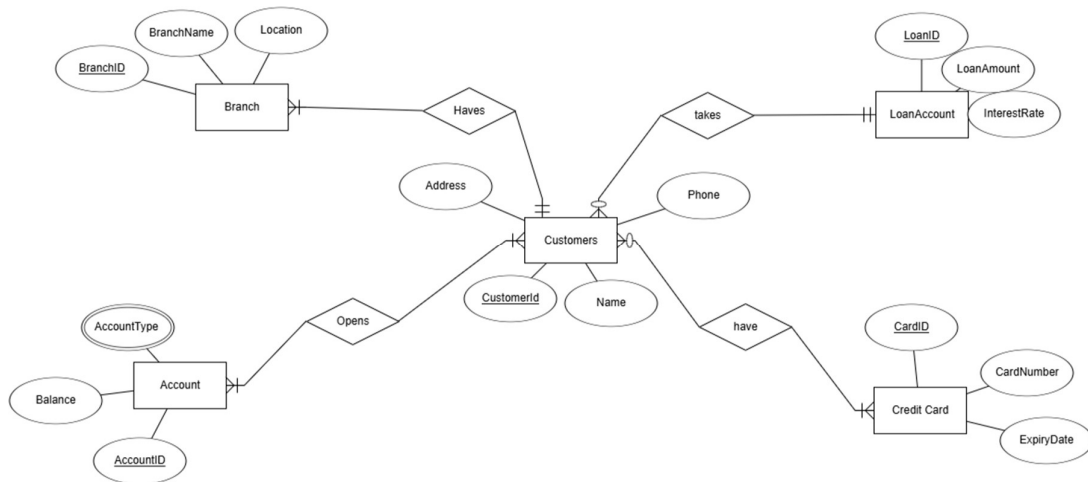


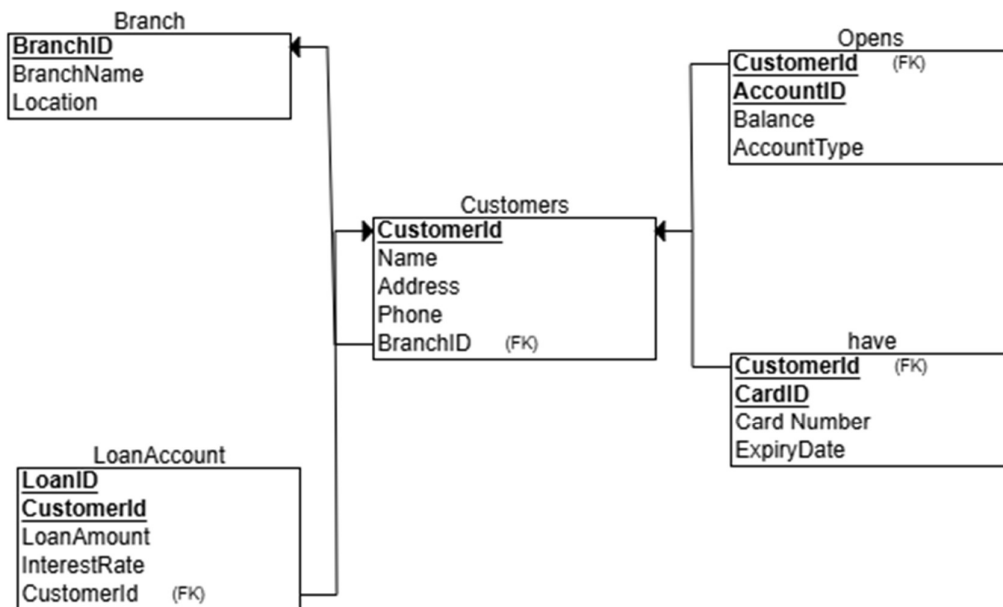
1. Problem Statement

Creating a banking database that manages information related to branches, customers, various types of accounts (savings and current), loan accounts, and credit cards.

2. ER DIAGRAM



3. Relational Schema



4.Creating Tables

```
1 v CREATE TABLE Branch (  
2     BranchID INT PRIMARY KEY,  
3     BranchName VARCHAR(100),  
4     Location VARCHAR(100)  
5 );  
6  
7 v CREATE TABLE Customer (  
8     CustomerID INT PRIMARY KEY,  
9     Name VARCHAR(100),  
10    Address VARCHAR(255),  
11    Phone VARCHAR(15),  
12    BranchID INT,  
13    FOREIGN KEY (BranchID) REFERENCES Branch(BranchID)  
14 );  
15  
16 v CREATE TABLE Account (  
17     AccountID INT PRIMARY KEY,  
18     AccountType VARCHAR(50),  
19     Balance DECIMAL(10, 2),  
20     CustomerID INT,  
21     FOREIGN KEY (CustomerID) REFERENCES Customer(CustomerID)  
22 );  
23  
24 v CREATE TABLE LoanAccount (  
25     LoanID INT PRIMARY KEY,  
26     LoanAmount DECIMAL(10, 2),  
27     InterestRate DECIMAL(5, 2),  
28     CustomerID INT,  
29     FOREIGN KEY (CustomerID) REFERENCES Customer(CustomerID)  
30 );  
31  
32 v CREATE TABLE CreditCard (  
33     CardID INT PRIMARY KEY,  
34     CardNumber VARCHAR(16),  
35     ExpiryDate DATE,  
36     CustomerID INT,  
37     FOREIGN KEY (CustomerID) REFERENCES Customer(CustomerID)  
38 );
```

