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DBMS LAB CAT 2

Question 2

INSERTING AND CREATING TABLES

```
Run SQL Command Line
SQL*Plus: Release 11.2.0.2.0 Production on Fri Oct 16 10:09:20 2020
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SQL> connect
Enter user-name: system
Enter password:
Connected.
SQL> create table faculty(fac_id varchar2(10), name varchar2(10), salary number(6), address varchar2(20), Dno number(4), constraint fac_cat_pk primary key(fac_id));
create table faculty(fac_id varchar2(10), name varchar2(10), salary number(6), address varchar2(20), Dno number(4), constraint fac_cat_pk primary key(fac_id))
*
ERROR at line 1:
ORA-00907: missing right parenthesis

SQL> create table faculty(fac_id varchar2(10), name varchar2(10), salary number(6), address varchar2(20), Dno number(4), constraint fac_cat_pk primary key(fac_id));
Table created.

SQL> create table department(dno number(4), dname varchar2(20), hod varchar2(10), constraint dept_cat_pk primary key(dno));
create table department(dno number(4), dname varchar2(20), hod varchar2(10), constraint dept_cat_pk primary key(dno))
*
ERROR at line 1:
ORA-00955: name is already used by an existing object

SQL> create table department_cat(dno number(4), dname varchar2(20), hod varchar2(10), constraint dept_cat_pk primary key(dno));
Table created.

SQL> create table course(code varchar2(10), title varchar2(20), credit number(5), type varchar2(20), constraint cou_cat_pk primary key(code));
Table created.

SQL> create table teaches(fac_id varchar2(10), code varchar2(10), venue varchar2(15), slot varchar2(10), constraint fac_id_fk foreign key(fac_id) references faculty(fac_id)
, constraint c_cod_fk foreign key(code) references course(code));
Table created.

SQL> _
```

Faculty table

```
Run SQL Command Line
new 1: insert into faculty values('F567', 'Jui', 56000, 'Pune', 2)
1 row created.

SQL> select * from faculty;

FAC_ID      NAME      SALARY ADDRESS      DNO
-----
F123      Yash      12000 Vellore      102
F128      Jahnavi    70000 Chennai     102
F130      Uma        56000 Hyderabad 103
F145      Usha       78000 Pune       104
F111      AarNAV    123000 Mumbai    105
F147      Krishna    18000 Vellore     106
F345      Guin       12000 Nellore     2
F567      Jui        56000 Pune       2

8 rows selected.

SQL> _
```

Department table

```
Run SQL Command Line
SQL>
SQL> select * from department_cat;

      DNO  DNAME      HOD
-----
      2  Maths      Jui
     102  CS       Jahnnavi
     103  IT        Uma
     104  ECE       Usha

SQL>
```

Course table

```
Run SQL Command Line
SQL> /
Enter value for code: ECE1002
Enter value for title: Semicond
Enter value for credit: 2
Enter value for type: Theory
old 1: insert into course values('&code', '&title', &credit, '&type')
new 1: insert into course values('ECE1002', 'Semicond', 2, 'Theory')

1 row created.

SQL> /
Enter value for code: BIT1001
Enter value for title: Programming
Enter value for credit: 3
Enter value for type: Lab
old 1: insert into course values('&code', '&title', &credit, '&type')
new 1: insert into course values('BIT1001', 'Programming', 3, 'Lab')

1 row created.

SQL> /
Enter value for code: CSE2004
Enter value for title: DBMS
Enter value for credit: 4
Enter value for type: Theory
old 1: insert into course values('&code', '&title', &credit, '&type')
new 1: insert into course values('CSE2004', 'DBMS', 4, 'Theory')

1 row created.

SQL> select * from course;

CODE      TITLE      CREDIT  TYPE
-----
CSE2001   CAO        3        Theory
CSE2003   DSA        4        Theory
ECE1002   Semicond   2        Theory
BIT1001   Programming 3        Lab
CSE2004   DBMS       4        Theory

SQL>
```

