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Course No. - COMP 3005

# ASSIGNMENT – 5

PART 1 --- DDL ---

```
CREATE TABLE Person(
P#          char(4)       primary key,
Name        varchar(10)   unique Not Null,
Age         Integer);

CREATE TABLE Hobby(
H#          char(4)       primary key,
Name        varchar(10)   unique Not Null);

CREATE TABLE Play(
P#          char(4),
H#          char(4),
Times       Integer,
Foreign key(P#) references Person(P#),
Foreign key(H#) references Hobby(H#));
```

PART 2 --- DML ---

```
INSERT INTO Person VALUES ('P1','Smith',20);
INSERT INTO Person VALUES ('P2','Jones',30);
INSERT INTO Person VALUES ('P3','Blake',25);
INSERT INTO Person VALUES ('P4','Singh',20);
INSERT INTO Person VALUES ('P5','Adams',30);

INSERT INTO Hobby VALUES('H1','Bowling');
INSERT INTO Hobby VALUES('H2','Chess');
INSERT INTO Hobby VALUES('H3','Dancing');
INSERT INTO Hobby VALUES('H4','Hiking');
INSERT INTO Hobby VALUES('H5','Skating');
INSERT INTO Hobby VALUES('H6','Ski');

INSERT INTO Play VALUES('P1','H1',3);
INSERT INTO Play VALUES('P1','H2',2);
INSERT INTO Play VALUES('P1','H3',4);
INSERT INTO Play VALUES('P1','H4',2);
INSERT INTO Play VALUES('P1','H5',1);
INSERT INTO Play VALUES('P1','H6',1);
INSERT INTO Play VALUES('P2','H1',3);
INSERT INTO Play VALUES('P2','H2',4);
INSERT INTO Play VALUES('P2','H3',5);
INSERT INTO Play VALUES('P2','H4',2);
INSERT INTO Play VALUES('P3','H2',2);
INSERT INTO Play VALUES('P3','H3',3);
INSERT INTO Play VALUES('P4','H2',3);
INSERT INTO Play VALUES('P4','H3',4);
```

PART 3 --- QL ---

1. Get the names of hobbies that “lastname” plays.

Select H.Name from Hobby H, Play P, Person P1 where H.H# = P.H# and P.P# = P1.P# and P.P# = P1.p# and P1.Name = 'Singh';

```
SQL> Select H.Name from Hobby H, Play P, Person P1 where  H.H# = P.H# and
P.P# = P1.P# and P1.Name = 'Singh';

NAME
----------
Chess
Dancing
```

2. Get the names of persons who play Bowling.

Select DISTINCT P.Name from Person P, Hobby H, Play P1 where H.Name = 'Bowling' and P1.H# = H.H# and P.P# = P1.P#;

```
SQL> Select DISTINCT P.Name from Person P, Hobby H, Play P1 where
 H.Name = 'Bowling' and P1.H# = H.H# and P.P# = P1.P#;

NAME
----------
Jones
Smith
```

3. Get the names of persons who play a hobby more than 3 times.

Select distinct P.Name from Person P, Play L where L.Times > 3 and P.P# = L.P#;

```
SQL> Select distinct P.Name from Person P, Play L where  L.Times > 3 and
P.P# = L.P# ;

NAME
----------
Jones
Singh
Smith
```

4. Get the names of persons who play either chess or dancing.

Select distinct P.Name from Person P, Hobby H, Play L where L.H# = H.H# and P.P# = L.P# and (H.Name = 'Chess' or H.Name = 'Dancing');

```
SQL>
SQL> Select distinct P.Name from Person P, Hobby H, Play L where L.H# = H.H#
and P.P# = L.P# and (H.Name = 'Chess' or H.Name = 'Dancing');

NAME
----------
Blake
Jones
Singh
Smith
```

5. Get the names of persons who play both chess and dancing.

Select X.Name from Person X, Play P1, Play P2, Hobby H1, Hobby H2 where X.P# = P1.P# and X.P# = P2.P# and P1.H# = H1.H# and P2.H# = H2.H# and H1.Name = 'Chess' and H2.Name = 'Dancing';

```
SQL> Select X.Name from Person X, Play P1, Play P2, Hobby H1, Hobby H2 where
X.P# = P1.P# and X.P# = P2.P# and P1.H# = H1.H# and P2.H# = H2.H# and H1.Name
 = 'Chess' and H2.Name  =  'Dancing';

NAME
----------
Smith
Jones
Blake
Singh
```

6. Get the person name/hobby name pairs such that the indicated person plays the indicated hobby.

Select P.Name, H.Name from Person P, Hobby H, Play L where P.P# = L.P# and L.H# = H.H#;

```
SQL> Select P.Name, H.Name from Person P, Hobby H, Play L where P.P# = L.P# and
L.H# = H.H#;

NAME       NAME
---------- ----------
Jones      Bowling
Smith      Bowling
Singh      Chess
Blake      Chess
Jones      Chess
Smith      Chess
Singh      Dancing
Blake      Dancing
Jones      Dancing
Smith      Dancing
Jones      Hiking

NAME       NAME
---------- ----------
Smith      Hiking
Smith      Skating
Smith      Ski

14 rows selected.
```

