The SQL **SELECT** statement is used to fetch the data from a database table which returns this data in the form of a result table. These result tables are called result-sets.

Syntax

The basic syntax of the SELECT statement is as follows −

SELECT column1, column2, columnN FROM table\_name;

Here, column1, column2... are the fields of a table whose values you want to fetch. If you want to fetch all the fields available in the field, then you can use the following syntax.

SELECT \* FROM table\_name;

Example

Consider the CUSTOMERS table having the following records −

+----+----------+-----+-----------+----------+

| ID | NAME | AGE | ADDRESS | SALARY |

+----+----------+-----+-----------+----------+

| 1 | Ramesh | 32 | Ahmedabad | 2000.00 |

| 2 | Khilan | 25 | Delhi | 1500.00 |

| 3 | kaushik | 23 | Kota | 2000.00 |

| 4 | Chaitali | 25 | Mumbai | 6500.00 |

| 5 | Hardik | 27 | Bhopal | 8500.00 |

| 6 | Komal | 22 | MP | 4500.00 |

| 7 | Muffy | 24 | Indore | 10000.00 |

+----+----------+-----+-----------+----------+

The following code is an example, which would fetch the ID, Name and Salary fields of the customers available in CUSTOMERS table.

SQL> SELECT ID, NAME, SALARY FROM CUSTOMERS;

This would produce the following result −

+----+----------+----------+

| ID | NAME | SALARY |

+----+----------+----------+

| 1 | Ramesh | 2000.00 |

| 2 | Khilan | 1500.00 |

| 3 | kaushik | 2000.00 |

| 4 | Chaitali | 6500.00 |

| 5 | Hardik | 8500.00 |

| 6 | Komal | 4500.00 |

| 7 | Muffy | 10000.00 |

+----+----------+----------+

If you want to fetch all the fields of the CUSTOMERS table, then you should use the following query.

SQL> SELECT \* FROM CUSTOMERS;

This would produce the result as shown below.

+----+----------+-----+-----------+----------+

| ID | NAME | AGE | ADDRESS | SALARY |

+----+----------+-----+-----------+----------+

| 1 | Ramesh | 32 | Ahmedabad | 2000.00 |

| 2 | Khilan | 25 | Delhi | 1500.00 |

| 3 | kaushik | 23 | Kota | 2000.00 |

| 4 | Chaitali | 25 | Mumbai | 6500.00 |

| 5 | Hardik | 27 | Bhopal | 8500.00 |

| 6 | Komal | 22 | MP | 4500.00 |

| 7 | Muffy | 24 | Indore | 10000.00 |

+----+----------+-----+-----------+----------+

The SQL **WHERE** clause is used to specify a condition while fetching the data from a single table or by joining with multiple tables. If the given condition is satisfied, then only it returns a specific value from the table. You should use the WHERE clause to filter the records and fetching only the necessary records.

The WHERE clause is not only used in the SELECT statement, but it is also used in the UPDATE, DELETE statement, etc., which we would examine in the subsequent chapters.

Syntax

The basic syntax of the SELECT statement with the WHERE clause is as shown below.

SELECT column1, column2, columnN

FROM table\_name

WHERE [condition]

You can specify a condition using the [comparison or logical operators](https://www.tutorialspoint.com/sql/sql-operators.htm) like >, <, =, **LIKE, NOT**, etc. The following examples would make this concept clear.

Example

Consider the CUSTOMERS table having the following records −

+----+----------+-----+-----------+----------+

| ID | NAME | AGE | ADDRESS | SALARY |

+----+----------+-----+-----------+----------+

| 1 | Ramesh | 32 | Ahmedabad | 2000.00 |

| 2 | Khilan | 25 | Delhi | 1500.00 |

| 3 | kaushik | 23 | Kota | 2000.00 |

| 4 | Chaitali | 25 | Mumbai | 6500.00 |

| 5 | Hardik | 27 | Bhopal | 8500.00 |

| 6 | Komal | 22 | MP | 4500.00 |

| 7 | Muffy | 24 | Indore | 10000.00 |

+----+----------+-----+-----------+----------+

The following code is an example which would fetch the ID, Name and Salary fields from the CUSTOMERS table, where the salary is greater than 2000 −

