

18CSC303J/ DBMS

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Exp-7: Joining Tables

Aim:- To study the various Join operations on the database.

Commands:-

- The **INNER JOIN** keyword return rows when there is at least one match in both tables.
- The **LEFT JOIN** keyword returns all rows from the left table (table_name1), even if there are no matches in the right table (table_name2).
- The **RIGHT JOIN** keyword Return all rows from the right table (table_name2), even if there are no matches in the left table (table_name1).
- The **FULL JOIN** keyword return rows when there is a match in one of the tables.

Procedure:-

LEFT JOIN or LEFT OUTER JOIN

Table:1 - ORDERS

```
SQL> CREATE table orders(O_Id number(5),
```

```
Orderno number(5),
```

```
P_Id number(3));
```

```
Table created.
```

```
SQL> DESC orders;
```

```
Name Null? Type
```

```
-----
```

```
O_ID NUMBER(5)
```

```
ORDERNO NUMBER(5)
```

```
P_ID NUMBER(3)
```

INSERTING VALUES INTO ORDERS

```
SQL> INSERT into orders values(&O_Id,&Orderno,&P_Id);
```

```
Enter value for o_id: 1
```

```
Enter value for orderno: 77895
```

```

Enter value for p_id: 3
old 1: INSERT into orders values(&O_Id,&Orderno,&P_Id)
new 1: INSERT into orders values(1,77895,3)
1 row created.
SQL> INSERT into orders values(&O_Id,&Orderno,&P_Id);
Enter value for o_id: 2
Enter value for orderno: 44678
Enter value for p_id: 3
old 1: INSERT into orders values(&O_Id,&Orderno,&P_Id)
new 1: INSERT into orders values(2,44678,3)
1 row created.
SQL> INSERT into orders values(&O_Id,&Orderno,&P_Id);
Enter value for o_id: 3
Enter value for orderno: 22456
Enter value for p_id: 1
old 1: INSERT into orders values(&O_Id,&Orderno,&P_Id)
new 1: INSERT into orders values(3,22456,1)
1 row created.
SQL> INSERT into orders values(&O_Id,&Orderno,&P_Id);
Enter value for o_id: 4
Enter value for orderno: 24562
Enter value for p_id: 1
old 1: INSERT into orders values(&O_Id,&Orderno,&P_Id)
new 1: INSERT into orders values(4,24562,1)
1 row created.
SQL> INSERT into orders values(&O_Id,&Orderno,&P_Id);
Enter value for o_id: 5

```

```

Enter value for orderno: 34764
Enter value for p_id: 15
old 1: INSERT into orders values(&O_Id,&Orderno,&P_Id)
new 1: INSERT into orders values(5,34764,15)
1 row created.

```

TABLE SECTION:

```

SQL> SELECT * FROM orders;
O_ID ORDERNO P_ID
-----

```

```

1 77895 3
2 44678 3
3 22456 1
4 24562 1
5 34764 15

```

TABLE -2: PERSONS

```

SQL> CREATE table persons(p_Id number(5),
LASTNAME varchar2(10),
Firstname varchar2(15), Address varchar2(20),
city varchar2(10));
Table created.
SQL> INSERT into persons values(&p_Id,&Lastname','&firstname','&Address','&city');
Enter value for p_id: 1
Enter value for lastname: Hansen
Enter value for firstname: Ola
Enter value for address: Timoteivn 10
Enter value for city: sadnes
old 1: INSERT into persons values(&p_Id,&Lastname','&firstname','&Address','&city')