7. Get the names of persons who do not play Ski.

```
Select Name from Person P WHERE NOT EXISTS (select * from Hobby H
WHERE Exists (Select * from Play L where P.P# = L.P# and L.H# = H.H#
and H.Name = 'Ski'));
```

```
SQL> Select Name from Person P WHERE NOT EXISTS (select * from Hobby H WHERE Exists
 (Select * from Play L where P.P# = L.P# and L.H# = H.H# and H.Name = 'Ski'));

NAME
----------
Jones
Blake
Singh
Adams
```

8. Get the names of persons who do not play any hobby.

```
Select Name from Person P WHERE NOT EXISTS (select P# from Play L
where P.P# = L.P#);
```

```
SQL> Select Name from Person P WHERE NOT EXISTS (select P# from Play L where P.P# = L.P#);

NAME
----------
Adams
```

9. Get the names of persons who play all hobbies.

```
Select Name from Person P WHERE NOT EXISTS (select * from Hobby H
WHERE NOT Exists (Select * from Play L where P.P# = L.P# and L.H# =
H.H#));
```

```
SQL> Select Name from Person P WHERE NOT EXISTS (select * from Hobby H WHERE NOT
 Exists (Select * from Play L where P.P# = L.P# and L.H# = H.H#));

NAME
----------
Smith
```

10. Get the names of persons who play all hobbies that “lastname” plays.

Select P1.Name from Person P1 where P1.Name != 'Singh' and Not Exists (Select H.H#
From Hobby H, Play L, Person P where P.Name = 'Singh' and P.P# = L.P# and L.H# = H.H#
MINUS Select H.H# From Hobby H, Play L where P1.P# = L.P# and L.H# = H.H#);

```
SQL> Select P1.Name from Person P1 where P1.Name != 'Singh' and Not Exists (Select H.H# From Hobby H, Play
 L, Person P where P.Name = 'Singh' and P.P# = L.P# and L.H# = H.H# MINUS Select H.H# From Hobby H, Play L
 where P1.P# = L.P# and L.H# = H.H#);

NAME
----------
Smith
Jones
Blake
```

11. Get the names of persons who play only all the hobbies that “lastname” plays.

Select P1.Name FROM Person P1, Person P2
Where P1.Name != 'Singh' and P2.Name = 'Singh' and Not Exists
(Select * from Hobby H WHERE NOT EXISTS
(Select * From Play L, Play L1
Where P2.P# = L.P# and L.H# = H.H# and P1.P# = L1.P# and L1.H# = H.H#)
And EXISTS
(Select * From Play L
Where (P2.P# = L.P# and H.H# = L.H#) or (P1.P# = L.P# and L.H# = H.H# )));

```
SQL> Select P1.Name FROM Person P1, Person P2
Where P1.Name != 'Singh' and P2.Name = 'Singh' and Not Exists
(Select * from Hobby H WHERE NOT EXISTS
(Select * From Play L, Play L1
Where P2.P# = L.P# and L.H# = H.H# and P1.P# = L1.P# and L1.H# = H.H#)
And EXISTS
(Select * From Play L
Where (P2.P# = L.P# and H.H# = L.H#) or (P1.P# = L.P# and L.H# = H.H# )));
  2    3    4    5    6    7    8
NAME
----------
Blake
```

12. Get the names of persons who play all hobbies except Skating and Ski.

```
Select Name FROM Person P where not exists
(Select * from Hobby H where
(H.Name !=  'Skating' and H.Name != 'Ski' or exists
(Select * From Play L where P.P# = L.P# and H.H# = L.H#))
And
(H.Name =  'Skating' or H.Name = 'Ski' or Not exists
(Select * From Play L where P.P# = L.P# and H.H# = L.H#)));
```

```
SQL> Select Name FROM Person P where not exists
(Select * from Hobby H where
(H.Name !=  'Skating' and H.Name != 'Ski' or exists
(Select * From Play L where P.P# = L.P# and H.H# = L.H#))
And
(H.Name =  'Skating' or H.Name = 'Ski' or Not exists
(Select * From Play L where P.P# = L.P# and H.H#)));
  2    3    4    5    6    7
NAME
----------
Jones
```

13. Get the names of persons who play hobbies, the number of hobbies and total number of times they play those hobbies.

Select Name, Count(P#), Sum(Times) from Person Natural Join Play group by Name;

```
SQL> Select Name, Count(P#), Sum(Times) from Person Natural Join Play group by Name;


NAME        COUNT(P#) SUM(TIMES)
---------- ---------- ----------
Blake               2          5
Jones               4         14
Singh               2          7
Smith               6         13
```

14. Get the names of persons who play hobbies but play the least number of hobbies.

```
CREATE TABLE T1 (Name, Cnt) As (Select Name, count(H#) from Person Natural Join Play group by Name ;
Select Name from T1 where cnt = (select min(cnt) from T1);
Drop table T1;
```

```
SQL> CREATE TABLE T1 (Name, Cnt) As Select Name, count(H#)  from Person Natural Join Play group by Name ;
Select Name from T1 where cnt = (select min(cnt) from T1);
Drop table T1;

Table created.

SQL>
NAME
----------
Blake
Singh

SQL>
Table dropped.
```