# Operators, Expressions and Conditions

# SQL Operators

- The symbols which are used to perform logical and mathematical operations in SQL are called SQL operators.
- There are three types of Operators used in SQL.
- Arithmetic operators.
- Relational operators.
- Logical operators.

# Arithmetic Operators

- Arithmetic operators in SQL are used to perform mathematical calculations like addition, subtraction, multiplication, division and modulus in SQL statements.

| Arithmetic Operators/Operation | Example |
|---|---|
| + (Addition) | A+B |
| – (Subtraction) | A-B |
| * (multiplication) | A*B |
| / (Division) | A/B |
| % (Modulus) | A%B |

# Relational Operators

- Relational operators in SQL are used to find the relation between two columns. i.e. to compare the values of two columns in SQL statements.

| Operators | Example/Description |
|---|---|
| > | x > y (x is greater than y) |
| < | x < y (x is less than y) |
| >= | x >= y (x is greater than or equal to y) |
| <= | x <= y (x is less than or equal to y) |
| = | x == y (x is equal to y) |
| != or < > | x != y or x <> y (x is not equal to y) |
| !< | x !< y (x is not less than y) |
| !> | x !> y (x is not greater than y) |

# Logical Operators

- Logical operators in SQL are used to perform logical operations on the given expressions in SQL statements.

- AND
- OR
- NOT
- BETWEEN...AND
- IS NULL, IS NOT NULL
- LIKE
- UNIQUE
- In, NOT IN etc.

# Expressions

- An expression is a combination of one or more values, operators and SQL functions that evaluate to a value.
- These SQL EXPRESSIONs are like formulae and they are written in query language.
- You can also use them to query the database for a specific set of data.
- SELECT column1, column2, columnN  FROM table_name  WHERE [EXPRESSION | CONDITION|];

# Types of Expressions

- **SQL Boolean expressions** fetch data based on one-to-one matching. In other words, we can think of it as a query that fetches one result at a time.
- Find out employees whose age is equal to 26.
  Query: SELECT * FROM dataflair_employee WHERE age = 26 ;
- **SQL Numerical expressions** are used to perform mathematical operations on the stored data.
- Find employees whose age, if doubled, will be more than 50.
  Query: SELECT * FROM dataflair_employee WHERE age*2 > 50 ;
- **SQL Date expressions** are used to compare and get data according to various date-related queries and conditions.
- Find the employees who were born after 1995 January.
  Query: SELECT * FROM dataflair_employee WHERE DoB > DATE('1995/01/01') ;

# Conditions

- A condition specifies a combination of one or more expressions and logical (Boolean) operators and returns a value of TRUE, FALSE, or unknown.
- SELECT *

```
FROM suppliers

WHERE (state = 'California' AND supplier_id <> 900)

OR (supplier_id = 100);
```