Teaches table

```
Run SQL Command Line
Enter value for fac_id: F145
Enter value for code: CSE2004
Enter value for venue: SJT 566
Enter value for slot: D2
old 1: insert into teaches values('&fac_id', '&code', '&venue', '&slot')
new 1: insert into teaches values('F145', 'CSE2004', 'SJT 566', 'D2')

1 row created.

SQL> /
Enter value for fac_id: F145
Enter value for code: CSE2003
Enter value for venue: SJT 811
Enter value for slot: C2
old 1: insert into teaches values('&fac_id', '&code', '&venue', '&slot')
new 1: insert into teaches values('F145', 'CSE2003', 'SJT 811', 'C2')

1 row created.

SQL> select * from teches;
select * from teches
*
ERROR at line 1:
ORA-00942: table or view does not exist

SQL> select * from teaches;

FAC_ID    CODE      VENUE      SLOT
-----
F145      CSE2001    SJT 111    B2
F128      CSE2003    SJT 002    C2
F567      BIT1001    TT 405     L11
F147      ECE1002    TT 451     F2
F111      CSE2004
F145      CSE2004    SJT 566    D2
F145      CSE2003    SJT 811    C2

7 rows selected.

SQL>
```

QUERIES

1. SQL> select name from teaches natural join course natural join faculty where credit > 3;

```
Run SQL Command Line
F145      CSE2003      SJT 811      C2
7 rows selected.

SQL> select * from teaches natural join course natural join faculty;

FAC_ID  CODE  VENUE  SLOT  TITLE  CREDIT TYPE  NAME  SALARY ADDRESS  DNO
-----
F128    CSE2003  SJT 002  C2    DSA      4 Theory  Jahnnavi  70000 Chennai  102
F145    CSE2003  SJT 811  C2    DSA      4 Theory  Usha      78000 Pune     104
F145    CSE2004  SJT 566  D2    DBMS     4 Theory  Usha      78000 Pune     104
F145    CSE2001  SJT 111  B2    CAO      3 Theory  Usha      78000 Pune     104
F111    CSE2004          DBMS     4 Theory  Aarnav    123000 Mumbai  105
F147    ECE1002  TT 451  F2    Semicond  2 Theory  Krishna   18000 Vellore  106
F567    BIT1001  TT 405  L11    Programming  3 Lab     Jui       56000 Pune     2

7 rows selected.

SQL> select name from teaches natural join course natural join faculty where credit > 3;

NAME
-----
Jahnnavi
Aarnav
Usha
Usha

SQL> select name, code from teaches natural join course natural join faculty where credit > 3;

NAME      CODE
-----
Jahnnavi  CSE2003
Aarnav    CSE2004
Usha      CSE2004
Usha      CSE2003

SQL>
```

2. SQL> select fac_id, name from faculty where salary in (select max(salary) from faculty group by dno) and dno = 2;

```
Run SQL Command Line

SQL> select dno, max(salary) from faculty group by dno;

DNO MAX(SALARY)
-----
2    56000
102   70000
104   78000
105  123000
103   56000
106   18000

6 rows selected.

SQL> select fac_id, name from faculty where salary = (select max(salary) from faculty group by dno);
select fac_id, name from faculty where salary = (select max(salary) from faculty group by dno)
*
ERROR at line 1:
ORA-01427: single-row subquery returns more than one row

SQL> select fac_id, name from faculty where salary in (select max(salary) from faculty group by dno);

FAC_ID  NAME
-----
F128    Jahnnavi
F130    Uma
F145    Usha
F111    Aarnav
F147    Krishna
F567    Jui

6 rows selected.

SQL> select fac_id, name from faculty where salary in (select max(salary) from faculty group by dno) and dno = 2;

FAC_ID  NAME
-----
F567    Jui

SQL>
```

