SQL | Join (Inner, Left, Right and Full Joins)

Difficulty Level : Easy • Last Updated : 15 Jul, 2022

Read Discuss Courses Practice Video

SQL Join statement is used to combine data or rows from two or more tables based on a common field between them. Different types of Joins are as follows:

- INNER JOIN
- LEFT JOIN
- RIGHT JOIN
- FULL JOIN

Consider the two tables below:

Student

ROLL_NO	NAME	ADDRESS	PHONE	Age
1	HARSH	DELHI	XXXXXXXXXX	18
2	PRATIK	BIHAR	XXXXXXXXXX	19
3	RIYANKA	SILIGURI	XXXXXXXXXX	20
4	DEEP	RAMNAGAR	XXXXXXXXXX	18
5	SAPTARHI	KOLKATA	XXXXXXXXXX	19
6	DHANRAJ	BARABAJAR	XXXXXXXXXX	20
7	ROHIT	BALURGHAT	XXXXXXXXXX	18
8	NIRAJ	ALIPUR	XXXXXXXXXX	19

StudentCourse

COURSE_ID	ROLL_NO
1	1
2	2
2	3
3	4
1	5
4	9
5	10
4	11

The simplest Join is INNER JOIN.

A. INNER JOIN

The INNER JOIN keyword selects all rows from both the tables as long as the condition is satisfied. This keyword will create the result-set by combining all rows from both the tables where the condition satisfies i.e value of the common field will be the same.

Syntax:

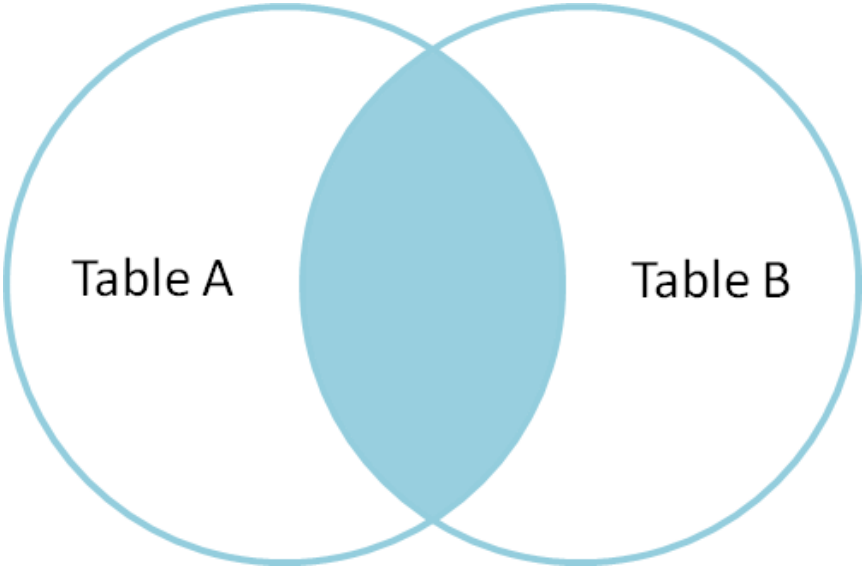
```
SELECT table1.column1,table1.column2,table2.column1,....
FROM table1
INNER JOIN table2
ON table1.matching_column = table2.matching_column;
```

table1: First table.

table2: Second table

matching_column: Column common to both the tables.

