

JOINS:

It is the process of retrieving the data from multiple tables simultaneously. This know as joins.

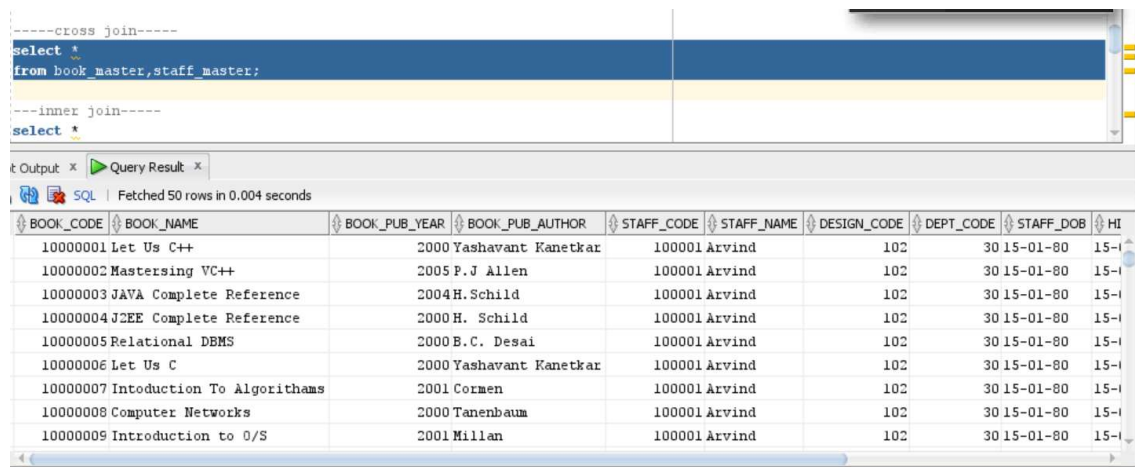
Types Of Joins:

1. Cartesian Join/Cross join
2. Inner Join/Equi Join
3. Outer Join
 - Left Outer Join
 - Right Outer Join
 - Full Outer Join
4. Self Join
5. Natural Join

Cross Join: In cross Join the record of one table will be merged with all the record of another table and so on.

SYNTAX:

```
SELECT COLUMN_NAME  
FROM TABLE_NAME1, TABLE_NAME2;
```



The screenshot shows a SQL query editor with a query window and a results window. The query window contains the following SQL code:

```
-----cross join-----  
select *  
from book_master, staff_master;  
  
-----inner join-----  
select *
```

The results window shows the output of the query, which is a cross join of the book_master and staff_master tables. The results are displayed in a table with the following columns: BOOK_CODE, BOOK_NAME, BOOK_PUB_YEAR, BOOK_PUB_AUTHOR, STAFF_CODE, STAFF_NAME, DESIGN_CODE, DEPT_CODE, STAFF_DOB, and HI. The results show 10 rows of data, representing the combination of 10 books and 10 staff members.

BOOK_CODE	BOOK_NAME	BOOK_PUB_YEAR	BOOK_PUB_AUTHOR	STAFF_CODE	STAFF_NAME	DESIGN_CODE	DEPT_CODE	STAFF_DOB	HI
10000001	Let Us C++	2000	Yashavant Kanetkar	100001	Arvind	102	30	15-01-80	15-1
10000002	Mastersing VC++	2005	P.J Allen	100001	Arvind	102	30	15-01-80	15-1
10000003	JAVA Complete Reference	2004	H. Schild	100001	Arvind	102	30	15-01-80	15-1
10000004	J2EE Complete Reference	2000	H. Schild	100001	Arvind	102	30	15-01-80	15-1
10000005	Relational DBMS	2000	B.C. Desai	100001	Arvind	102	30	15-01-80	15-1
10000006	Let Us C	2000	Yashavant Kanetkar	100001	Arvind	102	30	15-01-80	15-1
10000007	Introduction To Algorithms	2001	Cormen	100001	Arvind	102	30	15-01-80	15-1
10000008	Computer Networks	2000	Tanenbaum	100001	Arvind	102	30	15-01-80	15-1
10000009	Introduction to O/S	2001	Millan	100001	Arvind	102	30	15-01-80	15-1

Inner Join/Equi join :

Inner Join is used for matching records. To obtain matching records we use a join condition

SYNTAX: SELECT COLUMN_NAME

```
FROM TABE_NAME1, TABLE_NAME2
```

```
WHERE <JOIN_CONDITION>;
```

```

---inner join-----
select staff_sal,staff_name
from staff_master,designation_master
where staff_master.design_code=designation_master.design_code;

```

t Output x Query Result x
 SQL | All Rows Fetched: 10 in 0.002 seconds

STAFF_SAL	STAFF_NAME
17000	Arvind
20000	Shyam
24000	Mohan
20000	Anil
32000	John
42000	Allen
62000	Smith
18000	Raviraj
22000	Rahul
32000	Ram

OUTER JOIN : Outer Join are used to obtain unmatched Records.

LEFT OUTER JOIN:

SYNTAX: Left Outer Join are used to obtain unmatched records from the left table along with matching records.