SQL> SELECT ID, NAME, SALARY

FROM CUSTOMERS

WHERE SALARY > 2000;

This would produce the following result −

+----+----------+----------+

| ID | NAME | SALARY |

+----+----------+----------+

| 4 | Chaitali | 6500.00 |

| 5 | Hardik | 8500.00 |

| 6 | Komal | 4500.00 |

| 7 | Muffy | 10000.00 |

+----+----------+----------+

The following query is an example, which would fetch the ID, Name and Salary fields from the CUSTOMERS table for a customer with the name **Hardik**.

Here, it is important to note that all the strings should be given inside single quotes (''). Whereas, numeric values should be given without any quote as in the above example.

SQL> SELECT ID, NAME, SALARY

FROM CUSTOMERS

WHERE NAME = 'Hardik';

This would produce the following result −

+----+----------+----------+

| ID | NAME | SALARY |

+----+----------+----------+

| 5 | Hardik | 8500.00 |

+----+----------+----------+

The SQL **AND** & **OR** operators are used to combine multiple conditions to narrow data in an SQL statement. These two operators are called as the conjunctive operators.

These operators provide a means to make multiple comparisons with different operators in the same SQL statement.

## The AND Operator

The **AND** operator allows the existence of multiple conditions in an SQL statement's WHERE clause.

### Syntax

The basic syntax of the AND operator with a WHERE clause is as follows −

SELECT column1, column2, columnN

FROM table\_name

WHERE [condition1] AND [condition2]...AND [conditionN];

You can combine N number of conditions using the AND operator. For an action to be taken by the SQL statement, whether it be a transaction or a query, all conditions separated by the AND must be TRUE.

### Example

Consider the CUSTOMERS table having the following records −

+----+----------+-----+-----------+----------+

| ID | NAME | AGE | ADDRESS | SALARY |

+----+----------+-----+-----------+----------+

| 1 | Ramesh | 32 | Ahmedabad | 2000.00 |

| 2 | Khilan | 25 | Delhi | 1500.00 |

| 3 | kaushik | 23 | Kota | 2000.00 |

| 4 | Chaitali | 25 | Mumbai | 6500.00 |

| 5 | Hardik | 27 | Bhopal | 8500.00 |

| 6 | Komal | 22 | MP | 4500.00 |

| 7 | Muffy | 24 | Indore | 10000.00 |

+----+----------+-----+-----------+----------+

Following is an example, which would fetch the ID, Name and Salary fields from the CUSTOMERS table, where the salary is greater than 2000 and the age is less than 25 years −

SQL> SELECT ID, NAME, SALARY

FROM CUSTOMERS

WHERE SALARY > 2000 AND age < 25;

This would produce the following result −

+----+-------+----------+

| ID | NAME | SALARY |

+----+-------+----------+

| 6 | Komal | 4500.00 |

| 7 | Muffy | 10000.00 |

+----+-------+----------+

## The OR Operator

The OR operator is used to combine multiple conditions in an SQL statement's WHERE clause.

### Syntax

The basic syntax of the OR operator with a WHERE clause is as follows −

SELECT column1, column2, columnN

FROM table\_name

WHERE [condition1] OR [condition2]...OR [conditionN]

You can combine N number of conditions using the OR operator. For an action to be taken by the SQL statement, whether it be a transaction or query, the only any ONE of the conditions separated by the OR must be TRUE.

### Example

Consider the CUSTOMERS table having the following records −

+----+----------+-----+-----------+----------+

| ID | NAME | AGE | ADDRESS | SALARY |

+----+----------+-----+-----------+----------+

| 1 | Ramesh | 32 | Ahmedabad | 2000.00 |

| 2 | Khilan | 25 | Delhi | 1500.00 |

| 3 | kaushik | 23 | Kota | 2000.00 |

| 4 | Chaitali | 25 | Mumbai | 6500.00 |

| 5 | Hardik | 27 | Bhopal | 8500.00 |

| 6 | Komal | 22 | MP | 4500.00 |

| 7 | Muffy | 24 | Indore | 10000.00 |

+----+----------+-----+-----------+----------+

The following code block hasa query, which would fetch the ID, Name and Salary fields from the CUSTOMERS table, where the salary is greater than 2000 and the age is less than 25 years.

