**PROJECT REPORT - GROUP 1**

**Objectives:** develop a customer segmentation to define marketing strategy from credit card data

**INTRODUCTION**

What

Given the dataset This Project aims 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

Why:

Customer Segmentation is a classical problem , using clustering we will be able to make classify customers and see the optimal types of customers based on credit card information like purchases and credit history. This can help the marketing team to make informed decisions on their target audience.

How:

Using unsupervised K-means Clustering algorithm and python libraries pandas numpy matplotlib and seaborn in Jupyter Notebook IDE.

**Method:**

1. Load the Dataset and create a Dataframe.
2. Inspect the Data by methods and Data Visualizations.
3. Data Processing –Describe the data find and fix missing Values.Fill the null values using aggregate functions.
4. Perform EDA and Feature Engineering, variables to improve the accuracy of the model.
5. Train the Model
6. Model Evaluation
7. Satisfied we make inferences from the clusters by visualizing them with respect to various features

**DESCRIPTION OF DATA SET**

This case requires 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.

Following is the Data Dictionary for Credit Card dataset :-

**CUST**ID : Identification of Credit Card holder (Categorical)

**BALANCE** : Balance amount left in their account to make purchases   
**BALANCEFREQUENCY** : How frequently the Balance is updated, score between 0 and 1 (1 = frequently updated, 0 = not frequently updated)  
**PURCHASES** : Amount of purchases made from account  
**ONEOFF**PURCHASES : Maximum purchase amount done in one-go  
**INSTALLMENTSPURCHASES** : Amount of purchase done in installment  
**CASH**ADVANCE : Cash in advance given by the user  
**PURCHASESFREQUENCY** : How frequently the Purchases are being made, score between 0 and 1 (1 = frequently purchased, 0 = not frequently purchased)  
**ONEOFFPURCHASESFREQUENCY** : How frequently Purchases are happening in one-go (1 = frequently purchased, 0 = not frequently purchased)  
**PURCHASESINSTALLMENTSFREQUENCY** : How frequently purchases in installments are being done (1 = frequently done, 0 = not frequently done)  
**CASHADVANCEFREQUENCY** : How frequently the cash in advance being paid  
**CASHADVANCETRX** : Number of Transactions made with "Cash in Advanced"  
**PURCHASES**TRX : Numbe of purchase transactions made  
**CREDITLIMIT** : Limit of Credit Card for user  
**PAYMENTS** : Amount of Payment done by user  
**MINIMUM\_PAYMENTS** : Minimum amount of payments made by user  
**PRCFULLPAYMENT** : Percent of full payment paid by user  
**TENURE** : Tenure of credit card service for user