**Problem Statement 1**

**Overview:** This case requires you to develop a customer segmentation to define marketing 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 from the candidate:

* Advanced data preparation: Build an ‘enriched’ customer profile by deriving “intelligent” KPIs such as:
  + Monthly average purchase and cash advance amount
  + Purchases by type (one-off, installments)
  + Average amount per purchase and cash advance transaction,
  + Limit usage (balance to credit limit ratio),
  + Payments to minimum payments ratio etc (think of more types of similar analysis)
* Advanced reporting: Use the derived KPIs to gain insight on the customer profiles.
* Identification of the relationships/ affinities between services.
* 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
* Identify cluster characteristics of the cluster using detailed profiling.
* Provide the strategic insights and implementation of strategies for given set of cluster characteristics

**DATA DICTIONARY:**

CUST\_ID: Credit card holder ID

BALANCE: Monthly average balance (based on daily balance averages)

BALANCE\_FREQUENCY: Ratio of last 12 months with balance

PURCHASES: Total purchase amount spent during last 12 months

ONEOFF\_PURCHASES: Total amount of one-off purchases

INSTALLMENTS\_PURCHASES: Total amount of installment purchases

CASH\_ADVANCE: Total cash-advance amount

PURCHASES\_ FREQUENCY: Frequency of purchases (Percent of months with at least one purchase)

ONEOFF\_PURCHASES\_FREQUENCY: Frequency of one-off-purchases PURCHASES\_INSTALLMENTS\_FREQUENCY: Frequency of installment purchases

CASH\_ADVANCE\_ FREQUENCY: Cash-Advance frequency

AVERAGE\_PURCHASE\_TRX: Average amount per purchase transaction

CASH\_ADVANCE\_TRX: Average amount per cash-advance transaction

PURCHASES\_TRX: Average amount per purchase transaction

CREDIT\_LIMIT: Credit limit

PAYMENTS: Total payments (due amount paid by the customer to decrease their statement balance) in the period

MINIMUM\_PAYMENTS: Total minimum payments due in the period.

PRC\_FULL\_PAYMEN: Percentage of months with full payment of the due statement balance

TENURE: Number of months as a customer