5.Inserted 5 records in each table

```
INSERT INTO Branch VALUES (1, 'Connaught Place Branch', 'New Delhi');
INSERT INTO Branch VALUES (2, 'Bandra Branch', 'Mumbai');
INSERT INTO Branch VALUES (3, 'MG Road Branch', 'Bengaluru');
INSERT INTO Branch VALUES (4, 'Jubilee Hills Branch', 'Hyderabad');
INSERT INTO Branch VALUES (5, 'Salt Lake Branch', 'Kolkata');
```

```
select * from Branch;
```

BRANCHID	BRANCHNAME	LOCATION
1	Connaught Place Branch	New Delhi
2	Bandra Branch	Mumbai
3	MG Road Branch	Bengaluru
4	Jubilee Hills Branch	Hyderabad
5	Salt Lake Branch	Kolkata

```
INSERT INTO Customer VALUES (1, 'Amit Sharma', '1, Ashok Nagar, New Delhi', '9912345678',1);
INSERT INTO Customer VALUES (2, 'Priya Gupta', '45, Bandra West, Mumbai', '9823456789',1);
INSERT INTO Customer VALUES (3, 'Ravi Kumar', '23, MG Road, Bengaluru', '9908765432',2);
INSERT INTO Customer VALUES (4, 'Sneha Reddy', '78, Road No 5, Jubilee Hills, Hyderabad', '9987654321',1);
INSERT INTO Customer VALUES (5, 'Anjali Roy', '15, Salt Lake City, Kolkata', '9876543210',3);
```

```
select * from Customer;
```

CUSTOMERID	NAME	ADDRESS	PHONE	BRANCHID
1	Amit Sharma	1, Ashok Nagar, New Delhi	9912345678	1
2	Priya Gupta	45, Bandra West, Mumbai	9823456789	1
3	Ravi Kumar	23, MG Road, Bengaluru	9908765432	2
4	Sneha Reddy	78, Road No 5, Jubilee Hills, Hyderabad	9987654321	1
5	Anjali Roy	15, Salt Lake City, Kolkata	9876543210	3

```

INSERT INTO Account VALUES (101, 'Savings', 15000.00, 1);
INSERT INTO Account VALUES (202, 'Current', 20000.00, 2);
INSERT INTO Account VALUES (303, 'Savings', 30000.00, 3);
INSERT INTO Account VALUES (404, 'Current', 25000.00, 4);
INSERT INTO Account VALUES (505, 'Savings', 12000.00, 5);

```

```
select * from Account;
```

ACCOUNTID	ACCOUNTTYPE	BALANCE	CUSTOMERID
101	Savings	15000	1
202	Current	20000	2
303	Savings	30000	3
404	Current	25000	4
505	Savings	12000	5

```

INSERT INTO LoanAccount VALUES (111, 500000.00, 7.5, 1);
INSERT INTO LoanAccount VALUES (222, 700000.00, 8.0, 2);
INSERT INTO LoanAccount VALUES (333, 1000000.00, 7.0, 3);
INSERT INTO LoanAccount VALUES (444, 1500000.00, 7.25, 2);
INSERT INTO LoanAccount VALUES (555, 2000000.00, 6.5, 5);

```

```
select * from LoanAccount;
```

LOANID	LOANAMOUNT	INTERESTRATE	CUSTOMERID
111	500000	7.5	1
222	700000	8	2
333	1000000	7	3
444	1500000	7.25	2
555	2000000	6.5	5

```
INSERT INTO CreditCard VALUES (123, '4111111111111111', '31-Dec-2025', 1);
INSERT INTO CreditCard VALUES (234, '4222222222222222', '31-Jan-2026', 2);
INSERT INTO CreditCard VALUES (345, '4333333333333333', '28-Feb-2026', 3);
INSERT INTO CreditCard VALUES (456, '4444444444444444', '31-Mar-2026', 4);
INSERT INTO CreditCard VALUES (567, '4555555555555555', '30-Apr-2026', 1);
```

```
select * from CreditCard;
```

CARDID	CARDNUMBER	EXPIRYDATE	CUSTOMERID
234	4222222222222222	31-JAN-26	2
345	4333333333333333	28-FEB-26	3
456	4444444444444444	31-MAR-26	4
567	4555555555555555	30-APR-26	1
123	4111111111111111	31-DEC-25	1

