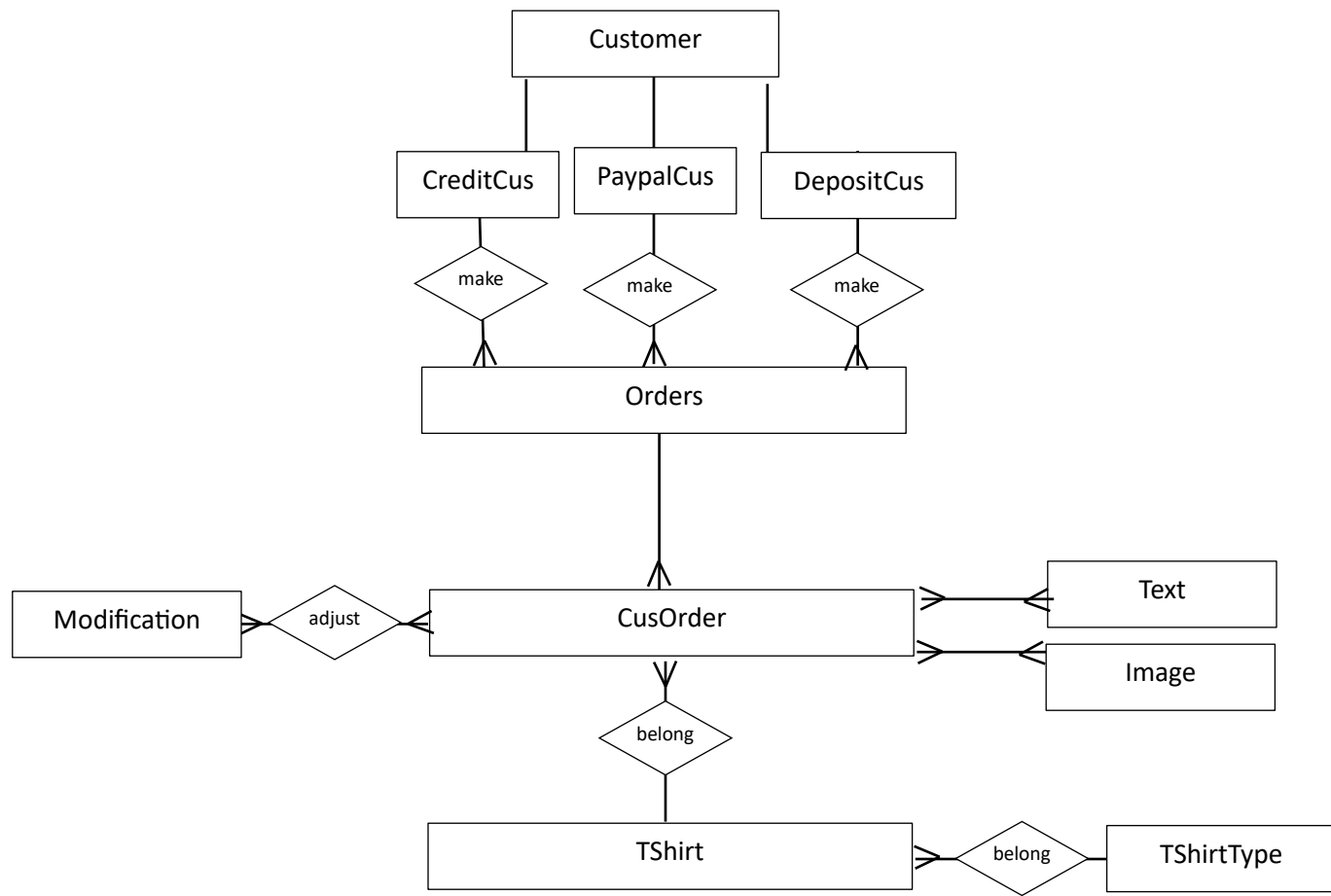# Assumption

Assume MyTShirt has a stock of sample images and texts for customers to choose from. If they want to change, they can require modifications. Adding is when they want some new pictures that are not available in the stock images (whether they find it through Internet,etc)

Customers can make many adjustments in 1 order and many orders can have one adjustment

Assume Customers only choose one payment method for later orders.

