

## Pagination

E-commerce applications like Amazon or Flipkart hold millions of products. But, the user does not require all the available products every time s/he accesses the application. Infact, fetching all the products takes too long and consumes huge amount of data.

Using pagination, only a chunk of the data can be sent to the user based on their request. And, the next chunk of data can be fetched only when the user asks for it.



- We use `LIMIT` & `OFFSET` clauses to select a chunk of the results

Let's understand more about pagination concept using the following database.

### Database

The database contains a

`product` table that stores the data of products like name, category, price, brand and rating. You can check the schema and data of `product` table in the code playground.

### LIMIT

`LIMIT` clause is used to specify the `number of rows(n)` we would like to have in result.

### Syntax

```
1 SELECT
2   column1,
3   column2,..
4   columnN
5 FROM
6   table_name
7 LIMIT n;
```

SQL

### Example

Get the details of 2 top-rated products from the brand "Puma".

SQL

SQL

```
1  SELECT
2    name,
3    price,
4    rating
5  FROM
6    product
7  WHERE
8    brand = "Puma"
9  ORDER BY
10   rating DESC
```

Expand

## Output

name	price	rating
Black Shirt	600	4.8
Blue Shirt	1000	4.3

Try it Yourself!

- Get the 3 lowest priced products from the brand "Puma".



### Note

If the limit value is greater than the total number of rows, then all rows will be retrieved.

## OFFSET

**OFFSET** clause is used to specify the position (from nth row) from where the chunk of the results are to be selected.

### Syntax

SQL

```
1  SELECT
2    column1,
3    column2,..
4    columnN
5  FROM
6    table_name
7  OFFSET n;
```

## Example

Get the details of 5 top-rated products, starting from 5th row.

SQL

```
1  SELECT
2    name,
3    price,
4    rating
5  FROM
6    product
7  ORDER BY
8    rating DESC
9  LIMIT 5
10 OFFSET 5;
```

## Output

name	price	rating
Strawberry Cake	10	4.6
Bourbon Special	15	4.6
Realme Smart Band	3000	4.6
Harry Potter and the Goblet of Fire	431	4.6
Black Jeans	750	4.5

## Possible Mistakes

- Using `OFFSET` before the `LIMIT` clause.

SQL

```
1  SELECT
2    *
3  FROM
4    product OFFSET 2
5  LIMIT 4;
```

SQL

```
1  Error: near "2": syntax error
```

- Using only `OFFSET` clause.

SQL

```
1  SELECT
2    *
3  FROM
```

```
4 product
5 OFFSET 2;
```

SQL

1 Error: near "2": syntax error

#### Note

`OFFSET` clause should be placed after the `LIMIT` clause. Default `OFFSET` value is 0.

Try it Yourself!

- Get the details of 5 top-rated products, starting from 10th row.