

SESSION 13 JOINS

JOINS

s	Roll	Name	Email	DeptID						m	Roll	Marks	DeptID							
	1	A	ASCa	2							1	10	2							
	2	B	SADA	5							2	10	5							
	3	C	efer	7							3	10	7							
	4	D	vrw	9							4	20	9							
	5	E	wdwe	4							5	10	4							
	6	F	erv	1							NULL	20	5							
	7	G	rev	2							NULL	15	5							

INNER JOINS: Is when you merge more than 1 table and only the shortest table is given preference while considering no. of rows.

LEFT JOINS: In this join only the rows of leftmost table is considered, as below in Left Join table whole rows of left most table is there and NULL values are in other table.

RIGHT JOINS: Only the rows of right table is considered, as below in Right Join table whole rows of right most table is there, in the place of space NULL values are in other table.

INNER JOIN							Left Join						
s.Roll	s.Name	s.Email	s.DeptID	m.Roll	Marks	m.DeptID	s.Roll	s.Name	s.Email	s.DeptID	m.Roll	Marks	m.DeptID
1	A	ASCa	2	1	10	2	1	A	ASCa	2	1	10	2
2	B	SADA	5	2	10	5	2	B	SADA	5	2	10	5
3	C	efer	7	3	10	7	3	C	efer	7	3	10	7
4	D	vrw	9	4	20	9	4	D	vrw	9	4	20	9
5	E	wdwe	4	5	10	4	5	E	wdwe	4	5	10	4
							6	F	erv	1	NULL	NULL	NULL
							7	G	rev	2	NULL	NULL	NULL
Right Join							Full Outer Join						
s.Roll	s.Name	s.Email	s.DeptID	m.Roll	Marks	m.DeptID	s.Roll	s.Name	s.Email	s.DeptID	m.Roll	Marks	m.DeptID
1	A	ASCa	2	1	10	2	1	A	ASCa	2	1	10	2
2	B	SADA	5	2	10	5	2	B	SADA	5	2	10	5
3	C	efer	7	3	10	7	3	C	efer	7	3	10	7
4	D	vrw	9	4	20	9	4	D	vrw	9	4	20	9
5	E	wdwe	4	5	10	4	5	E	wdwe	4	5	10	4
NULL	NULL	NULL	NULL	NULL	20	5	6	F	erv	1	NULL	NULL	NULL
NULL	NULL	NULL	NULL	NULL	15	5	7	G	rev	2	NULL	NULL	NULL
							NULL	NULL	NULL	NULL	NULL	20	5
							NULL	NULL	NULL	NULL	NULL	15	5

BLUEPRINT

emp						dep		info		
id	fname	lname	age	gender	email	depid	depname	depid	id	
-1	ancient	one	3500	F	zzzz@gmail.com	101	IT	999	-1	
0	natasha	romanof	30	F	zzzz@gmail.com	104	HR	999	980	
1	nayan	gadhari	22	M	zzzz@gmail.com	109	A	999	988	
8	wanda	witch	29	F	zzzz@gmail.com	678	F	101	89	
23	hope	wasp	28	F	zzzz@gmail.com	999	BOD	101	8	
38	peter	parker	18	M	zzzz@gmail.com			101	1	
40	nick	fury	45	M	zzzz@gmail.com			104	0	
78	wanda	witch	89	F	zzzz@gmail.com			104	23	
89	bruse	banner	24	M	zzzz@gmail.com			104	38	
98	wanda	witch	9	F	zzzz@gmail.com			109	8	
283	tony	stark	35	M	zzzz@gmail.com			104	78	
980	steve	rogers	9	M	zzzz@gmail.com			109	283	
988	steve	rogers	9	M	zzzz@gmail.com			678	40	
77	steven	strange	35	M	zzzz@gmail.com					

Below is the Query used to implement INNER JOIN.

But Because we did not specify 'On' command for every info row it display whole emp column.

```
mysql> SELECT * FROM emp INNER JOIN info;
```

id	fname	lname	age	gender	email	depid	id
-1	ancient	one	3500	F	zzzz@marvel.com	678	40
-1	ancient	one	3500	F	zzzz@marvel.com	109	283
-1	ancient	one	3500	F	zzzz@marvel.com	104	78
-1	ancient	one	3500	F	zzzz@marvel.com	109	8
-1	ancient	one	3500	F	zzzz@marvel.com	104	38
-1	ancient	one	3500	F	zzzz@marvel.com	104	23
-1	ancient	one	3500	F	zzzz@marvel.com	104	0
-1	ancient	one	3500	F	zzzz@marvel.com	101	1
-1	ancient	one	3500	F	zzzz@marvel.com	101	8
-1	ancient	one	3500	F	zzzz@marvel.com	101	89
-1	ancient	one	3500	F	zzzz@marvel.com	999	988
-1	ancient	one	3500	F	zzzz@marvel.com	999	980
-1	ancient	one	3500	F	zzzz@marvel.com	999	-1
0	natasha	romanof	30	F	zzzz@marvel.com	678	40
0	natasha	romanof	30	F	zzzz@marvel.com	109	283
0	natasha	romanof	30	F	zzzz@marvel.com	104	78
0	natasha	romanof	30	F	zzzz@marvel.com	109	8
0	natasha	romanof	30	F	zzzz@marvel.com	104	38
0	natasha	romanof	30	F	zzzz@marvel.com	104	23
0	natasha	romanof	30	F	zzzz@marvel.com	104	0
0	natasha	romanof	30	F	zzzz@marvel.com	101	1
0	natasha	romanof	30	F	zzzz@marvel.com	101	8
0	natasha	romanof	30	F	zzzz@marvel.com	101	89
0	natasha	romanof	30	F	zzzz@marvel.com	999	988