Assume many logo/text can be printed on 1 T-shirt order and many orders can have 1 text/logo

Assume every adjustment has a fixed price

```
                          ┌─────────────────┐
                          │    Customer     │
                          └─────────────────┘
                    ┌───────────┼───────────┐
              ┌──────────┐ ┌──────────┐ ┌──────────┐
              │ CreditCus│ │ PaypalCus│ │DepositCus│
              └──────────┘ └──────────┘ └──────────┘
                   │            │            │
                 ◇make◇      ◇make◇       ◇make◇
                   │            │            │
              ┌────────────────────────────────────┐
              │              Orders                 │
              └────────────────────────────────────┘
                               │
                               │
┌──────────────┐         ┌──────────────────────────┐      ┌──────────┐
│ Modification │──◇adjust◇──│       CusOrder         │──────│   Text   │
└──────────────┘         └──────────────────────────┘      └──────────┘
                               │                            ┌──────────┐
                            ◇belong◇                        │  Image   │
                               │                            └──────────┘
                          ┌──────────────────────┐      ┌──────────┐
                          │        TShirt         │──◇belong◇──│TShirtType│
                          └──────────────────────┘      └──────────┘
```

Customer	CreditCus	PaypalCus	DepositCus	Orders	CusOrder	TShirtText	Image	TShirt
CustomerNo	CreditCusNo	PayPalCusNo	DepositCusNo	OrderNo	CusOrderNo	TextNo	ImageNo	TShirtNo
Surname	CreditNumber	UserID	BankAccount	CreditCusNo	OrderNo	TextName	ImageName	TShirtName
Given	CustomerNo	CustomerNo	CustomerNo	PayPalCusNo	TShirtNo	Font	Color	TShirtTypeNo
Phone	ExpiryDate			DepositCusNo	Size	Size	Material	SleeveType
Address				DateOrdered		Color	Price	Color
Suburb				DateFinished		Material		Material
				PaymentStatus		Price		Price

TShirtType	Modification	ModiCusOrder	TextCusOrder	ImageCusOrder
TShirtTypeNo	ModiType	ModiCusOrderNo	TextCusOrderNo	ImageCusOrderNo
TypeName	Price	CusOrderNo	CusOrderNo	CusOrderNo
		ModiType	TextNo	ImageNo
		ModiDescription		

CREATE TABLE FUNCTION:

Customer Table:

CREATE TABLE Customer (

CustomerNo INT(10) NOT NULL PRIMARY KEY,

Surname VARCHAR (10),

Given VARCHAR (10),

Phone VARCHAR (10),

Address VARCHAR (20),

Suburb VARCHAR (10))

TShirtText:

CREATE TABLE TShirtText (

TextNo INT(10) NOT NULL PRIMARY KEY,

TextName VARCHAR (10),

Font VARCHAR (10),

Size VARCHAR (10),

Color VARCHAR (20),

Material VARCHAR (10),

Price INT(5))

Image:

CREATE TABLE Image (

ImageNo INT(10) NOT NULL PRIMARY KEY,

ImageName VARCHAR (10),

Color VARCHAR (20),

Material VARCHAR (10),

Price INT(5))

Modification:

CREATE TABLE Modification (

ModiType VARCHAR(w0) NOT NULL PRIMARY KEY,

Price INT (10)

)

TShirtType:

CREATE TABLE TShirtType (

TShirtTypeNo INT(10) NOT NULL PRIMARY KEY,

TypeName VARCHAR (10)

)

CreditCusNo:

CREATE TABLE CreditCus (

CreditCusNo INT(10) NOT NULL PRIMARY KEY,

CreditNumber VARCHAR (10),

CustomerNo INT (10) ,

FOREIGN KEY (CustomerNo) REFERENCES Customer(CustomerNo),

ExpiryDate DATE)