SQL> SELECT ID, NAME, SALARY

FROM CUSTOMERS

WHERE SALARY > 2000 OR age < 25;

This would produce the following result −

+----+----------+----------+

| ID | NAME | SALARY |

+----+----------+----------+

| 3 | kaushik | 2000.00 |

| 4 | Chaitali | 6500.00 |

| 5 | Hardik | 8500.00 |

| 6 | Komal | 4500.00 |

| 7 | Muffy | 10000.00 |

+----+----------+----------+

The SQL **UPDATE** Query is used to modify the existing records in a table. You can use the WHERE clause with the UPDATE query to update the selected rows, otherwise all the rows would be affected.

## Syntax

The basic syntax of the UPDATE query with a WHERE clause is as follows −

UPDATE table\_name

SET column1 = value1, column2 = value2...., columnN = valueN

WHERE [condition];

You can combine N number of conditions using the AND or the OR operators.

## Example

Consider the CUSTOMERS table having the following records −

+----+----------+-----+-----------+----------+

| ID | NAME | AGE | ADDRESS | SALARY |

+----+----------+-----+-----------+----------+

| 1 | Ramesh | 32 | Ahmedabad | 2000.00 |

| 2 | Khilan | 25 | Delhi | 1500.00 |

| 3 | kaushik | 23 | Kota | 2000.00 |

| 4 | Chaitali | 25 | Mumbai | 6500.00 |

| 5 | Hardik | 27 | Bhopal | 8500.00 |

| 6 | Komal | 22 | MP | 4500.00 |

| 7 | Muffy | 24 | Indore | 10000.00 |

+----+----------+-----+-----------+----------+

The following query will update the ADDRESS for a customer whose ID number is 6 in the table.

SQL> UPDATE CUSTOMERS

SET ADDRESS = 'Pune'

WHERE ID = 6;

Now, the CUSTOMERS table would have the following records −

+----+----------+-----+-----------+----------+

| ID | NAME | AGE | ADDRESS | SALARY |

+----+----------+-----+-----------+----------+

| 1 | Ramesh | 32 | Ahmedabad | 2000.00 |

| 2 | Khilan | 25 | Delhi | 1500.00 |

| 3 | kaushik | 23 | Kota | 2000.00 |

| 4 | Chaitali | 25 | Mumbai | 6500.00 |

| 5 | Hardik | 27 | Bhopal | 8500.00 |

| 6 | Komal | 22 | Pune | 4500.00 |

| 7 | Muffy | 24 | Indore | 10000.00 |

+----+----------+-----+-----------+----------+

If you want to modify all the ADDRESS and the SALARY column values in the CUSTOMERS table, you do not need to use the WHERE clause as the UPDATE query would be enough as shown in the following code block.

SQL> UPDATE CUSTOMERS

SET ADDRESS = 'Pune', SALARY = 1000.00;

Now, CUSTOMERS table would have the following records −

+----+----------+-----+---------+---------+

| ID | NAME | AGE | ADDRESS | SALARY |

+----+----------+-----+---------+---------+

| 1 | Ramesh | 32 | Pune | 1000.00 |

| 2 | Khilan | 25 | Pune | 1000.00 |

| 3 | kaushik | 23 | Pune | 1000.00 |

| 4 | Chaitali | 25 | Pune | 1000.00 |

| 5 | Hardik | 27 | Pune | 1000.00 |

| 6 | Komal | 22 | Pune | 1000.00 |

| 7 | Muffy | 24 | Pune | 1000.00 |

+----+----------+-----+---------+---------+

The SQL DELETE Query is used to delete the existing records from a table.

You can use the WHERE clause with a DELETE query to delete the selected rows, otherwise all the records would be deleted.

