Advanced SQL – Introduction

Version 1.0

1 - ADVANCED SQL

1.1 Introduction

Welcome to Advanced SQL course. You have already learnt Basics of SQL and here you will learn more about SQL. In this module you will learn more DML queries, DCL (Data control Language) and Sub queries. You have already learned single row functions and aggregate functions. In this module you will cover additional SQL functions like date functions, data type conversion functions and analytic functions. Analytic functions are are very useful in BI applications and analytics. In addition, this course also covers conditional statements, set operators and database objects. Happy Learning.

1.2 ANSI SQL

ANSI SQL or SQL is the American National Standards Institute standardized Structured Query Language. But there are many different versions of the SQL language. ANSI SQL is the base for several different SQL languages such as T-SQL and PL/SQL. ANSI SQL is used to Create, Alter, and View data stored within a database.

SQL is the standard language for Relation Database Systems. All relational database management systems like MySQL, MS Access, Oracle, Sybase, Informix, postgres and SQL Server use SQL as standard database language.

Also, they are using different dialects, such as:

- ✓ T-SQL (MS SQL Server)
- ✓ PL/SQL (Oracle)
- ✓ JET SQL (MS Access)

1.3 Dual Table

- DUAL is a table automatically created by Oracle Database along with the data dictionary.

- DUAL is in the schema of the user SYS but is accessible by the name DUAL to all users.
- It has one column, DUMMY, defined to be VARCHAR2(1), and contains one row with a value X.

Selecting from the DUAL table is useful for computing a **constant expression** with the SELECT statement. Because DUAL has only one row, the constant is returned only once. Alternatively, you can select a constant, pseudo-column, or expression from any table, but the value will be returned as many times as there are rows in the table.

Example:-

select 2+3 from Dual; - will display 5

select 'Hello World' from Dual - will display 'Hello World'

1.4 Pseudo-column

A pseudo-column behaves like a table column, but it is not actually stored in the table. You can select from pseudo-columns, but you cannot insert, update, or delete their values.

1.4.1 ROWNUM pseudo-column

For each row returned by a query, the ROWNUM pseudo-column returns a number indicating the order in which Oracle selects the row from a table or set of joined rows. The first row selected has a ROWNUM of 1, the second has 2, and so on.

You can use ROWNUM to limit the number of rows returned by a query, as in this example:

SELECT * FROM employees WHERE ROWNUM < 10;

1.4.2 ROWID Pseudo-column

For each row in the database, the ROWID pseudo-column returns the address of the row. Oracle Database rowid values contain information necessary to locate a row or record of data.