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IST659 M402

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Project Milestone 2

# **Summary**

In 2019, there were approximately 40 billion credit card transactions amassing $44.7 billion dollars in sales in the United States alone. With such a consumer driven economy, we can take advantage of this large market by incentivizing cardholder activity even further by implementing a system for loyalty rewards for cardholders. This database will take cardholders transactions from their day-to-day shopping and convert this activity into points which cardholders can then redeem for items/concepts such as cashback cards, statement credits, airmiles, vacation packages, etc. As the payments processor, we are proposing the concept of a loyalty rewards system that will utilize our existing infrastructure to take our clients transactions and convert them into points where their cardholders can utilize as they wish.

# **Stakeholders**

## Cardholders:

Under this loyalty system, the simple action of paying with their bank’s credit card rewards them with rewards points that they can redeem for various items without directly paying for them.

## Issuing Banks

While we’re providing a service to their cardholders, the issuing banks are our actual client we’ve performed card processing services for. The increased activity of their cardholder’s brings the issuers a larger share of revenue. Adding this loyalty service on top of our pre-existing system of processing their payments, this strengthens the business relationship between ourselves, as the processor, and the clients.

## Processors

Bringing in an increased load of activity from our client’s cardholders will bring in another revenue stream, as we will receive the benefits of more swipes along with the additional revenue generated on the loyalty side that will be negotiated with the issuing banks.

## Merchants

Under this loyalty system, we can configure programs that can be tailored towards specific establishments that we may or may not have a business relationship with. We can reward cardholders an extra amount of points if they were to use their card on gas or groceries.

# **Entities**

* Groups
* Program
* Accounts
* Transactions
* Items
* Rewards Activity (Points Ledger)

# **Business Rules**

* An ***account*** must belong to a ***group***.
* An ***account*** must meet specific qualifications to be eligible for certain ***programs***.
* An ***account*** in **good standing** can play loyalty.
* An ***account*** can have **multiple** **users** associated to it, but one of whom must be the **primary user**.
* Only an active credit card can perform transactions.
* While any of an account’s users can earn points, **only** the **primary user** of an account can **burn** points.
* An **account** in **bad standing** will be given a grace period to burn their remaining points, any remaining points after this period will then be forfeited.
* An **account** cannot generate a **negative available balance** of points after a redemption.
* A **redemption** must have an **order confirmation number** associated to it.
* A ***program*** is the mechanism to which an account’s points are altered.
* A ***Rewards\_Activity*** entry must be associated to either a ***Transaction*** or a ***Rewards\_Transation*** entry, but not both.
* **Points** are earned at either a **base rate** (proportional to transaction values) or a **bonus scheme** (spend x dollars, get y points)

# **Glossary**

* A ***cardholder*** is a member of a banking group having been issued a credit card.
* A ***group*** is a collection of a bank’s cardholders that they wish to partition a certain way.
* A ***transaction*** is the “swipe of a credit card” that a cardholder performs, either virtually or physically.
* ***Points*** are the converted value from cardholder activity that is dependent on the amount of the transaction, the program the cardholder is participating in, etc.
* To ***earn*** points is to accrue loyalty rewards through participation of their banks associated loyalty programs and/or promotions.
* To ***burn*** points is to redeem/spend points that are currently available to an account, without going negative, on various items offered.
* A ***base earn*** program is where the number of points generated is proportional to the value of the credit card transaction.
* A ***spend + get*** program is where a cardholder must “spend” a certain amount of money within a set timeframe in order to “get” a bonus amount of points.
* To ***forfeit*** an account’s points is simply the confiscation which occurs when either a certain timeframe of inactivity transpires, or the bank deemed the account to be in bad standing.

# **Conceptual Model:**

Graphical user interface, application

Description automatically generated

# **Logical Model:**

## Graphical user interface, application, Teams Description automatically generated

# **Data Sample**

Graphical user interface

Description automatically generated

Shown above is an example of Loyalty Rewards in real life. For the most part, some aspect of a Loyalty Rewards system is implemented within every major banking institution. What follows is the beginnings of when our data comes into our loyalty database environment.



It all starts the moment a cardholder uses their credit card at any point of sale (POS) terminal. In order to take advantage of the rewards that Loyalty can offer, the cardholders must exhibit some degree of activity. Whether that be simple swipes of their card at the market to earn base points from the sale or spending a certain amount then getting a set reward within a specified timeframe. The cardholders must earn their points. Once earned, then they can redeem their points for various items at their discretion. As is described in the following…

Graphical user interface, application

Description automatically generated

**Note:** **This is not a real-life example**. I made this html layout using an easy layout provided by the Bank of America website. The above shows what would *“typically appear”* on a bank’s website when making a statement credit redemption to a cardholder’s associated bank account. This example indicates to the cardholder that their recent activity has accrued $47.50 that will be available to the cardholder at the end of the billing statement period. The data inputted here will pipeline into our *Rewards* *Transaction* and *Rewards Activity* tables as a redemption for 4,750 points with our standard conversion rate of 100 points equals 1 USD.

If the project were to continue growing, we would certainly need more accounts to play loyalty. Included below is a screenshot of an MS Access form for the purpose of facilitating the addition of more accounts in our loyalty database.

Graphical user interface, text, table

Description automatically generated with medium confidence

# **Data Questions:**

1. Can we show a running balance of a cardholder’s balance of loyalty rewards points?

Text

Description automatically generated

Graphical user interface

Description automatically generated with medium confidence

Chart, line chart

Description automatically generated

Table

Description automatically generated

1. How do the loyalty points that are accrued compare across the different issuing banks?

Graphical user interface, text, application

Description automatically generated

Graphical user interface, table

Description automatically generated with medium confidence

Chart, waterfall chart

Description automatically generated

1. What is the most popular item redeemed for across the board?

Graphical user interface, text, application

Description automatically generated

Table

Description automatically generated

Chart, pie chart

Description automatically generated

From the pie chart above, we can clearly see that the “$25 Cashback” card holds the largest proportion of the total redemptions that have manifested in our loyalty database, making it the most popular item to date.

1. How many cardholders does each issuing bank have?

Graphical user interface, text, application

Description automatically generated

Table

Description automatically generated

Chart, box and whisker chart

Description automatically generated

1. Which groups’ cardholders spent the highest amount of credit with their corresponding loyalty cards?

Text

Description automatically generated

Graphical user interface, table

Description automatically generated with medium confidence

Chart

Description automatically generated

**Reflection**

As I first began my work for this project, I felt I had a strong foundation regarding the concepts of databases and how to interact with them to gain meaningful insight as this is relevant towards my position as a data analyst. Since I was wanting to challenge myself, I decided to theme my project behind one aspect of my company’s product that has interested me, while I’m not working with it in a direct manner. This allowed me to see meaningful insights from my profession while also challenging me to tackle this like a new concept. I’ve learned that there’s more going on behind the scenes when it has come to database architecture and design. Being able to construct a database, feed it data with the proper datatypes and the relevant primary/foreign keys, then utilizing the newly made database to answer meaningful data questions was quite intriguing. One concept I had to bring up that surprised me greatly was during our last discussion regarding SQL script performance. I was already aware of the efficacy of indexes and the partitioning of tables. But one fact you mentioned shocked me considering that it’s about a daily habit of mine in my work setting: *SELECT* ***\**** *FROM TABLE*. Learning of the queries improved performance from taking the less lazy route in terms of scripting. Needless to say, the asterisk will be a practice I no longer subscribe towards.