## Syntax

The basic syntax of the DELETE query with the WHERE clause is as follows −

DELETE FROM table\_name

WHERE [condition];

You can combine N number of conditions using AND or OR operators.

## Example

Consider the CUSTOMERS table having the following records −

+----+----------+-----+-----------+----------+

| ID | NAME | AGE | ADDRESS | SALARY |

+----+----------+-----+-----------+----------+

| 1 | Ramesh | 32 | Ahmedabad | 2000.00 |

| 2 | Khilan | 25 | Delhi | 1500.00 |

| 3 | kaushik | 23 | Kota | 2000.00 |

| 4 | Chaitali | 25 | Mumbai | 6500.00 |

| 5 | Hardik | 27 | Bhopal | 8500.00 |

| 6 | Komal | 22 | MP | 4500.00 |

| 7 | Muffy | 24 | Indore | 10000.00 |

+----+----------+-----+-----------+----------+

The following code has a query, which will DELETE a customer, whose ID is 6.

SQL> DELETE FROM CUSTOMERS

WHERE ID = 6;

Now, the CUSTOMERS table would have the following records.

+----+----------+-----+-----------+----------+

| ID | NAME | AGE | ADDRESS | SALARY |

+----+----------+-----+-----------+----------+

| 1 | Ramesh | 32 | Ahmedabad | 2000.00 |

| 2 | Khilan | 25 | Delhi | 1500.00 |

| 3 | kaushik | 23 | Kota | 2000.00 |

| 4 | Chaitali | 25 | Mumbai | 6500.00 |

| 5 | Hardik | 27 | Bhopal | 8500.00 |

| 7 | Muffy | 24 | Indore | 10000.00 |

+----+----------+-----+-----------+----------+

If you want to DELETE all the records from the CUSTOMERS table, you do not need to use the WHERE clause and the DELETE query would be as follows −

SQL> DELETE FROM CUSTOMERS;

Now, the CUSTOMERS table would not have any record.

The SQL **LIKE** clause is used to compare a value to similar values using wildcard operators. There are two wildcards used in conjunction with the LIKE operator.

* The percent sign (%)
* The underscore (\_)

The percent sign represents zero, one or multiple characters. The underscore represents a single number or character. These symbols can be used in combinations.

Syntax

The basic syntax of % and \_ is as follows −

SELECT FROM table\_name

WHERE column LIKE 'XXXX%'

or

SELECT FROM table\_name

WHERE column LIKE '%XXXX%'

or

SELECT FROM table\_name

WHERE column LIKE 'XXXX\_'

or

SELECT FROM table\_name

WHERE column LIKE '\_XXXX'

or

SELECT FROM table\_name

WHERE column LIKE '\_XXXX\_'

You can combine N number of conditions using AND or OR operators. Here, XXXX could be any numeric or string value.

Example

The following table has a few examples showing the WHERE part having different LIKE clause with '%' and '\_' operators −

|  |  |
| --- | --- |
| **Sr.No.** | **Statement & Description** |
| 1 | **WHERE SALARY LIKE '200%'**  Finds any values that start with 200. |
| 2 | **WHERE SALARY LIKE '%200%'**  Finds any values that have 200 in any position. |
| 3 | **WHERE SALARY LIKE '\_00%'**  Finds any values that have 00 in the second and third positions. |
| 4 | **WHERE SALARY LIKE '2\_%\_%'**  Finds any values that start with 2 and are at least 3 characters in length. |
| 5 | **WHERE SALARY LIKE '%2'**  Finds any values that end with 2. |
| 6 | **WHERE SALARY LIKE '\_2%3'**  Finds any values that have a 2 in the second position and end with a 3. |
| 7 | **WHERE SALARY LIKE '2\_\_\_3'**  Finds any values in a five-digit number that start with 2 and end with 3. |

Let us take a real example, consider the CUSTOMERS table having the records as shown below.