```

```

new 1: INSERT into persons values(1,'Hansen','Ola','Timoteivn 10','sandnes')
1 row created.
SQL> INSERT into persons values(&p_Id,'&Lastname','&firstname','&Address','&city');
Enter value for p_id: 2
Enter value for lastname: Svendson
Enter value for firstname: Tove
Enter value for address: Borgn 23
Enter value for city: Sandnes
old 1: INSERT into persons values(&p_Id,'&Lastname','&firstname','&Address','&city')
new 1: INSERT into persons values(2,'Svendson','Tove','Borgn 23','Sandnes')
1 row created.
SQL> INSERT into persons values(&p_Id,'&Lastname','&firstname','&Address','&city');
Enter value for p_id: 3
Enter value for lastname: Pettersen
Enter value for firstname: Kari
Enter value for address: Storgt 20
Enter value for city: Stavanger
old 1: INSERT into persons values(&p_Id,'&Lastname','&firstname','&Address','&city');
new 1: INSERT into persons values(3,'Pettersen','Kari','Storgt 20','Stavanger')
1 row created.

```

SQL> SELECT * FROM persons;

```

P_ID LASTNAME FIRSTNAME ADDRESS CITY
-----
1 Hansen Ola Timoteivn 10 sandnes
2 Svendson Tove Borgn 23 Sandnes
3 Pettersen Kari Storgt 20 Stavanger

```

LEFT JOIN SYNTAX

```

SQL> SELECT column_name(s)
FROM table_name1
LEFT JOIN table_name2
ON table_name1.column_name=table_name2.column_name

```

LEFT JOIN EXAMPLE

```

SQL> SELECT persons.lastname,persons.firstname,orders.orderno
FROM persons
LEFT JOIN orders
ON persons.p_Id = orders.p_Id
ORDER BY persons.lastname;

```

OUTPUT

```

LASTNAME FIRSTNAME ORDERNO
-----
Hansen Ola 22456
Hansen Ola 24562
Pettersen Kari 77895
Pettersen Kari 44678
Svendson Tove

```

FULL OUTER JOIN

```

SQL> SELECT * FROM persons;
P_ID LASTNAME FIRSTNAME ADDRESS CITY
-----

```

```

1 Hansen Ola Timoteivn 10 sandnes
2 Svendson Tove Borgn 23 Sandnes
3 Pettersen Kari Storgt 20 Stavanger
SQL> SELECT * FROM orders;

```

O_ID ORDERNO P_ID

1 77895 3

2 44678 3

3 22456 1

4 24562 1

5 34764 15

FULL OUTER JOIN SYNTAX

SQL>SELECT column_name(s)

FROM table_name1

FULL JOIN table_name2

ON table_name1.column_name=table_name2.column_name

FULL OUTER JOIN EXAMPLE

SQL> SELECT persons.lastname,persons.firstname,orders.orderno

FROM persons

FULL OUTER JOIN orders

ON persons.p_Id = orders.p_Id

ORDER BY persons.lastname;

RIGHT OUTER JOIN

RIGHT OUTER JOIN SYNTAX

SQL>SELECT Persons.LastName, Persons.FirstName, Orders.OrderNo

FROM Persons

RIGHT JOIN Orders

ON Persons.P_Id=Orders.P_Id

ORDER BY Persons.LastName

RIGHT OUTER JOIN EXAMPLE

SQL> SELECT persons.lastname,persons.firstname,orders.orderno

FROM persons

RIGHT OUTER JOIN orders

ON persons.p_Id = orders.p_Id

ORDER BY persons.lastname;

LASTNAME FIRSTNAME ORDERNO

Hansen Ola 24562

Hansen Ola 22456

Pettersen Kari 44678

Pettersen Kari 77895

INNER JOIN

INNER JOIN SYNTAX

SQL>SELECT column_name(s)

FROM table_name1

INNER JOIN table_name2

ON table_name1.column_name=table_name2.column_name

INNER JOIN EXAMPLE

SQL> SELECT persons.lastname,persons.firstname,orders.orderno

2 FROM persons

3 INNER JOIN orders

4 ON persons.p_Id = orders.p_Id

5 ORDER BY persons.lastname;

LASTNAME FIRSTNAME ORDERNO

Hansen Ola 22456

Hansen Ola 24562

Pettersen Kari 77895

```

Pettersen Kari 44678
LASTNAME FIRSTNAME ORDERNO
-----
Hansen Ola 22456
Hansen Ola 24562
Pettersen Kari 77895
Pettersen Kari 44678
Svendson Tove 34764
6 rows selected.

