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1. Setup, Loading libraries and Data

I started the task by loading the libraries and data.

```
library(dplyr)
library(ggplot2)
library(RCurl)
library(rmarkdown)
library(knitr)
library(stats4)
library(stats)
library(pander)
library(NbClust)
library(randomForest)
library(ROCR)
library(glmnet)
library(e1071)
library(doParallel)
library(data.table)
library(tidyr)
library(gridExtra)
rm(list=ls())
dr<-data.table(read.csv("default of credit card clients.csv",header=TRUE,sep=",",skip=1)%>%rename(y=def
set.seed(0706)
opts_chunk$set(cache=TRUE)
options(digit=4)
```

The response variable $Default\ Payment\ Next\ Month$ was renamed to y for convenience and the seed was set to 0706 here to ensure reproducibility.

2. Exploratory data analysis & Feature Engineering

a. Data description

The variables in the dataset are defined as follows:

^{*} Item 1 * Item 2 + Item 2a + Item 2b