SELECT COLUMN_NAME

FROM TABLE_NAME1,TABLE_NAME2

WHERE TABLE_NAME.COL_NAME=TABLE_NAME2.COL_NAME(+);

```

-----outer join-----left outer join-----
select *
from staff_master,designation_master
where staff_master.design_code=designation_master.design_code(+);

```

pt Output	Query Result
SQL	All Rows Fetched: 10 in 0.002 seconds
STAFF_SAL	STAFF_NAME
1	17000 Arvind
2	20000 Shyam
3	24000 Mohan
4	20000 Anil
5	32000 John
6	42000 Allen
7	62000 Smith
8	18000 Raviraj
9	22000 Rahul
0	32000 Ram

RIGHT OUTER JOIN:

Right outer join is used to obtain unmatched records from the right table along with matching the records.

SYNTAX:

SELECT COLUMN_NAME

FROM TABLE_NAME1, TABLE_NAME2

WHERE TABLE_NAME.COL_NAME(+)=TABLE_NAME2.COL_NAME;

-----right outer join-----																																															
<pre> select staff_name,staff_code,staff_sal,staff_address from staff_master,designation_master where staff_master.design_code(+)=designation_master.design_code; select staff_name,staff_master.design_code from </pre>																																															
<div> <div>Script Output x</div> <div>Query Result x</div> </div> <div> <div> </div> <div> All Rows Fetched: 13 in 0.003 seconds </div> </div> <table> <thead> <tr> <th>STAFF_NAME</th><th>STAFF_CODE</th><th>STAFF_SAL</th><th>STAFF_ADDRESS</th></tr> </thead> <tbody> <tr><td>1 Arvind</td><td>100001</td><td>17000</td><td>Bangalore</td></tr> <tr><td>2 Shyam</td><td>100002</td><td>20000</td><td>Chennai</td></tr> <tr><td>3 Mohan</td><td>100003</td><td>24000</td><td>Mumbai</td></tr> <tr><td>4 Anil</td><td>100004</td><td>20000</td><td>Hyderabad</td></tr> <tr><td>5 John</td><td>100005</td><td>32000</td><td>Bangalore</td></tr> <tr><td>6 Allen</td><td>100006</td><td>42000</td><td>Chennai</td></tr> <tr><td>7 Smith</td><td>100007</td><td>62000</td><td>Mumbai</td></tr> <tr><td>8 Raviraj</td><td>100008</td><td>18000</td><td>Bangalore</td></tr> <tr><td>9 Rahul</td><td>100009</td><td>22000</td><td>Hyderabad</td></tr> <tr><td>10 Ram</td><td>100010</td><td>32000</td><td>Bangalore</td></tr> </tbody> </table>				STAFF_NAME	STAFF_CODE	STAFF_SAL	STAFF_ADDRESS	1 Arvind	100001	17000	Bangalore	2 Shyam	100002	20000	Chennai	3 Mohan	100003	24000	Mumbai	4 Anil	100004	20000	Hyderabad	5 John	100005	32000	Bangalore	6 Allen	100006	42000	Chennai	7 Smith	100007	62000	Mumbai	8 Raviraj	100008	18000	Bangalore	9 Rahul	100009	22000	Hyderabad	10 Ram	100010	32000	Bangalore
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10 Ram	100010	32000	Bangalore																																												

FULL OUTER JOIN: It will retrieve matched records + all records from left table

SYNTAX: SELECT COLUMN_NAME

FROM TABLE_NAME1 FULL OUTER JOIN TABLE_NAME2

ON <JOIN_CONDITION>;

```

-----full outer join-----
select staff_name,staff_master.design_code from
staff_master full outer join designation_master on
staff_master.design_code=designation_master.design_code;

select * from designation_master;

```

Script Output x	Query Result x
All Rows Fetched: 13 in 0.002 seconds	
STAFF_NAME	DESIGN_CODE
1 Arvind	102
2 Shyam	102
3 Mohan	102
4 Anil	102
5 John	106
6 Allen	103
7 Smith	103
8 Raviraj	102
9 Rahul	102
10 Ram	103

SELF JOIN: Joining the table by itself is know as self join.

```

-----self join-----
select staff_name,design_name
from staff_master,designation_master
where staff_master.design_code=designation_master.design_code;

```

Script Output x	Query Result x
All Rows Fetched: 10 in 0.002 seconds	
STAFF_NAME	DESIGN_NAME
1 Arvind	Professor
2 Shyam	Professor
3 Mohan	Professor
4 Anil	Professor
5 John	Director
6 Allen	Reader
7 Smith	Reader
8 Raviraj	Professor
9 Rahul	Professor
10 Ram	Reader

-----self join-----

```
select staff_name,staff_master.design_code  
from staff_master,designation_master  
where staff_master.design_code=designation_master.design_code;
```

Script Output x


Query Result x

SQL | All Rows Fetched: 10 in 0.003 seconds

	STAFF_NAME	DESIGN_CODE
1	Arvind	102
2	Shyam	102
3	Mohan	102
4	Anil	102
5	John	106
6	Allen	103
7	Smith	103
8	Raviraj	102
9	Rahul	102
10	Ram	103

NATURAL JOIN: Natural join behaves like a inner join.if there is a relation present between tables (pk,fk).

```
-----natural join-----|
select staff_name,design_name
from staff_master,designation_master;
```

Script Output x		Query Result x	
 SQL		Fetched 50 rows in 0.002 seconds	
	STAFF_NAME	DESIGN_NAME	
4	Anil	HOD	
5	John	HOD	
6	Allen	HOD	
7	Smith	HOD	
8	Raviraj	HOD	
9	Rahul	HOD	
10	Ram	HOD	
11	Arvind	Professor	
12	Shyam	Professor	
13	Mohan	Professor	