

## Oracle Database: SQL Workshop I Ed 2

**Duration:** 3 Days

### What you will learn

The Oracle Database: SQL Workshop I Ed 2 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

- Application Developers
- Database Administrators
- Forms Developer
- Functional Implementer
- PL/SQL Developer
- System Analysts

### Related Training

#### *Required Prerequisites*

- Familiarity with data processing concepts and techniques
- Familiarity with programming languages

### Course 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

## Course 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