18CSC303J-Database Management System

Experiment 4

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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

SQL QUERY:

```
create table Customer_Account_Details_041(

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_041;

insert into Customer_Account_Details_041

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

insert into Customer_Account_Details_041

values (2, 'Noomen', null, 'Felipe', 3057, 'Current', 'Capital Bank', 'felipe.noomen@example.com');

insert into Customer_Account_Details_041

values (3, 'Lima', 'Rua', 'Jaqueline', 7747, 'Salary', 'State Bank', 'jaqueline.lima@example.com');

insert into Customer_Account_Details_041

values (4, 'Fleming', 'Van', 'Joe', 4089, 'Current', 'Punjab Bank', 'joe.fleming@example.com');

insert into Customer_Account_Details_041

values (5, 'Peltola', null, 'Linnea', 3529, 'NRI', 'Canara Bank', 'linnea.peltola@example.com');

insert into Customer_Account_Details_041

values (12, 'Niroj', null, 'Graham', 4989, 'Savings', 'Capital Bank', 'graham.niroj@example.com');


select * from Customer_Account_Details_041;
```

Table created.

TABLE CUSTOMER_ACCOUNT_DETAILS_041

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)

CUST_ID	CUST_LAST_NAME	CUST_MID_NAME	CUST_FIRST_NAME	ACCOUNT_NO	ACCOUNT_TYPE	BANK_BRANCH	CUST_EMAIL
1	Jenson	-	Laura	2739	Savings	Indus Bank	laura.jensen@example.com
2	Noomen	-	Felipe	3057	Current	Capital Bank	felipe.noomen@example.com
3	Lima	Rua	Jaqueline	7747	Salary	State Bank	jaqueline.lima@example.com
4	Fleming	Van	Joe	4089	Current	Punjab Bank	joe.fleming@example.com
5	Peltola	-	Linnea	3529	NRI	Canara Bank	linnea.peltola@example.com
12	Niroj	-	Graham	4989	Savings	Capital Bank	graham.niroj@example.com

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)	

SQL QUERY:

```
create table CustomerLoan_041(
LoanNo number(4) constraint CL_LNo primary key,
Cust_ID number(5) constraint CL_CID references Customer_Account_Details_041(Cust_ID),
Ammount_In_Dollar number(6,2)
);
desc CustomerLoan_041;

insert into CustomerLoan_041
values
(5577, 2, 9873.36);
insert into CustomerLoan_041
```

values

(8266, 4, 5660.47);

insert into CustomerLoan_041

values

(2430, 1, 6881.00);

insert into CustomerLoan_041

values

(9323, 3, 2811.73);

insert into CustomerLoan_041

values

(4743, 5, 5014.56);

select * from CustomerLoan_041;

```
Table created.
```

```
TABLE CUSTOMERLOAN_041
```

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

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

SQL QUERY:

```
create table Employee_Details_041(

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_041(Employee_ID)

);

desc Employee_Details_041;


insert into Employee_Details_041(Employee_ID,Employee_Last_Name,Employee_Mid_Name,Employee_First_Name,Employee_Email)

values

(6, 'Gallardo', null, 'Asuncion', 'asuncion.gallardo@example.com');

insert into Employee_Details_041(Employee_ID,Employee_Last_Name,Employee_Mid_Name,Employee_First_Name,Employee_Email,Manager_ID)

values

(7, 'Duijs', 'Nui' , 'Maik', 'aik.duijs@example.com',6);


insert into Employee_Details_041

values

(8, 'Evliyaoğlu', null , 'Çetin', 'cetin.evliyaoglu@example.com', 'Production' , 7);

insert into Employee_Details_041

values

(9, 'Andersen', null , 'Felix', 'felix.andersen@example.com', 'R&D' , null);

insert into Employee_Details_041

values

(10, 'Özkara', null , 'Mestan', 'mestan.ozkara@example.com', 'Production' , 9);
```

select * from Employee_Details_041;

Table created.

TABLE EMPLOYEE_DETAILS_041

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.

1 row(s) inserted.

1 row(s) inserted.

1 row(s) inserted.

1 row(s) inserted.

1 row(s) inserted.

EMPLOYEE_ID	EMPLOYEE_LAST_NAME	EMPLOYEE_MID_NAME	EMPLOYEE_FIRST_NAME	EMPLOYEE_EMAIL	EMPLOYEE_DEPT	MANAGER_ID
6	Gallardo	-	Asuncion	asuncion.gallardo@example.com	HR	-
7	Duijs	Nui	Maik	aik.duijs@example.com	HR	6
8	Evliyaoğlu	-	Çetin	cetin.evliyaoglu@example.com	Production	7
9	Andersen	-	Felix	felix.andersen@example.com	R&D	-
10	Özkara	-	Mestan	mestan.ozkara@example.com	Production	9

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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

SQL QUERY:

```
create table Customer_Fixed_Deposit_041(

FixedDeposit_No number(4) constraint CFD_Pkey primary key,

Cust_ID number(5) constraint CFD_CID references Customer_Account_Details_041(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_041;
```

```
insert into Customer_Fixed_Deposit_041
values
(9320, 1, 4457, 85907.00, 3.4);
insert into Customer_Fixed_Deposit_041
values
(7837, 2, 8615, 40254.28, 4.5);
insert into Customer_Fixed_Deposit_041
values
(8072, 3, 3376, 66406.30, 8.7);
insert into Customer_Fixed_Deposit_041
values
(6422, 4, 8997, 15000.30, 5.9);
insert into Customer_Fixed_Deposit_041
values
(7720, 5, 8868, 12374.31, 11.5);

select * from Customer_Fixed_Deposit_041;
```

Table created.