6. Execute 5 select statements

```
SELECT * FROM Branch WHERE Location = 'Mumbai';

SELECT * FROM Customer where BranchID = 1;

SELECT * FROM Account WHERE Balance > 20000;

SELECT * FROM LoanAccount WHERE InterestRate < 7.5;

SELECT c.Name, cc.CardNumber, cc.ExpiryDate
FROM Customer c
JOIN CreditCard cc ON c.CustomerID = cc.CustomerID;
```

BRANCHID	BRANCHNAME	LOCATION
2	Bandra Branch	Mumbai

CUSTOMERID	NAME	ADDRESS	PHONE	BRANCHID
1	Amit Sharma	1, Ashok Nagar, New Delhi	9912345678	1
2	Priya Gupta	45, Bandra West, Mumbai	9823456789	1
4	Sneha Reddy	78, Road No 5, Jubilee Hills, Hyderabad	9987654321	1

ACCOUNTID	ACCOUNTTYPE	BALANCE	CUSTOMERID
303	Savings	30000	3
404	Current	25000	4

LOANID	LOANAMOUNT	INTERESTRATE	CUSTOMERID
333	1000000	7	3
444	1500000	7.25	2
555	2000000	6.5	5

NAME	CARDNUMBER	EXPIRYDATE
Priya Gupta	4222222222222222	31-JAN-26
Ravi Kumar	4333333333333333	28-FEB-26
Sneha Reddy	4444444444444444	31-MAR-26
Amit Sharma	4555555555555555	30-APR-26
Amit Sharma	4111111111111111	31-DEC-25

7. Execute 5 Update Queries

```
UPDATE Account SET Balance = Balance + 5000 WHERE AccountID = 101;  
select * from Account;
```

```
UPDATE Customer SET Address = '2, Ashok Nagar, New Delhi' WHERE CustomerID = 1;  
select * from Customer;
```

```
UPDATE LoanAccount SET InterestRate = 7.0 WHERE LoanID = 222;  
select * from LoanAccount;
```

```
UPDATE CreditCard SET ExpiryDate = '30-Mar-2026' WHERE CardID = 345;  
select * from CreditCard;
```

```
UPDATE Account SET AccountType = 'Current' WHERE AccountID = 505;  
select * from Account;
```

1 row(s) updated.

ACCOUNTID	ACCOUNTTYPE	BALANCE	CUSTOMERID
101	Savings	25000	1
202	Current	20000	2
303	Savings	30000	3
404	Current	25000	4
505	Current	12000	5

1 row(s) updated.

CUSTOMERID	NAME	ADDRESS	PHONE	BRANCHID
1	Amit Sharma	2, Ashok Nagar, New Delhi	9912345678	1
2	Priya Gupta	45, Bandra West, Mumbai	9823456789	1
3	Ravi Kumar	23, MG Road, Bengaluru	9908765432	2
4	Sneha Reddy	78, Road No 5, Jubilee Hills, Hyderabad	9987654321	1
5	Anjali Roy	15, Salt Lake City, Kolkata	9876543210	3

1 row(s) updated.

LOANID	LOANAMOUNT	INTERESTRATE	CUSTOMERID
111	500000	7.5	1
222	700000	7	2
333	1000000	7	3
444	1500000	7.25	2
555	2000000	6.5	5

1 row(s) updated.

CARDID	CARDNUMBER	EXPIRYDATE	CUSTOMERID
234	4222222222222222	31-JAN-26	2
345	4333333333333333	30-MAR-26	3
456	4444444444444444	31-MAR-26	4
567	4555555555555555	30-APR-26	1
123	4111111111111111	31-DEC-25	1

1 row(s) updated.

ACCOUNTID	ACCOUNTTYPE	BALANCE	CUSTOMERID
101	Savings	25000	1
202	Current	20000	2
303	Savings	30000	3
404	Current	25000	4
505	Current	12000	5

8.Execute 5 Subqueries

```
SELECT Name FROM Customer WHERE CustomerID IN (  
    SELECT CustomerID FROM Account WHERE Balance > (SELECT AVG(Balance) FROM Account)  
);
```

```
SELECT c.Name, SUM(l.LoanAmount) AS TotalLoan  
FROM Customer c  
JOIN LoanAccount l ON c.CustomerID = l.CustomerID  
GROUP BY c.Name;
```

```
SELECT BranchID FROM Branch WHERE BranchID IN (  
    SELECT BranchID FROM Account GROUP BY BranchID HAVING COUNT(CustomerID) > 2  
);
```

```
SELECT AccountID FROM Account WHERE CustomerID IN (  
    SELECT DISTINCT CustomerID FROM LoanAccount  
);
```

```
SELECT c.Name FROM Customer c WHERE c.CustomerID IN (  
    SELECT cc.CustomerID FROM CreditCard cc WHERE c.BranchID = 1  
);
```

NAME
Amit Sharma
Sneha Reddy
Ravi Kumar

NAME	TOTALLOAN
Ravi Kumar	1000000
Anjali Roy	2000000
Amit Sharma	500000
Priya Gupta	2200000

BRANCHID
1
2
3
4
5

ACCOUNTID
101
202
303
505

NAME
Priya Gupta
Sneha Reddy
Amit Sharma