+----+----------+-----+-----------+----------+

| ID | NAME | AGE | ADDRESS | SALARY |

+----+----------+-----+-----------+----------+

| 1 | Ramesh | 32 | Ahmedabad | 2000.00 |

| 2 | Khilan | 25 | Delhi | 1500.00 |

| 3 | kaushik | 23 | Kota | 2000.00 |

| 4 | Chaitali | 25 | Mumbai | 6500.00 |

| 5 | Hardik | 27 | Bhopal | 8500.00 |

| 6 | Komal | 22 | MP | 4500.00 |

| 7 | Muffy | 24 | Indore | 10000.00 |

+----+----------+-----+-----------+----------+

Following is an example, which would display all the records from the CUSTOMERS table, where the SALARY starts with 200.

SQL> SELECT \* FROM CUSTOMERS

WHERE SALARY LIKE '200%';

This would produce the following result −

+----+----------+-----+-----------+----------+

| ID | NAME | AGE | ADDRESS | SALARY |

+----+----------+-----+-----------+----------+

| 1 | Ramesh | 32 | Ahmedabad | 2000.00 |

| 3 | kaushik | 23 | Kota | 2000.00 |

+----+----------+-----+-----------+----------+

The SQL **TOP** clause is used to fetch a TOP N number or X percent records from a table.

**Note** − All the databases do not support the TOP clause. For example MySQL supports the **LIMIT** clause to fetch limited number of records while Oracle uses the **ROWNUM** command to fetch a limited number of records.

## Syntax

The basic syntax of the TOP clause with a SELECT statement would be as follows.

SELECT TOP number|percent column\_name(s)

FROM table\_name

WHERE [condition]

## Example

Consider the CUSTOMERS table having the following records −

+----+----------+-----+-----------+----------+

| ID | NAME | AGE | ADDRESS | SALARY |

+----+----------+-----+-----------+----------+

| 1 | Ramesh | 32 | Ahmedabad | 2000.00 |

| 2 | Khilan | 25 | Delhi | 1500.00 |

| 3 | kaushik | 23 | Kota | 2000.00 |

| 4 | Chaitali | 25 | Mumbai | 6500.00 |

| 5 | Hardik | 27 | Bhopal | 8500.00 |

| 6 | Komal | 22 | MP | 4500.00 |

| 7 | Muffy | 24 | Indore | 10000.00 |

+----+----------+-----+-----------+----------+

The following query is an example on the SQL server, which would fetch the top 3 records from the CUSTOMERS table.

SQL> SELECT TOP 3 \* FROM CUSTOMERS;

This would produce the following result −

+----+---------+-----+-----------+---------+

| ID | NAME | AGE | ADDRESS | SALARY |

+----+---------+-----+-----------+---------+

| 1 | Ramesh | 32 | Ahmedabad | 2000.00 |

| 2 | Khilan | 25 | Delhi | 1500.00 |

| 3 | kaushik | 23 | Kota | 2000.00 |

+----+---------+-----+-----------+---------+

If you are using MySQL server, then here is an equivalent example −

SQL> SELECT \* FROM CUSTOMERS

LIMIT 3;

This would produce the following result −

+----+---------+-----+-----------+---------+

| ID | NAME | AGE | ADDRESS | SALARY |

+----+---------+-----+-----------+---------+

| 1 | Ramesh | 32 | Ahmedabad | 2000.00 |

| 2 | Khilan | 25 | Delhi | 1500.00 |

| 3 | kaushik | 23 | Kota | 2000.00 |

+----+---------+-----+-----------+---------+

If you are using an Oracle server, then the following code block has an equivalent example.

SQL> SELECT \* FROM CUSTOMERS

WHERE ROWNUM <= 3;

This would produce the following result −

+----+---------+-----+-----------+---------+

| ID | NAME | AGE | ADDRESS | SALARY |

+----+---------+-----+-----------+---------+

| 1 | Ramesh | 32 | Ahmedabad | 2000.00 |

| 2 | Khilan | 25 | Delhi | 1500.00 |

| 3 | kaushik | 23 | Kota | 2000.00 |

+----+---------+-----+-----------+---------+

The SQL **ORDER BY** clause is used to sort the data in ascending or descending order, based on one or more columns. Some databases sort the query results in an ascending order by default.