3. SQL> select fac_id, count(fac_id) from teaches group by fac_id;
 create view dummy as select fac_id, count(fac_id) as counts from teaches group by fac_id;
 select fac_id, name from dummy natural join faculty where counts > 2;

```
Run SQL Command Line
SQL> select fac_id, count(fac_id) from teaches group by fac_id;

FAC_ID      COUNT(FAC_ID)
-----
F567         1
F111         1
F145         3
F147         1
F128         1

SQL> create view dummy as select fac_id, count(fac_id) from teaches group by fac_id;
create view dummy as select fac_id, count(fac_id) from teaches group by fac_id
*
ERROR at line 1:
ORA-00998: must name this expression with a column alias

SQL> create view dummy as select fac_id, count(fac_id) as counts from teaches group by fac_id;

View created.

SQL> select * from dummy natural join faculty;

FAC_ID      COUNTS NAME      SALARY ADDRESS      DNO
-----
F128         1 Jahnvi      70000 Chennai      102
F145         3 Usha       78000 Pune        104
F111         1 Aarnav     123000 Mumbai      105
F147         1 Krishna    18000 Vellore     106
F567         1 Jui        56000 Pune        2

SQL> select fac_id, name from dummy natural join faculty where counts > 2;

FAC_ID      NAME
-----
F145        Usha

SQL>
```

