



Oracle Database 12c: SQL Fundamentals I

Course ID#: 0380-070-12-W

Hours: 21

Course Content

Course Description:

Learning the SQL language is one of the most basic tasks required for the use of a relational database. SQL proficiency is essential for business users, database developers, database administrators and any other database professional. This course introduces the basics of the SQL language and the Oracle Relational Database Management System (RDBMS). One will become acquainted with the differences in the working environment between a traditional on-premise database installation and the Oracle database service cloud-computing platform.

Since SQL is an industry standard language, many of the topics presented and many of the skills you will acquire will be applicable to other database platforms, such as Microsoft SQL Server, IBM DB2, the open-source databases MySQL and PostgreSQL, and others.

This course takes a unique approach to SQL training in that it incorporates data modeling theory, relational database theory, graphical depictions of theoretical concepts and numerous examples of actual SQL syntax into one learning vehicle.

Target Student:

The target audience for this course is all Oracle professionals, both business and systems professionals. Among the specific groups for whom this textbook will be helpful are:

- Business and non-IT professionals
- Application designers and database developers
- Business Intelligence (BI) analysts and consumers
- Database administrators
- Web server administrators



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Topics:

Module 1: Relational Databases & Data Models

- About Data Models
- About the Relational Model
- The Electronics Data Model
- About the Relational DBMS

Module 2: Selection & Setup of the Database Interface

- Considering Available Tools
- Selecting the Appropriate Tool
- Oracle NET Database Connections
- Oracle PAAS Database Connections
- Setup SQL Developer
- Setup SQL*PLUS
- Setup JDeveloper

Module 3: Using the Database Interface

- About BIND & SUBSTITUTION Variables
- Using SQL Developer
- Using SQL*PLUS

Module 4: Introduction to The SQL Language

- About the SQL Language
- Characteristics of SQL
- Introducing SQL Using SELECT
- SQL Rules

Module 5: The SELECT Statement

- The SELECT Statement
- DISTINCT / UNIQUE Keyword
- Using ALIAS Names

Module 6: Restricting Results With the WHERE Clause

- About Logical Operators
- EQUALITY Operator
- Boolean Operators
- REGEXP_LIKE()
- IN Operator

Module 7: Sorting Data With the ORDER BY Clause

- About the ORDER BY Clause
- Multiple Column Sorts
- Specify the Sort Sequence
- About NULL Values Within Sorts
- Using COLUMN Aliases

Module 8: Pseudo Columns, Functions, & TOP--N Queries

- ROWID Pseudo Column
- ORA_ROWSCN Pseudo Column
- ROWNUM Pseudo Column
- About the BUILT--IN Functions
- SYSDATE
- USER & UID
- SESSIONTIMEZONE Function
- Using the DUAL Table
- ROW LIMITING & TOP--N Queries
- FETCH FIRST x ROWS ONLY Clause
- OFFSET x ROWS Clause
- FETCH ... PERCENT Clause
- The WITH TIES Option

Module 9: JOINING TABLES

- About JOINS
- INNER JOIN
- REFLEXIVE JOIN
- NON--KEY JOIN
- OUTER JOIN

Module 10: USING THE SET OPERATORS

- About The SET Operators
- SQL SET Operator Examples
- UNION Example
- INTERSECT Example
- MINUS Example
- UNION ALL



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Module 11: Summary Functions Using SUB-- QUERIES

- Finding Data With SUB--QUERIES
- Standard SUB--QUERIES
- Correlated SUB--QUERIES
- The EXISTS Operator

Module 12: Aggregating Data Within Groups

- About SUMMARY Groups
- Find Groups Within the Tables
- Select Data From the Base Tables
- Select Groups from the Results

Module 13: Use DDL to Create & Manage Tables

- CREATE TABLE Statement
- COLUMN Data Types
- NOT NULL
- DEFAULT
- DESCRIBE
- ALTER TABLE Statement
- DROP TABLE Statement
- Table DDL Using SQL Developer
- ALTER USER Statement
- ALTER SESSION Statement
- NLS_LANGUAGE
- NLS_DATE

Module 14: Use DML to Manipulate Data

- The INSERT Statement
- The DELETE Statement
- The UPDATE Statement
- About TRANSACTIONS
- TRANSACTION ROLLBACK
- TRANSACTION COMMIT
- TRANSACTION SAVEPOINT
- The SET TRANSACTION Statement
- SET TRANSACTION READ ONLY Statement
Rules