

Introduction to Oracle9i: SQL

Duration: 5 Days

What you will learn

This class is applicable to Oracle9i and Oracle8i users. You learn concepts of relational databases, to create database structures and to store, retrieve, and manipulate data. Here you learn to query using Basic SQL Statements, restrict, sort, perform single row functions and group the queried data. You will write advanced SELECT statements and use advanced techniques such as ROLLUP, CUBE, set operators, and hierarchical retrieval. You will query multiple tables, perform nested queries, implement constraints, use date and time functions, and create sequences and views. You learn to write SQL and SQL*Plus script files using the iSQL*Plus tool to generate report-like output. Demonstrations and hands-on practice reinforce the fundamental concepts. The SQL Workshop will enhance your learning experience of SQL.

This course counts towards the Hands-on course requirement for the Oracle 9i Database Administrator Certification. Only instructor-led inclass or instructor-led online formats of this course will meet the Certification Hands-on Requirement. Self Study CD-Rom and Knowledge Center courses are excellent study and reference tools but DO NOT meet the Hands-on Requirement for certification.

Audience

Database Administrators
System Analysts

Prerequisites

Suggested Prerequisites

Familiarity with data processing concepts and techniques
Ability to use a graphical user interface (GUI)

Course Objectives

Describe relational and object relational database concepts
Retrieve, insert, update, and delete data
Use the Single row and Group functions
Retrieve data using additional advanced techniques like using ROLLUP, CUBE, set operators, correlated subqueries and
Solve problems by using multicolumn subqueries, subqueries in the from clause of a SELECT statement, correlated subc
Use the iSQL*Plus environment
Write scripts to generate script files
Generate reports using iSQL*Plus
Create and maintain database objects
Control transactions
Control data/user access
Use the Oracle9i Single row functions
Use GROUPING SETS and the WITH clause
Use the Oracle9i extensions to DML and DDL statements
Apply techniques in real life simulation

Course Topics

Introduction

Describing the Life Cycle Development Phases

Defining a Relational Database

Discussing the Theoretical, Conceptual, and Physical Aspects of a Relational Database

Describing How a Relational Database Management System (RDBMS) Is Used to Manage a Relational Database

Describing the Oracle Implementation of Both the RDBMS and the Object Relational Database Management System (ORDBMS)

Describing How SQL Is Used in the Oracle Product Set

Writing a Basic SQL Statement

Describing the SQL Select Capabilities

Executing a Basic Select Statement with the Mandatory Clauses

Differentiating Between SQL and iSQL*Plus Commands

Restricting and Sorting Data

Limiting the Rows Retrieved by a Query

Sorting the Rows Retrieved by a Query

Single Row Functions

Describing Various Types of Functions Available in SQL

Using a Variety of Character, Number, and Date Functions in SELECT Statements

Explaining What the Conversion Functions Are and How They Are Used

Using Control Statements

Displaying Data from Multiple Tables

Writing SELECT Statements to Access Data from More Than One Table

Describing the Cartesian Product

Describing and Using the Different Types of Joins

Writing Joins Using the Tips Provided

Aggregating Data by Using Group Functions

Identifying the Different Group Functions Available

Explaining the Use of Group Functions

Grouping Data by Using the GROUP BY Clause

Writing Subqueries

Describing the Types of Problems That Subqueries Can Solve

Describing Subqueries

Listing the Types of Subqueries

Writing Single-Row and Multi-Row Subqueries

Describing and Explaining the Behavior of Subqueries When NULL Values Are Retrieved

Producing Readable Output with iSQL*Plus

Producing Queries That Require an Input Variable

Customizing the iSQL*Plus Environment

Producing More Readable Output

Creating and Executing Script Files

Manipulating Data

Describing Each Data Manipulation Language (DML) Command

Inserting Rows into a Table

- Updating Rows in a Table
- Deleting Rows from a Table
- Merging Rows into a Table
- Controlling Transactions
- Describing Transaction Processing
- Describing Read Consistency and Implicit and Explicit Locking

Creating and Managing Tables

- Describing the Main Database Objects
- Creating Tables
- Describing the Oracle Data Types
- Altering Table Definitions
- Dropping, Renaming, and Truncating Tables

Including Constraints

- Describing Constraints
- Creating and Maintaining Constraints

Creating Views

- Describing Views and Their Uses
- Creating a View
- Retrieving Data by Means of a View
- Inserting, Updating, and Deleting Data Through Views
- Dropping Views
- Altering the Definition of a View
- Inline Views
- Top 'N' Analysis

Other Database Objects

- Creating, Maintaining, and Using Sequences
- Creating and Maintaining Indexes
- Creating Private and Public Synonyms

Controlling User Access

- Understanding the Concepts of Users, Roles, and Privileges
- Granting and Revoking Object Privileges
- Creating Roles and Granting Privileges to Roles
- Creating Synonyms for Ease of Table Access

SQL Workshop

- Applying Techniques Learned in This Course
- Preparing for Future Oracle Courses

Using Set Operators

- Describing the Set Operators
- Obeying the Set Operators Rules and Guidelines
- Using a Set Operator to Combine Multiple Queries into a Single Subquery
- Controlling the Order of Rows Returned

Oracle 9i Datetime Functions

- Using DATETIME Functions
- Using the NVL2 Function to Handle NULL Values

Enhancements to the GROUP BY Clause

Using ROLLUP as an Extension to the GROUP BY Clause to Produce Subtotal Values

Using CUBE as an Extension to the GROUP BY Clause to Produce Cross-Tabulation Values

Using the GROUPING Function to Identify the Row Values Created by ROLLUP or CUBE Operators

Using GROUPING SETS to Produce a Single Result Set That Is Equivalent to a UNION ALL Approach

Using the WITH Clause

Advanced Subqueries

Multiple-Column Subqueries

Writing a Subquery in the FROM Clause

Writing and describing Correlated Subquery

Using EXISTS and NOT EXISTS Operators

Updating and Deleting Rows Using Correlated Subqueries

Using Scalar Subqueries in SQL

Hierarchical Retrieval

Discussing the Benefits of the Hierarchical Query

Ordering the Rows Retrieved by a Query in a Hierarchical Manner

Formatting Hierarchical Data so That It Is Easy to Read

Excluding Branches from the Tree Structure

Oracle9i Extensions to DML and DDL Statements

Discussing Multitable Inserts

Creating and Using External Tables

Naming the Index and Using the CREATE INDEX Command at the Time of Creating Primary Key Constraint

Related Courses

Introduction to Oracle9i: SQL Self-Study CD Course