## Syntax

The basic syntax of the ORDER BY clause is as follows −

SELECT column-list

FROM table\_name

[WHERE condition]

[ORDER BY column1, column2, .. columnN] [ASC | DESC];

You can use more than one column in the ORDER BY clause. Make sure whatever column you are using to sort that column should be in the column-list.

## Example

Consider the CUSTOMERS table having the following records −

+----+----------+-----+-----------+----------+

| ID | NAME | AGE | ADDRESS | SALARY |

+----+----------+-----+-----------+----------+

| 1 | Ramesh | 32 | Ahmedabad | 2000.00 |

| 2 | Khilan | 25 | Delhi | 1500.00 |

| 3 | kaushik | 23 | Kota | 2000.00 |

| 4 | Chaitali | 25 | Mumbai | 6500.00 |

| 5 | Hardik | 27 | Bhopal | 8500.00 |

| 6 | Komal | 22 | MP | 4500.00 |

| 7 | Muffy | 24 | Indore | 10000.00 |

+----+----------+-----+-----------+----------+

The following code block has an example, which would sort the result in an ascending order by the NAME and the SALARY −

SQL> SELECT \* FROM CUSTOMERS

ORDER BY NAME, SALARY;

This would produce the following result −

+----+----------+-----+-----------+----------+

| ID | NAME | AGE | ADDRESS | SALARY |

+----+----------+-----+-----------+----------+

| 4 | Chaitali | 25 | Mumbai | 6500.00 |

| 5 | Hardik | 27 | Bhopal | 8500.00 |

| 3 | kaushik | 23 | Kota | 2000.00 |

| 2 | Khilan | 25 | Delhi | 1500.00 |

| 6 | Komal | 22 | MP | 4500.00 |

| 7 | Muffy | 24 | Indore | 10000.00 |

| 1 | Ramesh | 32 | Ahmedabad | 2000.00 |

+----+----------+-----+-----------+----------+

The following code block has an example, which would sort the result in the descending order by NAME.

SQL> SELECT \* FROM CUSTOMERS

ORDER BY NAME DESC;

This would produce the following result −

+----+----------+-----+-----------+----------+

| ID | NAME | AGE | ADDRESS | SALARY |

+----+----------+-----+-----------+----------+

| 1 | Ramesh | 32 | Ahmedabad | 2000.00 |

| 7 | Muffy | 24 | Indore | 10000.00 |

| 6 | Komal | 22 | MP | 4500.00 |

| 2 | Khilan | 25 | Delhi | 1500.00 |

| 3 | kaushik | 23 | Kota | 2000.00 |

| 5 | Hardik | 27 | Bhopal | 8500.00 |

| 4 | Chaitali | 25 | Mumbai | 6500.00 |

+----+----------+-----+-----------+----------+

The SQL **GROUP BY** clause is used in collaboration with the SELECT statement to arrange identical data into groups. This GROUP BY clause follows the WHERE clause in a SELECT statement and precedes the ORDER BY clause.

## Syntax

The basic syntax of a GROUP BY clause is shown in the following code block. The GROUP BY clause must follow the conditions in the WHERE clause and must precede the ORDER BY clause if one is used.

SELECT column1, column2

FROM table\_name

WHERE [ conditions ]

GROUP BY column1, column2

ORDER BY column1, column2

## Example

Consider the CUSTOMERS table is having the following records −

+----+----------+-----+-----------+----------+

| ID | NAME | AGE | ADDRESS | SALARY |

+----+----------+-----+-----------+----------+

| 1 | Ramesh | 32 | Ahmedabad | 2000.00 |

| 2 | Khilan | 25 | Delhi | 1500.00 |

| 3 | kaushik | 23 | Kota | 2000.00 |

| 4 | Chaitali | 25 | Mumbai | 6500.00 |

| 5 | Hardik | 27 | Bhopal | 8500.00 |

| 6 | Komal | 22 | MP | 4500.00 |

| 7 | Muffy | 24 | Indore | 10000.00 |

+----+----------+-----+-----------+----------+

If you want to know the total amount of the salary on each customer, then the GROUP BY query would be as follows.

