



Dear Candidate,

Please carefully follow the instructions below and checkout the attached data before getting started to code for the Question 1. You can code on SAS EG, Python, R or any programming language you're familiar with however do not forget to organize your code, list your assumptions, order your calculation steps. On the interview day you're supposed to interpret your results and explain your work by providing your code. For any question, please get in contact with VDF-HR regarding the Analytical Case Study-I.

DATA: Attached excel lists the historical data of a vehicle credit payments period of two consecutive months September-October 2019. Attached excel has 5 columns of which:

CUST_ID: Unique Customer ID

PERIOD: Payment period representing consecutive months

DUE_DATE: Due date of the monthly credit payment

PAID_DATE: Realized paid date of the monthly credit payment

AMOUNT: Amount of the monthly credit payment



Case_1_Data.xlsx

QUESTION 1:

Please generate a transition matrix of delinquency between two consecutive months in terms of counts and amount. Show your results in ratios. Please check for duplicated and missing observations.

- Create DELINQ variable that calculates delinquency of payments in terms of days.
- Create DELINQ_BUCKET variable using the below information:

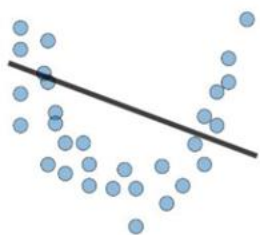


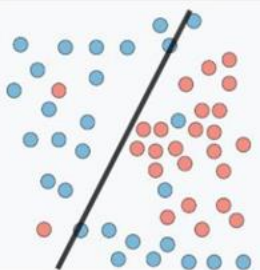
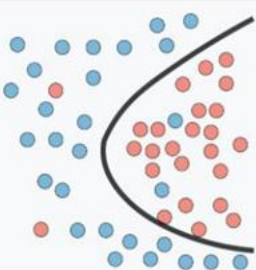
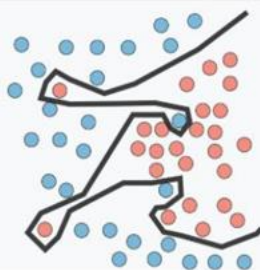
| Delinquency_Cut-offs | Buckets |
|----------------------|---------|
| 0-30 Days | 0 |
| 31-60 Days | 1 |
| 61-90 Days | 2 |
| 90+ Days | 3 |



- Calculate and interpret transition ratios between delinquency buckets over the period1 and period 2. Show your transition matrix on a table format.

QUESTION 2:

Below chart illustrates modeling methods in rows and generic modeling problems a model developer can meet. As a model developer please name the two methods and name related modeling problems illustrated in columns. Please list the related symptoms, if any, when do we face such problems and how would you mitigate illustrated problems, please briefly discuss the details of your solutions.

| | Problem - A | Problem - B | Problem - C |
|------------------------------------|---|--|---|
| Modeling Method Problems Solutions | List the symptoms and solutions for modeling problem -A | List the symptoms and solutions for modeling problem -B | List the symptoms and solutions for modeling problem -C |
| METHOD - I |  |  |  |
| METHOD - II |  |  |  |

QUESTION 3:

Can you please briefly state the modeling steps of a scorecard development process? You can start from data preparations steps, what sort of analysis would you follow to select sample, inputs (or independent variables) and final the model?

THANK YOU

GOOD LUCK !!!

VDF- RISK MANAGEMENT