In below example we specify emp.id=info.id that is why we can only see rows who's id column in table info matches id in table emp.

```
mysql> SELECT * FROM emp INNER JOIN info ON emp.id=info.id;
```

id	fname	lname	age	gender	email	depid	id
-1	ancient	one	3500	F	zzzz@marvel.com	999	-1
980	steve	rogers	9	M	zzzz@marvel.com	999	980
988	steve	rogers	9	M	zzzz@marvel.com	999	988
89	bruse	banner	24	M	zzzz@marvel.com	101	89
8	wanda	witch	29	F	zzzz@marvel.com	101	8
1	nayan	gadhari	22	M	zzzz@marvel.com	101	1
0	natasha	romanof	30	F	zzzz@marvel.com	104	0
23	hope	wasp	28	F	zzzz@marvel.com	104	23
38	peter	parker	18	M	zzzz@marvel.com	104	38
8	wanda	witch	29	F	zzzz@marvel.com	109	8
78	wanda	witch	89	F	zzzz@marvel.com	104	78
283	tony	stark	35	M	zzzz@marvel.com	109	283
40	nick	fury	45	M	zzzz@marvel.com	678	40

Below is an example of LEFT Join with 'USING' syntax. LEFT JOIN can also be done with 'USING' and 'WHILE' syntax


```
mysql> SELECT * FROM emp LEFT JOIN info USING(id);
```

id	fname	lname	age	gender	email	depid
-1	ancient	one	3500	F	zzzz@marvel.com	999
0	natasha	romanof	30	F	zzzz@marvel.com	104
1	nayan	gadhari	22	M	zzzz@marvel.com	101
8	wanda	witch	29	F	zzzz@marvel.com	101
8	wanda	witch	29	F	zzzz@marvel.com	109
23	hope	wasp	28	F	zzzz@marvel.com	104
38	peter	parker	18	M	zzzz@marvel.com	104
40	nick	fury	45	M	zzzz@marvel.com	678
77	Steven	strange	35	M	zzzz@gmail.com	NULL
78	wanda	witch	89	F	zzzz@marvel.com	104
89	bruse	banner	24	M	zzzz@marvel.com	101
98	wanda	witch	9	F	zzzz@marvel.com	NULL
283	tony	stark	35	M	zzzz@marvel.com	109
980	steve	rogers	9	M	zzzz@marvel.com	999
988	steve	rogers	9	M	zzzz@marvel.com	999

Below is an example of **RIGHT JOIN** with 'WHILE' syntax. **RIGHT JOIN** can also be done with 'USING' and 'ON t1.c1=t2.c2' syntax. Because this was **RIGHT JOIN** and left table had 1 extra rows, so that row was cut in below table. That row fname was 'steven' and lname was 'strange'.

```
mysql> SELECT * FROM emp RIGHT JOIN info USING(id);
```

id	depid	fname	lname	age	gender	email
-1	999	ancient	one	3500	F	zzzz@marvel.com
980	999	steve	rogers	9	M	zzzz@marvel.com
988	999	steve	rogers	9	M	zzzz@marvel.com
89	101	bruse	banner	24	M	zzzz@marvel.com
8	101	wanda	witch	29	F	zzzz@marvel.com
1	101	nayan	gadhari	22	M	zzzz@marvel.com
0	104	natasha	romanof	30	F	zzzz@marvel.com
23	104	hope	wasp	28	F	zzzz@marvel.com
38	104	peter	parker	18	M	zzzz@marvel.com
8	109	wanda	witch	29	F	zzzz@marvel.com
78	104	wanda	witch	89	F	zzzz@marvel.com
283	109	tony	stark	35	M	zzzz@marvel.com
40	678	nick	fury	45	M	zzzz@marvel.com

Q. Below was the task assign to print whole data from 3 table whose age is greater than 21.
-->So the solution is to join those tables inn nested structure and use WHERE clause.

```
mysql> SELECT * FROM ((emp JOIN info USING(id)) JOIN dep USING(depdeid)) WHERE age>=21 ;
```

depid	id	fname	lname	age	gender	email	depname
999	-1	ancient	one	3500	F	zzzz@marvel.com	BOD
104	0	natasha	romanof	30	F	zzzz@marvel.com	HR
101	1	nayan	gadhari	22	M	zzzz@marvel.com	IT
101	8	wanda	witch	29	F	zzzz@marvel.com	IT
109	8	wanda	witch	29	F	zzzz@marvel.com	A
104	23	hope	wasp	28	F	zzzz@marvel.com	HR
678	40	nick	fury	45	M	zzzz@marvel.com	F
104	78	wanda	witch	89	F	zzzz@marvel.com	HR
101	89	bruse	banner	24	M	zzzz@marvel.com	IT
109	283	tony	stark	35	M	zzzz@marvel.com	A

10 rows in set (0.00 sec)

Q. Below was the task to print whole data from 3 tables whose department is IT and gender is MALE.
-->So the solution is to join those tables inn nested structure and use WHERE clause.

```
mysql> SELECT * FROM ((emp JOIN info USING(id)) JOIN dep USING(depid)) WHERE depname='IT' and gender = 'M';
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| depid | id | fname | lname | age | gender | email | depname |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 101 | 89 | bruse | banner | 24 | M | zzzz@marvel.com | IT |
| 101 | 1 | nayan | gadhari | 22 | M | zzzz@marvel.com | IT |
+-----+-----+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```