# 18CSC303J – Database Management System
# Experiment 4

## Shushrut Kumar (RA1811028010049)

1.Create the following table **Customer_Account_Details**

| Column Name | Data type | Constraints |
| --- | --- | --- |
| Cust_ID | Number(5) | Primary key of the table |
| Cust_Last_Name | Varchar2(20) | Not  Null column |
| Cust_Mid_Name | Char(3) | |
| Cust_First_Name | Varchar2(20) | |
| Account_No | Number(4) | Unique column |
| Account_Type | Varchar2(15) | |
| Bank_Branch | Varchar2(20) | |
| Cust_Email | Varchar2(30) | Unique column |

create table Customer_Account_Details_049(

Cust_ID number(5) constraint CAD_Pk primary key,

Cust_Last_Name varchar2(20) constraint CAD_CLastName not null,

Cust_Mid_Name char(3),

Cust_First_Name varchar2(20),

Account_No number(4) constraint CAD_AcNo unique,

Account_Type varchar2(15),

Bank_Branch varchar2(20),

Cust_Email varchar2(30) constraint CAD_CEmail unique

);

desc Customer_Account_Details_046;

```
TABLE CUSTOMER_ACCOUNT_DETAILS_049
```

| Column | Null? | Type |
|---|---|---|
| CUST_ID | NOT NULL | NUMBER(5,0) |
| CUST_LAST_NAME | NOT NULL | VARCHAR2(20) |
| CUST_MID_NAME | - | CHAR(3) |
| CUST_FIRST_NAME | - | VARCHAR2(20) |
| ACCOUNT_NO | - | NUMBER(4,0) |
| ACCOUNT_TYPE | - | VARCHAR2(15) |
| BANK_BRANCH | - | VARCHAR2(20) |
| CUST_EMAIL | - | VARCHAR2(30) |

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8 rows selected.

insert into Customer_Account_Details_049

values (1, 'Jenson', null, 'Laura', 2739, 'Savings', 'Indus Bank', 'laura.jensen@example.com');

insert into Customer_Account_Details_049

values (2, 'Viren', null, 'Parmar', 3057, 'Current', 'HDFC Bank', 'viren@gmail.com');

insert into Customer_Account_Details_049

values (3, 'Sachin', 'Kalam', 'Tilokani', 7747, 'Salary', 'SBI Bank', 'sachin@gmail.com');

insert into Customer_Account_Details_049

values (4, 'Jakin', 'Deepak', 'Patel', 4089, 'Current', 'Bank of Baroda', 'jakin@gmail.com');

insert into Customer_Account_Details_049

values (5, 'Param', null, 'Shah', 3529, 'NRI', 'Capitol Bank', 'param@gmail.com');

insert into Customer_Account_Details_049

values (12, 'Neel', null, 'Thaker', 4989, 'Savings', 'LIC Bank', 'neel@gmail.com');

select * from Customer_Account_Details_049;

| CUST_ID | CUST_LAST_NAME | CUST_MID_NAME | CUST_FIRST_NAME | ACCOUNT_NO | ACCOUNT_TYPE | BANK_BRANCH | CUST_EMAIL |
|---------|----------------|---------------|-----------------|------------|--------------|-------------|------------|
| 4 | Jakin | De | Patel | 4089 | Current | Bank of Baroda | jakin@gmail.com |
| 5 | Param | - | Shah | 3529 | NRI | Capitol Bank | param@gmail.com |
| 12 | Neel | - | Thaker | 4989 | Savings | LIC Bank | neel@gmail.com |
| 2 | Viren | - | Parmar | 3057 | Current | HDFC Bank | viren@gmail.com |
| 3 | Sachin | Kal | Tilokani | 7747 | Salary | SBI Bank | sachin@gmail.com |
| 1 | Shushrut | - | Kumar | 2739 | Savings | Axis Bank | shushrut@gmail.com |

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6 rows selected.

2. Create the table **CustomerLoan** and **Implement the Primary Key and Foreign Key Constraints**

| Column Name | Data type | Constraints |
|-------------|-----------|-------------|
| LoanNo | Number(4) | It is the primary key of the table |
| Cust_ID | Number(5) | It can take only those values which are present in the Cust_ID of the Customer_Account_Details Table |
| Amount_In_dollar | Number(6,2) | |

create table CustomerLoan_049(

LoanNo number(4) constraint CL_LNo primary key,

Cust_ID number(5) constraint CL_CID references Customer_Account_Details_049(Cust_ID),

Ammount_In_Dollar number(6,2));

TABLE CUSTOMERLOAN_049

| Column | Null? | Type |
|--------|-------|------|
| LOANNO | NOT NULL | NUMBER(4,0) |
| CUST_ID | - | NUMBER(5,0) |
| AMMOUNT_IN_DOLLAR | - | NUMBER(6,2) |

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3 rows selected.

