

1) INNER JOIN (Default)

The *inner join* is the default used when you don't specify what type of Join. When you do an inner join of two tables it returns a new set of data with all of the instances of the join where the condition was met. If the condition was not met between the tables, the rows are ignored. This type of join will result in the smallest number of results.

```
SELECT * FROM Users  
INNER JOIN Orders  
ON Users.Id = Orders.User_Id;
```

The result is a combination of the two tables where the rows have been *joined* by their common *User_Id*.

You can see that because Saif and Neeraj did not order anything, they did not show up in the results for this join. Additionally, user 99 who is in the order table, but not listed in the users table did not show up in the result either.

Id	Name	Sr_No	User_Id	Item
2	Amit	1	2	Pizza
2	Amit	2	2	Burger
2	Amit	3	2	Milk Shake
3	Pankaj	4	3	French Fries
3	Pankaj	5	3	Burger
5	Samadhan	6	5	Diet Coke
5	Samadhan	7	5	Burger

OUTER JOIN

Where an inner join ignores any rows that don't match the condition, an outer join can still show results if no condition was met. For example even though Saif and Neeraj did not order anything, they could still show up in the results of an Outer Join Query, depending on which table is favored. There are three options for favoring tables, and therefore there are three possible Outer Joins.

LEFT OUTER JOIN:

The left outer join means that the join will favor the left listed (first listed) table. Favoring the table means that all results from that table will be shown in the result, whether or not they match of the joined table on the condition. If they do not match any rows in the joined table, it will be attached to NULL Columns.

```
SELECT * FROM Users  
LEFT OUTER JOIN Orders  
ON Users.Id = Orders.User_Id  
ORDER BY ID;
```

Id	Name	Sr_No	User_Id	Item
1	Saif	NULL	NULL	NULL
2	Amit	2	2	Burger
2	Amit	3	2	Milk Shake
2	Amit	1	2	Pizza
3	Pankaj	4	3	French Fries
3	Pankaj	5	3	Burger
4	Neeraj	NULL	NULL	NULL
5	Samadhan	7	5	Burger
5	Samadhan	6	5	Diet coke

Here we've listed the users table first, so it is the favored tables. As you can see Saif and Neeraj, who were not present in the results of the inner join as they did not order anything, are still listed in the results of this outer join. The columns that would normally be filled with values from the joined table are simply NULL.

RIGHT OUTER JOIN

The right outer join is the same as the left, except the favored table is the right listed (second listed) table.

```
SELECT * FROM Users
RIGHT OUTER JOIN Orders
ON Users.Id = Orders.User_Id
ORDER BY Sr_No;
```

Id	Name	Sr_No	User_Id	Item
2	Amit	1	2	Pizza
2	Amit	2	2	Burger
2	Amit	3	2	Milk Shake
3	Pankaj	4	3	French Fries
3	Pankaj	5	3	Burger
5	Samadhan	6	5	Diet Coke
5	Samadhan	7	5	Burger
NULL	NULL	8	99	Burger

You can see that by favoring the orders table we now see the unmatched User # 99 but not Saif and Neeraj.