



## Oracle Database 12c: SQL I - Introduction



ora12c020-ver2

Learning Resources Available From The Sideris Training Portal

3 Days

### General 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 textbook 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 textbook 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.

The target audience for this textbook 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

### Target Audience

### About Series

This textbook is part of the Sideris Oracle SQL Expert series, which in turn is one of the learning paths from the Sideris Oracle Database 12c: SQL & PL/SQL Programming curriculum.

### Certification

This textbook and the subsequent ones within this series consider subjects applicable to certification as an Oracle Database Certified SQL Expert. The topics considered are included within "Exam 1Z0-047: Oracle Database: SQL Certified Expert".

### Content Summary

Volumes: 2  
Pages: 526  
Workshops: 12  
Exercises: 67

### Training Suggestions

This textbook may be used as one module within a Sideris textbook kit entitled Oracle Database 12c: SQL Fundamentals (Levels I & II). When delivered in this format as an instructor-led training (ILT) or live virtual training session, the suggested presentation length of all chapters is between 5 and 6 days.

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### Objectives

The first portion of this textbook considers the logical models upon which a relational database is based and the various configurations and environments in which you may work with the Oracle database. The next segment focuses on the actual SQL syntax for writing database queries. You will begin with the simplest of queries and then proceed onto moderately complex query scenarios. Finally, this textbook covers the DDL, DML and transaction control portions of the SQL language that allow one to create, maintain and manipulate application database objects and application data.

### Contents

#### Relational Databases & Data Models

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

#### 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

#### Using the Database Interface

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

#### Introduction to The SQL Language

- About the SQL Language

- Characteristics of SQL
- Introducing SQL Using SELECT
- SQL Rules

#### The SELECT Statement

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

#### Restricting Results With the WHERE Clause

- About Logical Operators
- EQUALITY Operator
- Boolean Operators
- REGEXP\_LIKE()
- IN Operator

#### 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



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### 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

### JOINING TABLES

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

### USING THE SET OPERATORS

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

### Summary Functions

### Using SUB-QUERIES

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

### Aggregating Data Within Groups

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

### 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

### Use DML to Manipulate Data

- The INSERT Statement
- The DELETE Statement
- The UPDATE Statement
- About TRANSACTIONS
- TRANSACTION ROLLBACK
- TRANSACTION COMMIT
- TRANSACTION SAVEPOINT

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- The SET TRANSACTION Statement
- SET TRANSACTION READ ONLY Statement Rules