3. **Implementation of Self Referencing Foreign key in the table Employee_Details**

| Column Name | Data type | Constraints |
|---|---|---|
| Employee_ID | Number(6) | Primary key of the table |
| Employee_Last_Name | Varchar2(20) | |
| Employee_Mid_Name | Varchar2(3) | |
| Employee_First_Name | Varchar2(20) | |
| Employee_Email | Varchar2(30) | |
| Employee_Dept | Number(2) | Default 'HR' |
| Manager_ID | Varchar2(30) | It can take only those values which are present in Employee_ID column |

create table Employee_Details_049(

Employee_ID number(6) constraint ED_Pkey primary key,

Employee_Last_Name varchar2(20),

Employee_Mid_Name varchar2(3),

Employee_First_Name varchar2(20),

Employee_Email varchar2(30),

Employee_Dept varchar2(15) default 'HR',

Manager_ID number(6) constraint ED_MID references Employee_Details_049(Employee_ID)

);

TABLE EMPLOYEE_DETAILS_049

| Column | Null? | Type |
|---|---|---|
| EMPLOYEE_ID | NOT NULL | NUMBER(6,0) |
| EMPLOYEE_LAST_NAME | - | VARCHAR2(20) |
| EMPLOYEE_MID_NAME | - | VARCHAR2(3) |
| EMPLOYEE_FIRST_NAME | - | VARCHAR2(20) |
| EMPLOYEE_EMAIL | - | VARCHAR2(30) |
| EMPLOYEE_DEPT | - | VARCHAR2(15) |
| MANAGER_ID | - | NUMBER(6,0) |

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7 rows selected.

insert into Employee_Details_049(Employee_ID,Employee_Last_Name,Employee_Mid_Name,Employee_First_Name,Employee_Email)

values

(6, 'James', null, 'Milner', 'james@gmail.com');

insert into Employee_Details_049(Employee_ID,Employee_Last_Name,Employee_Mid_Name,Employee_First_Name,Employee_Email,Manager_ID)

values

(7, 'Sergio', 'Ruk' , 'Ramos', 'sergio@gmail.com',6);


insert into Employee_Details_049

values

(8, 'Toni', null , 'Kroos', 'toni@gmail.com', 'Production' , 7);

insert into Employee_Details_049

values

(9, 'Luka', null , 'Modric', 'luka@gmail.com', 'R&D' , null);

insert into Employee_Details_049

values

(10, 'Karim', null , 'Benzema', 'karim@gmail.com', 'Production' , 9);

select * from Employee_Details_049;

| EMPLOYEE_ID | EMPLOYEE_LAST_NAME | EMPLOYEE_MID_NAME | EMPLOYEE_FIRST_NAME | EMPLOYEE_EMAIL | EMPLOYEE_DEPT | MANAGER_ID |
|---|---|---|---|---|---|---|
| 6 | James | - | Milner | james@gmail.com | HR | - |
| 7 | Sergio | Ruk | Ramos | sergio@gmail.com | HR | 6 |
| 9 | Luka | - | Modric | luka@gmail.com | R&D | - |
| 8 | Toni | - | Kroos | toni@gmail.com | Production | 7 |
| 10 | Karim | - | Benzema | karim@gmail.com | Production | 9 |

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5 rows selected.

4. **Implementation of Check  Constraints in the table customer fixed deposit**

| Column Name | Data type | Constraints |
|---|---|---|
| FixedDeposit_No | Number(4) | It is the primary key of the table |
| Cust_ID | Number(5) | It can take only those values which are present in the Cust_ID of the Customer_Account_Details Table |
| Amount_In_dollar | Number(6,2) | |
| Rate_Of_Intrest | Number(3,1) | It can take values only between 2.5 to 12.0 |

create table Customer_Fixed_Deposit_049(

FixedDeposit_No number(4) constraint CFD_Pkey primary key,

Cust_ID number(5) constraint CFD_CID references Customer_Account_Details_049(Cust_ID),

Account_No number(4),

Amount_In_Dollars number(7,2),

Rate_Of_Interest number(3,1) constraint CFD_ROI check (Rate_Of_Interest between 2.5 and 12.0)

```
);
```

desc Customer_Fixed_Deposit_049;