Note: *We can also write JOIN instead of INNER JOIN. JOIN is same as INNER JOIN.*



Example Queries(INNER JOIN)

This query will show the names and age of students enrolled in different courses.

```
SELECT StudentCourse.COURSE_ID, Student.NAME, Student.AGE FROM Student
INNER JOIN StudentCourse
ON Student.ROLL_NO = StudentCourse.ROLL_NO;
```

Output:

COURSE_ID	NAME	Age
1	HARSH	18
2	PRATIK	19
2	RIYANKA	20
3	DEEP	18
1	SAPTARHI	19

B. LEFT JOIN

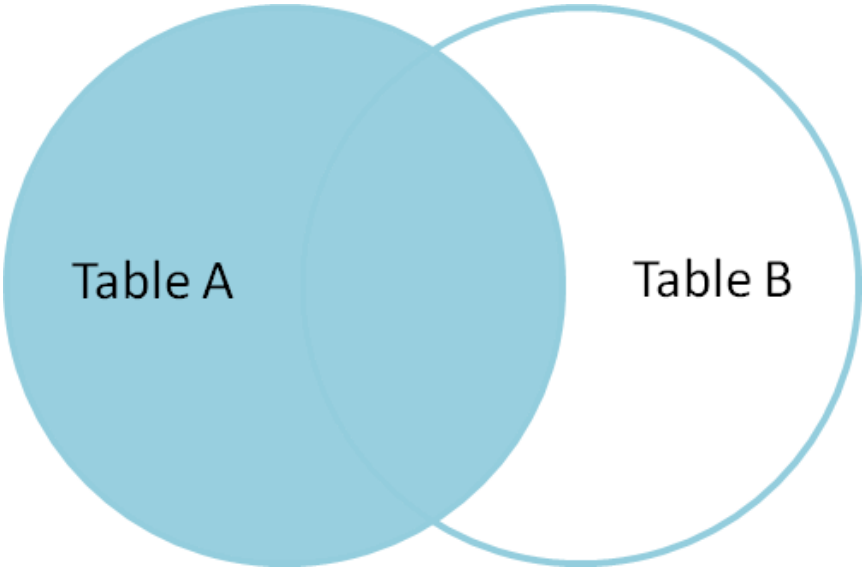
This join returns all the rows of the table on the left side of the join and matches rows for the table on the right side of the join. For the rows for which there is no matching row on the right side, the result-set will contain *null*. LEFT JOIN is also known as LEFT OUTER JOIN.

Syntax:

```
SELECT table1.column1,table1.column2,table2.column1,....
FROM table1
LEFT JOIN table2
ON table1.matching_column = table2.matching_column;


table1: First table.
table2: Second table
matching_column: Column common to both the tables.
```

***Note**: We can also use LEFT OUTER JOIN instead of LEFT JOIN, both are the same.*



Example Queries(LEFT JOIN):

```
SELECT Student.NAME,StudentCourse.COURSE_ID
FROM Student
LEFT JOIN StudentCourse
ON StudentCourse.ROLL_NO = Student.ROLL_NO;
```

Output:

NAME	COURSE_ID
HARSH	1
PRATIK	2
RIYANKA	2
DEEP	3
SAPTARHI	1
DHANRAJ	*NULL*
ROHIT	*NULL*
NIRAJ	*NULL*

C. RIGHT JOIN

RIGHT JOIN is similar to LEFT JOIN. This join returns all the rows of the table on the right side of the join and matching rows for the table on the left side of the join. For the rows for which

