

DBMS Lab Exercise-4 SQL –Set Operations and Subqueries

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21BCE1163

PART A

Create two tables with the following details

Customer_Fixed_Deposit(cust_ID,Cust_name,Fixed_Deposit_Amount)

Customer_loan(cust_ID, Cust_name, Loan_Amount)

Create table code:

```
create table cfd_21BCE1163(cusid number(10) , cname varchar(10),  
fd number(10));
```

```
create table cL_21BCE1163 (cusid number(10) , cname varchar(10),  
la number(10));
```

```
desc cfd_21BCE1163;
```

```
desC cL_21BCE1163;
```

```
insert into cfd_21BCE1163 values(111,'sandip',126800);
```

```
insert into cfd_21BCE1163 values(112,'ananya',970000);
```

```
insert into cfd_21BCE1163 values(113,'rohit',680000);
```

```
insert into cfd_21BCE1163 values(114,'rohan',670068);
```

```
insert into cfd_21BCE1163 values(115,'nidhish',767800);
```

```
insert into cfd_21BCE1163 values(116,'shneur',768595);
```

```
insert into cfd_21BCE1163 values(117,'naman',879555);
```

```

insert into cfd_21BCE1163 values(118,'ramesh',876567);
insert into cfd_21BCE1163 values(119,'rajesh',768494);
insert into cfd_21BCE1163 values(120,'rasam',46909);
insert into cfd_21BCE1163 values(121,'ritwik',34566);
insert into cL_21BCE1163 values(111,'sandip',757335);
insert into cL_21BCE1163 values(117,'naman',857694);
insert into cL_21BCE1163 values(119,'rajesh',67557);
insert into cL_21BCE1163 values(116,'shneur',56546);
insert into cL_21BCE1163 values(167,'pawan',78674);
insert into cL_21BCE1163 values(177,'kalyan',24465);
insert into cL_21BCE1163 values(190,'soloman',12300);
insert into cL_21BCE1163 values(198,'ram',857694);
insert into cL_21BCE1163 values(120,'rasam',458943);
insert into cL_21BCE1163 values(121,'ritwik',675768);

```

TABLE CFD_21BCE1163

Column	Null?	Type
CUSID	-	NUMBER(10,0)
CNAME	-	VARCHAR2(10)
FD	-	NUMBER(10,0)

TABLE CL_21BCE1163

Column	Null?	Type
CUSID	-	NUMBER(10,0)
CNAME	-	VARCHAR2(10)
LA	-	NUMBER(10,0)

```
1 row(s) inserted.
```

```
1 row(s) inserted.
```

```
1 row(s) inserted.
```

```
1 row(s) inserted.
```

```
1 row(s) inserted.
```

```
1 row(s) inserted.
```

```
1 row(s) inserted.
```

```
1 row(s) inserted.
```

```
1 row(s) inserted.
```

```
1 row(s) inserted.
```

```
1 row(s) inserted.
```

```
1 row(s) inserted.
```

```
1 row(s) inserted.
```

```
1 row(s) inserted.
```

```
1 row(s) inserted.
```

Write SQL queries for the following

1. Find all customers who have either having Fixed Deposit (FD) or loan or both

```
SELECT  cname from cfd_21BCE1163
```

```
UNION
```

```
SELECT cname from cL_21BCE1163;
```

CNAME
ananya
kalyan
naman
nidhish
pawan
rajesh
ram
ramesh
rasam
ritwik

rohan
rohit
sandip
shneur
soloman

2. List all customers who have both Fixed Deposit and Loan using set operation.

```
SELECT  cname from cfd_21BCE1163
```

```
intersect
```

```
SELECT  cname from cL_21BCE1163;
```

CNAME
naman
rajesh
rasam
ritwik
sandip
shneur

3. List all customers who have both Fixed Deposit and Loan using subquery.

```
select cname from cfd_21BCE1163 where cusid in (select cusid from cL_21BCE1163);
```

CNAME
sandip
naman
rajesh
shneur
rasam
ritwik

4. Get all Customers who have not taken a Loan using set operation.

```
select cname from cfd_21BCE1163
```

minus

```
select cname from cL_21BCE1163;
```


CNAME
ananya
nidhish
ramesh
rohan
rohit

5. Get all Customers who have not taken a Loan using subquery.

```
select cname from cfd_21BCE1163 where cusid not in (select cusid
from cL_21BCE1163);
```

CNAME
rohit
ramesh
nidhish
ananya
rohan

6. Find the names of customers whose FD amount is greater than the FD of the customer named 'Rajesh'.

```
select cname from cfd_21BCE1163 where fd> (select fd from  
cfd_21BCE1163 where cname='rajesh');
```

