SQL Basics Part 4

```sql
/*
	============================
	== 16 Comparison Operator ==
	============================
	- used to compare two things
	- syntax
		[expression] [operator] [expression]

	=	Equal to
	>	Greater than
	<	Less than
	>=	Greater than or equal to
	<=	Less than or equal to
	<>	Not equal to
*/

use MyDatabase;

-- retrieve all customers from germany
SELECT *
FROM customers
WHERE country = 'Germany';


-- retrieve all customers who are not from Germay
SELECT *
FROM customers
WHERE country != 'Germany';


-- retrieve all customers who are not from Germay
SELECT *
FROM customers
WHERE country <> 'Germany';


-- retrieve all customers with score greater than 500
SELECT *
FROM customers
WHERE score > 500;


-- retrieve all customers with score smaller than 350
SELECT *
FROM customers
WHERE score < 350
ORDER BY score ASC;


-- retrieve all customers with score greater than or equal 300
SELECT *
FROM customers
WHERE score >= 300;
```

```sql
-- retrieve all customers with score smaller than or equal 300
SELECT *
FROM customers
WHERE score <= 300;
```

```sql
/*
	========================
	== 17 Logical Operator ==
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	- logical operator are used in WHERE, HAVING and sometimes with JOIN
conditions to combine, filter, or
		manipulate conditions when retrieving, updating, or deleting data from
a database
	- they help whether a condition if TRUE or FALSE

	AND			TRUE if all the conditions separated by AND is TRUE
	OR			TRUE if any of the conditions separated by OR is TRUE
	NOT			Displays a record if the condition(s) is NOT TRUE, reverse
the condition
	ANY			TRUE if any of the subquery values meet the condition
	ALL			TRUE if all of the subquery values meet the condition
	BETWEEN		TRUE if the operand is within the range of comparisons
	EXISTS	TRUE if the subquery returns one or more records
	IN			TRUE if the operand is equal to one of a list of
expressions
	LIKE	TRUE if the operand matches a pattern
	SOME	TRUE if any of the subquery values meet the condition
*/

USE MyDataBase;


-- retrieve all customers with ID smaller than or equal 10, "AND" from USA
SELECT *
FROM customers
WHERE id <= 10 AND country = 'USA';


/*
	- retrieve all customers with ID smaller than or equal 10, "OR" from USA
	- will return the two conditions
	- will return first 10 customers
	- will return all customers from USA
*/
SELECT *
FROM customers
WHERE id <= 10 OR country = 'USA';


-- retrieve all customers who are either from USA or have a score greater than 500
SELECT *
FROM customers
WHERE score > 500 OR country = 'USA';


-- retrieve all customers with a score not less than 500
SELECT *
```

```sql
FROM customers
WHERE NOT score < 500
ORDER BY score ASC;


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-- Range Operator --
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-- BETWEEN: check if a value is within a range
-- retrieve all customers between 1 and 10 [1-10]
SELECT *
FROM customers
WHERE id BETWEEN 1 AND 10;


-- retrieve customers that have score between 650 and 850
SELECT *
FROM customers
WHERE score BETWEEN 650 AND 850
ORDER BY score ASC;
```

```sql
/*
	============================
	== 18 Membership Operator ==
	============================
	- IN: check if the value exists in a list
	- NOT IN: check if the value doex not exists in a list
*/

USE MyDatabase;


-- retrieve all customers from either Germany or USA
SELECT *
FROM customers
WHERE country = 'Germany' OR country = 'USA';

--------------------
-- Other Solution --
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SELECT *
FROM customers
WHERE country in ('Germany', 'USA');


-- retrieve all countires that does not exist on the list
SELECT *
FROM customers
WHERE country NOT IN ('USA', 'Egypt', 'Germany');
```

```sql
/*
	========================
	== 19 Search operator ==
	========================
