JOIN

When you need to retrieve data from more than one tables at a go, use MariaDB JOINS. This means that a JOIN works on two or more tables. The following three types of JOINS are supported in MariaDB:

- INNER/SIMPLE JOIN
- LEFT OUTER JOIN/LEFT JOIN
- RIGHT OUTER JOIN/RIGHT JOIN

Let us discuss them one-by-one:

INNER JOIN

The inner join returns all rows from the tables in which the join condition is true. Its syntax is as follows:

```sql
SELECT columns
FROM table-1
INNER JOIN table-2
ON table-1.column = table-2.column;
```

For example:

We will use our two tables, books, and book.

The book table has the following data:

```
<table>
<thead>
<tr>
<th>id</th>
<th>name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MariaDB Book1</td>
</tr>
<tr>
<td>2</td>
<td>MariaDB Book2</td>
</tr>
<tr>
<td>3</td>
<td>MariaDB Book3</td>
</tr>
<tr>
<td>4</td>
<td>MariaDB Book4</td>
</tr>
<tr>
<td>5</td>
<td>MariaDB Book5</td>
</tr>
</tbody>
</table>
```

5 rows in set (0.001 sec)
The Price table has the following data:

![Price Table Data](https://example.com/price_table_data)

The goal is to join the name column from the Book table and the price column from Price table into a single table. This is possible with an inner join, as demonstrated below:

```sql
SELECT book.name, price.price
FROM book
INNER JOIN price
ON book.id = price.id;
```

This command returns the following:

```
name          | price |
-------------|-------|
MariaDB Book1 | 250   |
MariaDB Book2 | 250   |
MariaDB Book3 | 220   |
MariaDB Book4 | 190   |
```

### LEFT OUTER JOIN

This join returns all the rows from the left-hand table and only rows in which the join condition is true from the other table. Its syntax is as follows:

```sql
SELECT columns
FROM table-1
LEFT [OUTER] JOIN table-2
ON table-1.column = table-2.column;
```

The OUTER keyword has been placed within square brackets because it is optional.
For example:

```
SELECT book.name, price.price
FROM book
LEFT JOIN price
ON book.id = price.id;
```

The command returns the following:

```
<table>
<thead>
<tr>
<th>name</th>
<th>price</th>
</tr>
</thead>
<tbody>
<tr>
<td>MariaDB</td>
<td>250</td>
</tr>
<tr>
<td>MariaDB</td>
<td>250</td>
</tr>
<tr>
<td>MariaDB</td>
<td>220</td>
</tr>
<tr>
<td>MariaDB</td>
<td>190</td>
</tr>
<tr>
<td>MariaDB</td>
<td>NULL</td>
</tr>
</tbody>
</table>
```

The last record in the above table has no matching value on the left. That is why it has been replaced with NULL.

**RIGHT OUTER JOIN**

This join returns all the rows from the right-hand table and only rows in which the join condition is true from the other table. Its syntax is as follows:

```
SELECT columns
FROM table-1
RIGHT [OUTER] JOIN table-2
ON table-1.column = table-2.column;
```

The OUTER keyword has been placed within square brackets because it is optional.

For example:

```
SELECT book.name, price.price
FROM book
RIGHT JOIN price
ON book.id = price.id;
```

The command returns the following:
The reason is that all rows in the right-hand table were matched to those in the other table. If some of the rows did not match, we would have NULLs in the first column.

**Assignment**

1. What are different types of Join?

2. How to use different types of join.