Bài 7: thiết kế database, viết truy vấn theo yêu cầu:

CREATE TABLE BRANCH (

Name VARCHAR(50) PRIMARY KEY,

AddressNo VARCHAR(20),

Street VARCHAR(50),

District VARCHAR(50),

City VARCHAR(50),

Region VARCHAR(50),

Email VARCHAR(50),

MngCode VARCHAR(10)

);

CREATE TABLE BRANCHPHONE (

BraName VARCHAR(50),

Phone VARCHAR(20),

PRIMARY KEY (BraName, Phone),

FOREIGN KEY (BraName) REFERENCES BRANCH(Name)

);

CREATE TABLE BRANCHFAX (

BraName VARCHAR(50),

Fax VARCHAR(20),

PRIMARY KEY (BraName, Fax),

FOREIGN KEY (BraName) REFERENCES BRANCH(Name)

);

CREATE TABLE EMPLOYEE (

Code VARCHAR(10) PRIMARY KEY,

FName VARCHAR(30),

LName VARCHAR(30),

AddressNo VARCHAR(20),

Street VARCHAR(50),

District VARCHAR(50),

City VARCHAR(50),

DOB DATE,

Email VARCHAR(50),

BraName VARCHAR(50),

FOREIGN KEY (BraName) REFERENCES BRANCH(Name)

);

CREATE TABLE EMPLOYEEPHONE (

EmpCode VARCHAR(10),

Phone VARCHAR(20),

PRIMARY KEY (EmpCode, Phone),

FOREIGN KEY (EmpCode) REFERENCES EMPLOYEE(Code)

);

CREATE TABLE CUSTOMER (

Code VARCHAR(10) PRIMARY KEY,

FName VARCHAR(30),

LName VARCHAR(30),

OfficeAddress VARCHAR(100),

HomeAddress VARCHAR(100),

Email VARCHAR(50),

EmpCode VARCHAR(10),

FOREIGN KEY (EmpCode) REFERENCES EMPLOYEE(Code)

);

CREATE TABLE CUSTOMERPHONE (

CusCode VARCHAR(10),

Phone VARCHAR(20),

PRIMARY KEY (CusCode, Phone),

FOREIGN KEY (CusCode) REFERENCES CUSTOMER(Code)

);

CREATE TABLE ACCOUNT (

Number VARCHAR(10) PRIMARY KEY,

CusCode VARCHAR(10),

FOREIGN KEY (CusCode) REFERENCES CUSTOMER(Code)

);

CREATE TABLE SAVINGACCOUNT (

AccNumber VARCHAR(10) PRIMARY KEY,

Balance DECIMAL(15,2),

InterestRate DECIMAL(5,2),

OpenedDate DATE,

FOREIGN KEY (AccNumber) REFERENCES ACCOUNT(Number)

);

CREATE TABLE CHECKINGACCOUNT (

AccNumber VARCHAR(10) PRIMARY KEY,

Balance DECIMAL(15,2),

OpenedDate DATE,

FOREIGN KEY (AccNumber) REFERENCES ACCOUNT(Number)

);

CREATE TABLE LOAN (

AccNumber VARCHAR(10) PRIMARY KEY,

BalanceDue DECIMAL(15,2),

InterestRate DECIMAL(5,2),

TakenDate DATE,

FOREIGN KEY (AccNumber) REFERENCES ACCOUNT(Number)

);

1. **You are required to insert valid and meaningful data into the database. Each table has at least 4 rows.**

INSERT INTO BRANCH VALUES ('BranchA','12','Main St','District 1','HCM','South','branchA@bank.com','NI1080');

INSERT INTO BRANCH VALUES ('BranchB','22','Hai Ba Trung','District 1','HCM','South','branchB@bank.com','NI1081');

INSERT INTO BRANCH VALUES ('BranchC','30','Nguyen Hue','District 5','HCM','South','branchC@bank.com','NI1082');

INSERT INTO EMPLOYEE VALUES

('NI1080','John','Smith','12','Main St','District 1','HCM','1980-05-12','john.smith@bank.com','BranchA'),

('NI1081','Anna','Taylor','45','Le Loi','District 3','HCM','1990-03-20','anna.taylor@bank.com','BranchA'),

('NI1082','Peter','Johnson','22','Hai Ba Trung','District 1','HCM','1985-07-10','peter.johnson@bank.com','BranchB'),

('NI1083','Mary','Brown','30','Nguyen Hue','District 5','HCM','1992-11-01','mary.brown@bank.com','BranchC');

INSERT INTO CUSTOMER VALUES

('C001','Peter','Johnson','Company A','12 Ly Thuong Kiet','peter.cus@bank.com','NI1082'),

('C002','David','Miller','Company B','45 Tran Hung Dao','david.miller@bank.com','NI1081'),

('C003','Sarah','Williams','Company C','99 Nguyen Hue','sarah.w@bank.com','NI1083');

INSERT INTO ACCOUNT VALUES

('A001','C001'),

('A002','C001'),

('A003','C002'),

('A004','C003');

INSERT INTO SAVINGACCOUNT VALUES

('A001',5000.00,3.5,'2020-01-10'),

('A002',8000.00,4.0,'2021-06-15');

INSERT INTO CHECKINGACCOUNT VALUES

('A003',2000.00,'2021-05-10'),

('A004',1500.00,'2022-07-20');

INSERT INTO LOAN VALUES

('A003',10000.00,6.5,'2021-07-01');

-- b. Change last name of an employee whose code is “N1080” to “Brown”.

UPDATE EMPLOYEE

SET LName = 'Brown'

WHERE Code = 'NI1080';

-- c. Delete the employee having code “N1080”. Explain what will happen to the customers who are severed by this employee.

DELETE FROM EMPLOYEE

WHERE Code = 'NI1080';

-- d. Retrieve all account numbers of a customer whose name is Peter Johnson.

SELECT A.Number

FROM ACCOUNT A

JOIN CUSTOMER C ON A.CusCode = C.Code

WHERE C.FName = 'Peter' AND C.LName = 'Johnson';

-- e Find all employees who have their birthdays in March 2010.

SELECT \*

FROM EMPLOYEE

WHERE YEAR(DOB) = 2010 AND MONTH(DOB) = 3;

-- f. Retrieve the total balance of all saving accounts owned by a customer named “Peter Johnson”

(Supposing that he has many saving accounts)

SELECT SUM(S.Balance) AS TotalSavingBalance

FROM CUSTOMER C

JOIN ACCOUNT A ON C.Code = A.CusCode

JOIN SAVINGACCOUNT S ON A.Number = S.AccNumber

WHERE C.FName = 'Peter' AND C.LName = 'Johnson';