	- LIKE: used to search about substring, number, ... on the field
	- There are two wildcards often used in conjunction with the LIKE operator:
		1- The percent sign % represents zero, one, or multiple characters
		2- The underscore sign _ represents one, single character
*/

USE MyDatabase;


-- search about customers from egypt or Egypt
SELECT *
FROM customers
WHERE country LIKE 'egypt';


-- search about counties that start with G
SELECT *
FROM customers
WHERE country LIKE 'G%';


-- Find customers whose names start with "A":
SELECT first_name, country, score
FROM customers
WHERE first_name LIKE 'A%';


-- Find customers whose names contain the letter "o"
SELECT first_name, country, score
FROM customers
WHERE first_name LIKE '%o%';



-- Find customers whose names end with "a"
SELECT first_name, country, score
FROM customers
WHERE first_name LIKE '%a';


-- Find customers whose names have exactly 4 characters
SELECT first_name, country, score
FROM customers
WHERE first_name LIKE '____';  -- Four underscores represent four characters


-- Find customers from countries whose name starts with "E"
SELECT first_name, country, score
FROM customers
WHERE country LIKE 'E%';


-- Find customers whose names have "a" as the second lette
SELECT first_name, country, score
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FROM customers
WHERE first_name LIKE '_a%';


-- Find customers whose names have "a" as the second-to-last letter:
SELECT first_name, country, score
FROM customers
WHERE first_name LIKE '%a_';


-- Find customers whose names start with any letter between "A" and "D"
SELECT first_name, country, score
FROM customers
WHERE first_name LIKE '[A-D]%';


-- Find customers whose names contain either "a" or "e" and are from a country
starting with "E":
SELECT first_name, country, score
FROM customers
WHERE (first_name LIKE '%a%' OR first_name LIKE '%e%')
AND country LIKE 'E%';


-- Find customers whose names start with "A" or "B" and their score is greater than
750
SELECT first_name, country, score
FROM customers
WHERE (first_name LIKE 'A%' OR first_name LIKE 'B%')
AND score > 750;


-- Find customers whose names start with "S" or "N" and their country ends with "a"
or "e":
SELECT first_name, country, score
FROM customers
WHERE (first_name LIKE 'S%' OR first_name LIKE 'N%')
AND (country LIKE '%a' OR country LIKE '%e');


-- Find customers whose name contains "i" or "o" and their score is between 700 and
900:
SELECT first_name, country, score
FROM customers
WHERE (first_name LIKE '%i%' OR first_name LIKE '%o%')
AND score BETWEEN 700 AND 900;


-- Find customers from "Egypt" or "USA" whose names contain the letter "a" at any
position:
SELECT first_name, country, score
FROM customers
WHERE (country LIKE 'Egypt' OR country LIKE 'USA')
AND first_name LIKE '%a%';


-- Find customers whose names start with "E", "F", or "G" and score is greater than
750
```

```sql
SELECT first_name, country, score
FROM customers
WHERE (first_name LIKE 'E%' OR first_name LIKE 'F%' OR first_name LIKE 'G%')
AND score > 750;


-- Find customers whose names start with a vowel ("A", "E", "I", "O", or "U") and
are from the USA or Canada:
SELECT first_name, country, score
FROM customers
WHERE (first_name LIKE 'A%' OR first_name LIKE 'E%' OR first_name LIKE 'I%'
    OR first_name LIKE 'O%' OR first_name LIKE 'U%')
AND (country LIKE 'USA' OR country LIKE 'Canada');


-- Find customers whose names contain "a" or "o", their country contains "a", and
their score is between 700 and 900:
SELECT first_name, country, score
FROM customers
WHERE (first_name LIKE '%a%' OR first_name LIKE '%o%')
AND country LIKE '%a%'
AND score BETWEEN 700 AND 900;


-- Find customers whose names contain "o" in the second or second-to-last position:
SELECT first_name, country, score
FROM customers
WHERE first_name LIKE '_o%' OR first_name LIKE '%o_';
```