

## Oracle Database: Introduction to SQL Ed 2

**Duration:** 5 Days

### What you will learn

This Oracle Database 12c: 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 12c: SQL Workshop I and Oracle Database12c: SQL Workshop II courses.

### Audience

Application Developers  
Business Analysts  
Data Warehouse Administrator  
Developer  
Forms Developer  
PL/SQL Developer  
System Analysts

### 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

Manage objects with data dictionary views

Manage schema objects

Retrieve row and column data from tables

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

Use scalar and correlated sub-queries

Utilize views to display data

Write SELECT statements that include queries

Write multiple-column sub-queries

Control database access to specific objects

Create reports of aggregated data

Create reports of sorted and restricted data

Create tables to store data

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

Employ SQL functions to retrieve customized 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

Tables used in the Course

## **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