**<Prediction>**

**Business Objective:**

Revolving credit means you're borrowing against a line of credit. Let's say a lender extends a certain amount of credit to you, against which you can borrow repeatedly. The amount of credit you're allowed to use each month is your credit line, or [credit limit](https://creditcards.usnews.com/articles/how-much-of-my-credit-limit-should-i-use). You're free to use as much or as little of that credit line as you wish on any purchase you could make with cash. Its just like a credit card and only difference is they have lower interest rate and they are secured by business assets.

At the end of each statement period, you receive a bill for the balance. If you don't pay it off in full, you carry the balance, or revolve it, over to the next month and [pay interest](https://creditcards.usnews.com/articles/how-credit-card-interest-is-calculated) on any remaining balance. As you pay down the balance, more of your credit line becomes available and usually its useful for small loans

As a bank or investor who are into this revolving balance here they can charge higher interest rates and convenience fees as there is lot of risk associated in customer paying the amount. Our company wants to predict the revolving balance maintained by the customer so that they can derive marketing strategies individually.

**Data Set Details:**

<This dataset consists of 2300 observations>

member\_id unique ID assigned to each member

loan\_amnt loan amount ($) applied by the member

terms: term of loan (in months)

batch\_ID batch numbers allotted to members

Rate\_of\_intrst: interest rate (%) on loan

Grade:grade assigned by the bank

sub\_grade: grade assigned by the bank

emp\_designation job / Employer title of member

Experience: employment length, where 0 means less than one year and 10 means ten or more years

home\_ownership status of home ownership

annual\_inc: annual income ($) reported by the member

verification\_status status of income verified by the bank

purpose purpose of loan

State: living state of member

debt-to-income ratio : ratio of member's total monthly debt

Delinquency of past 2 years: ( failure to pay an outstanding debt by due date)

inq\_6mths: Inquiries made in past 6 months

total\_months\_delinq : number of months since last delinq

Nmbr\_months\_last\_record: number of months since last public record

Numb\_credit\_lines:number of open credit line in member's credit

line

pub\_rec number of derogatory public records

Tota\_credit\_revolving\_balance: total credit revolving balance

total\_credits: total number of credit lines available in

members credit line

list\_status unique listing status of the loan - W(Waiting),F(Forwarded)

int\_rec: Total interest received till date

late\_fee\_rev: Late fee received till date

recov\_chrg: post charge off gross recovery

collection\_recovery\_fee post charge off collection fee

exc\_med\_colle\_12mon: number of collections in last 12 months excluding medical collections

since\_last\_major\_derog: months since most recent 90 day or worse rating

application\_type indicates when the member is an individual or joint

verification\_status\_joint indicates if the joint members income was verified by the bank

last\_pay\_week: indicates how long (in weeks) a member has paid EMI after batch enrolled

nmbr\_acc\_delinq: number of accounts on which the member isdelinquent

colle\_amt: total collection amount ever owed

curr\_bal: total current balance of all accounts

**Acceptance criteria:**

- Should get the least possible RMSE and the model should be deployed using Flask/ RShiny/Heroku.

**Milestones:**

40 days to complete the Project

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| **Milestone** | **Duration** | **Task start - End Date** |
| Kick off and Business Objective discussion | 1 day |  |
| Data set Details | 2 days |  |
| EDA | 1 week |  |
| Model Building and evaluation | 2 weeks |  |
| Deployment | 4 days |  |
| Final presentation | 1 day |  |

Protocols:

1. All participants should add here to agreed timelines and timelines will not be extended
2. All the documentation – Final presentation and R/python code to be submitted before the final presentation day
3. All the participants must attend review meetings