**Summary**

As we progress in this Applied Data Science graduate degree program and also beyond when we hit the private sector as data scientists, we will always be exposed to some sort of database. I’ve greatly enjoyed learning the content of IST659 with you Dr. Block. I’ve been able to add the designing of databases in addition to construction. Utilized various tools for communicating with a database, as well as using supporting software such as R to provide relevant and insightful information with graphics towards my data questions.

## **Repeatable Script**

-- Joshua Gaze IST659 M402 Fall 2021 Loyalty Project

--drop all procedures

**drop** **procedure** **if** **exists** dbo**.**add\_child\_group**;**

**drop** **procedure** **if** **exists** dbo**.**assign\_parent**;**

--drop all tables in reverse order of their dependencies

**DROP** **TABLE** **IF** **EXISTS** DBO**.**REWARDS\_ACTIVITY**;**

**GO**

**DROP** **TABLE** **IF** **EXISTS** DBO**.**REWARDS\_TRANSACTION\_ITEM**;**

**GO**

**DROP** **TABLE** **IF** **EXISTS** DBO**.**ITEM**;**

**GO**

**DROP** **TABLE** **IF** **EXISTS** DBO**.**REWARDS\_TRANSACTION**;**

**GO**

**DROP** **TABLE** **IF** **EXISTS** DBO**.**TRANSACTIONN**;**

**GO**

**DROP** **TABLE** **IF** **EXISTS** DBO**.**ACCOUNT\_USERS**;**

**GO**

**DROP** **TABLE** **IF** **EXISTS** DBO**.**ACCOUNT\_XREFERENCE**;**

**GO**

**DROP** **TABLE** **IF** **EXISTS** DBO**.**ACCOUNT**;**

**GO**

**DROP** **TABLE** **IF** **EXISTS** DBO**.**PROGRAM**;**

**GO**

**DROP** **TABLE** **IF** **EXISTS** DBO**.**GROUPS**;**

**GO**

--create all tables in the order of their dependencies

--BEGIN Creation of the Loyalty tables

-- creating the GROUPS table

/\* GROUPS contains the partitions that our clients (the banks) wish to distribute their

associated cardholders in. This table represents a hierarchy system where we have

the bank (having parent\_groups\_id = 1) being at the top and their associated partitions

having their parent\_groups\_id equal to the groups\_id of their parent.

\*/

**CREATE** **TABLE** GROUPS **(**

-- attributes/fields for the GROUPS table

groups\_id int **identity,**

name varchar**(**40**)** **not** **null,**

client\_code varchar**(**4**)** **not** **null,**

parent\_groups\_id int**,**

group\_type varchar**(**10**),**

-- Constraints on the GROUPS table

**CONSTRAINT** PK\_groups **PRIMARY** **KEY** **(**groups\_id**),**

**CONSTRAINT** U1\_groups **UNIQUE(**name**),**

**CONSTRAINT** FK1\_groups **FOREIGN** **KEY** **(**parent\_groups\_id**)** **REFERENCES** groups**(**groups\_id**))**

**GO**

-- creating the PROGRAM table

/\* PROGRAM contains the methods as to how we decide how a cardholder turns their spending activity

into points from an earnings perspective. Or also how a cardholder utlizes their points for

some loyalty rewards item(s).

\*/

**CREATE** **TABLE** PROGRAM **(**

-- columns for the PROGRAM table

program\_id int **identity,**

name varchar**(**40**)** **not** **null,**

pgm\_type varchar**(**10**)** **not** **null,**

pgm\_start\_date datetime **not** **null** **default** **GetDate(),**

pgm\_end\_date datetime**,**

points2dollar\_rate float

-- Constraints on the PROGRAM table

**CONSTRAINT** PK\_PROGRAM **PRIMARY** **KEY** **(**program\_id**),**

**CONSTRAINT** U1\_PROGRAM **UNIQUE** **(**name**))**

**GO**

-- creating the ACCOUNT table

/\* ACCOUNT belongs to the individual that has ownership of the loyalty rewards. Depending on their

current status with their corresponding issuing bank, they have the discretion as to how their

loyalty points are utilized. An account may have child account's, but those kinds of accounts exist

in the ACCOUNT\_USERS table.

\*/

**CREATE** **TABLE** ACCOUNT **(**

-- columns for the ACCOUNT table

account\_id int **identity,**

groups\_id int **not** **null,**

enrolled\_date datetime **not** **null** **default** **GetDate(),**

cancelled\_date datetime**,**

earn\_flg binary **not** **null,**

burn\_flg binary **not** **null,**

status\_type varchar**(**2**)** **not** **null,**

forfeit\_points\_flg binary **not** **null,**

-- Constraints on the ACCOUNT table

**CONSTRAINT** PK\_ACCOUNT **PRIMARY** **KEY** **(**account\_id**),**

**CONSTRAINT** FK1\_ACCOUNT **FOREIGN** **KEY** **(**groups\_id**)** **REFERENCES** GROUPS**(**groups\_id**),)**

**GO**

-- creating the ACCOUNT\_XREFERENCE table

/\* ACCOUNT\_XREFERENCE is used as a cross reference table between ACCOUNT and ACCOUNT\_USERS

so that we are able to distinguish the credit card that belongs to the specific ACCOUNT\_USER

\*/

**CREATE** **TABLE** ACCOUNT\_XREFERENCE **(**

-- columns for the ACCOUNT\_XREFERENCE table

account\_xreference\_id int **identity,**

account\_id int **not** **null,**

account\_number varchar**(**12**)** **not** **null,**

card\_number varchar**(**16**)** **not** **null,**

active\_flg binary **not** **null,**

groups\_id int **not** **null,**

-- Constraints of the ACCOUNT\_XREFERENCE table

**CONSTRAINT** PK\_ACCOUNT\_XREFERENCE **PRIMARY** **KEY** **(**account\_xreference\_id**),**

**CONSTRAINT** FK1\_ACCOUNT\_XREFERENCE **FOREIGN** **KEY** **(**account\_id**)** **REFERENCES** ACCOUNT**(**account\_id**),**

**CONSTRAINT** FK2\_ACCOUNT\_XREFERENCE **FOREIGN** **KEY** **(**groups\_id**)** **REFERENCES** GROUPS**(**groups\_id**))**

**GO**

-- creating of ACCOUNT\_USERS table

/\* The purpose of the ACCOUNT\_USERS table is to prevent redundant data

in the instance of a specific account wanting to have multiple cards

associated with it. An example of this would be the primary account holder

being the parent and the secondary users being his/her children.