```

Execution:-

SQL*Plus: Release 11.2.0.4.0 Production on Wed Mar 9 16:45:43 2022

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Enter user-name: **RA1911003010367/RA1911003010367@f1-drjebakumar.co86hfjmfjkx.us-west-2.rds.amazonaws.com:1521/F1**

Connected to:

Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production

SQL> **spool exp7.lst**

```

SQL> CREATE table orders(O_Id number(5),
2 Orderno number(5),
3 P_Id number(3));

```

Table created.

SQL> **DESC orders;**

Name	Null?	Type
O_ID		NUMBER(5)
ORDERNO		NUMBER(5)
P_ID		NUMBER(3)

SQL> **INSERT into orders values(&O_Id,&Orderno,&P_Id);**

Enter value for o_id: **1**

Enter value for orderno: **77895**

Enter value for p_id: **3**

old 1: INSERT into orders values(&O_Id,&Orderno,&P_Id)

new 1: INSERT into orders values(1,77895,3)

1 row created.

SQL> **INSERT into orders values(&O_Id,&Orderno,&P_Id);**

Enter value for o_id: **2**

Enter value for orderno: **44678**

Enter value for p_id: **3**

old 1: INSERT into orders values(&O_Id,&Orderno,&P_Id)

new 1: INSERT into orders values(2,44678,3)

1 row created.

SQL> INSERT into orders values(&O_Id,&Orderno,&P_Id);

Enter value for o_id: 3

Enter value for orderno: 22456

Enter value for p_id: 1

old 1: INSERT into orders values(&O_Id,&Orderno,&P_Id)

new 1: INSERT into orders values(3,22456,1)

1 row created.

SQL> INSERT into orders values(&O_Id,&Orderno,&P_Id);

Enter value for o_id: 4

Enter value for orderno: 24562

Enter value for p_id: 1

old 1: INSERT into orders values(&O_Id,&Orderno,&P_Id)

new 1: INSERT into orders values(4,24562,1)

1 row created.

SQL> INSERT into orders values(&O_Id,&Orderno,&P_Id);

Enter value for o_id: 5

Enter value for orderno: 34764

Enter value for p_id: 15

old 1: INSERT into orders values(&O_Id,&Orderno,&P_Id)

new 1: INSERT into orders values(5,34764,15)

1 row created.

SQL> SELECT * FROM orders;

O_ID	ORDERNO	P_ID
1	77895	3
2	44678	3
3	22456	1
4	24562	1
5	34764	15

SQL> CREATE table persons(p_Id number(5),

2 LASTNAME varchar2(10),

3 Firstname varchar2(15), Address varchar2(20),

4 city varchar2(10));

Table created.

SQL> INSERT into persons values(&p_Id,&Lastname','&firstname','&Address','&city');

Enter value for p_id: 1

Enter value for lastname: Hansen

Enter value for firstname: Ola

Enter value for address: **10**

Enter value for city: **sadnes**

old 1: INSERT into persons values(&p_Id,'&Lastname','&firstname','&Address','&city')

new 1: INSERT into persons values(1,'Hansen','Ola','10','sadness')

1 row created.

SQL> **INSERT into persons values(&p_Id,'&Lastname','&firstname','&Address','&city');**

Enter value for p_id: **2**

Enter value for lastname: **Svendson**

Enter value for firstname: **Tove**

Enter value for address: **Borgn 23**

Enter value for city: **Sandnes**

old 1: INSERT into persons values(&p_Id,'&Lastname','&firstname','&Address','&city')

new 1: INSERT into persons values(2,'Svendson','Tove','Borgn 23','Sandnes')

1 row created.