TABLE CUSTOMER_FIXED_DEPOSIT_049

| Column | Null? | Type |
|---|---|---|
| FIXEDDEPOSIT_NO | NOT NULL | NUMBER(4,0) |
| CUST_ID | - | NUMBER(5,0) |
| ACCOUNT_NO | - | NUMBER(4,0) |
| AMOUNT_IN_DOLLARS | - | NUMBER(7,2) |
| RATE_OF_INTEREST | - | NUMBER(3,1) |

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5 rows selected.

insert into Customer_Fixed_Deposit_049

values

(9320, 1, 4457, 85907.00, 3.4);

insert into Customer_Fixed_Deposit_049

values

(7837, 2, 8615, 40254.28, 4.5);

insert into Customer_Fixed_Deposit_049

values

(8072, 3, 3376, 66406.30, 8.7);

insert into Customer_Fixed_Deposit_049

values

(6422, 4, 8997, 15000.30, 5.9);

insert into Customer_Fixed_Deposit_049

values

(7720, 5, 8868, 12374.31, 11.5);

select * from Customer_Fixed_Deposit_049;

| FIXEDDEPOSIT_NO | CUST_ID | ACCOUNT_NO | AMOUNT_IN_DOLLARS | RATE_OF_INTEREST |
|---|---|---|---|---|
| 9320 | 1 | 4457 | 85907 | 3.4 |
| 8072 | 3 | 3376 | 66406.3 | 8.7 |
| 6422 | 4 | 8997 | 15000.3 | 5.9 |
| 7720 | 5 | 8868 | 12374.31 | 11.5 |
| 7837 | 2 | 8615 | 40254.28 | 4.5 |

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5 rows selected.

5. Alter the table **customer fixed deposit by dropping the primary key.**

alter table Customer_Fixed_Deposit_049 drop constraint  CFD_Pkey;

TABLE CUSTOMER_FIXED_DEPOSIT_049

| Column | Null? | Type |
|---|---|---|
| FIXEDDEPOSIT_NO | - | NUMBER(4,0) |
| CUST_ID | - | NUMBER(5,0) |
| ACCOUNT_NO | - | NUMBER(4,0) |
| AMOUNT_IN_DOLLARS | - | NUMBER(7,2) |
| RATE_OF_INTEREST | - | NUMBER(3,1) |

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**6. Alter table customer fixed deposit by adding primary key constraint to account no.**

alter table Customer_Fixed_Deposit_049 add constraint CFD_Pkey primary key(Account_No);

TABLE CUSTOMER_FIXED_DEPOSIT_049

| Column | Null? | Type |
|---|---|---|
| FIXEDDEPOSIT_NO | - | NUMBER(4,0) |
| CUST_ID | - | NUMBER(5,0) |
| ACCOUNT_NO | NOT NULL | NUMBER(4,0) |
| AMOUNT_IN_DOLLARS | - | NUMBER(7,2) |
| RATE_OF_INTEREST | - | NUMBER(3,1) |

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5 rows selected.

**7. Select all the Cust_Last_name fron customer_account_details.**

select Cust_Last_Name from Customer_Account_Details_049;

| CUST_LAST_NAME |
|---|
| Jakin |
| Param |
| Neel |
| Viren |
| Sachin |
| Shushrut |

Download CSV
6 rows selected.

**8. Select distinct the Cust_Last_name fron customer_account_details.**

select DISTINCT(Cust_Last_Name) from Customer_Account_Details_049;

| CUST_LAST_NAME |
| --- |
| Shushrut |
| Param |
| Jakin |
| Neel |
| Viren |
| Sachin |

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**9. *List all customers with an account balance > $10000***

select * from Customer_Fixed_Deposit_049 where Amount_In_Dollars > 10000;

| FIXEDDEPOSIT_NO | CUST_ID | ACCOUNT_NO | AMOUNT_IN_DOLLARS | RATE_OF_INTEREST |
| --- | --- | --- | --- | --- |
| 9320 | 1 | 4457 | 85907 | 3.4 |
| 8072 | 3 | 3376 | 66406.3 | 8.7 |
| 6422 | 4 | 8997 | 15000.3 | 5.9 |
| 7720 | 5 | 8868 | 12374.31 | 11.5 |
| 7837 | 2 | 8615 | 40254.28 | 4.5 |

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5 rows selected.

