



The SELECT command is used to retrieve rows from a single table or multiple Tables or Views.

A query may retrieve information from specified columns or from all of the columns in the Table.

It helps to select the required data from the table.

SELECT [ALL | DISTINCT] { * | col_name,...}
FROM table_name alias,...
[WHERE exprt]
[CONNECT BY expr2 [START WITH expr3]]
[GROUP BY expr4] [HAVING expr5]
[UNION | INTERSECT | MINUS SELECT ...]
[ORDER BY expr | ASC | DESC];

3.1: The SELECT Statement
Selecting Columns

Displays all the columns from the student_master table

SELECT *
FROM student_master;

Displays selected columns from the student_master table

SELECT student_code, student_name
FROM student_master;

The WHERE clause is used to specify the criteria for selection.

For example: displays the selected columns from the student_master table based on the condition being satisfied

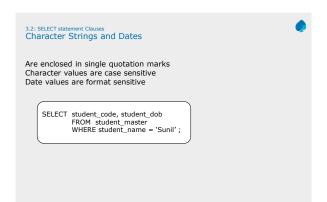
SELECT student_code, student_name, student_dob
FROM student_master
WHERE dept_code = 10;

The AS clause is used to specify an alternate colum heading.

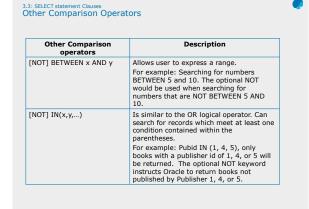
For example: displays the selected columns from the student_master table based on the condition being satisfied. Observe the column heading

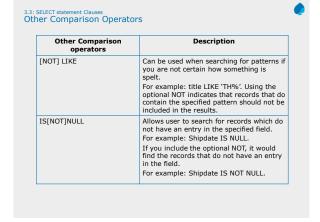
SELECT student_dob as "Date of Birth"
FROM student_master
WHERE dept_code = 10;
-- quotes are required when the column heading contains a space

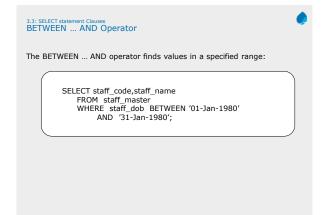
SELECT student_dob "Date of Birth"
FROM student_master
WHERE dept_code = 10;
-- AS keyword is optional

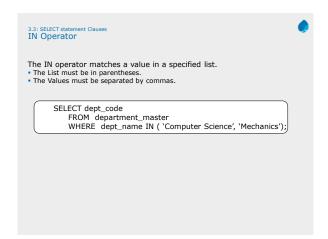


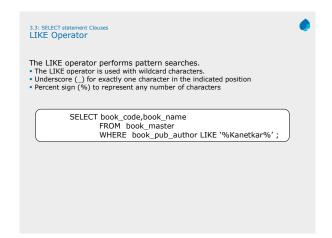


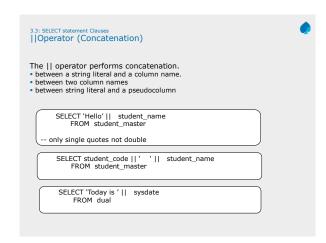


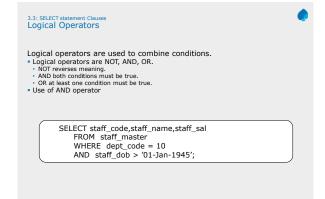


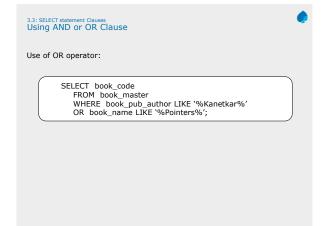


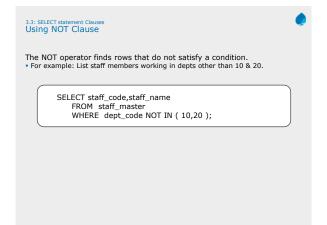


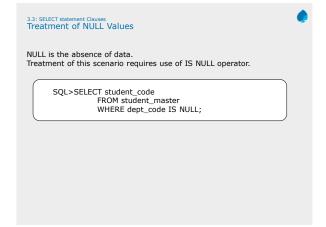












Operator Precedence

Operator precedence is decided in the following order:

Levels	Operators
1	* (Multiply), / (Division), % (Modulo)
2	+ (Positive), - (Negative), + (Add), (+ Concatenate), - (Subtract), & (Bitwise AND)
3	=, >, <, >=, <=, <>, !=, !>, !< (Comparison operators)
4	NOT
5	OR
6	AND
7	ALL, ANY, BETWEEN, IN, LIKE, OR, SOME
8	= (Assignment)
8	= (Assignment)

The DISTINCT clause

The SQL DISTINCT clause is used to eliminate duplicate rows.

