-- Create Customers table

CREATE TABLE Customers (

CustomerID INT PRIMARY KEY,

Name VARCHAR(100),

ContactDetails VARCHAR(100),

Email VARCHAR(100) UNIQUE, -- Unique constraint for Email

DateOfBirth DATE

);

-- Create Branches table

CREATE TABLE Branches (

BranchID INT PRIMARY KEY,

BranchName VARCHAR(100),

BranchAddress VARCHAR(200)

);

-- Create Accounts table

CREATE TABLE Accounts (

AccountNumber INT PRIMARY KEY, -- Unique account number

AccountType VARCHAR(20),

Balance DECIMAL(10, 2),

CustomerID INT,

FOREIGN KEY (CustomerID) REFERENCES Customers(CustomerID)

);

-- Create Transactions table (composite primary key)

CREATE TABLE Transactions (

TransactionID INT,

AccountNumber INT,

Amount DECIMAL(10, 2),

TransactionDate DATE,

TransactionType VARCHAR(20),

PRIMARY KEY (TransactionID, AccountNumber), -- Composite Key (TransactionID, AccountNumber)

FOREIGN KEY (AccountNumber) REFERENCES Accounts(AccountNumber)

);

-- Create Employees table

CREATE TABLE Employees (

EmployeeID INT PRIMARY KEY,

Name VARCHAR(100),

Position VARCHAR(50),

Email VARCHAR(100) UNIQUE, -- Unique constraint for Email

BranchID INT,

FOREIGN KEY (BranchID) REFERENCES Branches(BranchID)

);

-- Create Shippings table

CREATE TABLE Shippings (

ShippingID INT PRIMARY KEY,

CustomerID INT,

ShippingAddress VARCHAR(200),

FOREIGN KEY (CustomerID) REFERENCES Customers(CustomerID)

);

-- Insert sample customers

INSERT INTO Customers (CustomerID, Name, ContactDetails, Email, DateOfBirth)

VALUES

(1, 'Alice Smith', '123-456-7890', 'alice@example.com', '1980-03-12'),

(2, 'Bob Johnson', '234-567-8901', 'bob@example.com', '1990-07-25'),

(3, 'Charlie Lee', '345-678-9012', 'charlie@example.com', '1985-10-30');

-- Insert sample branches

INSERT INTO Branches (BranchID, BranchName, BranchAddress)

VALUES

(1, 'Main Branch', '123 Main St, Cityville'),

(2, 'West Branch', '456 West Ave, Townsville');

-- Insert sample accounts

INSERT INTO Accounts (AccountNumber, AccountType, Balance, CustomerID)

VALUES

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

(102, 'Checking', 1000.00, 2),

(103, 'Savings', 2000.00, 3);

-- Insert sample transactions

INSERT INTO Transactions (TransactionID, AccountNumber, Amount, TransactionDate, TransactionType)

VALUES

(1, 101, 500.00, '2025-01-20', 'Deposit'),

(2, 102, 300.00, '2025-01-21', 'Withdrawal'),

(3, 103, 1000.00, '2025-01-22', 'Deposit');

-- Insert sample employees

INSERT INTO Employees (EmployeeID, Name, Position, Email, BranchID)

VALUES

(1, 'David Green', 'Manager', 'david.green@bank.com', 1),

(2, 'Eva White', 'Teller', 'eva.white@bank.com', 2);

-- Insert sample shippings

INSERT INTO Shippings (ShippingID, CustomerID, ShippingAddress)

VALUES

(1, 1, '123 Main St, Cityville'),

(2, 2, '456 West Ave, Townsville');

-- Example Updates and Queries

-- Update account balance after a transaction

UPDATE Accounts

SET Balance = Balance + 500.00 -- example for a deposit

WHERE AccountNumber = 101;

-- Update customer contact details

UPDATE Customers

SET ContactDetails = '555-555-5555'

WHERE CustomerID = 2;

-- Update employee position

UPDATE Employees

SET Position = 'Senior Teller'

WHERE EmployeeID = 2;

-- Remove a customer and all their associated accounts (cascade delete)

DELETE FROM Accounts

WHERE CustomerID = 1;

DELETE FROM Customers

WHERE CustomerID = 1;

-- Delete transactions older than a specific date (e.g., before '2025-01-20')

DELETE FROM Transactions

WHERE TransactionDate < '2025-01-20';

-- Retrieve all transactions for a specific account (e.g., AccountNumber = 101)

SELECT \*

FROM Transactions

WHERE AccountNumber = 101;

-- List all customers for a specific branch (e.g., BranchID = 1)

SELECT c.Name

FROM Customers c

JOIN Accounts a ON c.CustomerID = a.CustomerID

JOIN Employees e ON e.BranchID = 1

WHERE e.BranchID = 1;

-- Calculate the total balance across all accounts for a specific customer (e.g., CustomerID = 1)

SELECT SUM(a.Balance) AS TotalBalance

FROM Accounts a

WHERE a.CustomerID = 1;  
  
  
  
-- Drop tables if they exist

DROP TABLE IF EXISTS Orders;

DROP TABLE IF EXISTS Customers;

-- Create Customers table

CREATE TABLE Customers (

CustomerID INT PRIMARY KEY,

Name VARCHAR(100),

ContactDetails VARCHAR(100),

Email VARCHAR(100) UNIQUE, -- Unique constraint for Email

DateOfBirth DATE

);

-- Create Orders table

CREATE TABLE Orders (

OrderID INT PRIMARY KEY,

CustomerID INT,

OrderDate DATE,

Amount DECIMAL(10, 2),

FOREIGN KEY (CustomerID) REFERENCES Customers(CustomerID) -- Foreign key referencing Customers table

);

-- Insert sample customers

INSERT INTO Customers (CustomerID, Name, ContactDetails, Email, DateOfBirth)

VALUES

(1, 'Alice Smith', '123-456-7890', 'alice@example.com', '1980-03-12'),

(2, 'Bob Johnson', '234-567-8901', 'bob@example.com', '1990-07-25'),

(3, 'Charlie Lee', '345-678-9012', 'charlie@example.com', '1985-10-30');

-- Insert sample orders

INSERT INTO Orders (OrderID, CustomerID, OrderDate, Amount)

VALUES

(1, 1, '2025-01-20', 500.00),

(2, 2, '2025-01-21', 300.00),

(3, 3, '2025-01-22', 1000.00);

-- Retrieve all orders for a specific customer (e.g., CustomerID = 1)

SELECT \*

FROM Orders

WHERE CustomerID = 1;

-- Example Update and Delete Queries

-- Update order amount for a specific order

UPDATE Orders

SET Amount = 600.00

WHERE OrderID = 1;

-- Delete all orders for a specific customer

DELETE FROM Orders

WHERE CustomerID = 1;



