



## Oracle Database 12c: SQL II - Intermediate



ora12c030-ver2

Learning Resources Available From The Sideris Training Portal

3 Days

### General Description

This textbook builds upon the prerequisite introductory volume from the Sideris Oracle Database 12c: SQL Expert Series and considers intermediate-level SQL topics such as writing database queries using the SQL-99 syntax and exploiting the power of built-in functions that extend the capabilities of SQL.

You will learn how to complete of an application schema definition by creating database objects such as relational views, sequences, synonyms, indexes and others to compliment the table definitions. The crucial topic of data integrity and how this is protected using declarative constraints is covered.

With this textbook we will also leave the idyllic realm of the learning environment and begin to explore such practical real-world considerations as database object security and database performance.

The 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:

### Target Audience

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

### 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 considers 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". One must also complete the related volumes from the Sideris Oracle Database 12c: SQL Expert Series entitled Oracle Database 12c: SQL I – Introduction and Oracle Database 12c: SQL III - Advanced to prepare for this certification.

### Content Summary

Volumes: 2  
Pages: 531  
Workshops: 14  
Exercises: 88

### Training Suggestions

This textbook may be used as one module within a kit entitled Oracle Database 12c: SQL Fundamentals Library (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

This textbook demonstrates how one can build intermediate-level and even advanced queries using the SQL-99 join syntax, along with other advanced query topics. It also considers both ANSI/ISO and native Oracle SQL built-in functions and the tremendous power that functions offer to SQL operations. It is difficult for one to use SQL within a production environment without liberal use of the built-in functions. Among many other tasks, the built-in functions allow one to move beyond the use of primitive data types and values to include timestamps, time zones and to address other realistic date and time challenges. Finally attention is given to how one completes an application schema by creating database objects to compliment table definitions. One cannot implement a production database application simply with table and column definitions but needs to create and manage views, indexes, constraints and other object types.

### Contents

#### Understanding The Data Models

- The Company Data Model
- The Electronics Data Model

#### About The SQL-99 Standard

- SQL-92 & SQL-99
- Cross Joins
- Natural Joins
- Inner Joins
- Implicit Inner Join
- Outer Joins
- Anti Joins
- Named Sub-Queries

#### Enhancing Groups With ROLLUP & CUBE

- Using ROLLUP
- The GROUPING() Function
- Using CUBE

#### Using The CASE Expression

#### Sql Functions: Character Handling

- What Are The Sql Functions?
- String Formatting Functions
- UPPER(), LOWER() Example
- INITCAP() Example
- Character Codes Functions
- CHR(), ASCII() Examples
- PAD & TRIM FUNCTIONS
- RPAD() Example
- RTRIM() Example
- TRIM() Example
- String Manipulation Functions
- DECODE() Example
- SUBSTR() Example
- INSTR() Example
- TRANSLATE() Example
- REPLACE() Example
- String Comparison Functions
- LEAST() Example



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- Phonetic Search Function
- SOUNDIX() Example

### Sql Functions: Numeric Handling

- About The Numeric Data Functions
- GREATEST() Example
- ABS() Example
- ROUND() Example
- TRUNC() Example
- SIGN() Example
- TO\_NUMBER() Example & Data Type Conversions
- NULL VALUES FUNCTIONS
- NVL() & NVL2() Function
- NVL() Example (Character)
- NVL() Example (Numeric Loss Of Data)
- NVL() Example (Numeric Output)
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- TO\_CHAR() Examples
- TO\_DATE() Examples
- EXTRACT() Example
- DATE ARITHMETIC FUNCTIONS
- MONTHS\_BETWEEN() Example
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- LAST\_DAY() Example
- NEXT\_DAY() Example
- TRUNC(), ROUND() Dates Example
- NEW\_TIME() Example

- About V\$TIMEZONE\_NAMES
- CAST() FUNCTION & TIME ZONES

### Database Objects: About Database Objects

- About Database Objects
- About Schemas
- Making Object References

### Database Objects: Relational Views

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- The Create View Statement
- Why Use Views?
- Accessing Views With DML
- Maintaining View Definitions
- Alter View
- Drop View
- DDL Using SQL Developer

### Database Objects: Indexes

- About Indexes
- CREATE & DROP INDEX Statements
- Indexes & Performance
- Data Dictionary Storage

### Database Objects: Creating Other Objects

- About Sequences
- Referencing NEXTVAL
- Referencing CURRVAL
- Within The DEFAULT Clause
- ALTER SEQUENCE & DROP SEQUENCE
- ALTER SEQUENCE
- DROP SEQUENCE
- About Identity Columns

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- CREATE TABLE ... GENERATED AS IDENTITY
- ALTER TABLE ... GENERATED AS IDENTITY
- START WITH LIMIT VALUE
- ALTER TABLE ... DROP IDENTITY
- ABOUT SYNONYMS
- CREATE & DROP SYNONYM Statements
- CREATE SYNONYM
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- Public Vs. Private Synonyms
- CREATE SCHEMA AUTHORIZATION

### Database Objects: Object Management Using DDL

- The RENAME Statement
- TABLESPACE Placement
- CREATE TABLE ... TABLESPACE
- The COMMENT Statement
- The TRUNCATE TABLE Statement

### Database Objects: Security

- About Object Security
- Grant Object Privileges
- Revoke Object Privileges
- Object Privileges & SQL Developer

### Data Integrity Using Constraints

- About Constraints
- NOT NULL Constraint
- NOT NULL Example
- CHECK Constraint
- UNIQUE Constraint
- PRIMARY KEY Constraint
- REFERENCES Constraint
- ON DELETE CASCADE Example

- ON DELETE SET NULL Example
- CONSTRAINTS ON EXISTING TABLES
- Constraints & SQL Developer

### Managing Constraint Definitions

- Renaming & Dropping Constraints
- Enabling & Disabling Constraints
- Deferred Constraint Enforcement
- Set Constraints
- Handling Constraint Exceptions
- Constraints With Views
- Data Dictionary Storage

### The Data Dictionary Structure

- More About The Data Dictionary
- Object-Specific Dictionary Views
- USER\_UPDATABLE\_COLUMNS
- The Dictionary Structure
- Metadata & SQL Developer

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