SQL: SELECT

The SELECT keyword is one of the most wildly used instruction in SQL since it states that we want to select something from our database.

The general syntax is

```
SELECT column1, column2, ... FROM table_name;
```

This is the `SELECT` in its simplest form ! We encounter this selection with a FILTER and sometimes the `table_name` is not simply a name but references the schema (here `public`)

```
SELECT * FROM "public"."name";
```

Here for instance, the `*` indicates that we want to select every columns (the whole degree). And we explicitly states that we want it from the `public` schema that contains the `name` table.

We may want also to use the SELECT keyword only for renaming purpose:

```
SELECT column1 as "new_column_name" FROM table_name;
```

Note:

- the `as` keyword is called an aliases and will be discussed in another section.
- when selection column names, always use the double quote ! The single quote are for strings.
- Sometimes, using functions implies renaming, like the `CONCAT` function that allows gathering different data into one and renaming the result:

  ```
  SELECT CONCAT(column1, column2) AS "name of concat" FROM table_name;
  ```

  Here the idea is that the `CONCAT` will create a result that requires renaming. And of course as usual, we need to select the data `FROM` somewhere so we

need to specify it. Note alose that in the `CONCAT` we may want to put some spaces so use the single quote !

Examples of Using `SELECT`

Let's go through a practical example to illustrate how the `SELECT` statement works.

Example Table: Products

product_id	product_name	category	price	stock
1	Laptop	Electronics	1200	30
2	Phone	Electronics	800	100
3	Shirt	Clothing	25	200
4	Book	Stationery	15	150

1. **Selecting Specific Columns**:

   If you want to retrieve the `product_name` and `price` of all products:

   ```
   SELECT product_name, price
   FROM Products;
   ```

   Result:

product_name	price
Laptop	1200
Phone	800
Shirt	25
Book	15

2. **Selecting All Columns**:

   If you want to see all details of the products:

   ```
   SELECT *
   FROM Products;
   ```

   This will return every column for all rows in the `Products` table.

Key Points

- The `SELECT` statement is the primary way to retrieve data from a database.
- You can specify exactly which columns you want to retrieve or use `*` to get all columns.
- It can be combined with other SQL clauses like `WHERE`, `ORDER BY`, `GROUP BY`, and `JOIN` to filter, sort, group, or join data from multiple tables.

The `SELECT` statement is versatile and foundational for any SQL query, enabling a wide range of data retrieval options from a database.