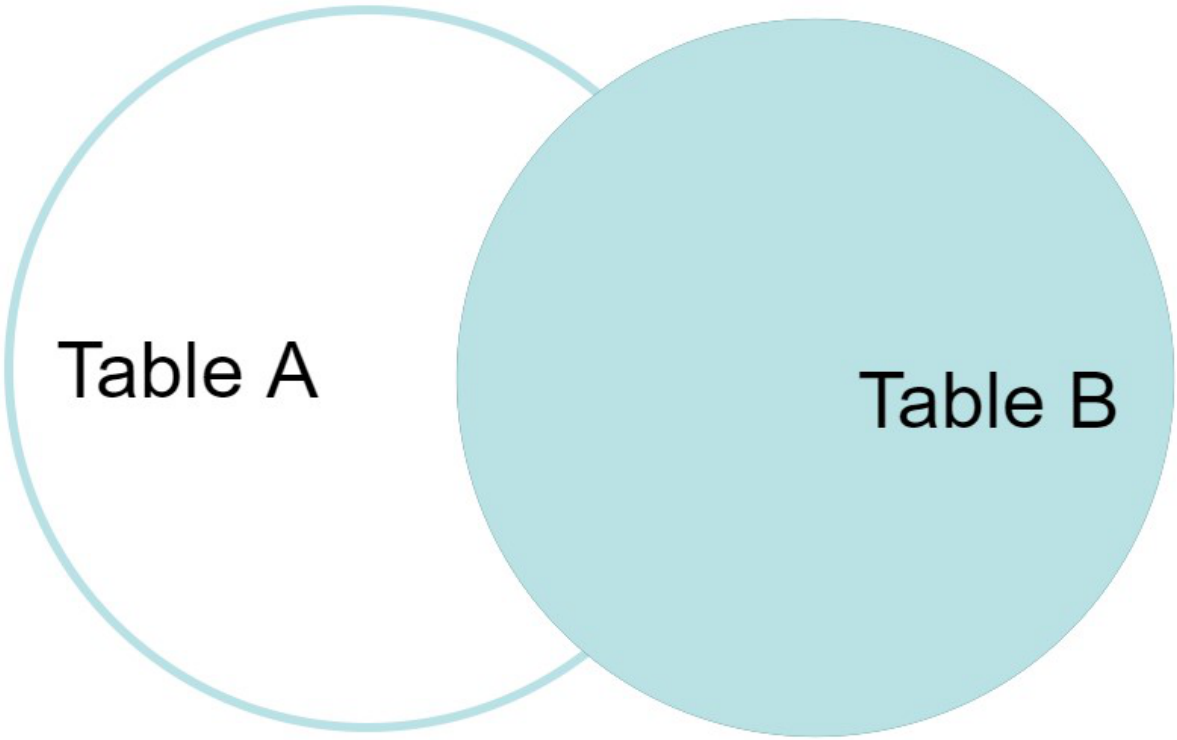
there is no matching row on the left side, the result-set will contain *null*. RIGHT JOIN is also known as RIGHT OUTER JOIN.

Syntax:

```
SELECT table1.column1,table1.column2,table2.column1,....
FROM table1
RIGHT JOIN table2
ON table1.matching_column = table2.matching_column;


table1: First table.
table2: Second table
matching_column: Column common to both the tables.
```

***Note**: We can also use RIGHT OUTER JOIN instead of RIGHT JOIN, both are the same.*



Example Queries(RIGHT JOIN):

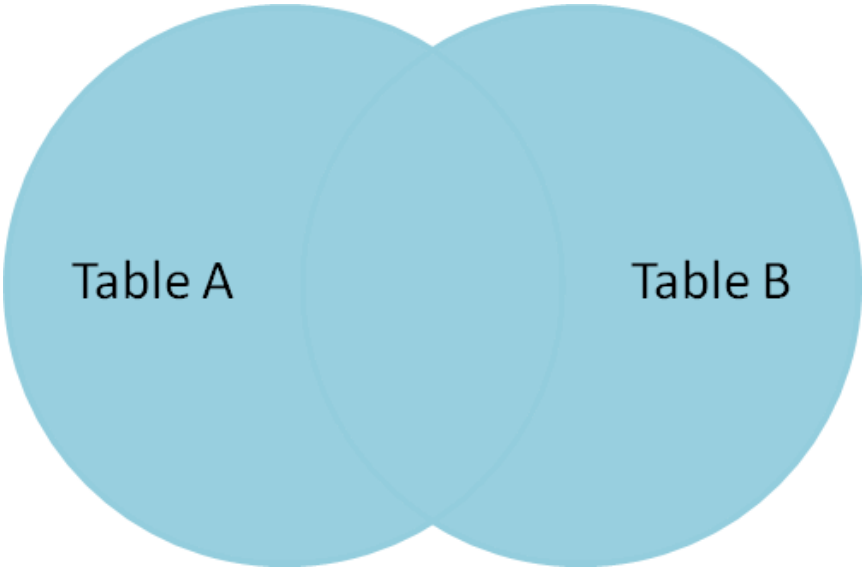
```
SELECT Student.NAME,StudentCourse.COURSE_ID
FROM Student
RIGHT JOIN StudentCourse
ON StudentCourse.ROLL_NO = Student.ROLL_NO;
```

