30 k there is highest chance of default. Also high loan amount for medical purpose tends to default considerably

# Analysis



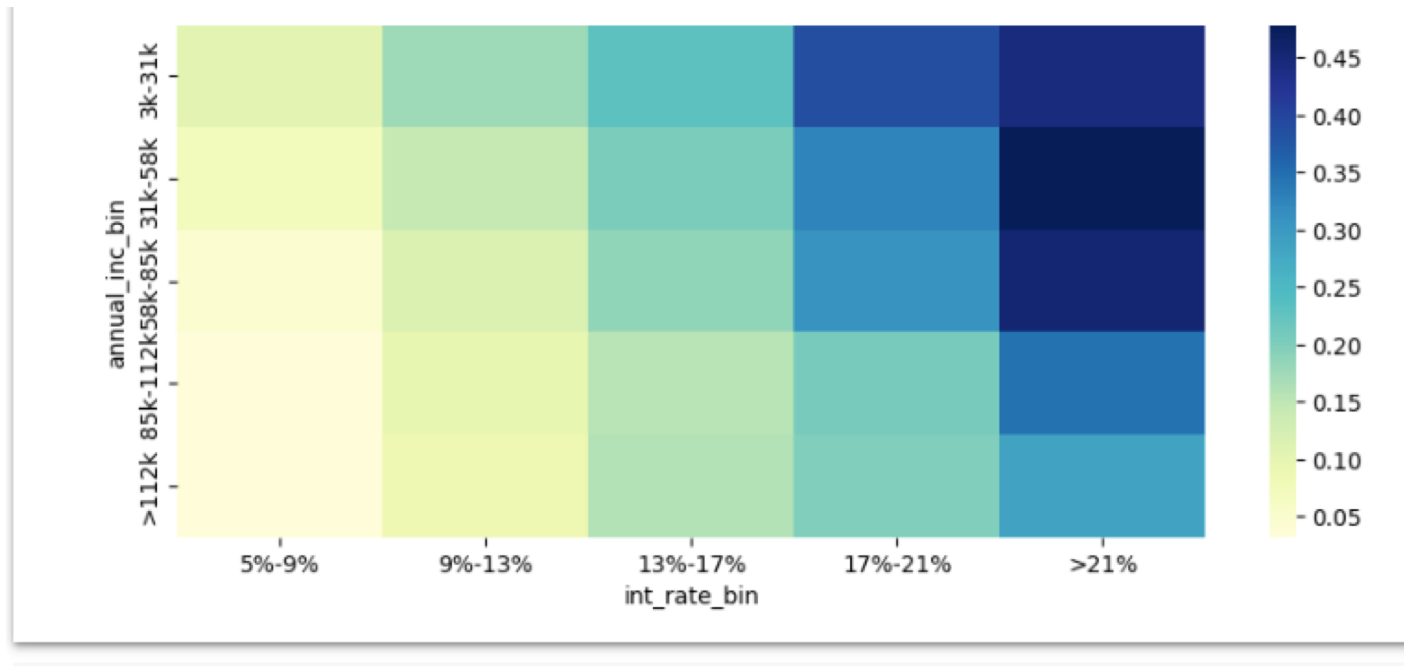
By looking at chart we can say, long term loan at high interest rates are given, they have higher chances of default

# Analysis



By looking at chart we can say, long term loan at high interest rates are given, they have higher chances of default

# Analysis



By looking at chart we can say, high interest rates loans to low income group (<58 k) tends to default more



# Reccomendations

- Borrowers from California state (CA) needs to be scrutinized thoroughly before giving loans
- Long term loan (60 Months) at high interest rates should be avoided.
- High interest rates loans to low income group (<58 k) should not be given
- When purpose of the loan is medical or moving loans borrowers should be scrutinized thoroughly if loan amount is more than 25k
- High loan amount(>25k) to low income group (<58k) borrowers should be avoided
- Borrowers having earliest credit lines from 1997 to 2001 should be scrutinized thoroughly before giving loans as they tend to default more
- Non verified loans should be avoided
- Loans for debt consolidation should be scrutinized thoroughly before giving loans as they tend to default more



# Thank You!