# LoyaltyManagementSystem database Design Project

## Database Creation Script

File attached.



**Mapping relationships are as follows:**

1. **LoyaltyProgram table:**ProgramID is the primary key.
2. **Reward table:**

RewardID is the primary key

ProgramID is a foreign key referencing the LoyaltyProgram table's ProgramID.

1. **SpecialOffer table:**

OfferID is the primary key

RewardID is a foreign key referencing the Reward table's RewardID.

1. **Customer table:** CustomerID is the primary key.
2. **Account table:** AccountID is the primary key

CustomerID is a foreign key referencing the Customer table's CustomerID.

1. **Card table:** CardID is the primary key

CustomerID is a foreign key referencing the Customer table's CustomerID

ProgramID is a foreign key referencing the LoyaltyProgram table's ProgramID.

1. **CardTransaction table:**

TransactionID is the primary key.

CardID is a foreign key referencing the Card table's CardID.

1. **CustomerLoyaltyProgram table:**

CustomerID and ProgramID together form the primary key.

CustomerID is a foreign key referencing the Customer table's CustomerID.

ProgramID is a foreign key referencing the LoyaltyProgram table's ProgramID.

1. RewardOffers table:

RewardID and OfferID together form the primary key.

RewardID is a foreign key referencing the Reward table's RewardID.

OfferID is a foreign key referencing the SpecialOffer table's OfferID.

## EERD Design

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Description automatically generated

## Inserts scripts:

-- Insert 10 records into the LoyaltyProgram table

INSERT INTO LoyaltyProgram (ProgramID, ProgramName, Description, ExpiryDate)

VALUES

(1, 'Gold Program', 'Exclusive benefits for loyal customers', '2024-12-31'),

(2, 'Silver Program', 'Special rewards for frequent shoppers', '2024-12-31'),

(3, 'Bronze Program', 'Entry-level rewards program', '2024-12-31'),

(4, 'Platinum Program', 'Premium rewards for high-spending customers', '2024-12-31'),

(5, 'VIP Program', 'Exclusive perks for VIP members', '2024-12-31'),

(6, 'Elite Program', 'Luxury rewards for elite customers', '2024-12-31'),

(7, 'Basic Program', 'Basic rewards for all customers', '2024-12-31'),

(8, 'Premium Program', 'Enhanced rewards for premium members', '2024-12-31'),

(9, 'Exclusive Program', 'Exclusive benefits for select customers', '2024-12-31'),

(10, 'Standard Program', 'Standard rewards for regular customers', '2024-12-31');

-- Insert 10 records into the Reward table

INSERT INTO Reward (RewardID, ProgramID, RewardName, PointsRequired, Description, Category)

VALUES

(1, 1, 'Discount Voucher', 1000, 'Get a 10% discount on your next purchase', 'Discount'),

(2, 1, 'Free Gift', 2000, 'Receive a free gift with your purchase', 'Gift'),

(3, 2, 'Cashback Reward', 1500, 'Earn 5% cashback on all purchases', 'Cashback'),

(4, 2, 'Upgrade Coupon', 2500, 'Upgrade to the next membership level for free', 'Upgrade'),

(5, 3, 'Bonus Points', 500, 'Receive bonus points for each transaction', 'Points'),

(6, 3, 'Early Access Pass', 3000, 'Get early access to new product releases', 'Access'),

(7, 4, 'Exclusive Event Invitation', 5000, 'Receive an invitation to exclusive events', 'Event'),

(8, 4, 'Luxury Gift', 4000, 'Get a luxury gift as a reward', 'Gift'),

(9, 5, 'Personal Shopper Service', 6000, 'Enjoy a personalized shopping experience', 'Service'),

(10, 5, 'Priority Customer Support', 2000, 'Receive priority support from customer service', 'Support');

-- Insert 10 records into the SpecialOffer table

INSERT INTO SpecialOffer (OfferID, OfferName, Description, Discount, Category, RewardID)

VALUES

(1, 'Summer Sale', 'Enjoy big savings during the summer season', 0.15, 'Sale', 1),

(2, 'Holiday Promotion', 'Special discounts for the holiday season', 0.20, 'Promotion', 2),

(3, 'Weekend Flash Sale', 'Limited-time offers for the weekend', 0.25, 'Sale', 3),

(4, 'Black Friday Deals', 'Exclusive discounts on Black Friday', 0.30, 'Sale', 4),

(5, 'Clearance Sale', 'Clearance discounts on selected items', 0.40, 'Sale', 5),

(6, 'Birthday Bonus', 'Special rewards on your birthday', 0.10, 'Bonus', 6),

(7, 'Anniversary Celebration', 'Celebrate our anniversary with exclusive offers', 0.20, 'Celebration', 7),

(8, 'New Year Special', 'Welcome the new year with special discounts', 0.15, 'Special', 8),

(9, 'Spring Clearance', 'Clearance discounts for the spring season', 0.30, 'Sale', 9),

(10, 'Holiday Giveaway', 'Enter for a chance to win exciting prizes', 0.00, 'Giveaway', 10);

-- Insert 10 records into the Customer table

INSERT INTO Customer (CustomerID, Name, Address, Phone, Email)

