Mastering Teradata

Certification Project

edureka!

Version 1.0

Problem Statement

The project should be able to segment the banking customers according to the business rules defined. Customer segmentation is the process of dividing the customers into groups who have similar characteristics in terms of their balance in various products.

Business Rules:

1. The project should segment the customers who hold Saving Accounts, Credit Card accounts and Mortgage accounts.
2. The project should exclude other accounts.
3. Customers should be segmented as following categories.

Low-Networth, Medium-Networth or High-Networth customers (Based on their balance held in the accounts)

4. The project should build a target table that contains customers and their corresponding segments.

Criteria for Segmentation:

1. If the customer meets **one of the below criteria,** then the segment of the customer will be High-Networth.
   Saving accounts balance > 5,00,000
   Credit Card Balance > 3,00,000
   Mortgage account amount > 50,00,000

2. If the customer meets **one of the below criteria**, then the segment of the customer will be Medium-Networth
   Saving accounts balance > 2,00,000
   Credit Card Balance > 1,00,000
   Mortgage account amount > 10,00,000

3. If the customer meets **one of the below criteria,** then the segment of the customer will be Low-Networth
   Saving accounts balance < 2,00,000
   Credit Card Balance < 1,00,000
   Mortgage account amount < 10,00,000

Source system would provide below data:

Customer - All customers of the bank
Accounts - All open accounts
Account Type – Reference table for accounts like Savings, Credit Card, Mortgage, and PPF.

Steps to Implement:

Note: Table structure for all the staging tables and target tables are provided in the next section.

1. Create the staging and target tables as per structure provided in next section.

2. Write a fastload script named as customerload.fl to load the below Customer.txt into staging table Customer_Stg.


Customer.txt

3. Write a fastload script named as accountsload.fl to load the below Accounts.txt into staging table Accounts_Stg;


Accounts.txt

4. Write insert queries to load the below records into Account_type table.

Account Type	Description
01	Savings
02	Credit Card
03	Mortgage
04	PPF

5. Write a BTEQ script named as CustomerAccountsLoad.bteq to load the Customer and Accounts table from their corresponding staging tables Customer_Stg and Accounts_Stg; (BTEQ script should have delete queries to delete the existing records from Customer and Accounts tables and load from Customer_Stg and Accounts_Stg);

6. Write a BTEQ script named as CustomerSegment.bteq. This BTEQ script should have below steps.

   - Create a Volatile table named as Customer_First_Account with columns Customer_Id and First_Account_Dt.
   - Write an Insert query to identify the first account open date for each customer from Accounts table and insert into Customer_First_Account table. If the customer has multiple accounts, then the oldest Account_Open_Dt should be considered.
   - Create a Volatile table named as Customer_Accounts with columns Customer_Id, Savings_Balance, Credit_Balance and Mortgage_Balance.
   - Write an insert query to calculate the savings account balance, credit card balance and mortgage balance from Accounts table for each customer and insert into Customer_Accounts table. For each customer, there should be only one record in this table which contains their savings account balance, credit card balance and mortgage balance.

- Write a delete query to delete existing data from Customer_Segment table
- Insert into Customer_Segment table from Customer, Customer_Accounts and Customer_First_Account tables. Criteria for each column is given below.
- Column Customer_Type is set to N, if the first account opened date (First_Account_Dt from Customer_First_Account table) of the customer is within last 3 months, otherwise it is set to E.
- Column Customer_Segmentation_Value is calculated based on the segmentation criteria provided in problem statement. Compare the Savings_Balance, Credit_Balance and Mortgage_Balance against the criteria provided and assign Customer_Segmentation_value as High_Networth, Medium_Networth or Low_Networth.
- Column Segmentation_start_dt should be set to current date and segmentation_end_dt should be set to 9999-12-31.

Table Layout:

Customer_Stg		
Customer_ID	INTEGER	UPI
Customer_FName	CHAR(15)	
Customer_LName	CHAR(15)	
Customer_Dob	DATE	
Customer_City	CHAR(15)	
Customer_State	CHAR(02)	
Customer_Phone	CHAR(10)	

Customer		
Customer_ID	INTEGER	UPI
Customer_FName	CHAR(15)	
Customer_LName	CHAR(15)	
Customer_Dob	DATE	
Customer_City	CHAR(15)	
Customer_State	CHAR(02)	
Customer_Phone	CHAR(10)	

Accounts_Stg		
Customer_Id	INTEGER	
Account_ID	INTEGER	UPI
Account_Open_Dt	DATE	
Account_Close_Dt	DATE	
Account_Type_Cd	BYTEINT	
Account_Balance	INTEGER	

Accounts		
Customer_Id	INTEGER	NUSI
Account_ID	INTEGER	UPI
Account_Open_Dt	DATE	
Account_Close_Dt	DATE	
Account_Type_Cd	BYTEINT	
Account_Balance	INTEGER	

Account_Type		
Account_Type_Cd	BYTEINT	UPI
Account_Type_Desc	CHAR(10)	

Customer_First_Account		
Customer_Id	INTEGER	UPI
First_Account_Dt	DATE	

Customer_Accounts		
Customer_Id	INTEGER	UPI
Savings_Balance	INTEGER	
Credit_Balance	INTEGER	
Mortgage_Balance	INTEGER	

Customer_Segment		
Customer_Id	INTEGER	UPI
Customer_FName	CHAR(15)	
Customer_LName	CHAR(15)	
Customer_Type	CHAR(01	
Customer_Segment_Value	CHAR(15)	
Segment_Start_Dt	DATE	
Segment_End_Dt	DATE	

The table Customer_Segment should have below data at the end of the load.

Customer_Id	Customer_FName	Customer_LName	Customer_Type	Customer_Segment_Value	Segment_Start_Dt	Segment_End_Dt
100123	Deepak	Sharma	E	High-Networth	2016-02-03	9999-12-31
103256	Ramesh	Kumar	E	High-Networth	2016-02-03	9999-12-31
109345	Ram	Kumar	E	Low-Networth	2016-02-03	9999-12-31
119834	Anand	Sharma	E	Low-Networth	2016-02-03	9999-12-31
125783	Dilip	Mehta	E	Medium-Networth	2016-02-03	9999-12-31
146784	Mohan	Kanna	E	Low-Networth	2016-02-03	9999-12-31
157345	Siva	Kannan	E	Low-Networth	2016-02-03	9999-12-31
191289	Anand	Kannan	E	Low-Networth	2016-02-03	9999-12-31
210923	Umesh	Yadav	E	Medium-Networth	2016-02-03	9999-12-31