SQL JOINS SHORT NOTES

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Sql joins :

- A JOIN clause is used to combine rows from two or more tables, based on a common field between them

- The join clause allows us to **retrieve data from two or more related tables** into a meaningful result set.

- We can join the table using a SELECT statement and a join condition.

Types of Sql Joins :

- INNER JOIN
- LEFT (OUTER) JOIN
- RIGHT (OUTER) JOIN
- FULL (OUTER) JOIN

Consider the two tables below:

Student Table

Std_id	Std_Name	Contact	Address
101	Yadnyesh	8852 4562 3221	PUNE
102	Rushikesh	4384 2250 1220	DELHI
103	Sahil	8525 2141 3663	CHENNAI
104	Sahil	9632 1258 7458	NOIDA
105	Mrudul	17894 5214 3698	MUMBAI
106	Siddharth	1234 5678 9632	MUMBAI

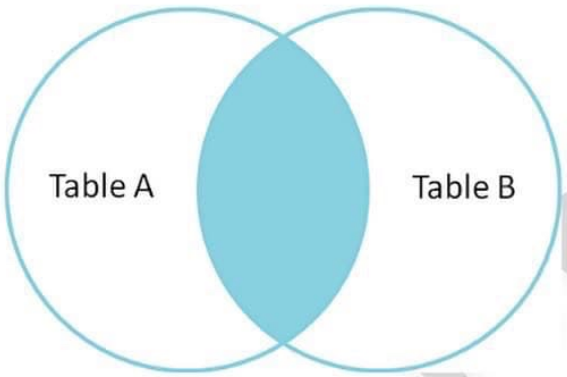
Course Table

Course_id	Studend_id
1	101
2	102
4	104
4	105
5	109
6	108
3	107

1. Inner Join

- The inner join is used to select all matching rows or columns in both tables or as long as the defined condition is valid in SQL.

- The INNER JOIN keyword selects all rows from both the tables as long as the condition is satisfied



Syntax :

```
SELECT column_name(s)
FROM table1
INNER JOIN table2
ON table1.column_name = table2.column_name;
```

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

Example:

Input

```
SELECT Student.Std_id, Student.std_name,
Course.Course_id
FROM Student INNER JOIN Course
ON Student.Std_id = Course.Student_id;
```

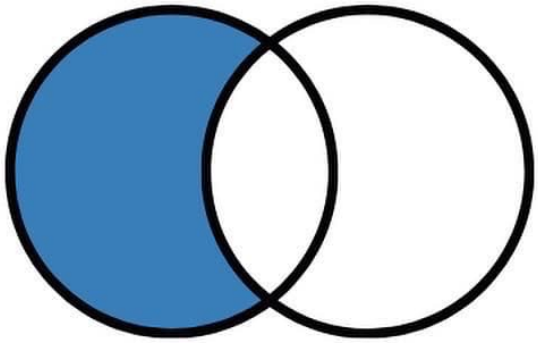
Result:

Number of Records: 4

Std_id	std_name	Course_id
101	Yadnyesh	1
102	Rushikesh	2
104	SAHIL	4
105	Mrudul	4

2. Left (Outer) Join

- The LEFT JOIN is used to retrieve all records from the left table (table1) and the matched rows or columns from the right table (table2).
- If both tables do not contain any matched rows or columns, it returns the 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;
```

Example:

Input

Run SQL

```
SELECT Std_name, Course.Course_ID
FROM Student
LEFT JOIN Course
ON Course.student_id = Student.Std_id;
```

Result:

Number of Records: 6

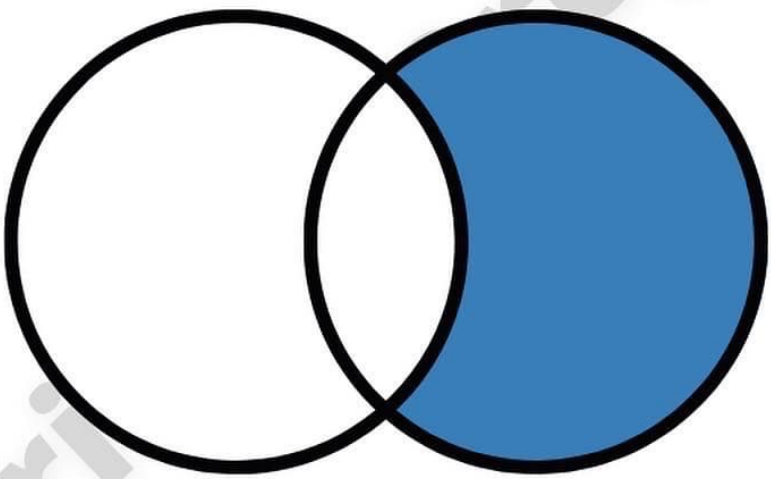
std_name	Course_id
Yadnyesh	1
Rushikesh	2
SAHIL	*null*
SAHIL	4
Mrudul	4
Siddharth	*null*

3. Right (Outer) Join

- The SQL right join returns all the values from the rows of right table.

- It also includes the matched values from left table but if there is no matching in both tables, it returns NULL.

- RIGHT JOIN is also known as RIGHT OUTER JOIN.



Syntax:

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


Output

SQL Statement:

```
SELECT Std_name,Course.Course_id
from Student RIGHT join Course
on Student.Std_id = Course.Student_id;
```

Result:

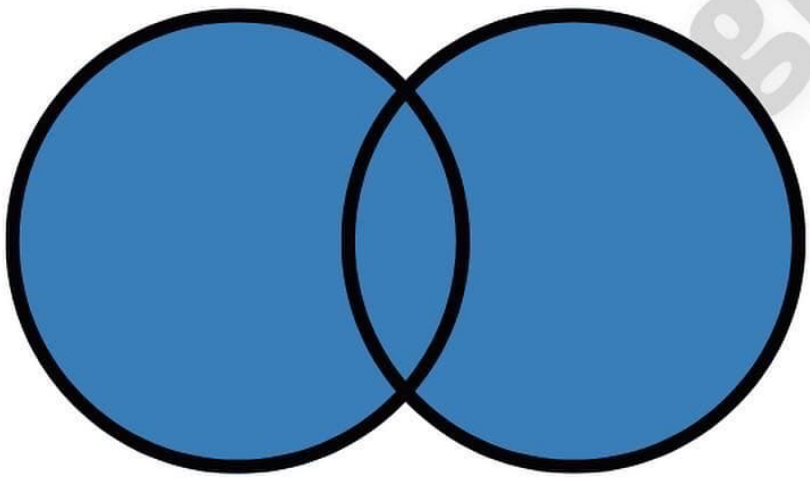
Number of Records: 7

std_name	Course_id
Yadnyesh	1
Rushikesh	2
SAHIL	4
Mrudul	4
null	5
null	6
null	3

3. Full (Outer) Join

- FULL JOIN creates the result-set by combining results of both LEFT JOIN and RIGHT JOIN.

- The joined tables return all records from both the tables and if no matches are found in the table, it places NULL. It is also called a FULL OUTER JOIN.



Syntax:

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


Example

SQL Statement:

```
SELECT Std_name,Course.Course_id
from Course FULL join Student
on Student.Std_id = Course.Student_id;
```

Number of Records: 8

std_name	Course_id
yadnyesh	1
Rushikesh	2
Sahil	*null*
Sahil	4
Siddhart	*null*
null	5
null	6
null	3