

SQL

07 February 2022 18:07

OUTER JOIN

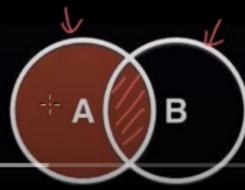
Left Outer Join ✓
Right Outer Join
Full Outer Join

LoanNo	Branch	Amt
L ₁	B ₁	1K
L ₂	B ₂	2K
L ₃	B ₃	1.5K

Loan

Cust Name	LoanNo
C ₁	L ₁
C ₂	L ₂
C ₃	L ₄

Borrower

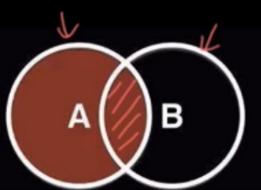


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LEFT OUTER JOIN

→ All records from left table.
→ Only matching record from right table.

SELECT <Attrs> FROM Loan LEFT OUTER JOIN Borrower
ON <Join Cond> WHERE <Pred> ;



LEFT OUTER JOIN

→ All records from left table.
→ Only matching record from right table.

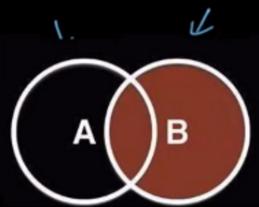
SELECT <Attrs> FROM Loan LEFT OUTER JOIN Borrower
ON <Join Cond> WHERE <Pred> ;

LoanNo	Branch	Amt	Cust	LoanNo
✓L ₁	B ₁	1K	C ₁	L ₁
✓L ₂	B ₂	2K	C ₂	L ₂
✓L ₃	B ₃	1.5K	NULL	NULL

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RIGHT OUTER JOIN

- All records from left table.
- Only matching record from right table.
Left



```
SELECT <Attrs> FROM Loan RIGHT OUTER JOIN Borrower
ON <Join Cond> WHERE <Pred.>;
```

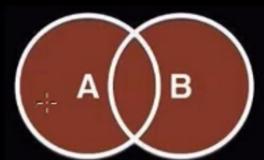
<u>LoanNo</u>	<u>Branch</u>	<u>Amt</u>	<u>Cust</u>	<u>LoanNo</u>
L1	B1	1K	C1	L1
L2	B2	2K	C2	L2
NULL	NULL	NULL	C3	L3

FULL OUTER JOIN

- All records from ALL table.

```
SELECT <Attrs> FROM Loan FULL OUTER JOIN Borrower
ON <Join Cond> WHERE <Pred.>;
```

<u>LoanNo</u>	<u>Branch</u>	<u>Amt</u>	<u>Cust</u>	<u>LoanNo</u>
L1	B1	1K	C1	L1 ✓
L2	B2	2K	C2	L2 ✓
NULL	NULL	NULL	C3	L4
L3	B3	1.5K	NULL	NULL



SUBSTR IN SQL

→ used to extract the certain part of a given string from a given position.

SUBSTR (string, Starting index, length)

S (A D I A
1 2 3 4 5
-5 -4 -3 -2 -1)

SUBSTR ('SADIA', 2, 2) → AD.
 SUBSTR ('SADIA', -4, 3) → ADI
 SUBSTR ('SADIA', -1, 3) → A
 SUBSTR ('SADIA', -1, 1) → A.
 SUBSTR ('SADIA', 3, 3) → DIA
~~* SUBSTR ('LAUGH', 4, 3)~~

2.00

SELECT DISTINCT

The SELECT DISTINCT statement is used to display only distinct (different) values.

Syntax: - SELECT DISTINCT column_name FROM table_name;