PayPalCus:

CREATE TABLE PayPalCus (

PayPalCusNo INT(10) NOT NULL PRIMARY KEY,

UserID INT (10),

CustomerNo INT (10) ,

FOREIGN KEY (CustomerNo) REFERENCES Customer(CustomerNo)

)

DepositCus

CREATE TABLE DepositCus (

DepositCusNo INT(10) NOT NULL PRIMARY KEY,

BankAccount INT(10),

CustomerNo INT(10),

FOREIGN KEY(CustomerNo) REFERENCES Customer(CustomerNo))

Orders

CREATE TABLE Orders (

OrderNo INT(10) NOT NULL PRIMARY KEY,

CreditCusNo INT (10),

PayPalCusNo INT(10),

DepositCusNo INT (10),

DateOrdered DATE,

DateFinished DATE,

PaymentStatus VARCHAR(1),

FOREIGN KEY(CreditCusNo) REFERENCES CreditCus(CreditCusNo),

FOREIGN KEY(PayPalCusNo) REFERENCES PayPalCus(PayPalCusNo),

FOREIGN KEY(DepositCusNo) REFERENCES DepositCus(DepositCusNo))

CusOrders:

CREATE TABLE CusOrder (

CusOrderNo INT(10) NOT NULL PRIMARY KEY,

OrderNo INT(10),

TShirtNo INT(10),

Size VARCHAR (3),

FOREIGN KEY(OrderNo) REFERENCES Orders(OrderNo),

FOREIGN KEY(TShirtNo) REFERENCES TShirt(TShirtNo)

TShirt:

CREATE TABLE TShirt (

TShirtNo INT(10) NOT NULL PRIMARY KEY,

TShirtName VARCHAR(20),

TShirtTypeNo INT(10),

SleeveType VARCHAR(10),

Color VARCHAR(10),

Material VARCHAR(10),

Price INT(10),

FOREIGN KEY(TShirtTypeNo) REFERENCES TShirtType(TShirtTypeNo))

ModiCusOrder

CREATE TABLE ModiCusOrder(

ModiCusOrderNo INT(10) PRIMARY KEY NOT NULL,

CusOrderNo INT(10),

ModiType VARCHAR (20),

ModiDescription VARCHAR (40),

FOREIGN KEY (CusOrderNo) REFERENCES CusOrder (CusOrderNo),

FOREIGN KEY (ModiType) REFERENCES Modification (ModiType))

TextCusOrder

CREATE TABLE TextCusOrder (

TextCusOrderNo INT(10) PRIMARY KEY NOT NULL,

CusOrderNo INT (10),

TextNo INT (10),

FOREIGN KEY (CusOrderNo) REFERENCES CusOrder (CusOrderNo),

FOREIGN KEY (TextNo) REFERENCES TShirtText (TextNo))

ImageCusOrder

CREATE TABLE ImageCusOrder (

ImageCusOrderNo INT(10) PRIMARY KEY NOT NULL,

CusOrderNo INT (10),

ImageNo INT (10),

FOREIGN KEY (CusOrderNo) REFERENCES CusOrder (CusOrderNo),

FOREIGN KEY (ImageNo) REFERENCES Image (ImageNo))

