Cheatsheets / **Joining Multiple Tables**

codecademy

Multiple Tables

Outer Join

An outer join will combine rows from different tables even if the join condition is not met. In a `LEFT JOIN`, every row in the *left* table is returned in the result set, and if the join condition is not met, then `NULL` values are used to fill in the columns from the *right* table.

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

`WITH` Clause

The `WITH` clause stores the result of a query in a temporary table (`temporary_movies`) using an alias.
Multiple temporary tables can be defined with one instance of the `WITH` keyword.

```
WITH temporary_movies AS (
   SELECT *
   FROM movies
)
SELECT *
FROM temporary_movies
WHERE year BETWEEN 2000 AND 2020;
```

`UNION` Clause

The `UNION` clause is used to combine results that appear from multiple `SELECT` statements and filter duplicates.
For example, given a `first_names` table with a column `name` containing rows of data “James” and “Hermione”, and a `last_names` table with a column `name` containing rows of data “James”, “Hermione” and “Cassidy”, the result of this query would contain three `name`s: “Cassidy”, “James”, and “Hermione”.

```
SELECT name
FROM first_names
UNION
SELECT name
FROM last_names
```

codecademy

`CROSS JOIN` Clause

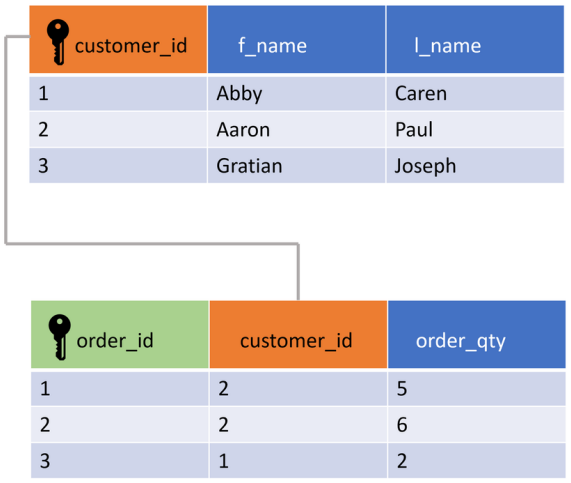
The `CROSS JOIN` clause is used to combine each row from one table with each row from another in the result set. This `JOIN` is helpful for creating all possible combinations for the records (rows) in two tables.

The given query will select the `shirt_color` and `pants_color` columns from the result set, which will contain all combinations of combining the rows in the `shirts` and `pants` tables. If there are 3 different shirt colors in the `shirts` table and 5 different pants colors in the `pants` table then the result set will contain 3 x 5 = 15 rows.

```
SELECT shirts.shirt_color,
   pants.pants_color
FROM shirts
CROSS JOIN pants;
```

Foreign Key

A *foreign key* is a reference in one table's records to the primary key of another table. To maintain multiple records for a specific row, the use of foreign key plays a vital role. For instance, to track all the orders of a specific customer, the table `order` (illustrated at the bottom of the image) can contain a foreign key.



codecademy

Primary Key

A *primary key* column in a SQL table is used to uniquely identify each record in that table. A primary key cannot be `NULL`. In the example, `customer_id` is the primary key. The same value cannot re-occur in a primary key column. Primary keys are often used in `JOIN` operations.

customer_id	f_name	l_name
1	Abby	Caren
2	Aaron	Paul
3	Gratian	Joseph

Inner Join

The `JOIN` clause allows for the return of results from more than one table by joining them together with other results based on common column values specified using an `ON` clause. `INNER JOIN` is the default `JOIN` and it will only return results matching the condition specified by `ON`.

```
SELECT *
FROM books
JOIN authors
  ON books.author_id = authors.id;
```

Print Share