4. SQL> select fac_id, name, salary, dname, code from faculty natural join teaches natural join department_cat where name like 'S%';

```
Run SQL Command Line
SQL> select * from faculty natural join teaches natural join department_cat;

DNO FAC_ID NAME      SALARY ADDRESS      CODE  VENUE  SLOT  DNAME  HOD
-----
104 F145  Usha       78000 Pune        CSE2001  SJT 111  B2    ECE    Usha
102 F128  Jahnvi     70000 Chennai  CSE2003  SJT 002  C2    CS     Jahnvi
2 F567  Jui        56000 Pune        BIT1001  TT 405  L11   Maths  Jui
105 F111  Swara     123000 Mumbai  CSE2004          Chem  Swara
104 F145  Usha       78000 Pune        CSE2004  SJT 566  D2    ECE    Usha
104 F145  Usha       78000 Pune        CSE2003  SJT 811  C2    ECE    Usha

6 rows selected.

SQL> select fac_id, name, salary, dname, code from faculty natural join teaches natural join department_cat;

FAC_ID NAME      SALARY DNAME      CODE
-----
F145  Usha       78000 ECE        CSE2001
F128  Jahnvi     70000 CS        CSE2003
F567  Jui        56000 Maths    BIT1001
F111  Swara     123000 Chem     CSE2004
F145  Usha       78000 ECE        CSE2004
F145  Usha       78000 ECE        CSE2003

6 rows selected.

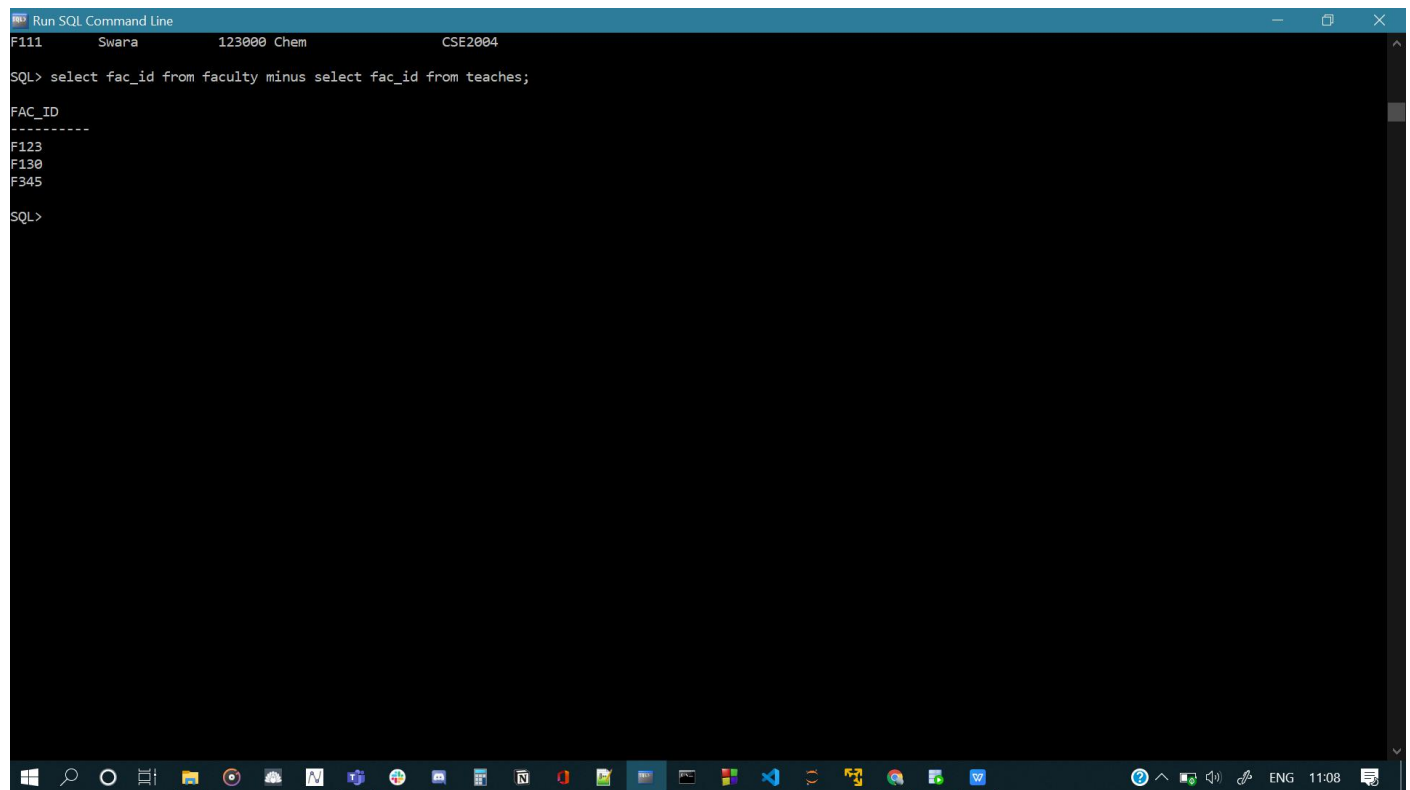
SQL> select fac_id, name, salary, dname, code from faculty natural join teaches natural join department_cat where name like "S%";
select fac_id, name, salary, dname, code from faculty natural join teaches natural join department_cat where name like "S%"
*
ERROR at line 1:
ORA-00904: "S%": invalid identifier

SQL> select fac_id, name, salary, dname, code from faculty natural join teaches natural join department_cat where name like 'S%';

FAC_ID NAME      SALARY DNAME      CODE
-----
F111  Swara     123000 Chem     CSE2004

SQL>
```