TABLE CUSTOMER_FIXED_DEPOSIT_041

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)

5 rows selected.

1 row(s) inserted.

1 row(s) inserted.

1 row(s) inserted.

1 row(s) inserted.

1 row(s) inserted.

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

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

SQL QUERY:

alter table Customer_Fixed_Deposit_041 drop constraint CFD_Pkey;

select * from Customer_Fixed_Deposit_041;

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

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

SQL QUERY:

alter table Customer_Fixed_Deposit_041 add constraint CFD_Pkey primary key(Account_No);

select * from Customer_Fixed_Deposit_041;

```
Table altered.
```

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

7. Select all the Cust_Last_name fron customer_account_details.

SQL QUERY:

select Cust_Last_Name from Customer_Account_Details_041;

CUST_LAST_NAME
Jenson
Noomen
Lima
Fleming
Peltola
Niroj

8. Select distinct the Cust_Last_name fron customer_account_details.

SQL QUERY:

select DISTINCT(Cust_Last_Name) from Customer_Account_Details_041;

CUST_LAST_NAME
Lima
Noomen
Jenson
Fleming
Peltola
Niroj

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

SQL QUERY:

select * from Customer_Fixed_Deposit_041 where Amount_In_Dollars > 10000;

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

10. List the Cust_ID, Account_No of 'Graham'

SQL QUERY:

select Cust_ID,Account_No from Customer_Account_Details_041 where Cust_First_Name = 'Graham';

CUST_ID	ACCOUNT_NO
12	4989

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

SQL QUERY:

select Cust_ID,Cust_Last_Name from Customer_Account_Details_041 where Account_Type = 'Savings' AND Bank_Branch = 'Capital Bank';

CUST_ID	CUST_LAST_NAME
12	Niroj

12. List all Cust_ID, Cust_Last_Name where neither Account_type is ‘Savings’ and nor Bank_Branch is ‘Capital Bank’

SQL QUERY:

select Cust_ID,Cust_Last_Name from Customer_Account_Details_041 where Account_Type != 'Savings' AND Bank_Branch != 'Capital Bank';

CUST_ID	CUST_LAST_NAME
3	Lima
4	Fleming
5	Peltola

13. List all Cust_ID, Cust_Last_Name where either Account_type is

‘Savings’ or Bank_Branch is ‘Capital Bank’.

SQL QUERY:

select Cust_ID,Cust_Last_Name from Customer_Account_Details_041 where Account_Type = 'Savings' OR Bank_Branch = 'Capital Bank';

CUST_ID	CUST_LAST_NAME
1	Jenson
2	Noomen
12	Niroj

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

SQL QUERY:

select Cust_ID from Customer_Fixed_Deposit_041 where Amount_In_Dollars between 10000.00 and 20000.00;

CUST_ID
4
5

15. List all customers who have account in Capital Bank or Indus Bank

SQL QUERY:

select * from Customer_Account_Details_041 where Bank_Branch in ('Capital Bank','Indus Bank');

CUST_ID	CUST_LAST_NAME	CUST_MID_NAME	CUST_FIRST_NAME	ACCOUNT_NO	ACCOUNT_TYPE	BANK_BRANCH	CUST_EMAIL
1	Jenson	-	Laura	2739	Savings	Indus Bank	laura.jensen@example.com
2	Noomen	-	Felipe	3057	Current	Capital Bank	felipe.noomen@example.com
12	Niroj	-	Graham	4989	Savings	Capital Bank	graham.niroj@example.com

16. List all Accounts where the Bank_Branch begins with a ‘C’ and has ‘a’ as the second character

SQL QUERY:

select Account_No,Bank_Branch from Customer_Account_Details_041 where Bank_Branch like 'Ca%';

ACCOUNT_NO	BANK_BRANCH
3057	Capital Bank
3529	Canara Bank
4989	Capital Bank

17. List all Accounts where the Bank_Branch column has ‘a’ as the second character.

SQL QUERY:

select Account_No,Bank_Branch from Customer_Account_Details_041 where Bank_Branch like '_a%';

ACCOUNT_NO	BANK_BRANCH
3057	Capital Bank
3529	Canara Bank
4989	Capital Bank

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

SQL QUERY:

select * from Employee_Details_041 where Manager_ID is null;

EMPLOYEE_ID	EMPLOYEE_LAST_NAME	EMPLOYEE_MID_NAME	EMPLOYEE_FIRST_NAME	EMPLOYEE_EMAIL	EMPLOYEE_DEPT	MANAGER_ID
6	Gallardo	-	Asuncion	asuncion.gallardo@example.com	HR	-
9	Andersen	-	Felix	felix.andersen@example.com	R&D	-

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

SQL QUERY:

select * from Employee_Details_041 where Manager_ID is not null;

EMPLOYEE_ID	EMPLOYEE_LAST_NAME	EMPLOYEE_MID_NAME	EMPLOYEE_FIRST_NAME	EMPLOYEE_EMAIL	EMPLOYEE_DEPT	MANAGER_ID
7	Duijs	Nui	Maik	aik.duijs@example.com	HR	6
8	Evliyaoğlu	-	Çetin	cetin.evliyaoglu@example.com	Production	7
10	Özkara	-	Mestan	mestan.ozkara@example.com	Production	9

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

SQL QUERY:

select Cust_ID,Amount_In_Dollars from Customer_Fixed_Deposit_041 order by Amount_In_Dollars;

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