## Join example:

Example inner join and simple explanation of each line:

SELECT Orders.OrderID, Customers.CustomerName, Orders.OrderDate  
FROM Orders  
INNER JOIN Customers

ON Orders.CustomerID=Customers.CustomerID;

Line 1: List all the columns you want output

Line 2: Name of the first table

Line 3: Name of the second table

Line 4: Customer.CustomerID is the Primary key. Orders.CustomerID is the associated Foreign key. Equating the two allows us to link the two tables and query specific columns from both tables.

## Inner Join:

For an inner join, the data within the row will only be displayed if that order has an associated customer and if that customer has an associated order. In the following table, the first row is displayed because the order has an associated customer, and the customer has an associated order. The second row is not output because the customer does not have an associated order. The third row is not output because the order does not have an associated customer.

|  |  |  |  |
| --- | --- | --- | --- |
| OrderID | CustomerName | OrderDate | Explanation: |
| 001 | James | 08/03/21 | * Order has associated non-null customer * Customer has associated non-null order |
| Null | John | Null | * Customer does not have associated non-null order |
| 002 | Null | 08/04/21 | * Order does not have associated non-null customer |

## Outer Join:

For an outer join, the opposite of an inner join is true. As long as a customer exists, it is displayed regardless of a Null order. As long as an order exists, it is displayed regardless of a Null customer.

|  |  |  |  |
| --- | --- | --- | --- |
| OrderID | CustomerName | OrderDate | Explanation: |
| 001 | James | 08/03/21 | * Everything is output regardless of null values |
| Null | John | Null |
| 002 | Null | 08/04/21 |

## Right/Left Join:

Example right join:

SELECT Orders.OrderID, Customers.CustomerName, Orders.OrderDate  
FROM Orders  
RIGHT JOIN Customers

ON Orders.CustomerID=Customers.CustomerID;

In the above example the Customers table is the right table, and the Orders table is the left table. For a right join a particular customer from the right table doesn’t have to have an associated order but a particular order from the left table has to have an associated customer. So, all rows from the right table, Customers, are output. On the other hand, only rows from the left table that have an associated non-null right table row will be output.

|  |  |  |  |
| --- | --- | --- | --- |
| OrderID | CustomerName | OrderDate | Explanation: |
| 001 | James | 08/03/21 | * Order has associated non-null customer * All customers are output even if order is null |
| Null | John | Null | * All customers are output even if order is null |
| 002 | Null | 08/04/21 | * Order does not have non-null customer |

Example left join:

SELECT Orders.OrderID, Customers.CustomerName, Orders.OrderDate  
FROM Orders  
LEFT JOIN Customers

ON Orders.CustomerID=Customers.CustomerID;

For a left join is exactly the same concept. In this case a row from the left table doesn’t have to have an associated non-null right table row. However, a row from the right table has to have an associated non-null left table row.

|  |  |  |  |
| --- | --- | --- | --- |
| OrderID | CustomerName | OrderDate | Explanation: |
| 001 | James | 08/03/21 | * Customer has associated non-null order * All orders are output even if customer is null |
| Null | John | Null | * Customer does not have non-null order |
| 002 | Null | 08/04/21 | * All orders are output even if customer is null |