**10. List the Cust_ID, Account_No of 'Kumar'**

select Cust_ID,Account_No from Customer_Account_Details_049 where Cust_First_Name = 'Kumar';

| CUST_ID | ACCOUNT_NO |
|---------|------------|
| 1 | 2739 |

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**11. *List all Cust_ID, Cust_Last_Name where Account_type is 'Savings' and Bank_Branch is 'AXIS Bank'.***

select Cust_ID,Cust_Last_Name from Customer_Account_Details_049 where Account_Type = 'Savings' AND Bank_Branch = 'AXIS Bank';

| CUST_ID | CUST_LAST_NAME |
|---------|----------------|
| 12 | Neel |

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**12. *List all Cust_ID, Cust_Last_Name where neither Account_type is 'Savings' and nor Bank_Branch is 'Capitol Bank'***

select Cust_ID,Cust_Last_Name from Customer_Account_Details_049 where Account_Type != 'Savings' AND Bank_Branch != 'Capitol Bank';

| CUST_ID | CUST_LAST_NAME |
|---------|----------------|
| 4 | Jakin |
| 2 | Viren |
| 3 | Sachin |

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3 rows selected.

**13. List all Cust_ID, Cust_Last_Name where either Account_type is**

**'Savings'   or Bank_Branch is 'LIC Bank'.**

select Cust_ID,Cust_Last_Name from Customer_Account_Details_049 where Account_Type = 'Savings' OR Bank_Branch = 'LIC Bank';

| CUST_ID | CUST_LAST_NAME |
|---------|----------------|
| 12 | Neel |
| 1 | Shushrut |

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2 rows selected.

**14. List all  Cust_ID with balance in the range $10000.00 to $20000.00.**

select Cust_ID from Customer_Fixed_Deposit_049 where Amount_In_Dollars between 10000.00 and 20000.00;

| CUST_ID |
|---------|
| 4 |
| 5 |

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2 rows selected.

**15. List all customers who have account in AXIS Bank or HDFC Bank**

select * from Customer_Account_Details_049 where Bank_Branch in ('AXIS Bank','HDFC Bank');

| CUST_ID | CUST_LAST_NAME | CUST_MID_NAME | CUST_FIRST_NAME | ACCOUNT_NO | ACCOUNT_TYPE | BANK_BRANCH | CUST_EMAIL |
|---------|----------------|---------------|-----------------|------------|--------------|-------------|------------|
| 2 | Viren | - | Parmar | 3057 | Current | HDFC Bank | viren@gmail.com |

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**16. List all Accounts where the Bank_Branch begins with a 'A' and has 'X' as the second character**

select Account_No,Bank_Branch from Customer_Account_Details_049 where Bank_Branch like 'CA%';

| ACCOUNT_NO | BANK_BRANCH |
|---|---|
| 3529 | Capitol Bank |

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**17. List all Accounts where the Bank_Branch column has 'B' as the second character.**

select Account_No,Bank_Branch from Customer_Account_Details_049 where Bank_Branch like '_B%';

| ACCOUNT_NO | BANK_BRANCH |
|---|---|
| 7747 | SBI Bank |

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**18. List employees who have not been assigned a Manager yet.**

select * from Employee_Details_049 where Manager_ID is null;

| EMPLOYEE_ID | EMPLOYEE_LAST_NAME | EMPLOYEE_MID_NAME | EMPLOYEE_FIRST_NAME | EMPLOYEE_EMAIL | EMPLOYEE_DEPT | MANAGER_ID |
|---|---|---|---|---|---|---|
| 6 | James | - | Milner | james@gmail.com | HR | - |
| 9 | Luka | - | Modric | luka@gmail.com | R&D | - |

Download CSV
2 rows selected.

**19. List employees who have been assigned to some Manager.**

select * from Employee_Details_049 where Manager_ID is not null;

| EMPLOYEE_ID | EMPLOYEE_LAST_NAME | EMPLOYEE_MID_NAME | EMPLOYEE_FIRST_NAME | EMPLOYEE_EMAIL | EMPLOYEE_DEPT | MANAGER_ID |
|---|---|---|---|---|---|---|
| 7 | Sergio | Ruk | Ramos | sergio@gmail.com | HR | 6 |
| 8 | Toni | - | Kroos | toni@gmail.com | Production | 7 |
| 10 | Karim | - | Benzema | karim@gmail.com | Production | 9 |

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3 rows selected.

**20. List the Cust_ID and their account balances, in the increasing order of the balance**

select Cust_ID,Amount_In_Dollars from Customer_Fixed_Deposit_049  order by Amount_In_Dollars;

| CUST_ID | AMOUNT_IN_DOLLARS |
|---------|-------------------|
| 5 | 12374.31 |
| 4 | 15000.3 |
| 2 | 40254.28 |
| 3 | 66406.3 |
| 1 | 85907 |

Download CSV
5 rows selected.