



Oracle Database 12c R2: SQL Workshop I

The Oracle Database: SQL Workshop I Ed 3 course offers students an introduction to Oracle Database 12c database technology. The students are also introduced to Oracle Database Exadata Express Cloud Service. In this class students learn the concepts of relational databases and the powerful SQL programming language. This course provides the essential SQL skills that allow developers to write queries against single and multiple tables, manipulate data in tables, and create database objects.

Learn To:

- Identify what a SQL statement is.
- Understand the Oracle Relational Database.
- Use SQL Developer.
- Write reports using SQL Statements.
- Manipulate data in relational tables and save the data.

Benefits To You

Students use Oracle SQL Developer as the main environment tool for writing SQL. SQL*Plus is introduced as an optional tool. Demonstrations and hands-on practice reinforce the fundamental concepts.

Audience

- Database Administrator
- Developer
- Implementer
- Systems Administrator

Objectives

- Identify the major components of Oracle Database
- Retrieve row and column data from tables with the SELECT statement
- Create reports of sorted and restricted data

- Employ SQL functions to generate and retrieve customized data
- Run complex queries to retrieve data from multiple tables
- Run data manipulation language (DML) statements to update data in Oracle Database

Topics

- Introduction
 - Course Objectives, Course Agenda and Appendixes Used in this Course
 - Overview of Oracle Database 12c and Related Products
 - Overview of relational database management concepts and terminologies
 - Introduction to SQL and its development environments
 - What is Oracle SQL Developer?
 - Starting SQL*Plus from Oracle SQL Developer
 - The Human Resource(HR) Schema
 - Tables used in the Course
- Retrieving Data using the SQL SELECT Statement
 - Capabilities of the SELECT statement
 - Arithmetic expressions and NULL values in the SELECT statement
 - Column aliases
 - Use of concatenation operator, literal character strings, alternative quote operator, and the DISTINCT keyword
 - Use of the DESCRIBE command
- Restricting and Sorting Data
 - Limiting the Rows
 - Rules of precedence for operators in an expression
 - Sorting rows using ORDER BY clause
 - SQL row limiting clause in a query
 - Substitution Variables
 - Using the DEFINE and VERIFY command
- Using Single-Row Functions to Customize Output
 - Describe the differences between single row and multiple row functions
 - Manipulate strings with character function in the SELECT and WHERE clauses
 - Nesting Functions
 - Manipulate numbers with the ROUND, TRUNC and MOD functions
 - Perform arithmetic with date data
 - Manipulate dates with the date functions
- Using Conversion Functions and Conditional Expressions
 - Describe implicit and explicit data type conversion
 - Use the TO_CHAR, TO_NUMBER, and TO_DATE conversion functions
 - Apply the NVL, NULLIF, and COALESCE functions to data
 - Conditional Expressions
- Reporting Aggregated Data Using the Group Functions
 - Group Functions
 - Grouping Rows (GROUP BY and HAVING clause)
 - Nesting Group Functions
- Displaying Data From Multiple Tables Using Joins
 - Introduction to JOINS
 - Types of Joins
 - Natural join
 - Self-join
 - Nonequijoins
 - OUTER join
 - Cartesian product
- Using Subqueries to Solve Queries

- Introduction to Subqueries
- Single Row Subqueries
- Multiple Row Subqueries
- Null values in a subquery
- Using the SET Operators
 - Set Operators
 - UNION and UNION ALL operator
 - INTERSECT operator
 - MINUS operator
 - Matching the SELECT statements
 - Using ORDER BY clause in set operations
- Managing Tables using DML statements
 - Data Manipulation Language
 - Database Transactions
 - Manual Data Locking
- Introduction to Data Definition Language
 - Database Objects
 - CREATE TABLE statement
 - Data types
 - Overview of constraint
 - Creating a table using subquery
 - Use the ALTER TABLE statement to add, modify, and drop a column
 - DROP TABLE statement