# 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