\*/

**CREATE** **TABLE** ACCOUNT\_USERS **(**

-- columns for the ACCOUNT\_USERS table

account\_users\_id int **identity,**

account\_id int **not** **null,**

account\_xreference\_id int **not** **null,**

active\_flg binary **not** **null,**

user\_level\_type varchar**(**10**),**

groups\_id int **not** **null,**

primary\_account binary **not** **null,**

enrolled\_date datetime **not** **null,**

-- Constraints on the ACCOUNT\_USERS table

**CONSTRAINT** PK\_ACCOUNT\_USERS **PRIMARY** **KEY** **(**account\_users\_id**),**

**CONSTRAINT** FK1\_ACCOUNT\_USERS **FOREIGN** **KEY** **(**account\_id**)** **REFERENCES** ACCOUNT**(**account\_id**),**

**CONSTRAINT** FK2\_ACCOUNT\_USERS **FOREIGN** **KEY** **(**account\_xreference\_id**)** **REFERENCES** ACCOUNT\_XREFERENCE**(**account\_xreference\_id**),**

**CONSTRAINT** FK3\_ACCOUNT\_USERS **FOREIGN** **KEY** **(**groups\_id**)** **REFERENCES** GROUPS**(**groups\_id**))**

**GO**

-- creating the TRANSACTIONN table

-- TRANSACTIONN is the table that deals with all "card swipes", meaning that this deals with driving earnings of loyalty points that will be performed in the REWARDS\_ACTIVITY table.

**CREATE** **TABLE** TRANSACTIONN **(**

-- columns for the TRANSACTIONN table

transactionn\_id int **identity,**

groups\_id int **not** **null,**

account\_id int **not** **null,**

card\_number varchar**(**16**)** **not** **null,**

account\_users\_id int **not** **null,**

sales\_date date **not** **null,**

posting\_date date **not** **null,**

sales\_amount money **not** **null,**

-- Constraints of the TRANSACTIONN table

**CONSTRAINT** PK\_TRANSACTIONN **PRIMARY** **KEY** **(**transactionn\_id**),**

**CONSTRAINT** FK1\_TRANSACTIONN **FOREIGN** **KEY** **(**groups\_id**)** **REFERENCES** GROUPS**(**groups\_id**),**

**CONSTRAINT** FK2\_TRANSACTIONN **FOREIGN** **KEY** **(**account\_id**)** **REFERENCES** ACCOUNT**(**account\_id**),**

**CONSTRAINT** FK3\_TRANSACTIONN **FOREIGN** **KEY** **(**account\_users\_id**)** **REFERENCES** ACCOUNT\_USERS**(**account\_users\_id**))**

**GO**

-- creating the REWARDS\_TRANSACTION table

--REWARDS\_TRANSACTION deals with the manipulation of an account's balance of points. Things driving this table would include the redemption or forfeiture of points.

**CREATE** **TABLE** REWARDS\_TRANSACTION **(**

-- columns for the REWARDS\_TRANSACTION table

rewards\_transaction\_id int **identity,**

account\_id int **not** **null,**

account\_users\_id int **not** **null,**

groups\_id int **not** **null,**

rewards\_value float **not** **null,**

program\_id int **not** **null,**

order\_confirmation\_number varchar**(**20**)** **not** **null,**

create\_time datetime **not** **null** **default** **GetDate(),**

-- Constraints of the REWARDS\_TRANSACTION table

**CONSTRAINT** PK\_REWARDS\_TRANSACTION **PRIMARY** **KEY** **(**rewards\_transaction\_id**),**

**CONSTRAINT** FK1\_REWARDS\_TRANSACTION **FOREIGN** **KEY** **(**account\_id**)** **REFERENCES** ACCOUNT**(**account\_id**),**

**CONSTRAINT** FK2\_REWARDS\_TRANSACTION **FOREIGN** **KEY** **(**account\_users\_id**)** **REFERENCES** ACCOUNT\_USERS**(**account\_users\_id**),**

**CONSTRAINT** FK3\_REWARDS\_TRANSACTION **FOREIGN** **KEY** **(**groups\_id**)** **REFERENCES** GROUPS**(**groups\_id**),**

**CONSTRAINT** FK4\_REWARDS\_TRANSACTION **FOREIGN** **KEY** **(**program\_id**)** **REFERENCES** PROGRAM**(**program\_id**))**

**GO**

-- creating of ITEM table

-- The ITEM table contains the various items that cardholder's can redeem their loyalty rewards points for (provided they have the balance to do so)

**CREATE** **TABLE** ITEM **(**

-- columns for the ITEM table

item\_id int **identity,**

name varchar**(**20**)** **not** **null,**

item\_description varchar**(**300**),**

item\_cost\_points int **not** **null,**

item\_cost money **not** **null,**

SKU varchar**(**50**)** **not** **null,**

-- Constraints of the ITEM table

**CONSTRAINT** PK\_ITEM **PRIMARY** **KEY** **(**item\_id**),**

**CONSTRAINT** U1\_ITEM **UNIQUE** **(**name**,** SKU**))**

**GO**

-- creating of REWARDS\_TRANSACTION\_ITEM table

-- To prevent redundancy and repetition of data from the REWARDS\_TRANSACTION table, the REWARDS\_TRANSACTION\_ITEM table gives additional details as to what the redemption was for.

**CREATE** **TABLE** REWARDS\_TRANSACTION\_ITEM **(**

-- columns for the REWARDS\_TRANSACTION\_ITEM table

rewards\_transaction\_item\_id int **identity** **not** **null,**

rewards\_transaction\_id int **not** **null,**

rewards\_value float **not** **null,**

item\_cost money**,**

item\_id int **not** **null,**

rewards\_items\_type varchar**(**30**)** **not** **null,**

quantity integer **not** **null,**

groups\_id int **not** **null**

-- Constraints of the REWARDS\_TRANSACTION\_ITEM table

**CONSTRAINT** PK\_REWARDS\_TRANSACTION\_ITEM **PRIMARY** **KEY** **(**rewards\_transaction\_item\_id**)**

**CONSTRAINT** FK1\_REWARDS\_TRANSACTION\_ITEM **FOREIGN** **KEY** **(**rewards\_transaction\_id**)** **REFERENCES** REWARDS\_TRANSACTION**(**rewards\_transaction\_id**),**

**CONSTRAINT** FK2\_REWARDS\_TRANSACTION\_ITEM **FOREIGN** **KEY** **(**item\_id**)** **REFERENCES** ITEM**(**item\_id**),**

**CONSTRAINT** FK3\_REWARDS\_TRANSACTION\_ITEM **FOREIGN** **KEY** **(**groups\_id**)** **REFERENCES** GROUPS**(**groups\_id**))**

**GO**

-- creating of REWARDS\_ACTIVITY table

--The Ledger of Points. By far the most important table in our database, as this table documents every time points are touched in any way, whether that be in a positive or negative aspect.