INSERT FUNCTION

Customer

INSERT INTO Customer

VALUES ('1','Cristiano','Ronaldo','6149912452','1 Dicksons Street','SUNSHINE'),

 ('2','Sergio','Ramos','6149933352','5 Thames Street','BOX HILL'),

 ('3','Lionel','Messi','6149937852','61 Buckley Street','FOOTSCRAY'),

 ('4','Ander','Herrera','6146787852','2 Elgar Street','BOX HILL'),

 ('5','Romelu','Lukaku','6146787869','8 Chapel Street','CAMBERWELL'),

 ('6','Bruno','Vince','6146712369','12 Chapel Street','CAMBERWELL'),

 ('7','Oliver','Giroud','6321712369','7 Swanston Street','WINDSOR'),

 ('8','Bruno','Fernades','6146912369','1 LaTrobe Street','RICHMOND'),

 ('9','David','Degea','6146435369','12 Collins Street','HAWTHORN'),

 ('10','Bruno','Vince Jr','6146700069','3 King Street','CITY'),

 ('11','Neymar','Jr','6199912369','5 Bourke Street','SUNBURY'),

 ('12','Thomas','Tuchel','6146722369','2 Russel Street','BLACKBURN'),

 ('13','Erik','Ten Hag','6146712009','12 Thames Street','BOX HILL'),

 ('14','Glory','Glory','6146774269','1 Chapel Street','CAMBERWELL'),

 ('15','Manchester','United','6146711169','1 Yarra Street','SPRINGVALE')

CreditCus:

INSERT INTO CreditCus

VALUES ('1','4485910504','1','2024/12/01'),

 ('2','4485910694','2','2023/06/01'),

 ('3','6985910694','3','2027/12/01'),

 ('4','4471910694','4','2025/12/05'),

 ('5','4485910621','5','2024/06/03')

DepositCus:

INSERT INTO DepositCus VALUES

('1','68480037','6'),

('2','69658841','7'),

('3','85238947','8'),

('4','98373689','9'),

('5','03955424','10')

PayPalCus:

INSERT INTO PayPalCus VALUES

('1','123456789','11'),

('2','987654321','12'),

('3','453216789','13'),

('4','012348765','14'),

('5','342178569','15')

Image:

INSERT INTO Image VALUES

('1','Tiger','Yellow','Cotton','5'),

('2','Cat','Red','Silk','10'),

('3','Dog','Orange','Wool','15'),

('4','Bird','Black','Silk','20'),

('5','Fish','White','Nylon','30')

TShirtText:

INSERT INTO TShirtText VALUES

('1','SQLBest','Arial','10','Black','Nylon','5'),

('2','SQLBoring','Calibri','10','White','Cotton','10'),

('3','ILoveSQL','Rod','10','Green','Silk','15'),

('4','IHateSQL','Seaford','10','Gray','Cotton','20'),

('5','RStudio','Rockwell','10','Purple','Silk','40')

TShirtType:

INSERT INTO TShirtType VALUES

('1','Polo'),

('2','Casual'),

('3','Formal'),

('4','Office'),

('5','Fit')

TShirt:

INSERT INTO TShirt VALUES

('1','RMITShirt','3','Long','White','Silk','10'),

('2','MonashShirt','2','Short','Pink','Wool','15'),

('3','VICShirt','1','Long','Black','Cotton','10'),

('4','DeakinShirt','5','Short','Navy','Fabric','20'),

('5','UTSShirt','4','Long','Red','Polyester','25')

Orders:

INSERT INTO Orders (OrderNo,CreditCusNo,DateOrdered,DateFinished) VALUES

('1','1','2023-05-01','2023-05-08'),

('2','3','2023-05-02','2023-05-09')

INSERT INTO Orders (OrderNo,PayPalCusNo,DateOrdered,DateFinished,PaymentStatus) VALUES

('3','1','2023-05-04','2023-05-11','Y'),

('4','3','2023-05-06','2023-05-13','Y')

INSERT INTO Orders (OrderNo,DepositCusNo,DateOrdered,DateFinished,PaymentStatus) VALUES

('5','4','2023-05-07','2023-05-14','Y'),

('6','5','2023-05-08','2023-05-15','Y')

CusOrder:

INSERT INTO CusOrder VALUES

('1','1','5','S'),

('2','1','4','S'),

('3','2','2','M'),

('4','3','3','L'),

('5','4','1','XS'),

('6','5','2','M'),

('7','6','3','L'),

('8','2','4','M'),

('9','1','3','S')

Modification

INSERT INTO Modification VALUES

('Change Sleeve','5'),

('Add Image','5'),

('Add Text','5'),

('Adjust Image','5'),

('Adjust Text','5'),

('Change Shirt Type','5'),

('Change Shirt Color','5'),

('Change Material','5')

