

Oracle Database: SQL Fundamentals I

Duration: 3 Days

What you will learn

This course is now offered as part of a 5-day course [/a/b/p/p/b/pulli/lili/lili/lili/lili/li/ul/b/p/p/p/p/p/](#)

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 queries 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 data 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