**CREATE** **TABLE** REWARDS\_ACTIVITY **(**

-- columns for the REWARDS\_ACTIVITY table

rewards\_activity\_id int **identity** **not** **null,**

account\_id int **not** **null,**

account\_users\_id int **not** **null,**

rewards\_value float **not** **null,**

rewards\_type varchar**(**5**)** **not** **null,**

rewards\_activity\_type varchar**(**20**)** **not** **null,**

program\_id int **not** **null,**

groups\_id int **not** **null,**

sales\_date datetime**,**

posting\_date datetime **not** **null** **default** **getDate(),**

tender\_amount money**,**

transactionn\_id int**,**

rewards\_transaction\_id int**,**

rewards\_transaction\_item\_id int**,**

-- Constraints of the REWARDS\_ACTIVITY table

**CONSTRAINT** PK\_REWARDS\_ACTIVITY **PRIMARY** **KEY** **(**rewards\_activity\_id**),**

**CONSTRAINT** FK1\_REWARDS\_ACTIVITY **FOREIGN** **KEY** **(**account\_id**)** **REFERENCES** ACCOUNT**(**account\_id**),**

**CONSTRAINT** FK2\_REWARDS\_ACTIVITY **FOREIGN** **KEY** **(**account\_users\_id**)** **REFERENCES** ACCOUNT\_USERS**(**account\_users\_id**),**

**CONSTRAINT** FK3\_REWARDS\_ACTIVITY **FOREIGN** **KEY** **(**program\_id**)** **REFERENCES** PROGRAM**(**program\_id**),**

**CONSTRAINT** FK4\_REWARDS\_ACTIVITY **FOREIGN** **KEY** **(**groups\_id**)** **REFERENCES** GROUPS**(**groups\_id**),**

**CONSTRAINT** FK5\_REWARDS\_ACTIVITY **FOREIGN** **KEY** **(**transactionn\_id**)** **REFERENCES** TRANSACTIONN**(**transactionn\_id**),**

**CONSTRAINT** FK6\_REWARDS\_ACTIVITY **FOREIGN** **KEY** **(**rewards\_transaction\_id**)** **REFERENCES** REWARDS\_TRANSACTION**(**rewards\_transaction\_id**),**

**CONSTRAINT** FK7\_REWARDS\_ACTIVITY **FOREIGN** **KEY** **(**rewards\_transaction\_item\_id**)** **REFERENCES** REWARDS\_TRANSACTION\_ITEM**(**rewards\_transaction\_item\_id**))**

**GO**

--BEGIN creation of Procedures

-- adding new product(s) to the GROUPS table

/\* Create a stored procedure to add a new child group to a parent in the GROUPS table.

The child group must reference who it's parent through the following logic:

CHILD.parent\_groups\_id = PARENT.groups\_id

Input(s):

@group\_name: name of the child group

@client\_code: to mark which collection of products this child belongs to.

Returns:

@@identity, or the groups\_id, to the newly created CHILD group.

\*/

**CREATE** **PROCEDURE** add\_child\_group**(**

@group\_name varchar**(**40**),**

@client\_code varchar**(**4**),**

@group\_type varchar**(**10**))**

**AS**

**BEGIN**

**INSERT** **INTO** dbo**.**GROUPS**(**name**,** client\_code**,** group\_type**)**

**VALUES** **(**@group\_name**,** @client\_code**,** @group\_type**);**

**RETURN** @@**identity**

**END**

**GO**

-- assigning newly created child group to its corresponding parent group

**CREATE** **PROCEDURE** assign\_parent**(**@groups\_id int**)** **AS**

**BEGIN**

**UPDATE** DBO**.**GROUPS

**SET** parent\_groups\_id **=** **(select** g1**.**groups\_id **from** groups g1 **left** **join** groups g2 **on** g1**.**groups\_id **=** g2**.**groups\_id **where** g1**.**client\_code **=** **(select** client\_code **from** groups **where** groups\_id **=** @groups\_id**)** **and** g1**.**parent\_groups\_id **=** 1**)**

**WHERE** groups\_id **=** @groups\_id

**END**

**GO**

**;**

**EXEC** assign\_parent 5

-- BEGINNING OF INSERT STATEMENTS FOR LOYALTY TABLES

-- Insert of the Issuing Banks (parent level), Since this is a hierarchy and we don't want any bank to be above the other, also created "Loyalty Root" as the Top entry to eliminate any complication/issue

**INSERT** **INTO** GROUPS **(**name**,** client\_code**,** parent\_groups\_id**,** group\_type**)**

**VALUES**

**(**'Loyalty Root'**,** '0000'**,** 1**,**'ROOT'**),**

**(**'Bank of America'**,** '1776'**,** 1**,**'PARENT'**),**

**(**'Regions'**,** '9570'**,** 1**,** 'PARENT'**),**

**(**'Navy Federal Credit Union'**,** '7339'**,** 1**,** 'PARENT'**)**

**;**

**SELECT** **\*** **FROM** GROUPS**;**

-- Insert child groups of the issuing banks

**INSERT** **INTO** DBO**.**GROUPS **(**name**,** client\_code**,** parent\_groups\_id**,** group\_type**)**

**VALUES**

**(**'BOA Cash Rewards'**,** '1776'**,** 2**,** 'CHILD'**),**

**(**'BOA Travel Rewards'**,** '1776'**,** 2**,** 'CHILD'**),**

**(**'BOA Premium Rewards'**,**'1776'**,** 2**,** 'CHILD'**),**

**(**'Regions Student Rewards'**,** '9570'**,** 3**,** 'CHILD'**),**

**(**'Signature Cashback Rewards'**,** '9570'**,** 3**,** 'CHILD'**),**

**(**'Mastercard Rewards'**,** '7339'**,** 4**,** 'CHILD'**),**

**(**'Visa Signature Rewards'**,** '7339'**,** 4**,** 'CHILD'**),**

**(**'American Express More Rewards'**,** '7339'**,** 4**,** 'CHILD'**)**

**;**

-- After creating the add\_child\_group stored-procedure, execute the following SQL against the GROUPS table:

**DECLARE** @new\_groups\_id int

**EXEC** @new\_groups\_id **=** add\_child\_group 'BOA Example New Group'**,**'1776'**,** 'CHILD'

**SELECT** **\*** **FROM** GROUPS **WHERE** groups\_id **=** @new\_groups\_id

**;**

**GO**

**UPDATE** DBO**.**GROUPS

**SET** parent\_groups\_id **=** 2

**WHERE** groups\_id **=** 13

**;**

**GO**

-- Inserting programs into the PROGRAM table.

**INSERT** **INTO** DBO**.**PROGRAM**(**name**,** pgm\_type**,** pgm\_start\_date**,** pgm\_end\_date**,** points2dollar\_rate**)**

**VALUES**

**(**'Cash Rewards Base Earn'**,**'EARN'**,**'1/1/2000'**,**'1/1/2999'**,**1**),**

**(**'Travel Rewards Base Earn'**,** 'EARN'**,** '1/1/2000'**,**'1/1/2999'**,**1**),**

**(**'Premium Rewards Base Earn'**,** 'EARN'**,** '1/1/2000'**,**'1/1/2999'**,**1**),**

**(**'Loyalty Redemption Program'**,**'REDEEM'**,** '1/1/2000'**,** '1/1/2999'**,** 1**)**

**;**

-- Inserting accounts with their corresponding attributes

**INSERT** **INTO** DBO**.**ACCOUNT**(**groups\_id**,** enrolled\_date**,** earn\_flg**,** burn\_flg**,** status\_type**,** forfeit\_points\_flg**)**

**VALUES**

**(**5**,**'03-07-2020'**,**1**,**1**,**'OP'**,**0**),**

**(**6**,**'07-10-2021'**,** 1**,**1**,**'OP'**,**0**),**

**(**7**,**'05-07-2020'**,** 1**,**1**,**'OP'**,**0**),**

**(**8**,**'06-07-2020'**,** 1**,**1**,**'OP'**,**0**),**

**(**9**,**'10-11-2021'**,** 1**,**1**,**'OP'**,**0**),**

**(**10**,**'10-08-2019'**,** 0**,**1**,**'CT'**,**1**),**

**(**11**,**'03-02-2019'**,** 0**,**0**,**'CP'**,**1**),**

**(**12**,**'06-14-2021'**,** 1**,**1**,**'OP'**,**0**)**

**;**

**SELECT** **\*** **FROM** ACCOUNT**;**

-- Inserting additional information for the cross reference table ACCOUNT\_XREFERENCE