Ex: - SELECT DISTINCT name FROM student;

```
C:\Windows\system32\cmd.exe - mysql -u root -p
mysql> select * from emp;
+-----+-----+-----+-----+-----+-----+-----+
| emp_id | emp_name | dob      | dept    | salary | city    | pin    |
+-----+-----+-----+-----+-----+-----+-----+
| 101   | Ram      | 1990-01-01 | IT      | 30000  | Delhi   | 800001 |
| 102   | Amit     | 1988-04-03  | Research | 45000  | Mumbai  | 800002 |
| 103   | Tanu     | 1990-01-01  | Accountant | 15000  | Delhi   | 800001 |
| 104   | Sunil    | 1989-12-05  | IT      | 30000  | Kolkata | 800003 |
| 105   | Sonam    | 1989-12-05  | Executive | 10000  | Kolkata | 800003 |
| 106   | Komal    | 1992-11-03  | HR      | 35000  | Ranchi  | 800004 |
| 107   | Vinay    | 1990-10-06  | HR      | 35000  | Kolkata | 800003 |
| 108   | Dev      | 1989-09-25  | IT      | 30000  | Mumbai  | 800002 |
| 109   | Suhana   | 1990-07-15  | IT      | 30000  | Ranchi  | 800004 |
| 110   | Puja     | 1988-01-26  | HR      | 35000  | Banglore | 800005 |
| 111   | Raja     | 1992-11-03  | Accountant | 15000  | Patna   | 800007 |
| 112   | Jai      | 1990-01-18  | Trainer  | 20000  | Chennai | 800009 |
| 113   | Sonam    | 1990-01-18  | Trainer  | 20000  | J&K    | 800010 |
| 114   | Dev      | 1989-09-25  | IT      | 30000  | Chennai | 800009 |
+-----+-----+-----+-----+-----+-----+-----+
14 rows in set (0.00 sec)

mysql> _
```

```

+----+----+----+----+----+----+----+
| 113 | Sonam   | 1990-01-18 | Trainer    | 20000 | J&K      | 800010 |
| 200 | 114     | 1989-09-25 | IT          | 30000 | Chennai   | 800009 |
+----+----+----+----+----+----+----+
14 rows in set (0.00 sec)

```

```
mysql> SELECT DISTINCT emp_name FROM emp;
```

```

+-----+
| emp_name |
+-----+
| Ram      |
| Amit     |
| Tanu     |
| Sunil    |
| Sonam    |
| Komal    |
| Vinay    |
| Dev      |
| Suhana   |
| Puja     |
| Raja     |
| Jai      |
+-----+

```

```

mysql> SELECT DISTINCT dept FROM emp;
+-----+
| dept |
+-----+
| IT    |
| Research |
| Accountant |
| Executive |
| HR    |
| Trainer |
+-----+
6 rows in set (0.00 sec)
=====
```

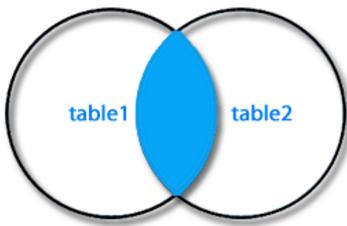
Inner join

The INNER JOIN selects all rows from both participating tables as long as there is a match between the columns. An SQL INNER JOIN is same as JOIN clause, combining rows from two or more tables.

syntax:

```
SELECT *
FROM table1 INNER JOIN table2
ON table1.column_name = table2.column_name;
```

SQL Inner Join



example-

Here is an example of inner join in SQL between two tables.

sample table-Foods

```

+-----+-----+-----+
| ITEM_ID | ITEM_NAME | ITEM_UNIT | COMPANY_ID |
+-----+-----+-----+
| 1     | Chex Mix  | Pcs      | 16       |
| 6     | Cheez-It   | Pcs      | 15       |
| 2     | BN Biscuit | Pcs      | 15       |
| 3     | Mighty Munch| Pcs      | 17       |
| 4     | Pot Rice   | Pcs      | 15       |
| 5     | Jaffa Cakes| Pcs      | 18       |
| 7     | Salt n Shake| Pcs      |           |
+-----+-----+-----+

```

sample table-company

```

+-----+-----+-----+
| COMPANY_ID | COMPANY_NAME | COMPANY_CITY |
+-----+-----+-----+
| 18     | Order All  | Boston    |
| 15     | Jack Hill Ltd | London |
+-----+-----+-----+

```

16 Akas Foods Delhi
17 Foodies. London
19 sip-n-Bite. New York

To join item name, item unit columns from foods table and company name, company city columns from company table, with the following condition -

1. company_id of foods and company table must be same,
the following SQL statement can be used:

Query:

1. SELECT foods.item_name, foods.item_unit,
2. company.company_name, company.company_city
3. FROM foods
4. INNER JOIN company
5. ON foods.company_id = company.company_id;

Output

ITEM_NAME	ITEM_COMPANY_NAME	COMPANY_CITY
Chex Mix	Pcs Akas Foods	Delhi
Cheez-It	Pcs Jack Hill Ltd	London
BN Biscuit	Pcs Jack Hill Ltd	London
Mighty Munch	Pcs Foodies.	London
Pot Rice	Pcs Jack Hill Ltd	London
Jaffa Cakes	Pcs Order All	Boston

From <<https://www.techtud.com/short-notes/inner-join>>

SUBQUERY

- Queries must be enclosed within parenthesis.
- ORDER BY can not be used in inner query.