SQL> SELECT NAME, SUM(SALARY) FROM CUSTOMERS

GROUP BY NAME;

This would produce the following result −

+----------+-------------+

| NAME | SUM(SALARY) |

+----------+-------------+

| Chaitali | 6500.00 |

| Hardik | 8500.00 |

| kaushik | 2000.00 |

| Khilan | 1500.00 |

| Komal | 4500.00 |

| Muffy | 10000.00 |

| Ramesh | 2000.00 |

+----------+-------------+

Now, let us look at a table where the CUSTOMERS table has the following records with duplicate names −

+----+----------+-----+-----------+----------+

| ID | NAME | AGE | ADDRESS | SALARY |

+----+----------+-----+-----------+----------+

| 1 | Ramesh | 32 | Ahmedabad | 2000.00 |

| 2 | Ramesh | 25 | Delhi | 1500.00 |

| 3 | kaushik | 23 | Kota | 2000.00 |

| 4 | kaushik | 25 | Mumbai | 6500.00 |

| 5 | Hardik | 27 | Bhopal | 8500.00 |

| 6 | Komal | 22 | MP | 4500.00 |

| 7 | Muffy | 24 | Indore | 10000.00 |

+----+----------+-----+-----------+----------+

Now again, if you want to know the total amount of salary on each customer, then the GROUP BY query would be as follows −

SQL> SELECT NAME, SUM(SALARY) FROM CUSTOMERS

GROUP BY NAME;

This would produce the following result −

+---------+-------------+

| NAME | SUM(SALARY) |

+---------+-------------+

| Hardik | 8500.00 |

| kaushik | 8500.00 |

| Komal | 4500.00 |

| Muffy | 10000.00 |

| Ramesh | 3500.00 |

+---------+-------------+

The SQL **DISTINCT** keyword is used in conjunction with the SELECT statement to eliminate all the duplicate records and fetching only unique records.

There may be a situation when you have multiple duplicate records in a table. While fetching such records, it makes more sense to fetch only those unique records instead of fetching duplicate records.

## Syntax

The basic syntax of DISTINCT keyword to eliminate the duplicate records is as follows −

SELECT DISTINCT column1, column2,.....columnN

FROM table\_name

WHERE [condition]

## Example

Consider the CUSTOMERS table having the following records −

+----+----------+-----+-----------+----------+

| ID | NAME | AGE | ADDRESS | SALARY |

+----+----------+-----+-----------+----------+

| 1 | Ramesh | 32 | Ahmedabad | 2000.00 |

| 2 | Khilan | 25 | Delhi | 1500.00 |

| 3 | kaushik | 23 | Kota | 2000.00 |

| 4 | Chaitali | 25 | Mumbai | 6500.00 |

| 5 | Hardik | 27 | Bhopal | 8500.00 |

| 6 | Komal | 22 | MP | 4500.00 |

| 7 | Muffy | 24 | Indore | 10000.00 |

+----+----------+-----+-----------+----------+

First, let us see how the following SELECT query returns the duplicate salary records.

SQL> SELECT SALARY FROM CUSTOMERS

ORDER BY SALARY;

This would produce the following result, where the salary (2000) is coming twice which is a duplicate record from the original table.

+----------+

| SALARY |

+----------+

| 1500.00 |

| 2000.00 |

| 2000.00 |

| 4500.00 |

| 6500.00 |

| 8500.00 |

| 10000.00 |

+----------+

Now, let us use the DISTINCT keyword with the above SELECT query and then see the result.

SQL> SELECT DISTINCT SALARY FROM CUSTOMERS

ORDER BY SALARY;

This would produce the following result where we do not have any duplicate entry.

+----------+

| SALARY |

+----------+

| 1500.00 |

| 2000.00 |

| 4500.00 |

| 6500.00 |

| 8500.00 |

| 10000.00 |

+----------+

The SQL **ORDER BY** clause is used to sort the data in ascending or descending order, based on one or more columns. Some databases sort the query results in an ascending order by default.