Output:

NAME	COURSE_ID
HARSH	1
PRATIK	2
RIYANKA	2
DEEP	3
SAPTARHI	1
NULL	4
NULL	5
NULL	4

D. FULL JOIN

FULL JOIN creates the result-set by combining results of both LEFT JOIN and RIGHT JOIN. The result-set will contain all the rows from both tables. For the rows for which there is no matching, the result-set will contain *NULL* values.



Syntax:

```
SELECT table1.column1,table1.column2,table2.column1,....
FROM table1
FULL JOIN table2
ON table1.matching_column = table2.matching_column;
```

```
table1: First table.
table2: Second table
matching_column: Column common to both the tables.
```

Example Queries(FULL JOIN):

```
SELECT Student.NAME,StudentCourse.COURSE_ID
FROM Student
FULL JOIN StudentCourse
ON StudentCourse.ROLL_NO = Student.ROLL_NO;
```

Output:

NAME	COURSE_ID
HARSH	1
PRATIK	2
RIYANKA	2
DEEP	3
SAPTARHI	1
DHANRAJ	NULL
ROHIT	NULL

NAME	COURSE_ID
NIRAJ	NULL
NULL	4
NULL	5
NULL	4

Left JOIN (Video)

Right JOIN (Video)

Full JOIN (Video)

SQL | JOIN (Cartesian Join, Self Join)

This article is contributed by **Harsh Agarwal**. If you like GeeksforGeeks and would like to contribute, you can also write an article using write.geeksforgeeks.org or mail your article to review-team@geeksforgeeks.org. See your article appearing on the GeeksforGeeks main page and help other Geeks.

Please write comments if you find anything incorrect, or if you want to share more information about the topic discussed above.

310

Related Articles

1. Full join and Inner join in MS SQL Server
2. SQL Full Outer Join Using Left and Right Outer Join and Union Clause
3. Difference between Inner Join and Outer Join in SQL
4. Difference between Natural join and Inner Join in SQL
5. Left join and Right join in MS SQL Server
6. SQL | Join (Cartesian Join & Self Join)

7. Difference between “INNER JOIN” and “OUTER JOIN”
8. Join Multiple Tables Using Inner Join
9. Inner Join vs Outer Join
10. Difference between Left, Right and Full Outer Join

Previous Next

Article Contributed By :

GeeksforGeeks

Vote for difficulty

Current difficulty : Easy

Easy | Normal | Medium | Hard | Expert

Improved By :

Article Tags : DBMS-Join, SQL-Clauses-Operators, Articles, DBMS, SQL

Practice Tags : DBMS, SQL

Improve Article | Report Issue

GeeksforGeeks
A-143, 9th Floor, Sovereign Corporate Tower,
Sector-136, Noida, Uttar Pradesh - 201305

feedback@geeksforgeeks.org

Digital Logic Design

Engineering Maths

NumPy Tutorial

NLP Tutorial

Interview Corner

Company Preparation

Preparation for SDE

Company Interview Corner

Experienced Interview

Internship Interview

Competitive Programming

Aptitude

Python

Python Tutorial

Python Programming Examples

Django Tutorial

Python Projects

Python Tkinter

OpenCV Python Tutorial

GfG School

CBSE Notes for Class 8

CBSE Notes for Class 9

CBSE Notes for Class 10

CBSE Notes for Class 11

CBSE Notes for Class 12

English Grammar

UPSC/SSC/BANKING

SSC CGL Syllabus

SBI PO Syllabus

IBPS PO Syllabus

UPSC Ethics Notes

UPSC Economics Notes

UPSC History Notes