SQL> **INSERT into persons values(&p_Id,'&Lastname','&firstname','&Address','&city');**

Enter value for p_id: **3**

Enter value for lastname: **Pettersen**

Enter value for firstname: **Kari**

Enter value for address: **Storgt 20**

Enter value for city: **Stavanger**

old 1: INSERT into persons values(&p_Id,'&Lastname','&firstname','&Address','&city')

new 1: INSERT into persons values(3,'Pettersen','Kari','Storgt 20','Stavanger')

1 row created.

SQL> **SELECT * FROM persons;**

P_ID	LASTNAME	FIRSTNAME	ADDRESS	CITY
1	Hansen	Ola	10	sadnes
2	Svendson	Tove	Borgn 23	Sandnes
3	Pettersen	Kari	Storgt 20	Stavanger

SQL> **select persons.Lastname, persons.firstname, orders.Orderno from persons left join orders on persons.p_Id = orders.P_Id order by persons.lastname;**

LASTNAME	FIRSTNAME	ORDERNO
Hansen	Ola	22456
Hansen	Ola	24562
Pettersen	Kari	44678
Pettersen	Kari	77895
Svendson	Tove	

SQL> **select persons.Lastname, persons.firstname, orders.Orderno from persons left join orders on persons.p_Id = orders.P_Id order by persons.Lastname;**

LASTNAME	FIRSTNAME	ORDERNO
----------	-----------	---------

```

-----
Hansen  Ola      22456
Hansen  Ola      24562
Pettersen Kari    44678
Pettersen Kari    77895
Svendson Tove

```

SQL> **select persons.Lastname, persons.firstname, orders.Orderno from persons full join orders on persons.p_Id = orders.P_Id order by persons.Lastname;**

```

LASTNAME  FIRSTNAME    ORDERNO
-----
Hansen  Ola      24562
Hansen  Ola      22456
Pettersen Kari    44678
Pettersen Kari    77895
Svendson Tove
              77897
              34764

```

7 rows selected.

SQL> **select persons.Lastname, persons.firstname, orders.Orderno from persons right outer join orders on persons.p_Id = orders.P_Id order by persons.Lastname;**

```

LASTNAME  FIRSTNAME    ORDERNO
-----
Hansen  Ola      22456
Hansen  Ola      24562
Pettersen Kari    77895
Pettersen Kari    44678
              34764
              77897

```

6 rows selected.

SQL> **SELECT persons.lastname,persons.firstname,orders.orderno**
2 FROM persons
3 FULL OUTER JOIN orders
4 ON persons.p_Id = orders.p_Id
5 ORDER BY persons.lastname;

```

LASTNAME  FIRSTNAME    ORDERNO
-----
Hansen  Ola      24562
Hansen  Ola      22456
Pettersen Kari    44678
Pettersen Kari    77895
Svendson Tove
              77897
              34764

```


7 rows selected.

SQL> **select persons.Lastname, persons.firstname, orders.Orderno from persons right join orders on persons.p_Id = orders.P_Id order by persons.Lastname;**

LASTNAME	FIRSTNAME	ORDERNO
Hansen	Ola	22456
Hansen	Ola	24562
Pettersen	Kari	77895
Pettersen	Kari	44678
		34764
		77897

6 rows selected.

SQL> **SELECT persons.lastname,persons.firstname,orders.orderno**
2 FROM persons
3 INNER JOIN orders
4 ON persons.p_Id = orders.p_Id
5 ORDER BY persons.lastname;

LASTNAME	FIRSTNAME	ORDERNO
Hansen	Ola	22456
Hansen	Ola	24562
Pettersen	Kari	77895
Pettersen	Kari	44678

SQL> **spool off;**

SQL> **edit exp7.lst**

SQL>

```
SQL> CREATE table orders(O_Id number(5),
 2  Orderno number(5),
 3  P_Id number(3));
```

Table created.

```
SQL> DESC orders;
```

Name	Null?	Type
O_ID		NUMBER(5)
ORDERNO		NUMBER(5)
P_ID		NUMBER(3)

```
SQL> INSERT into orders values(&O_Id,&Orderno,&P_Id);
```