SELECT att₁, att₂ ... - - - (SELECT - - -)
 + mid =
 SET comp. IN ANY

Movie (Mid, Title, Year, Rating, Votes)

M_Director (Id, Mrd, Pid)

Person (Pid, Name, dob, Gender)

Query - List down the movies directed by Karan Johar;

Query - List down the movies directed by Karan Johar;

```
SELECT Title as Movies FROM Movie, M_Director  
WHERE Movie.Mid = M_Director.Mid AND  
Pid = (SELECT Pid FROM PERSON  
WHERE  
Name = 'Karan Johar'  
);
```

Movie (Mid, Title, Year, Rating, Votes)

M_Director (Id, Mrd, Pid)

Person (Pid, Name, dob, Gender)

Query - List down the movies directed by Karan Johar;

```
SELECT Title as Movies FROM Movie, M_Director  
WHERE Movie.Mid = M_Director.Mid AND  
M_Director.Pid = (SELECT Pid FROM PERSON  
WHERE  
Name = 'Karan Johar')
```

M_Director.Pid
conflict prevent

```

ubuntu@ip-10-190-83-36: /var/www          bash...          ubuntu@ip-10-190-83-36: /var/www/itkgp.org/sites/all/themes/itkgp/template
+-----+
| Pid |
+-----+
| nm0424103 |
+-----+
1 row in set (0.01 sec)

mysql> SELECT Title as Movies From Movie, M_Director WHERE Movie.Mid = M_Director.Mid AND Pid = 'nm0424103';
+-----+
| Movies |
+-----+
| My Name Is Khan |
| Kuch Kuch Hota Hai |
| Kabhi Khushi Kabhie Gham... |
| Student of the Year |
+-----+
4 rows in set (0.08 sec)

mysql> SELECT Title as Movies From Movie, M_Director WHERE Movie.Mid = M_Director.Mid AND Pid = (SELECT Pid FROM Person WHERE Name = 'Karan Johar');
+-----+
| Movies |
+-----+
| My Name Is Khan |
| Kuch Kuch Hota Hai |
| Kabhi Khushi Kabhie Gham... |
| Student of the Year |
+-----+
4 rows in set (0.08 sec)

mysql>

```

Consider the tables traveler, package and booking given below:

Table: traveler

travelerid	name	gender	email
T001	John	M	john@abc.com
T002	Mary	F	mary@xyz.com
T003	William	M	will@pqr.com
T004	Henry	M	henry@abc.com
T005	Mark	M	mark@abc.com

Table: package

packageid	location	needdays	ptype	cost
P001	East Asia	6	S	50000
P002	South Africa	9	R	60000
P003	Australia	16	S	300000
P004	Europe	6	W	52000
P005	USA	10	W	400000

Table: booking

bookingid	travelerid	packageid	startdate	discount	netamount
B1001	T001	P001	23-Jan-17	1500	400000
B1002	T004	P003	13-Jan-18	15000	250000
B1003	T001	P002	3-Aug-17	3000	55000
B1004	T002	P003	23-Oct-17	1500	25000
B1005	T003	P002	23-Jan-18	2000	55000

Query:

MCQ QUESTIONS

01.30.17

Table: booking

bookingid	travelerid	packageid	startdate	discount	netamount
B1001	T001	P001	23-Jan-17	1500	400000
B1002	T004	P003	13-Jan-18	15000	250000
B1003	T001	P002	3-Aug-17	3000	55000
B1004	T002	P003	23-Oct-17	1500	25000
B1005	T003	P002	23-Jan-18	2000	55000

Query:

SELECT DISTINCT bookingid FROM booking b LEFT OUTER JOIN traveler t ON b.travelerid = t.travelerid RIGHT OUTER JOIN packages p ON p.packageid=b.packageid AND netamount > 25000 AND SUBSTR(b.packageid,4) >= 2;

Which of the following bookingid's will be fetched in the output when the query given above is executed?

harsh.lohia11@gmail.com, please provide your response below

B1001, B1002, B1003, B1004, B1005
 B1002, B1003, NULL, B1005
 B1001, B1002, B1003, NULL, B1005
 B1005, B1002, B1003, NULL, NULL