

Oracle Database: SQL Fundamentals I

Duration: 3 Days

What you will learn

Audience

Application Developers
End Users
Forms Developer
Functional Implementer

PL/SQL Developer

Portal Developer

Reports Developer

Technical Consultant

Related Training

Required Prerequisites

Familiarity with data processing concepts and techniques.

Course Objectives

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

Employ SQL functions to generate customized data.

Create reports of aggregated data.

Use the SET operators to create subsets of data.

Run data manipulation statements (DML) in Oracle Database 11g.

Run data definition language (DDL) statements to create schema objects.

Identify the major structural components of Oracle Database 11g.

Retrieve data from tables.

Create reports of sorted and restricted data.

Course Topics

Introduction

Overview of Oracle Database 11g and related products

Overview of relational database management concepts and terminologies

Introduction to SQL and its development environments

The HR schema and the tables used in this course

Oracle Database documentation and additional resources

Retrieve Data Using the SQL SELECT Statement

List the capabilities of SQL SELECT statements

Generate a report of data from the output of a basic SELECT statement

Usage of arithmetic expressions and NULL values

Implement Column aliases

Describe the concatenation operator, literal character strings, alternative quote operator, and the DISTINCT keyword

Display the table structure using the DESCRIBE command

Restrict and Sort Data

Write gueries with a WHERE clause to limit the output retrieved

Use the comparison operators and logical operators

Identify the rules of precedence for comparison and logical operators

Usage of character string literals in the WHERE clause

Write queries with an ORDER BY clause

Sort output in descending and ascending order

Substitution Variables

Use Single-Row Functions to Customize Output

Differentiate between single row and multiple row functions

Manipulate strings using character functions

Manipulate numbers with the ROUND, TRUNC, and MOD functions

Perform arithmetic with date data

Manipulate dates with the DATE functions

Conversion Functions and Conditional Expressions

Describe implicit and explicit data type conversion

Describe TO CHAR, TO NUMBER, and TO DATE conversion functions

Nesting multiple functions

Apply the NVL, NULLIF, and COALESCE functions to data

Use conditional IF THEN ELSE logic

Aggregated Data Using Group Functions

How aggregation functions help to produce meaningful reports?

Use the AVG, SUM, MIN, and MAX function

How to handle Null Values in a group function?

Divide the data in groups by using the GROUP BY clause

Exclude groups of date by using the HAVING clause

Display Data From Multiple Tables Using Joins

Write SELECT statements to access data from more than one table

Join Tables Using SQL:1999 Syntax

View data that does not meet a join condition by using outer joins

Join a table to itself by using a self join

Create Cross Joins

Use Sub-queries to Solve Queries

Use a Subquery to Solve a Problem

Execute Single-Row Sub-queries
Deploy Group Functions in a Sub-query
Multiple-Row Subqueries
Use ANY and ALL Operator in Multiple-Row Sub-queries
Use EXISTS Operator

SET Operators

What are SET operators?
Use a SET operator to combine multiple queries into a single query
Use UNION, UNION ALL, INTERSECT, and MINUS Operator
Use ORDER BY Clause in Set Operations

Data Manipulation

Add New Rows to a Table
Change the Data in a Table
Use DELETE and TRUNCATE Statements
Save and discard changes with the COMMIT and ROLLBACK statements
Implement Read Consistency
Describe the FOR UPDATE Clause

Use DDL Statements to Create and Manage Tables

Categorize Database Objects
Create Tables using the CREATE TABLE Statement
Identify the data types
Describe Constraints
Create a table using a subquery
How to alter a table?
Drop a table

Other Schema Objects

Create, modify, and retrieve data from a view
Perform Data manipulation language (DML) operations on a view
Drop a view
Create, use, and modify a sequence
Create and maintain indexes
Create and drop synonyms