**INSERT** **INTO** DBO**.**ACCOUNT\_XREFERENCE**(**account\_id**,** account\_number**,** card\_number**,** active\_flg**,** groups\_id**)**

**VALUES**

**(**1**,**'609414768152'**,**'2887986118958270'**,**1**,**5**),**

**(**2**,**'710525879263'**,**'3998097229069380'**,**1**,**6**),**

**(**3**,**'821636989274'**,**'4009108330170490'**,**1**,**7**),**

**(**4**,**'932747090385'**,**'5110219441281500'**,**1**,**8**),**

**(**5**,**'043858101496'**,**'6221320552392610'**,**1**,**9**),**

**(**6**,**'154969212507'**,**'7332431663403720'**,**0**,**10**),**

**(**7**,**'265070323618'**,**'8443542774514830'**,**0**,**11**),**

**(**8**,**'376181434729'**,**'9554653884645940'**,**1**,**12**)**

**;**

**SELECT** **\*** **FROM** ACCOUNT\_XREFERENCE**;**

-- Inserting the child accounts that stem from the ACCOUNT table

**INSERT** **INTO** DBO**.**ACCOUNT\_USERS**(**account\_id**,** account\_xreference\_id**,** active\_flg**,** user\_level\_type**,** groups\_id**,** primary\_account**,** enrolled\_date**)**

**VALUES**

**(**1**,** 1**,** 1**,** 'PRIMARY'**,** 5**,** 1**,** '03-07-2020 08:05'**),**

**(**1**,** 1**,** 0**,** 'SECONDARY'**,** 5**,** 0**,** '09-14-2020 11:47'**),**

**(**1**,** 1**,** 1**,** 'SECONDARY'**,** 5**,** 0**,** '10-27-2020 13:17'**),**

**(**2**,** 2**,** 1**,** 'PRIMARY'**,** 6**,** 1**,** '05-06-2019 07:47'**),**

**(**3**,** 3**,** 1**,** 'PRIMARY'**,** 7**,** 1**,** '01-29-2020 14:12'**),**

**(**3**,** 3**,** 1**,** 'SECONDARY'**,** 7**,** 0**,** '02-26-2020 12:00'**),**

**(**3**,** 3**,** 1**,** 'SECONDARY'**,** 7**,** 0**,** '03-01-2020 13:00'**),**

**(**4**,** 4**,** 1**,** 'PRIMARY'**,** 8**,** 1**,** '11-06-2018 14:02'**),**

**(**4**,** 4**,** 1**,** 'SECONDARY'**,** 8**,** 0**,** '11-08-2018 15:00'**),**

**(**5**,** 5**,** 1**,** 'PRIMARY'**,** 9**,** 1**,** '07-30-2018 18:15'**),**

**(**5**,** 5**,** 1**,** 'SECONDARY'**,** 9**,** 0**,** '8-29-2018 17:00'**),**

**(**6**,** 6**,** 0**,** 'PRIMARY'**,** 10**,** 1**,** '06-11-2018 10:45'**),**

**(**6**,** 6**,** 0**,** 'SECONDARY'**,** 10**,** 0**,** '07-12-2018 10:05'**),**

**(**6**,** 6**,** 0**,** 'SECONDARY'**,** 10**,** 0**,** '08-13-2018 11:01'**),**

**(**7**,** 7**,** 0**,** 'PRIMARY'**,** 11**,** 1**,** '03-27-2019 09:46'**),**

**(**8**,** 8**,** 1**,** 'PRIMARY'**,** 12**,** 1**,** '05-20-2020 08:58'**)**

**;**

-- Inserting items that are available for redemptions

**INSERT** **INTO** DBO**.**ITEM**(**NAME**,** ITEM\_DESCRIPTION**,** ITEM\_COST\_POINTS**,** ITEM\_COST**,** SKU**)**

**VALUES**

**(**'$10 Cashback'**,**'Statement credit of 10 dollars USD'**,**-10000**,**10**,**'98403102639425922328045955308679845468176392588359'**),**

**(**'$25 Cashback'**,**'Statement credit of 25 dollars USD'**,**-25000**,**25**,**'43082700080318863420587001226028796154178366559535'**),**

**(**'$50 Cashback'**,**'Statement credit of 50 dollars USD'**,**-50000**,**50**,**'36004068480284993944030917661316034187840378415048'**),**

**(**'$100 Amazon GC'**,**'Amazon giftcard with 100 dollars USD Balance'**,**-100000**,**100**,**'75216895456389503456328907661316034187840378314568'**)**

**;**

-- Inserting incoming transaction entries that came from Credit Card Swipes!

**INSERT** **INTO** dbo**.**TRANSACTIONN**(**groups\_id**,** account\_id**,** card\_number**,** account\_users\_id**,** sales\_date**,** posting\_date**,** sales\_amount**)**

**VALUES**

**(**5**,**1**,(SELECT** CARD\_NUMBER **FROM** ACCOUNT\_XREFERENCE **WHERE** GROUPS\_ID**=**5 **AND** ACCOUNT\_ID**=**1**),**1**,**'01-05-21'**,**' 01-06-21'**,**779**),**

**(**5**,**1**,(SELECT** CARD\_NUMBER **FROM** ACCOUNT\_XREFERENCE **WHERE** GROUPS\_ID**=**5 **AND** ACCOUNT\_ID**=**1**),**1**,**'01-12-21'**,**' 01-13-21'**,**375**),**

**(**5**,**1**,(SELECT** CARD\_NUMBER **FROM** ACCOUNT\_XREFERENCE **WHERE** GROUPS\_ID**=**5 **AND** ACCOUNT\_ID**=**1**),**1**,**'01-19-21'**,**' 01-20-21'**,**173**),**

**(**5**,**1**,(SELECT** CARD\_NUMBER **FROM** ACCOUNT\_XREFERENCE **WHERE** GROUPS\_ID**=**5 **AND** ACCOUNT\_ID**=**1**),**1**,**'02-26-21'**,**' 02-27-21'**,**479**),**

**(**5**,**1**,(SELECT** CARD\_NUMBER **FROM** ACCOUNT\_XREFERENCE **WHERE** GROUPS\_ID**=**5 **AND** ACCOUNT\_ID**=**1**),**3**,**'03-13-21'**,**' 03-14-21'**,**48**),**

**(**6**,**2**,(SELECT** CARD\_NUMBER **FROM** ACCOUNT\_XREFERENCE **WHERE** GROUPS\_ID**=**6 **AND** ACCOUNT\_ID**=**2**),**4**,**'08-19-21'**,**' 08-20-21'**,**79**),**

**(**7**,**3**,(SELECT** CARD\_NUMBER **FROM** ACCOUNT\_XREFERENCE **WHERE** GROUPS\_ID**=**7 **AND** ACCOUNT\_ID**=**3**),**5**,**'08-22-21'**,**' 08-23-21'**,**77**),**

**(**7**,**3**,(SELECT** CARD\_NUMBER **FROM** ACCOUNT\_XREFERENCE **WHERE** GROUPS\_ID**=**7 **AND** ACCOUNT\_ID**=**3**),**5**,**'08-29-21'**,**' 08-30-21'**,**84**),**

