

Oracle SQL and PL/SQL for Developers

Course ISI-1527 5 Days Instructor-led, Hands on

Introduction

If you're developing applications that access Oracle databases, you can save time and work by having SQL do more of the data handling for you: This five day, instructor-led course shows you how. It teaches you how to create effective SQL queries to extract and update the data in an Oracle database. It teaches you how to design and implement a database, giving you insight into performance and security issues. It teaches you how to use PL/SQL to take advantage of powerful features like stored procedures, functions, and triggers. In short, it teaches you to create the kind of efficient database applications that make you a more effective and valuable developer

Prerequisites

Students should have some development experience. Everything you need to know about databases and SQL is presented in this course, so you don't need to have any programming background.

Course Objectives

- Learn the concepts and terms you need for working with any database.
- Learn how to use Oracle Database and Oracle SQL Developer to run SQL statements
- Learn all the SQL skills for retrieving data from a database and for adding, updating and deleting that data.
- Learn how to design a database and how to implement that design by using the DDL (Data Definition Language) statements that are a part of SQL
- Learn how to use Oracle's procedure language, PL/SQL, to create stored procedures, functions and triggers. You'll also learn how to manage transactions and locking.
- Learn how to work with the timestamp, interval, and large object data types; features that are critical for storing data.

Course Outline

Module 1: An Introduction to SQL

- An introduction to client/server systems
- The hardware components of a client/server system
- The software components of a client/server system

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- Other client/server architectures

Module 2: How to use Oracle SQL Developer and Other Tools

- How to work with an Oracle database
- How to use SQL Developer to work with a database
- How to use SQL Developer to run SQL statements
- How to use the SQL Reference manual

Module 3: How to retrieve data from a single table

- An introduction to the SELECT statement
- How to code the SELECT clause
- How to code the WHERE clause
- How to code the ORDER BY clause
- How to code the row limiting clause

Module 4: How to Retrieve Data from Two or More Tables

- How to work with inner joins
- How to work with outer joins
- Other skills for working with joins
- How to work with unions

Module 5: How to Code Summary Queries

- How to work with aggregate functions
- How to group and summarize data
- How to summarize data using Oracle extensions

Module 6: How to Code Subqueries

- An introduction to subqueries
- How to code subqueries in search conditions
- Other ways to use subqueries
- Guidelines for working with complex queries
- Two more skills for working with subqueries

Module 7: How to insert, update and delete data

- How to create test tables
- How to commit and rollback changes
- How to insert new rows
- How to update existing rows
- How to delete existing rows

Module 8: How to Work with Data Types and Functions

- The built-in data types

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- How to convert data from one type to another
- How to work with character data
- How to work with numeric data
- How to work with date/time data
- Other functions you should know about

Module 9: How to Design a Database

- How to design a data structure
- How to normalize a data structure

Module 10: How to Create Tables, Indexes and Sequences

- How to work with tables
- How to work with indexes
- How to work with sequences
- The script used to create the AP tables
- How to automatically generate ID values
- How to use SQL Developer

Module 11: How to Create Views

- An introduction to views
- How to work with views
- How to use SQL Developer

Module 12: How to Manage Database Security

- An introduction to database security
- How to manage database security
- How to use SQL Developer

Module 13: How to Write PL/SQL Code

- An introduction to PL/SQL
- How to code the basic PL/SQL statements
- Other scripting and PL/SQL skills

Module 14: How to Manage Transactions and Locking

- How to work with transactions
- How to work with concurrency and locking

Module 15: How to Create Stored Procedures

- How to code stored procedures
- How to code user-defined functions
- How to work with packages
- How to use SQL Developer

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Module 16: How to Create Triggers

- How to work with triggers
- Other skills for working with triggers
- How to use SQL Developer

Module 17: How to Work with Timestamps and Intervals

- An introduction to time zones
- How to work with timestamps
- How to work with intervals

Module 18: How to Work with Large Objects

- An introduction to large objects
- How to use SQL to work with large objects
- How to use Java to work with large objects
- How to use PL/SQL to work with large objects