Enter value for o_id: 1

Enter value for orderno: 77895

Enter value for p_id: 3

old 1: INSERT into orders values(&O_Id,&Orderno,&P_Id)

new 1: INSERT into orders values(1,77895,3)

1 row created.

```
SQL> INSERT into orders values(&O_Id,&Orderno,&P_Id);
```

Enter value for o_id: 2

Enter value for orderno: 44678

Enter value for p_id: 3

old 1: INSERT into orders values(&O_Id,&Orderno,&P_Id)

new 1: INSERT into orders values(2,44678,3)

1 row created.

```
SQL> INSERT into orders values(&O_Id,&Orderno,&P_Id);
```

Enter value for o_id: 3

Enter value for orderno: 22456

Enter value for p_id: 1

old 1: INSERT into orders values(&O_Id,&Orderno,&P_Id)

new 1: INSERT into orders values(3,22456,1)

1 row created.

```
SQL> INSERT into orders values(&O_Id,&Orderno,&P_Id);
```

Enter value for o_id: 4

Enter value for orderno: 24562

Enter value for p_id: 1

old 1: INSERT into orders values(&O_Id,&Orderno,&P_Id)

new 1: INSERT into orders values(4,24562,1)

1 row created.

```
SQL> INSERT into orders values(&O_Id,&Orderno,&P_Id);
Enter value for o_id: 5
Enter value for orderno: 34764
Enter value for p_id: 15
old 1: INSERT into orders values(&O_Id,&Orderno,&P_Id)
new 1: INSERT into orders values(5,34764,15)
```

1 row created.

```
SQL> SELECT * FROM orders;
```

O_ID	ORDERNO	P_ID
1	77895	3
2	44678	3
3	22456	1
4	24562	1
5	34764	15

```
SQL> CREATE table persons(p_Id number(5),
2 LASTNAME varchar2(10),
3 Firstname varchar2(15), Address varchar2(20),
4 city varchar2(10));
```

Table created.

```
SQL> INSERT into persons values(&p_Id,'&Lastname','&firstname','&Address','&city');
Enter value for p_id: 1
Enter value for lastname: Hansen
Enter value for firstname: Ola
Enter value for address: 10
Enter value for city: sadness
old 1: INSERT into persons values(&p_Id,'&Lastname','&firstname','&Address','&city')
new 1: INSERT into persons values(1,'Hansen','Ola','10','sadness')
```

1 row created.

```
SQL> INSERT into persons values(&p_Id,'&Lastname','&firstname','&Address','&city');
Enter value for p_id: 2
Enter value for lastname: Svendsen
Enter value for firstname: Tove
Enter value for address: Borgn 23
Enter value for city: Sandnes
old 1: INSERT into persons values(&p_Id,'&Lastname','&firstname','&Address','&city')
new 1: INSERT into persons values(2,'Svendsen','Tove','Borgn 23','Sandnes')
```

1 row created.

```
SQL> INSERT into persons values(&p_Id,'&Lastname','&firstname','&Address','&city');
Enter value for p_id: 3
Enter value for lastname: Pettersen
Enter value for firstname: Kari
Enter value for address: Storgt 20
Enter value for city: Stavanger
old 1: INSERT into persons values(&p_Id,'&Lastname','&firstname','&Address','&city')
new 1: INSERT into persons values(3,'Pettersen','Kari','Storgt 20','Stavanger')
```

