**Business Context:**

This case requires developing a customer segmentation to define market strategy. The sample dataset summarizes the usage behavior of about 9000 active credit card holders during the last 6 months. The file is at a customer level with 18 behavioral variables.

**Expectations:**

* Advanced data preparations
* Clustering: Apply a data reduction technique factor analysis for variable reduction technique and a clustering algorithm to reveal the behavioral segments of credit card holders.

**Data Dictionary:**

* **CUST\_ID:** Credit card holder ID
* **BALANCE:** monthly average balance
* **BALANCE\_FREQUENCY:** Ratio of last 12 months
* **PURCHASES:** Total purchase amount spent during last 12 months
* **ONEOFF\_PURCHASES:** Total amount of one-off purchase
* **INSTALLMENTS\_PURCHASES:** Total amount of installment purchase
* **CASH\_ADVANCE:** Total cash-advanced amount
* **PURCHASES\_FREQUENCY:** Frequency of purchases
* **ONEOFF\_PURCHASES\_FREQUENCY:** Frequency of one-off purchases
* **PURCHASES\_INSTALLMENTS\_FREQUENCY:** Frequency of installment purchases
* **CASH\_ADVANCE\_FREQUENCY:** cash advance frequency
* **CASH\_ADVANCE\_TRX:** Average amount per cash advance transaction
* **PURCHASES\_TRX:** Average amount per purchases transaction
* **CREDIT\_LIMIT:** credit limit
* **PAYMENTS:** Total payments in the period
* **MINIMUM\_PAYMENTS:** Total minimum payments due in the period
* **PRC\_FULL\_PAYMENT:** percentage of months with full payment of the due statement balance
* **TENURE:** Number of months as a customer