ModiCusOrder:

INSERT INTO ModiCusOrder VALUES

('1','1','Change Shirt Color','Change to Rainbow Color'),

('2','1','Adjust Text','Change to Times New Roman'),

('3','3','Adjust Image','Make Image 2 times bigger'),

('4','1','Add Text','PythonBest'),

('5','2','Change Material','Change to Wool')

ImageCusOrder

INSERT INTO ImageCusOrder VALUES

('1','1','5'),

('2','2','4'),

('3','3','3'),

('4','4','2'),

('5','5','1')

TextCusOrder

INSERT INTO TextCusOrder VALUES

('1','1','5'),

('2','2','4'),

('3','3','3'),

('4','4','2'),

('5','5','1'),

('6','1','2')

Business Question
Question 1: Identify customers that have not made any orders and from that myTShirt can come up with appropriate strategies to incentivize them to make their first purchase.

SELECT CONCAT(Surname,' ',Given) AS full_name

FROM Customer c JOIN DepositCus d ON c.CustomerNo = d.CustomerNo

WHERE CONCAT(Surname,' ',Given) NOT IN (SELECT CONCAT(Surname,' ',Given)

FROM Customer c JOIN DepositCus d ON c.CustomerNo = d.CustomerNo

JOIN Orders o ON o.DepositCusNo = d.DepositCusNo)

UNION

SELECT CONCAT(Surname,' ',Given) AS full_name

FROM Customer c JOIN CreditCus ccus ON c.CustomerNo = ccus.CustomerNo

WHERE CONCAT(Surname,' ',Given) NOT IN (SELECT CONCAT(Surname,' ',Given)

FROM Customer c JOIN CreditCus ccus ON c.CustomerNo = ccus.CustomerNo

JOIN Orders o ON o.CreditCusNo = ccus.CreditCusNo)

UNION

SELECT CONCAT(Surname,' ',Given) AS full_name

FROM Customer c JOIN PayPalCus p ON c.CustomerNo = p.CustomerNo

WHERE CONCAT(Surname,' ',Given) NOT IN (SELECT CONCAT(Surname,' ',Given)

FROM Customer c JOIN PayPalCus p ON c.CustomerNo = p.CustomerNo

JOIN Orders o ON o.PayPalCusNo = p.PayPalCusNo)

Question 2: Show the revenue of each customers have made to identify which customers have contributed most to the business for developing rewarding programs.

SELECT CONCAT(Surname,' ',Given) AS Full_Name,SUM(ts.Price) AS Shirt_Revenue

FROM Customer c JOIN CreditCus ccus ON c.CustomerNo = ccus.CustomerNo

JOIN Orders o ON ccus.CreditCusNo = o.CreditCusNo

JOIN CusOrder co ON o.OrderNo = co.OrderNo

JOIN TShirt ts ON ts.TShirtNo = co.TShirtNo

GROUP BY CONCAT(Surname,' ',Given)

UNION

SELECT CONCAT(Surname,' ',Given) AS Full_Name,SUM(ts.Price) AS Shirt_Revenue

FROM Customer c JOIN DepositCus d ON c.CustomerNo = d.CustomerNo

JOIN Orders o ON d.DepositCusNo = o.DepositCusNo

JOIN CusOrder co ON o.OrderNo = co.OrderNo

JOIN TShirt ts ON ts.TShirtNo = co.TShirtNo

GROUP BY CONCAT(Surname,' ',Given)

UNION

SELECT CONCAT(Surname,' ',Given) AS Full_Name,SUM(ts.Price) AS Shirt_Revenue

FROM Customer c JOIN PayPalCus p ON c.CustomerNo = p.CustomerNo

JOIN Orders o ON p.PaypalCusNo = o.DepositCusNo

JOIN CusOrder co ON o.OrderNo = co.OrderNo

JOIN TShirt ts ON ts.TShirtNo = co.TShirtNo

GROUP BY CONCAT(Surname,' ',Given)

Visualization