CNAME
ananya
shneur
naman
ramesh

7. Find the number of customers whose FD amount is greater than the average of all FD amounts.

```
select cname from cfd_21BCE1163 where fd>(select avg(fd) from  
cfd_21BCE1163);
```

CNAME
ananya
rohit
rohan
nidhish
shneur
naman
ramesh
rajesh

8. Find the customers those who have FD of less than Rs. 50000 and a loan amount of Rs.100000 or above.

```
select cname,la from cL_21BCE1163 where cusid in (select cusid
from cfd_21BCE1163 where fd<50000) and la>100000;
```

CNAME	LA
rasam	458943
ritwik	675768

9. Find the names of the customers who have taken the maximum loan amount.

```
select cname from cL_21BCE1163 where la=(select max(la) from
cL_21BCE1163);
```

CNAME
naman
ram

10. Find the number of customers who have both Fixed Deposit and Loan.

```
select count(cname) from cfd_21BCE1163 where cusid in (select
cusid from cL_21BCE1163);
```

COUNT(CNAME)
6

Whole code:

```
create table cfd_21BCE1163(cusid number(10) , cname varchar(10),
fd number(10));
```

```
create table cL_21BCE1163 (cusid number(10) , cname varchar(10),
la number(10));
```

```
desc cfd_21BCE1163;
```

```
desc cL_21BCE1163;
```

```
insert into cfd_21BCE1163 values(111,'sandip',126800);
```

```
insert into cfd_21BCE1163 values(112,'ananya',970000);
```

```
insert into cfd_21BCE1163 values(113,'rohit',680000);
```

```
insert into cfd_21BCE1163 values(114,'rohan',670068);
insert into cfd_21BCE1163 values(115,'nidhish',767800);
insert into cfd_21BCE1163 values(116,'shneur',768595);
insert into cfd_21BCE1163 values(117,'naman',879555);
insert into cfd_21BCE1163 values(118,'ramesh',876567);
insert into cfd_21BCE1163 values(119,'rajesh',768494);
insert into cfd_21BCE1163 values(120,'rasam',46909);
insert into cfd_21BCE1163 values(121,'ritwik',34566);
insert into cL_21BCE1163 values(111,'sandip',757335);
insert into cL_21BCE1163 values(117,'naman',857694);
insert into cL_21BCE1163 values(119,'rajesh',67557);
insert into cL_21BCE1163 values(116,'shneur',56546);
insert into cL_21BCE1163 values(167,'pawan',78674);
insert into cL_21BCE1163 values(177,'kalyan',24465);
insert into cL_21BCE1163 values(190,'soloman',12300);
insert into cL_21BCE1163 values(198,'ram',857694);
insert into cL_21BCE1163 values(120,'rasam',458943);
insert into cL_21BCE1163 values(121,'ritwik',675768);
```

```
SELECT  cname from cfd_21BCE1163
```

```
UNION
```

```
SELECT  cname from cL_21BCE1163;
```

```
SELECT  cname from cfd_21BCE1163
```

```
intersect
```

```
SELECT  cname from cL_21BCE1163;
```

```
select cname from cfd_21BCE1163 where cusid in (select cusid from  
cL_21BCE1163);
```

```
select cname from cfd_21BCE1163
```

minus

```
select cname from cL_21BCE1163;
```

```
select cname from cfd_21BCE1163 where cusid not in (select cusid  
from cL_21BCE1163);
```

```
select  cname  from  cfd_21BCE1163  where  fd>  (select  fd  from  
cfd_21BCE1163 where cname='rajesh');
```

```
select  cname  from  cfd_21BCE1163  where  fd>(select  avg(fd)from  
cfd_21BCE1163);
```

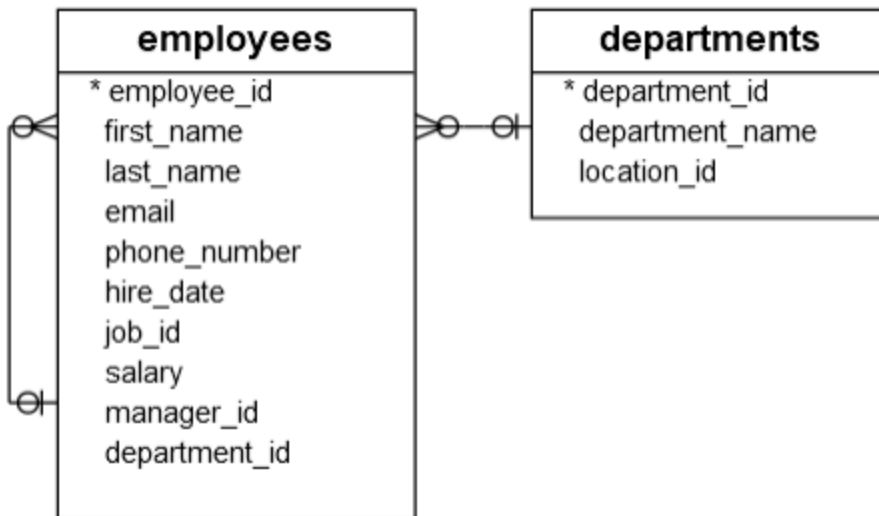
```
select cname,la from cL_21BCE1163 where cusid in (select cusid  
from cfd_21BCE1163 where fd<50000) and la>100000;
```

```
select  cname  from  cL_21BCE1163  where  la=(select  max(la)  from  
cL_21BCE1163);
```

```
select count(cname) from cfd_21BCE1163 where cusid in (select  
cusid from cL_21BCE1163);
```

