

# Theory: SELECT FROM WHERE statement

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Imagine that you are responsible for a book store database. You already know how to select preprocessed info about all entities from a table "books". There are so many rows in each selection, and you need to filter them according to certain criteria, for example, by author, language, some attribute or even expression requested by the client. The selection of a subset of rows from a table is called **filtering**. Let's see how it can be done in SQL.

## §1. Example

Let's imagine that your first client wants to buy a good book by Charles Dickens for a friend who speaks French and English. Let's write a query that selects books that meet the criteria:

```
1  SELECT
2      id,
3      title,
4      author,
5      language,
6      rating,
7      price,
8      amount
9  FROM
10     books
11
12  WHERE
13
14      author = 'Charles Dickens'
15
16      AND (language = 'EN' OR language = 'FR')
17
18      AND rating > 4.0
19
20      AND amount > 0
21
22  ;
```

At the end of the SELECT statement, we added a **keyword WHERE** followed by the logical expression that specifies the filters. The query extracts only those rows for which the expression `author = 'Charles Dickens' AND (language = 'EN' OR language = 'FR') AND rating > 4.0 AND amount > 0` returns TRUE.

## §2. WHERE clause

Here's a general template for SELECT statements with WHERE filtering: keyword SELECT, list of expressions with optional aliases, keyword FROM, table name, keyword WHERE, filtering logical expression, and a semicolon to mark the end of the statement:

```
1  SELECT
2      expr1 [AS alias1], ..., exprN [AS aliasN]
3  FROM
4      table_name
5  WHERE
6      logical_expression
7  ;
```

SELECT is probably the most complex and expressive statement in SQL with optional parts called **clauses** that include SELECT, FROM, WHERE, ORDER BY, GROUP BY, HAVING. You already know at least three of them!

The template above can be summarised as follows:

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- **SELECT** clause that contains a list of expressions to include in the result
- **FROM** clause that indicates the table(s) to retrieve data from
- **WHERE** clause that eliminates from the result set all rows where the specified logical expression returns FALSE.

SELECT clause doesn't have to contain columns or expressions listed in the WHERE clause. For example, we didn't have to output rating in the query above even though there is a corresponding condition in WHERE.

### §3. Conclusion

Now you know how to filter the result set using a WHERE clause in your SELECT statements. The majority of your queries will probably contain filtering, so let's practice.

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