**(**7**,**3**,(SELECT** CARD\_NUMBER **FROM** ACCOUNT\_XREFERENCE **WHERE** GROUPS\_ID**=**7 **AND** ACCOUNT\_ID**=**3**),**6**,**'09-14-21'**,**' 09-15-21'**,**41**),**

**(**7**,**3**,(SELECT** CARD\_NUMBER **FROM** ACCOUNT\_XREFERENCE **WHERE** GROUPS\_ID**=**7 **AND** ACCOUNT\_ID**=**3**),**7**,**'11-14-21'**,**' 11-15-21'**,**280**),**

**(**7**,**3**,(SELECT** CARD\_NUMBER **FROM** ACCOUNT\_XREFERENCE **WHERE** GROUPS\_ID**=**7 **AND** ACCOUNT\_ID**=**3**),**7**,**'11-21-21'**,**' 11-22-21'**,**78**),**

**(**8**,**4**,(SELECT** CARD\_NUMBER **FROM** ACCOUNT\_XREFERENCE **WHERE** GROUPS\_ID**=**8 **AND** ACCOUNT\_ID**=**4**),**8**,**'05-04-21'**,**' 05-05-21'**,**54**),**

**(**8**,**4**,(SELECT** CARD\_NUMBER **FROM** ACCOUNT\_XREFERENCE **WHERE** GROUPS\_ID**=**8 **AND** ACCOUNT\_ID**=**4**),**9**,**'05-16-21'**,**' 05-17-21'**,**103**),**

**(**8**,**4**,(SELECT** CARD\_NUMBER **FROM** ACCOUNT\_XREFERENCE **WHERE** GROUPS\_ID**=**8 **AND** ACCOUNT\_ID**=**4**),**9**,**'05-23-21'**,**' 05-24-21'**,**81**),**

**(**9**,**5**,(SELECT** CARD\_NUMBER **FROM** ACCOUNT\_XREFERENCE **WHERE** GROUPS\_ID**=**9 **AND** ACCOUNT\_ID**=**5**),**10**,**'08-11-21'**,**'08-12-21'**,**57**),**

**(**9**,**5**,(SELECT** CARD\_NUMBER **FROM** ACCOUNT\_XREFERENCE **WHERE** GROUPS\_ID**=**9 **AND** ACCOUNT\_ID**=**5**),**11**,**'10-21-21'**,**'10-22-21'**,**378**),**

**(**11**,**7**,(SELECT** CARD\_NUMBER **FROM** ACCOUNT\_XREFERENCE **WHERE** GROUPS\_ID**=**11 **AND** ACCOUNT\_ID**=**7**),**16**,**'11-18-21'**,**'11-19-21'**,**83**)**

-- Insert REWARDS\_TRANSACTION rows that make withdraws of points accrued for redemptions

**INSERT** **INTO** dbo**.**rewards\_transaction**(**account\_id**,** account\_users\_id**,** groups\_id**,** rewards\_value**,** program\_id**,** order\_confirmation\_number**,** create\_time**)**

**VALUES**

**(**1**,**1**,**5**,**-50000**,**4**,**'63228801057494242721'**,** **getdate()**-15**),**

**(**1**,**1**,**5**,**-100000**,**4**,**'86064402486499332735'**,** **getdate()**-11**),**

**(**2**,**4**,**6**,**-25000**,**4**,**'79654871009244873174'**,** **getdate()**-7 **),**

**(**3**,**5**,**7**,**-50000**,**4**,**'83205871078925874169'**,** **getdate()**-17**),**

**(**4**,**8**,**8**,**-50000**,**4**,**'84879651187965131889'**,** **getdate()**-17**),**

**(**5**,**10**,**9**,**-25000**,**4**,**'56549878879779887559'**,** **getdate()**-14**),**

**(**8**,**16**,**12**,**-25000**,**4**,**'15726752197217219716'**,** **getdate()**-13**)**

-- Insert REWARDS\_TRANSACTION\_ITEM entries that correspond to redemptions found in REWARDS\_TRANSACTION and REWARDS\_ACTIVITY

**INSERT** **INTO** dbo**.**rewards\_transaction\_item**(**rewards\_transaction\_id**,** rewards\_value**,** item\_cost**,** item\_id**,** rewards\_items\_type**,** quantity**,** groups\_id**)**

**VALUES**

**(**1**,(SELECT** item\_cost\_points **FROM** ITEM **WHERE** ITEM\_ID**=**1**),(SELECT** item\_cost **FROM** ITEM **WHERE** ITEM\_ID**=**1**),**1**,**'STATEMENT\_CREDIT'**,**1**,**5**),**

**(**2**,(SELECT** item\_cost\_points **FROM** ITEM **WHERE** ITEM\_ID**=**4**),(SELECT** item\_cost **FROM** ITEM **WHERE** ITEM\_ID**=**4**),**4**,**'GIFT\_CARD'**,**1**,**5**),**

**(**3**,(SELECT** item\_cost\_points **FROM** ITEM **WHERE** ITEM\_ID**=**2**),(SELECT** item\_cost **FROM** ITEM **WHERE** ITEM\_ID**=**2**),**2**,**'STATEMENT\_CREDIT'**,**1**,**6**),**

**(**4**,(SELECT** item\_cost\_points **FROM** ITEM **WHERE** ITEM\_ID**=**2**),(SELECT** item\_cost **FROM** ITEM **WHERE** ITEM\_ID**=**2**),**2**,**'STATEMENT\_CREDIT'**,**1**,**7**),**

**(**5**,(SELECT** item\_cost\_points **FROM** ITEM **WHERE** ITEM\_ID**=**2**),(SELECT** item\_cost **FROM** ITEM **WHERE** ITEM\_ID**=**2**),**2**,**'STATEMENT\_CREDIT'**,**1**,**8**),**

**(**6**,(SELECT** item\_cost\_points **FROM** ITEM **WHERE** ITEM\_ID**=**3**),(SELECT** item\_cost **FROM** ITEM **WHERE** ITEM\_ID**=**3**),**3**,**'STATEMENT\_CREDIT'**,**1**,**9**),**

**(**7**,(SELECT** item\_cost\_points **FROM** ITEM **WHERE** ITEM\_ID**=**1**),(SELECT** item\_cost **FROM** ITEM **WHERE** ITEM\_ID**=**1**),**1**,**'STATEMENT\_CREDIT'**,**1**,**12**)**

**SELECT** **\*** **FROM** REWARDS\_TRANSACTION\_ITEM**;**

-- Inserting the Redemption activity from REWARDS\_TRANSACTION into the Points Ledger REWARDS\_ACTIVITY

**INSERT** **INTO** dbo**.**rewards\_activity**(** account\_id**,** account\_users\_id**,** rewards\_value**,** rewards\_type**,** rewards\_activity\_type**,** program\_id**,** groups\_id**,** posting\_date**,** rewards\_transaction\_id**,** rewards\_transaction\_item\_id**)**