PART B

Consider the following `employees` and `departments` tables



Create table code:

```
create table employee (empid number(10) primary key, fname
varchar(10), lname          varchar(10), email          varchar(20), pno
number(10), hdate date, jobid number(10), salary number(10), manid
number(10), depid number(10));
create table departments (depid          number(10), depname
varchar(10), locid number(10));
```

Departments_21BCE1163

depid	depname	locid
160	HR	1600
170	Developer	1700

Employee_21BCE1163

empid	fname	lname	email	pno
100	Sandip	Datta	datta@gmail.com	7679236037
101	Ananya	Tej	tej@gmail.com	7637926878
102	Rohan	Mathur	mathur@gmail.com	8679765407
103	Shneur	Jhirad	jhirad@gmail.com	9876762360

1. Find all employees that belong to the location 1700 by using the department id

```
select fname,lname from employee_21BCE1163 where depid in (select depid from departments_21BCE1163 where locid=1700);
```

fname	lname
Sandip	Datta
Rohan	Mathur

2. Find the employees who have the highest salary:


```
select fname, lname from employee_21BCE1163 where salary in(select
max(salary) from employee_21BCE1163);
```

fname	lname
Sandip	Datta
Shneur	Jhirad

3. Find all employees who salaries are greater than the average salary of all employees:

```
select fname,lname from employee_21BCE1163 where salary>(select
avg(salary)from employee_21BCE1163);
```

fname	lname
Sandip	Datta
Shneur	Jhirad

4. Find all employees whose salaries are greater than the lowest salary of every department:

```
select * from employee_21BCE1163 where salary>(select min(salary)
from employee_21BCE1163 group by depid);
```

empid	fname	lname	email	pno	hdate	jobid	salary	manid	depid
100	Sandip	Datta	datta@gmail.com	7679236037	12-jul-2022	200	987453	300	170
102	Rohan	Mathur	mathur@gmail.com	8679765407	05-apr-2023	202	654453	301	170
103	Shneur	Jhirad	jhirad@gmail.com	9876762360	23-mar-2022	203	987453	301	160

5. Finds the salaries of all employees, their average salary, and the difference between the salary of each employee and the average salary.

```
select  fname,lname,salary,salary-(select  avg(salary)  from
employee) as 'diff'
from employee;
```

fname	lname	salary	diff
Sandip	Datta	987453	193700
Ananya	Tej	545653	-248100
Rohan	Mathur	654453	-139300
Shneur	Jhirad	987453	193700

Whole Code:

```
create table employee (empid number(10) primary key, fname
varchar(10), lname          varchar(10), email          varchar(20), pno
number(10), hdate date, jobid number(10), salary number(10), manid
number(10), depid number(10));
create table departments(depid          number(10), depname
varchar(10), locid number(10));
insert                into                employee
values(100, 'Sandip', 'Datta', 'datta@gmail.com', 7679236037, '12-
jul-2022', 200, 987453, 300, 170);
insert                into                employee
values(101, 'Ananya', 'Tej', 'tej@gmail.com', 7637926878, '15-jan-
2021', 201, 545653, 300, 160);
insert                into                employee
values(102, 'Rohan', 'Mathur', 'mathur@gmail.com', 8679765407, '05-
apr-2023', 202, 654453, 301, 170);
insert                into                employee
values(103, 'Shneur', 'Jhirad', 'jhirad@gmail.com', 9876762360, '23-
mar-2022', 203, 987453, 301, 160);
insert into departments values(160, 'HR', 1600);
insert into departments values(170, 'Developer', 1700);
select fname, lname from employee where depid in (select depid from
departments where locid=1700);
select  fname,  lname  from  employee  where  salary  in(select
max(salary) from employee);
select  fname, lname  from  employee  where  salary>(select
avg(salary) from employee);
select * from employee where salary>(select min(salary) from
employee group by depid);
select  fname, lname, salary, salary-(select  avg(salary)  from
employee) as 'diff'
from employee;
```