

## Oracle Database 12c R2: Introduction to SQL Ed 2

**Duration:** 5 Days

### What you will learn

This Oracle Database: Introduction to SQL training helps you write subqueries, combine multiple queries into a single query using SET operators and report aggregated data using group functions. Learn this and more through hands-on exercises. Learn To: Understand the basic concepts of relational databases ensure refined code by developers. Create reports of sorted and restricted data. Run data manipulation statements (DML). Control database access to specific objects. Manage schema objects. Manage objects with data dictionary views. Retrieve row and column data from tables. Control privileges at the object and system level. Create indexes and constraints; alter existing schema objects. Create and query external tables. Benefits to You Ensure fast, reliable, secure and easy to manage performance. Optimize database workloads, lower IT costs and deliver a higher quality of service by enabling consolidation onto database clouds. Learn Advanced Features of SQL This course will help you understand the advanced features of SQL. Learning these features will help you query and manipulate data within the database, use the dictionary views to retrieve metadata and create reports about their schema objects. Some of the date-time functions available in the Oracle Database are also covered. This course also discusses how to use the regular expression support in SQL through expert instruction. Use Development Tools The main development tool used in this training is Oracle SQL Developer. SQL\*Plus is available as an optional development tool. This is appropriate for a 10g, 11g and 12c audience. Course Bundle Note: This course is a combination of Oracle Database: SQL Workshop I and Oracle Database: SQL Workshop II courses.

### Related Training

#### *Required Prerequisites*

Data processing

Familiarity with data processing concepts and techniques

### Course Objectives

Identify the major structural components of the Oracle Database 12c

Create reports of aggregated data

Write SELECT statements that include queries

Retrieve row and column data from tables

Run data manipulation statements (DML) in Oracle Database 12c

Create tables to store data

Utilize views to display data

Control database access to specific objects

Manage schema objects

Display data from multiple tables using the ANSI SQL 99 JOIN syntax

Manage objects with data dictionary views

Write multiple-column sub-queries

Employ SQL functions to retrieve customized data

Use scalar and correlated sub-queries

Create reports of sorted and restricted data

## 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

## **Working with Oracle Cloud Exadata Express Cloud Service**

Introduction to Oracle Database Exadata Express Cloud Service  
Accessing Cloud Database using SQL Workshop  
Connecting to Exadata Express Database using Database Clients

## **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  
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  
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  
Nest multiple functions  
Apply the NVL, NULLIF, and COALESCE functions to data  
Use conditional IF THEN ELSE logic in a SELECT statement

## **Reporting Aggregated Data Using the Group Functions**

Group Functions  
Creating Groups of Data  
Restricting Group Results

## **Displaying Data from Multiple Tables Using Joins**

Introduction to JOINS  
Types of Joins  
Natural join  
Self-join  
Non equijoins  
OUTER join

## **Using Subqueries to Solve Queries**

Introduction to Subqueries  
Single Row Subqueries  
Multiple Row Subqueries

## **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

## **Introduction to Data Definition Language**

Data Definition Language

## **Introduction to Data Dictionary Views**

Introduction to Data Dictionary

Describe the Data Dictionary Structure

Using the Data Dictionary views

Querying the Data Dictionary Views

## **Creating Sequences, Synonyms, Indexes**

Overview of sequences

Overview of synonyms

Overview of indexes

## **Creating Views**

Overview of views

## **Managing Schema Objects**

Managing constraints

Creating and using temporary tables

Creating and using external tables

## **Retrieving Data by Using Subqueries**

Retrieving Data by Using a Subquery as Source

Working with Multiple-Column subqueries

Using Scalar subqueries in SQL

Correlated Subqueries

Working with the WITH clause

## **Manipulating Data by Using Subqueries**

Using Subqueries to Manipulate Data

Inserting by Using a Subquery as a Target

Using the WITH CHECK OPTION Keyword on DML Statements

Using Correlated Subqueries to Update and Delete rows

## **Controlling User Access**

System privileges

Creating a role

Object privileges

Revoking object privileges

## **Manipulating Data**

Overview of the Explicit Default Feature

Using multitable INSERTs

Using the MERGE statement

Performing flashback operations

Tracking Changes in Data

## **Managing Data in Different Time Zones**

Working with CURRENT\_DATE, CURRENT\_TIMESTAMP, and LOCALTIMESTAMP

Working with INTERVAL data types