**VALUES**

**((SELECT** ACCOUNT\_ID **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**1**),(SELECT** ACCOUNT\_USERS\_ID **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**1**),(SELECT** REWARDS\_VALUE **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**1**),**'OTHER'**,**'REDEEM'**,**4**,(SELECT** GROUPS\_ID **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**1**),(SELECT** CREATE\_TIME **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**1**),(SELECT** REWARDS\_TRANSACTION\_ID **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**1**),(SELECT** REWARDS\_TRANSACTION\_ITEM\_ID **FROM** REWARDS\_TRANSACTION\_ITEM **WHERE** REWARDS\_TRANSACTION\_ID**=**1**)),**

**((SELECT** ACCOUNT\_ID **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**2**),(SELECT** ACCOUNT\_USERS\_ID **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**2**),(SELECT** REWARDS\_VALUE **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**2**),**'OTHER'**,**'REDEEM'**,**4**,(SELECT** GROUPS\_ID **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**2**),(SELECT** CREATE\_TIME **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**2**),(SELECT** REWARDS\_TRANSACTION\_ID **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**2**),(SELECT** REWARDS\_TRANSACTION\_ITEM\_ID **FROM** REWARDS\_TRANSACTION\_ITEM **WHERE** REWARDS\_TRANSACTION\_ID**=**2**)),**

**((SELECT** ACCOUNT\_ID **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**3**),(SELECT** ACCOUNT\_USERS\_ID **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**3**),(SELECT** REWARDS\_VALUE **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**3**),**'OTHER'**,**'REDEEM'**,**4**,(SELECT** GROUPS\_ID **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**3**),(SELECT** CREATE\_TIME **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**3**),(SELECT** REWARDS\_TRANSACTION\_ID **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**3**),(SELECT** REWARDS\_TRANSACTION\_ITEM\_ID **FROM** REWARDS\_TRANSACTION\_ITEM **WHERE** REWARDS\_TRANSACTION\_ID**=**3**)),**

**((SELECT** ACCOUNT\_ID **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**4**),(SELECT** ACCOUNT\_USERS\_ID **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**4**),(SELECT** REWARDS\_VALUE **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**4**),**'OTHER'**,**'REDEEM'**,**4**,(SELECT** GROUPS\_ID **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**4**),(SELECT** CREATE\_TIME **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**4**),(SELECT** REWARDS\_TRANSACTION\_ID **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**4**),(SELECT** REWARDS\_TRANSACTION\_ITEM\_ID **FROM** REWARDS\_TRANSACTION\_ITEM **WHERE** REWARDS\_TRANSACTION\_ID**=**4**)),**

**((SELECT** ACCOUNT\_ID **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**5**),(SELECT** ACCOUNT\_USERS\_ID **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**5**),(SELECT** REWARDS\_VALUE **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**5**),**'OTHER'**,**'REDEEM'**,**4**,(SELECT** GROUPS\_ID **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**5**),(SELECT** CREATE\_TIME **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**5**),(SELECT** REWARDS\_TRANSACTION\_ID **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**5**),(SELECT** REWARDS\_TRANSACTION\_ITEM\_ID **FROM** REWARDS\_TRANSACTION\_ITEM **WHERE** REWARDS\_TRANSACTION\_ID**=**5**)),**

**((SELECT** ACCOUNT\_ID **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**6**),(SELECT** ACCOUNT\_USERS\_ID **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**6**),(SELECT** REWARDS\_VALUE **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**6**),**'OTHER'**,**'REDEEM'**,**4**,(SELECT** GROUPS\_ID **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**6**),(SELECT** CREATE\_TIME **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**6**),(SELECT** REWARDS\_TRANSACTION\_ID **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**6**),(SELECT** REWARDS\_TRANSACTION\_ITEM\_ID **FROM** REWARDS\_TRANSACTION\_ITEM **WHERE** REWARDS\_TRANSACTION\_ID**=**6**)),**

**((SELECT** ACCOUNT\_ID **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**7**),(SELECT** ACCOUNT\_USERS\_ID **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**7**),(SELECT** REWARDS\_VALUE **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**7**),**'OTHER'**,**'REDEEM'**,**4**,(SELECT** GROUPS\_ID **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**7**),(SELECT** CREATE\_TIME **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**7**),(SELECT** REWARDS\_TRANSACTION\_ID **FROM** REWARDS\_TRANSACTION **WHERE** REWARDS\_TRANSACTION\_ID**=**7**),(SELECT** REWARDS\_TRANSACTION\_ITEM\_ID **FROM** REWARDS\_TRANSACTION\_ITEM **WHERE** REWARDS\_TRANSACTION\_ID**=**7**))**

-- Inserting the card swipes activity from TRANSACTIONN into the Points Ledger REWARDS\_ACTIVITY

**INSERT** **INTO** DBO**.**REWARDS\_ACTIVITY**(**account\_id**,** account\_users\_id**,** rewards\_value**,** rewards\_type**,** rewards\_activity\_type**,** program\_id**,** groups\_id**,** sales\_date**,** posting\_date**,** tender\_amount**,** transactionn\_id**)**

**VALUES**

**((SELECT** ACCOUNT\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**1**),(SELECT** ACCOUNT\_USERS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**1**),(SELECT** SALES\_AMOUNT**\***100 **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**1**),**'BASE'**,**'EARN'**,**1**,(SELECT** GROUPS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**1**),(select** sales\_date **from** transactionn **where** transactionn\_id**=**1**),(select** posting\_date **from** transactionn **where** transactionn\_id**=**1**),(select** sales\_amount **from** transactionn **where** transactionn\_id**=**1**),(SELECT** TRANSACTIONN\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**1**)),**

**((SELECT** ACCOUNT\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**2**),(SELECT** ACCOUNT\_USERS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**2**),(SELECT** SALES\_AMOUNT**\***100 **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**2**),**'BASE'**,**'EARN'**,**1**,(SELECT** GROUPS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**2**),(select** sales\_date **from** transactionn **where** transactionn\_id**=**2**),(select** posting\_date **from** transactionn **where** transactionn\_id**=**2**),(select** sales\_amount **from** transactionn **where** transactionn\_id**=**2**),(SELECT** TRANSACTIONN\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**2**)),**

**((SELECT** ACCOUNT\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**3**),(SELECT** ACCOUNT\_USERS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**3**),(SELECT** SALES\_AMOUNT**\***100 **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**3**),**'BASE'**,**'EARN'**,**1**,(SELECT** GROUPS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**3**),(select** sales\_date **from** transactionn **where** transactionn\_id**=**3**),(select** posting\_date **from** transactionn **where** transactionn\_id**=**3**),(select** sales\_amount **from** transactionn **where** transactionn\_id**=**3**),(SELECT** TRANSACTIONN\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**3**)),**

**((SELECT** ACCOUNT\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**4**),(SELECT** ACCOUNT\_USERS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**4**),(SELECT** SALES\_AMOUNT**\***100 **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**4**),**'BASE'**,**'EARN'**,**1**,(SELECT** GROUPS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**4**),(select** sales\_date **from** transactionn **where** transactionn\_id**=**4**),(select** posting\_date **from** transactionn **where** transactionn\_id**=**4**),(select** sales\_amount **from** transactionn **where** transactionn\_id**=**4**),(SELECT** TRANSACTIONN\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**4**)),**