## Syntax

The basic syntax of the ORDER BY clause which would be used to sort the result in an ascending or descending order is as follows −

SELECT column-list

FROM table\_name

[WHERE condition]

[ORDER BY column1, column2, .. columnN] [ASC | DESC];

You can use more than one column in the ORDER BY clause. Make sure that whatever column you are using to sort, that column should be in the column-list.

## Example

Consider the CUSTOMERS table having the following records −

+----+----------+-----+-----------+----------+

| ID | NAME | AGE | ADDRESS | SALARY |

+----+----------+-----+-----------+----------+

| 1 | Ramesh | 32 | Ahmedabad | 2000.00 |

| 2 | Khilan | 25 | Delhi | 1500.00 |

| 3 | kaushik | 23 | Kota | 2000.00 |

| 4 | Chaitali | 25 | Mumbai | 6500.00 |

| 5 | Hardik | 27 | Bhopal | 8500.00 |

| 6 | Komal | 22 | MP | 4500.00 |

| 7 | Muffy | 24 | Indore | 10000.00 |

+----+----------+-----+-----------+----------+

Following is an example, which would sort the result in an ascending order by NAME and SALARY.

SQL> SELECT \* FROM CUSTOMERS

ORDER BY NAME, SALARY;

This would produce the following result −

+----+----------+-----+-----------+----------+

| ID | NAME | AGE | ADDRESS | SALARY |

+----+----------+-----+-----------+----------+

| 4 | Chaitali | 25 | Mumbai | 6500.00 |

| 5 | Hardik | 27 | Bhopal | 8500.00 |

| 3 | kaushik | 23 | Kota | 2000.00 |

| 2 | Khilan | 25 | Delhi | 1500.00 |

| 6 | Komal | 22 | MP | 4500.00 |

| 7 | Muffy | 24 | Indore | 10000.00 |

| 1 | Ramesh | 32 | Ahmedabad | 2000.00 |

+----+----------+-----+-----------+----------+

The following code block has an example, which would sort the result in a descending order by NAME.

SQL> SELECT \* FROM CUSTOMERS

ORDER BY NAME DESC;

This would produce the following result −

+----+----------+-----+-----------+----------+

| ID | NAME | AGE | ADDRESS | SALARY |

+----+----------+-----+-----------+----------+

| 1 | Ramesh | 32 | Ahmedabad | 2000.00 |

| 7 | Muffy | 24 | Indore | 10000.00 |

| 6 | Komal | 22 | MP | 4500.00 |

| 2 | Khilan | 25 | Delhi | 1500.00 |

| 3 | kaushik | 23 | Kota | 2000.00 |

| 5 | Hardik | 27 | Bhopal | 8500.00 |

| 4 | Chaitali | 25 | Mumbai | 6500.00 |

+----+----------+-----+-----------+----------+

To fetch the rows with their own preferred order, the SELECT query used would be as follows −

SQL> SELECT \* FROM CUSTOMERS

ORDER BY (CASE ADDRESS

WHEN 'DELHI' THEN 1

WHEN 'BHOPAL' THEN 2

WHEN 'KOTA' THEN 3

WHEN 'AHMADABAD' THEN 4

WHEN 'MP' THEN 5

ELSE 100 END) ASC, ADDRESS DESC;

This would produce the following result −

+----+----------+-----+-----------+----------+

| ID | NAME | AGE | ADDRESS | SALARY |

+----+----------+-----+-----------+----------+

| 2 | Khilan | 25 | Delhi | 1500.00 |

| 5 | Hardik | 27 | Bhopal | 8500.00 |

| 3 | kaushik | 23 | Kota | 2000.00 |

| 6 | Komal | 22 | MP | 4500.00 |

| 4 | Chaitali | 25 | Mumbai | 6500.00 |

| 7 | Muffy | 24 | Indore | 10000.00 |

| 1 | Ramesh | 32 | Ahmedabad | 2000.00 |

+----+----------+-----+-----------+----------+

This will sort the customers by ADDRESS in your **ownoOrder** of preference first and in a natural order for the remaining addresses. Also, the remaining Addresses will be sorted in the reverse alphabetical order.

SO NOW U R READY TO CODE!!