For example: Displays student codes from student_marks tables. the student codes are displayed without duplication

SELECT DISTINCT student code FROM student_marks;

The ORDER BY clause

The ORDER BY clause presents data in a sorted order.

- It uses an "ascending order" by default.

 You can use the DESC keyword to change the default sort order.

 It can process a maximum of 255 columns.

In an ascending order, the values will be listed in the following sequence:

- Numeric valuesCharacter values

In a descending order, the sequence is reversed.

Sorting Data

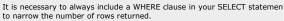
The output of the SELECT statement can be sorted using ORDER BY clause

ASC: Ascending order, default
 DESC: Descending order

Display student details from student_master table sorted on student_code in descending order.

 ${\sf SELECT\ Student_Code}, {\sf Student_Name}, {\sf Dept_Code},$ Student_dob FROM Student_Master
ORDER BY Student_Code DESC;

d Tricks in SELECT Statements Quick Guidelines



- If you do not use a WHERE clause, then Oracle will perform a table scan of your table, and return all the rows.
- By returning data you do not need, you cause the SQL engine to perform I/O it doe
 not need to perform, thus wasting SQL engine resources.



Quick Guidelines

- In addition, the above scenario increases network traffic, which can also lead to
- And if the table is very large, a table scan will lock the table during the time-consuming scan, preventing other users from accessing it, and will hurt concurrency.

In your queries, do not return column data that is not required.

- For example:
- You should not use SELECT \ast to return all the columns from a table if all the data from each column is not required.
- In addition, using SELECT * prevents the use of covered indexes, further potentially decreasing the query performance.



Quick Guidelines



Carefully evaluate whether the SELECT query requires the DISTINCT clause or not.

- The DISTINCT clause should only be used in SELECT statements.
 This is mandatory if you know that "duplicate" returned rows are a possibility, and that having duplicate rows in the result set would cause problems with your application.
- The DISTINCT clause creates a lot of extra work for SQL Server.
- The extra load reduces the "physical resources" that other SQL statements have at their
- Hence, use the DISTINCT clause only if it is necessary.



Quick Guidelines



In a WHERE clause, the various "operators" that are used, directly affect the query performance.

- Given below are the key operators used in the WHERE clause, ordered by their performance. The operators at the top produce faster results, than those listed at the bottom.
 - LIKE
- Use "=" as much as possible, and "<>" as least as possible.



Ouick Guidelines



If you use LIKE in your WHERE clause, try to use one or more leading character in the clause, if at all possible.

For example: Use LIKE 'm%' not LIKE '%m'
Certain operators in the WHERE clause prevents the query optimizer from using an Index to perform a search.

For example: "IS NULL", "<>"," "!="," "!="," "\"," "NOT", "NOT EXISTS", "NOT IN", "NOT LIKE", and "LIKE '%500"."



Ouick Guidelines



Suppose you have a choice of using the IN or the BETWEEN clauses. In such a case use the BETWEEN clause, as it is much more efficient.

• For example: The first code is much less efficient than the second code given below.



SELECT customer_number, customer_name

FROM customer | Hamber, customer | Hamber | Hamb

SELECT customer_number, customer_name FROM customer WHERE customer number BETWEEN 1000 and 1004

Quick Guidelines



Do not use ORDER BY in your SELECT statements unless you really need to

Whenever SQL engine has to perform a sorting operation, additional resources have to be used to perform this task.



Summary





- In this lesson, you have learnt:

 What is SELECT statement?

 Usage of the following:

 The WHERE clause

 The Mathematical, Comparison, and Logical operators

 The AND or OR clause
- The NOT clause
 The DISTINCT clause
- The ORDER BY clause