**((SELECT** ACCOUNT\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**5**),(SELECT** ACCOUNT\_USERS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**5**),(SELECT** SALES\_AMOUNT**\***100 **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**5**),**'BASE'**,**'EARN'**,**1**,(SELECT** GROUPS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**5**),(select** sales\_date **from** transactionn **where** transactionn\_id**=**5**),(select** posting\_date **from** transactionn **where** transactionn\_id**=**5**),(select** sales\_amount **from** transactionn **where** transactionn\_id**=**5**),(SELECT** TRANSACTIONN\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**5**)),**

**((SELECT** ACCOUNT\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**6**),(SELECT** ACCOUNT\_USERS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**6**),(SELECT** SALES\_AMOUNT**\***100 **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**6**),**'BASE'**,**'EARN'**,**1**,(SELECT** GROUPS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**6**),(select** sales\_date **from** transactionn **where** transactionn\_id**=**6**),(select** posting\_date **from** transactionn **where** transactionn\_id**=**6**),(select** sales\_amount **from** transactionn **where** transactionn\_id**=**6**),(SELECT** TRANSACTIONN\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**6**)),**

**((SELECT** ACCOUNT\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**7**),(SELECT** ACCOUNT\_USERS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**7**),(SELECT** SALES\_AMOUNT**\***100 **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**7**),**'BASE'**,**'EARN'**,**1**,(SELECT** GROUPS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**7**),(select** sales\_date **from** transactionn **where** transactionn\_id**=**7**),(select** posting\_date **from** transactionn **where** transactionn\_id**=**7**),(select** sales\_amount **from** transactionn **where** transactionn\_id**=**7**),(SELECT** TRANSACTIONN\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**7**)),**

**((SELECT** ACCOUNT\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**8**),(SELECT** ACCOUNT\_USERS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**8**),(SELECT** SALES\_AMOUNT**\***100 **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**8**),**'BASE'**,**'EARN'**,**1**,(SELECT** GROUPS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**8**),(select** sales\_date **from** transactionn **where** transactionn\_id**=**8**),(select** posting\_date **from** transactionn **where** transactionn\_id**=**8**),(select** sales\_amount **from** transactionn **where** transactionn\_id**=**8**),(SELECT** TRANSACTIONN\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**8**)),**

**((SELECT** ACCOUNT\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**9**),(SELECT** ACCOUNT\_USERS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**9**),(SELECT** SALES\_AMOUNT**\***100 **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**9**),**'BASE'**,**'EARN'**,**1**,(SELECT** GROUPS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**9**),(select** sales\_date **from** transactionn **where** transactionn\_id**=**9**),(select** posting\_date **from** transactionn **where** transactionn\_id**=**9**),(select** sales\_amount **from** transactionn **where** transactionn\_id**=**9**),(SELECT** TRANSACTIONN\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**9**)),**

**((SELECT** ACCOUNT\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**10**),(SELECT** ACCOUNT\_USERS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**10**),(SELECT** SALES\_AMOUNT**\***100 **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**10**),**'BASE'**,**'EARN'**,**1**,(SELECT** GROUPS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**10**),(select** sales\_date **from** transactionn **where** transactionn\_id**=**10**),(select** posting\_date **from** transactionn **where** transactionn\_id**=**10**),(select** sales\_amount **from** transactionn **where** transactionn\_id**=**10**),(SELECT** TRANSACTIONN\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**10**)),**

**((SELECT** ACCOUNT\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**11**),(SELECT** ACCOUNT\_USERS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**11**),(SELECT** SALES\_AMOUNT**\***100 **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**11**),**'BASE'**,**'EARN'**,**1**,(SELECT** GROUPS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**11**),(select** sales\_date **from** transactionn **where** transactionn\_id**=**11**),(select** posting\_date **from** transactionn **where** transactionn\_id**=**11**),(select** sales\_amount **from** transactionn **where** transactionn\_id**=**11**),(SELECT** TRANSACTIONN\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**11**)),**

**((SELECT** ACCOUNT\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**12**),(SELECT** ACCOUNT\_USERS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**12**),(SELECT** SALES\_AMOUNT**\***100 **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**12**),**'BASE'**,**'EARN'**,**1**,(SELECT** GROUPS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**12**),(select** sales\_date **from** transactionn **where** transactionn\_id**=**12**),(select** posting\_date **from** transactionn **where** transactionn\_id**=**12**),(select** sales\_amount **from** transactionn **where** transactionn\_id**=**12**),(SELECT** TRANSACTIONN\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**12**)),**

**((SELECT** ACCOUNT\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**13**),(SELECT** ACCOUNT\_USERS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**13**),(SELECT** SALES\_AMOUNT**\***100 **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**13**),**'BASE'**,**'EARN'**,**1**,(SELECT** GROUPS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**13**),(select** sales\_date **from** transactionn **where** transactionn\_id**=**13**),(select** posting\_date **from** transactionn **where** transactionn\_id**=**13**),(select** sales\_amount **from** transactionn **where** transactionn\_id**=**13**),(SELECT** TRANSACTIONN\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**13**)),**

**((SELECT** ACCOUNT\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**14**),(SELECT** ACCOUNT\_USERS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**14**),(SELECT** SALES\_AMOUNT**\***100 **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**14**),**'BASE'**,**'EARN'**,**1**,(SELECT** GROUPS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**14**),(select** sales\_date **from** transactionn **where** transactionn\_id**=**14**),(select** posting\_date **from** transactionn **where** transactionn\_id**=**14**),(select** sales\_amount **from** transactionn **where** transactionn\_id**=**14**),(SELECT** TRANSACTIONN\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**14**)),**

**((SELECT** ACCOUNT\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**15**),(SELECT** ACCOUNT\_USERS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**15**),(SELECT** SALES\_AMOUNT**\***100 **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**15**),**'BASE'**,**'EARN'**,**1**,(SELECT** GROUPS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**15**),(select** sales\_date **from** transactionn **where** transactionn\_id**=**15**),(select** posting\_date **from** transactionn **where** transactionn\_id**=**15**),(select** sales\_amount **from** transactionn **where** transactionn\_id**=**15**),(SELECT** TRANSACTIONN\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**15**)),**

**((SELECT** ACCOUNT\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**16**),(SELECT** ACCOUNT\_USERS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**16**),(SELECT** SALES\_AMOUNT**\***100 **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**16**),**'BASE'**,**'EARN'**,**1**,(SELECT** GROUPS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**16**),(select** sales\_date **from** transactionn **where** transactionn\_id**=**16**),(select** posting\_date **from** transactionn **where** transactionn\_id**=**16**),(select** sales\_amount **from** transactionn **where** transactionn\_id**=**16**),(SELECT** TRANSACTIONN\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**16**)),**

**((SELECT** ACCOUNT\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**17**),(SELECT** ACCOUNT\_USERS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**17**),(SELECT** SALES\_AMOUNT**\***100 **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**17**),**'BASE'**,**'EARN'**,**1**,(SELECT** GROUPS\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**17**),(select** sales\_date **from** transactionn **where** transactionn\_id**=**17**),(select** posting\_date **from** transactionn **where** transactionn\_id**=**17**),(select** sales\_amount **from** transactionn **where** transactionn\_id**=**17**),(SELECT** TRANSACTIONN\_ID **FROM** TRANSACTIONN **WHERE** TRANSACTIONN\_ID**=**17**))**

**;**

**SELECT** **\*** **FROM** REWARDS\_ACTIVITY**;**

-- DONE WITH INSERT STATEMENTS FOR LOYALTY TABLES