CONCEPT

# Oracle SQL Course: Queries, Joins, Database Objects and Analytic Functions



**Oracle SQL Course: Queries, Joins, Database Objects and Analytic Functions**

## Introduction:

Oracle SQL, covering queries, joins, database objects and analytic functions, is a 1-week course for application developers, report writers, data analysts and junior database staff, ending with an Oracle SQL Query and Schema Toolkit of tested scripts and a query review checklist. Many teams depend on Oracle Database yet write slow or incorrect queries, build objects without constraints and grant broader access than needed. Nominees already use databases or reports at work, and teaching is hands-on in a lab with Oracle SQL Developer and SQLPlus. CoreConcept Training Center delivers this Oracle SQL course.

## Course Objectives:

- Write SELECT statements in Oracle SQL Developer that filter, sort and format data with single-row functions
- Combine data from several tables using joins, subqueries and set operators without duplicate or missing rows
- Summarise and rank data with group functions, GROUP BY, analytic functions and hierarchical queries
- Create and maintain tables, constraints, sequences, views, indexes and synonyms with DDL scripts
- Change data safely with DML, transaction control and user privileges and roles
- Read an EXPLAIN PLAN and assemble an Oracle SQL Query and Schema Toolkit for the team

## Target Audience:

- Application developers responsible for the SQL inside business applications
- Report writers responsible for extracting and shaping data for management reports
- Data analysts responsible for querying operational data held in Oracle Database
- Junior database staff responsible for creating schema objects and running scripts
- Support analysts responsible for investigating data issues reported by users

## Course Outline:

### Day 1: Oracle Database Foundations and Basic Queries

- Oracle Database Instance, Schema and Tablespace Concepts
- Oracle SQL Developer and SQLPlus Session Setup
- SELECT Statement Column Selection, Aliases and Expressions
- WHERE Clause Filtering and ORDER BY Sorting Rules
- Single-Row Character, Number and Date Functions

## Day 2: Joins, Subqueries and Set Operators

- Inner and Outer Joins With ANSI Join Syntax
- Self Joins and Non-Equijoins for Lookup Data
- Single-Row and Multiple-Row Subquery Patterns
- Correlated Subqueries With EXISTS and NOT EXISTS
- UNION, INTERSECT and MINUS Set Operator Queries

## Day 3: Aggregation, Analytic Functions and Hierarchical Queries

- Group Functions With GROUP BY and HAVING
- Analytic Functions for Ranking, Running Totals and Windows
- Hierarchical Queries Using CONNECT BY and START WITH
- Conversion Functions and NULL Handling With NVL and COALESCE
- CASE Expressions and DECODE for Conditional Reporting

## Day 4: Schema Objects, Data Changes and Access Control

- CREATE TABLE Data Types and Integrity Constraints
- Sequences, Views, Indexes and Synonyms Creation Scripts
- INSERT, UPDATE, DELETE and MERGE Statement Practice
- COMMIT, ROLLBACK and SAVEPOINT Transaction Control
- Users, Roles and Object Privileges With GRANT

## Day 5: Lab Practice and the Query Toolkit

- EXPLAIN PLAN Reading for Full Scans and Index Use
- PL/SQL Anonymous Block Structure and Variables Introduction
- Reporting Lab Combining Joins, Analytics and Hierarchies
- Schema Build Lab With Constraints, Views and Grants
- Oracle SQL Query and Schema Toolkit Completion

# Skills You Will Gain:

- Oracle SQL Querying
- Multi-Table Join Design
- Subquery Construction
- Analytic Function Use
- Schema Object Creation
- Transaction Control
- Database Privilege Management
- Execution Plan Reading

## Why Attend This Course:

- Deliver an Oracle SQL Query and Schema Toolkit with tested scripts and a review checklist to the application or reporting team lead
- Decide when a join, subquery, analytic function or index is the right choice for a reporting or application need
- Avoid wrong report figures, slow queries and over-broad access caused by untested SQL and missing constraints
- Share the query patterns, script templates and review checklist with colleagues who write SQL

## Conclusion:

Back at work, the participant gives the Oracle SQL Query and Schema Toolkit to the application or reporting team lead and the database owner. The team uses it as the reference for writing report queries, creating schema objects and granting access, and as a checklist before scripts reach production. After the first month, the team should compare query run times and data errors with earlier reports and add any new patterns or checks to the toolkit.

## Frequently Asked Questions FAQ:

### What should participants know before an Oracle SQL course?

Participants should be comfortable with tables, rows and columns and have used a database or reporting tool at work. No previous SQL is required, but bringing typical report requirements helps them apply the lab exercises to their own data.

### How does an Oracle SQL course differ from an Oracle database administration course?

This course teaches writing queries, building schema objects and managing data and privileges with SQL. Database administration courses cover installation, backup and recovery, storage and instance tuning, which this course does not teach.

### Why do Oracle SQL analytic functions matter for reporting?

Analytic functions rank, total and compare rows within a group without collapsing them, so one query can produce running totals, top-N lists and period comparisons that would otherwise need several queries or manual work in spreadsheets.

### What do participants take back from the Oracle SQL course?

Participants take back an Oracle SQL Query and Schema Toolkit with tested query patterns, DDL and DML script templates, a privileges script, a PL/SQL starter block and a checklist for reviewing queries and execution plans.