IN and BETWEEN Operators

Consider the case of a typical e-commerce scenario. Users generally search for the products that belong to a list of brands, or the products that lie within a particular price range.

In such scenarios, we use the IN operator to check if a value is present in the list of values. And, BETWEEN operator is used to check if a particular value exists in the given range.

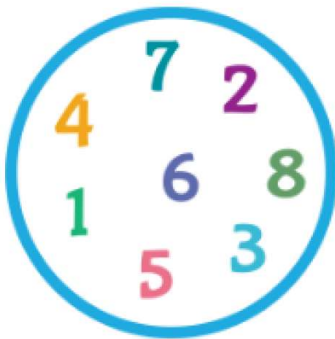Let's learn about these operators in detail using the following database.

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.

IN Operator

Retrieves the corresponding rows from the table if the value of column(c1) is present in the given values(v1,v2,..).

Syntax

```sql
1   SELECT
2      *
3   FROM
4      table_name
5   WHERE
```

```
6      c1 IN (v1, v2,..);
```

Example

Get the details of all the products from

product table, where the brand is either "Puma", "Mufti", "Levi's", "Lee" or "Denim".

```SQL
1   SELECT
2    *
3   FROM
4     product
5   WHERE
6     brand IN ( "Puma", "Levi's", "Mufti", "Lee", "Denim");
```

Output

name	category	price	brand	rating
Blue Shirt	Clothing	750	Denim	3.8
Blue Jeans	Clothing	800	Puma	3.6
Black Jeans	Clothing	750	Denim	4.5
...	...	...	...	...

Try it Yourself!

- Get all the products from product table, that belong to "Britannia", "Lay's", "Cadbury" brands from the "Food" category.

BETWEEN Operator

Retrieves all the rows from table that have cloumn(c1) value present between the given range(v1 and v2).

$$1 \text{-----------------------} 9$$

Syntax

```SQL
1   SELECT
2    *
```

```
3    FROM
4       table_name
5    WHERE
6       c1 BETWEEN v1
7       AND v2;
```

📋 **Note**

BETWEEN operator is inclusive, i.e., both the lower and upper limit values of the range are included.

Example

Find the products with

price ranging from 1000 to 5000.

SQL
```
1    SELECT
2       name,
3       price,
4       brand
5    FROM
6       product
7    WHERE
8       price BETWEEN 1000
9       AND 5000;
```

Output

name	price	brand
Blue Shirt	1000	Puma
Smart Cam	2600	Realme
Realme Smart Band	3000	Realme

Possible Mistakes

1. When using the BETWEEN operator, the first value should be less than second value. If not, we'll get an incorrect result depending on the DBMS.

SQL
```
1    SELECT
2       name,
3       price,
```

```sql
4      brand
5  FROM
6      product
7  WHERE
8      price BETWEEN 500
9      AND 300;
```

Output

name	price	brand

2. We have to give both lower limit and upper limit while specifying range.

SQL

```sql
1  SELECT
2      name,
3      price,
4      brand
5  FROM
6      product
7  WHERE
8      price BETWEEN
9      AND 300;
```

SQL

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

3. The data type of the column for which we're using the `BETWEEN` operator must match with the data types of the lower and upper limits.

SQL

```sql
1  SELECT
2      name,
3      price,
4      brand
5  FROM
6      product
7  WHERE
8      name BETWEEN 300
9      AND 500;
```

Output

name	price	brand

- Get all the products from `product` table with `rating` greater than 4.3 and less than 4.8