1 row created.

```
SQL> SELECT * FROM persons;
```

P_ID	LASTNAME	FIRSTNAME	ADDRESS	CITY
1	Hansen	Ola	10	sadness
2	Svendsen	Tove	Borgn 23	Sandnes
3	Pettersen	Kari	Storgt 20	Stavanger

```

E:\SRM Sem-all\Sem-6\Database Management\Lab\ORACLE CLIENT 11.2\instantclient_11.2\sqlplus.exe
SQL> select persons.Lastname, persons.firstname, orders.Orderno from persons left join orders on persons.p_Id = orders.P_Id order by persons.lastname;

LASTNAME  FIRSTNAME  ORDERNO
-----
Hansen    Ola        22456
Hansen    Ola        24562
Pettersen Kari       44678
Pettersen Kari       77895
Svendson  Tove

SQL> select persons.Lastname, persons.firstname, orders.Orderno from persons left join orders on persons.p_Id = orders.P_Id order by persons.Lastname;

LASTNAME  FIRSTNAME  ORDERNO
-----
Hansen    Ola        22456
Hansen    Ola        24562
Pettersen Kari       44678
Pettersen Kari       77895
Svendson  Tove

SQL> select persons.Lastname, persons.firstname, orders.Orderno from persons full join orders on persons.p_Id = orders.P_Id order by persons.Lastname;

LASTNAME  FIRSTNAME  ORDERNO
-----
Hansen    Ola        24562
Hansen    Ola        22456
Pettersen Kari       44678
Pettersen Kari       77895
Svendson  Tove
              77897
              34764

7 rows selected.

SQL> select persons.Lastname, persons.firstname, orders.Orderno from persons right outer join orders on persons.p_Id = orders.P_Id order by persons.Lastname;

LASTNAME  FIRSTNAME  ORDERNO
-----
Hansen    Ola        22456
Hansen    Ola        24562
Pettersen Kari       77895

```

```

E:\SRM Sem-all\Sem-6\Database Management\Lab\ORACLE CLIENT 11.2\instantclient_11.2\sqlplus.exe
SQL> select persons.Lastname, persons.firstname, orders.Orderno from persons right outer join orders on persons.p_Id = orders.P_Id order by persons.Lastname;

LASTNAME  FIRSTNAME  ORDERNO
-----
Hansen    Ola        22456
Hansen    Ola        24562
Pettersen Kari       77895
Pettersen Kari       44678
              34764
              77897

6 rows selected.

SQL> SELECT persons.lastname,persons.firstname,orders.orderno
  2 FROM persons
  3 FULL OUTER JOIN orders
  4 ON persons.p_Id = orders.p_Id
  5 ORDER BY persons.lastname;

LASTNAME  FIRSTNAME  ORDERNO
-----
Hansen    Ola        24562
Hansen    Ola        22456
Pettersen Kari       44678
Pettersen Kari       77895
Svendson  Tove
              77897
              34764

7 rows selected.

SQL> select persons.Lastname, persons.firstname, orders.Orderno from persons right join orders on persons.p_Id = orders.P_Id order by persons.Lastname;

LASTNAME  FIRSTNAME  ORDERNO
-----
Hansen    Ola        22456
Hansen    Ola        24562
Pettersen Kari       77895
Pettersen Kari       44678

```

```
E:\SRM Sem-all\Sem-6\Database Management\Lab\ORACLE CLIENT 11.2\instantclient_11_2\sqlplus.exe
SQL> select persons.Lastname, persons.firstname, orders.Orderno from persons right join orders on persons.p_Id = orders.P_Id order by persons.Lastname;

LASTNAME  FIRSTNAME  ORDERNO
-----
Hansen    Ola        22456
Hansen    Ola        24562
Pettersen Kari       77895
Pettersen Kari       44678
          34764
          77897

5 rows selected.

SQL> SELECT persons.lastname,persons.firstname,orders.orderno
2  FROM persons
3  INNER JOIN orders
4  ON persons.p_Id = orders.p_Id
5  ORDER BY persons.lastname;

LASTNAME  FIRSTNAME  ORDERNO
-----
Hansen    Ola        22456
Hansen    Ola        24562
Pettersen Kari       77895
Pettersen Kari       44678

SQL> spool off;
SQL> edit exp7.lst
```

RESULT: Thus the joining tables have been executed successfully.