SESSION 13 JOINS

07 October 2021   03:41 PM

JOINS

s

Roll	Name	Email	DepID
1	A	ASCa	2
2	B	SADA	5
3	C	efer	7
4	D	vrv	9
5	E	wdwe	4
6	F	erv	1
7	G	rev	2

m

Roll	Marks	DepID
1	10	2
2	10	5
3	10	7
4	20	9
5	10	4
NULL	20	5
NULL	15	5

T1 Join T2 ON com1=col2

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

s.Roll	s.Name	s.Email	s.DepID	m.Roll	.Marks	m.DepID
1	A	ASCa	2	1	10	2
2	B	SADA	5	2	10	5
3	C	efer	7	3	10	7
4	D	vrv	9	4	20	9
5	E	wdwe	4	5	10	4

Left Join

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

Right Join

s.Roll	s.Name	s.Email	s.DepID	m.Roll	.Marks	m.DepID
1	A	ASCa	2	1	10	2
2	B	SADA	5	2	10	5
3	C	efer	7	3	10	7
4	D	vrv	9	4	20	9
5	E	wdwe	4	5	10	4
NULL	NULL	NULL	NULL	NULL	20	5
NULL	NULL	NULL	NULL	NULL	15	5

Full Outer Join

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

BLUEPRINT

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

dep	
depid	depname
101	IT
104	HR
109	A
678	F
999	BOD

info	
depid	id
999	-1
999	980
999	988
101	89
101	8
101	1
104	0
104	23
104	38
109	8
104	78
109	283
678	40

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(depid)) 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)
```