5. SQL> select fac_id from faculty minus select fac_id from teaches;



The screenshot shows a SQL Command Line window with the following content:

```
Run SQL Command Line
F111 Swara 123000 Chem CSE2004

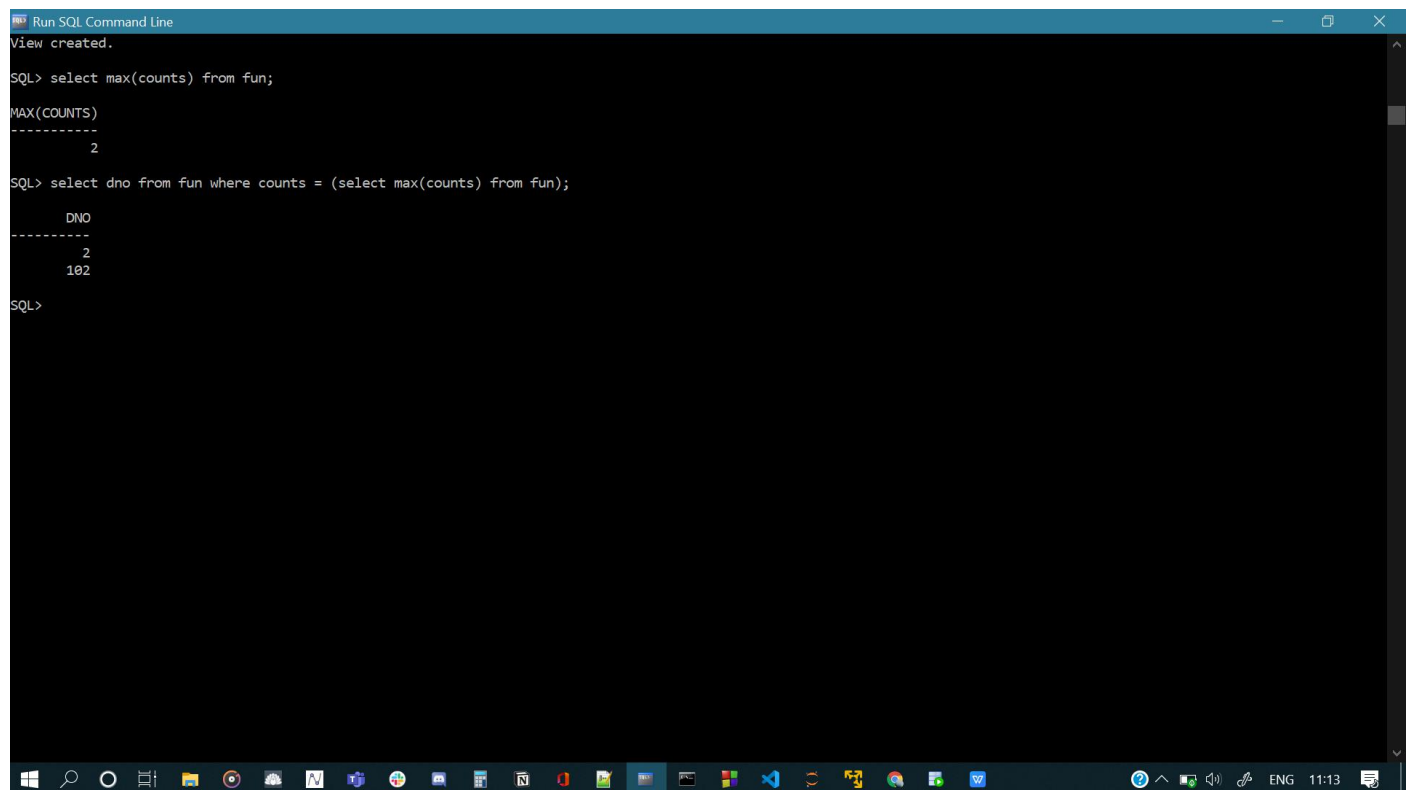
SQL> select fac_id from faculty minus select fac_id from teaches;

FAC_ID
-----
F123
F130
F345

SQL>
```

The window title bar reads "Run SQL Command Line". The status bar at the bottom shows "ENG 11:08".

6. create view fun as select dno, count(dno) as counts from faculty group by dno;
select dno from fun where counts = (select max(counts) from fun);



The screenshot shows a SQL Command Line window with the following content:

```
Run SQL Command Line
View created.

SQL> select max(counts) from fun;

MAX(COUNTS)
-----
2

SQL> select dno from fun where counts = (select max(counts) from fun);

DNO
-----
2
102

SQL>
```

The window title bar reads "Run SQL Command Line". The status bar at the bottom shows "ENG 11:13".