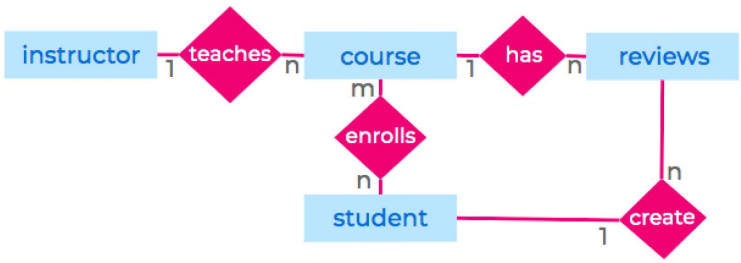
JOINS Cont'd

Database

The database stores the data of students, courses, course reviews, instructors, etc., of an e-learning platform.



Refer the tables in the code palyground for a better understanding of the database.

RIGHT JOIN

RIGHT JOIN or RIGHT OUTER JOIN is vice versa of LEFT JOIN.
I.e., in

`RIGHT JOIN` , for each row in the right table, matched rows from the left table are combined. If there is no match, NULL values are assigned to the left half of the rows in the temporary table.

Syntax

SQL

```sql
SELECT *
FROM table1
   RIGHT JOIN table2
ON table1.c1 = table2.c2;
```

Which is similar to

SQL

```sql
SELECT *
FROM table2
   LEFT JOIN table1
ON table1.c1 = table2.c2;
```

Example

Following query performs RIGHT JOIN on course and instructor tables

SQL

```sql
SELECT course.name,
    instructor.full_name
FROM course
   RIGHT JOIN instructor
ON course.instructor_id = instructor.instructor_id;
```


Note

Right Join is not supported in some dbms(SQLite).

FULL JOIN

FULL JOIN or FULL OUTER JOIN is the result of both RIGHT JOIN and LEFT JOIN

Syntax

SQL

```sql
SELECT *
FROM table1
   FULL JOIN table2
ON c1 = c2;
```

Example

Following query performs FULL JOIN ON course and instructor tables

SQL

```sql
SELECT course.name,
    instructor.full_name
FROM course
   FULL JOIN instructor
ON course.instructor_id = instructor.instructor_id;
```


Note

FULL JOIN is not supported in some dbms(SQLite).

CROSS JOIN

In CROSS JOIN, each row from the first table is combined with all rows in the second table.
Cross Join is also called as CARTESIAN JOIN

Syntax

```sql
SELECT *
FROM table1
   CROSS JOIN table2;
```

Example

Following query performs CROSS JOIN on course and instructor tables

```sql
SELECT course.name AS course_name,
    instructor.full_name AS instructor_name
FROM course
   CROSS JOIN instructor;
```

Output

course_name	instructor_name
Machine Learning	Alex
Machine Learning	Arun
Machine Learning	Bentlee
Cyber Security	Alex
...	...

SELF JOIN

So far, we have learnt to combine different tables. We can also combine a table with itself. This kind of join is called SELF-JOIN.

Syntax

SQL

```sql
SELECT t1.c1,
   t2.c2
FROM table1 AS t1
   JOIN table1 AS t2
ON t1.c1 = t2.cn;
```

Note

We can use any JOIN clause in self-join.

Example

Get student pairs who registered for common course.

SQL

```sql
SELECT sc1.student_id AS student_id1,
  sc2.student_id AS student_id2, sc1.course_id
FROM
   student_course AS sc1
   INNER JOIN student_course sc2 ON sc1.course_id = sc2.course_id
WHERE
    sc1.student_id < sc2.student_id;
```

Output

student_id1	student_id2	course_id
1	3	11

JOINS Summary

Join Type	Use Case
Natural Join	Joins based on common columns
Inner Join	Joins based on a given condition
Left Join	All rows from left table & matched rows from right table
Right Join	All rows from right table & matched rows from left table
Full Join	All rows from both the tables
Cross Join	All possible combinations