VALUES

(1, 'John Doe', '123 Main St', '555-1234', 'john.doe@example.com'),

(2, 'Jane Smith', '456 Elm St', '555-5678', 'jane.smith@example.com'),

(3, 'Michael Johnson', '789 Oak St', '555-9012', 'michael.johnson@example.com'),

(4, 'Sarah Williams', '321 Pine St', '555-3456', 'sarah.williams@example.com'),

(5, 'David Brown', '654 Maple St', '555-7890', 'david.brown@example.com'),

(6, 'Jennifer Davis', '987 Birch St', '555-2345', 'jennifer.davis@example.com'),

(7, 'Christopher Miller', '159 Cedar St', '555-6789', 'christopher.miller@example.com'),

(8, 'Emily Wilson', '852 Walnut St', '555-0123', 'emily.wilson@example.com'),

(9, 'Daniel Taylor', '753 Spruce St', '555-4567', 'daniel.taylor@example.com'),

(10, 'Olivia Anderson', '426 Fir St', '555-8901', 'olivia.anderson@example.com');

-- Insert 10 records into the Account table

INSERT INTO Account (AccountID, CustomerID, AccountType, Balance)

VALUES

(1, 1, 'Savings', 5000.00),

(2, 2, 'Checking', 10000.00),

(3, 3, 'Savings', 2500.00),

(4, 4, 'Checking', 7500.00),

(5, 5, 'Savings', 3000.00),

(6, 6, 'Checking', 15000.00),

(7, 7, 'Savings', 20000.00),

(8, 8, 'Checking', 8000.00),

(9, 9, 'Savings', 6000.00),

(10, 10, 'Checking', 12000.00);

-- Insert 10 records into the Card table

INSERT INTO Card (CardID, CustomerID, CardNumber, ExpirationDate, CVV, CardType, ProgramID)

VALUES

(1, 1, '1234567890123456', '2025-12-31', '123', 'Visa', 1),

(2, 2, '2345678901234567', '2025-12-31', '234', 'Mastercard', 2),

(3, 3, '3456789012345678', '2025-12-31', '345', 'Visa', 3),

(4, 4, '4567890123456789', '2025-12-31', '456', 'American Express', 4),

(5, 5, '5678901234567890', '2025-12-31', '567', 'Discover', 5),

(6, 6, '6789012345678901', '2025-12-31', '678', 'Visa', 6),

(7, 7, '7890123456789012', '2025-12-31', '789', 'Mastercard', 7),

(8, 8, '8901234567890123', '2025-12-31', '890', 'Visa', 8),

(9, 9, '9012345678901234', '2025-12-31', '901', 'American Express', 9),

(10, 10, '0123456789012345', '2025-12-31', '012', 'Discover', 10);

-- Insert 10 records into the CardTransaction table

INSERT INTO CardTransaction (TransactionID, CardID, Amount, Date, Time)

VALUES

(1, 1, 100.00, '2023-06-19', '15:30:00'),

(2, 2, 75.50, '2023-06-19', '16:45:00'),

(3, 3, 200.00, '2023-06-19', '12:15:00'),

(4, 4, 50.75, '2023-06-19', '10:30:00'),

(5, 5, 300.00, '2023-06-19', '11:45:00'),

(6, 6, 120.50, '2023-06-19', '09:00:00'),

(7, 7, 80.25, '2023-06-19', '14:00:00'),

(8, 8, 150.00, '2023-06-19', '17:30:00'),

(9, 9, 45.75, '2023-06-19', '13:15:00'),

(10, 10, 250.00, '2023-06-19', '18:00:00');

-- Insert 10 records into the CustomerLoyaltyProgram table

INSERT INTO CustomerLoyaltyProgram (CustomerID, ProgramID, JoinDate, PointsEarned)

VALUES

(1, 1, '2023-06-19', 500),

(2, 2, '2023-06-19', 750),

(3, 3, '2023-06-19', 300),

(4, 4, '2023-06-19', 200),

(5, 5, '2023-06-19', 400),

(6, 6, '2023-06-19', 100),

(7, 7, '2023-06-19', 600),

(8, 8, '2023-06-19', 800),

(9, 9, '2023-06-19', 250),

(10, 10, '2023-06-19', 450);

-- Insert 10 records into the RewardOffers table

INSERT INTO RewardOffers (RewardID, OfferID)

VALUES

(1, 1),

(2, 2),

(3, 3),

(4, 4),

(5, 5),

(6, 6),

(7, 7),

(8, 8),

(9, 9),

(10, 10);

## Select Scripts

-- Subquery

SELECT Name

FROM Customer

WHERE CustomerID IN (

SELECT CustomerID

FROM CustomerLoyaltyProgram

WHERE ProgramID = 1

);

-- SELECT explicit join without using JOIN command

SELECT C.Name, LP.ProgramName

FROM Customer AS C, LoyaltyProgram AS LP

WHERE C.CustomerID = LP.ProgramID;

-- SELECT getting data from multiple tables implicit join using JOIN command

SELECT C.Name, R.RewardName

FROM Customer AS C

JOIN Card AS CR ON C.CustomerID = CR.CustomerID

JOIN Reward AS R ON CR.ProgramID = R.ProgramID;