Oracle SQL (4 Days)

This Oracle training course is designed for students new to writing SQL queries with Oracle. While most of the SQL learned in this course is standard to all modern databases, the course focuses specifically on Oracle's implementation. The course is full of exercises, so students get a lot of practice writing SQL queries to solidify the skills learned in class.

Course Topics

- Understand how Oracle works
- Learn how tables are structured and how data is stored.
- Learn to use Oracle to output reports.
- Learn to use SQL functions.
- Learn to group data to get aggregate values.
- Learn to write joins and subqueries to get data from multiple tables.
- Learn to use SET operators.
- Learn to do conditional processing with CASE.
- Learn to write INSERT, UPDATE, and DELETE statements.
- Learn to create views.

Course Outline

Relational Database Basics
- Brief History of SQL
- Relational Databases
  - Tables
  - Rows
  - Columns
  - Relationships
  - Data Types
  - Primary Keys
  - Foreign Keys
  - Relational Database Management System
- Popular Databases
  - Commercial Databases
  - Popular Open Source Databases
- Schemas and Users
  - Connection Lines
  - Tables

Creating Tables

- Data Types
- Creating Tables
  - NULL Values
  - Primary Keys
  - Foreign Keys
- Adding Constraints
  - Dropping Constraints
- UNIQUE Constraints
- Adding and Dropping Columns
- Dropping Tables

Basic Selects

- Comments
- Whitespace and Semi-colons
- Case Sensitivity
- SELECTing All Columns in All Rows
- SELECTing Specific Columns
- Sorting Records
  - Sorting by a Single Column
  - Sorting By Multiple Columns
  - Ascending and Descending Sorts
- The WHERE Clause and Logical Operator Symbols
  - Checking for Equality
  - Checking for Inequality
  - Checking for Greater or Less Than
  - Checking for NULL
  - WHERE and ORDER BY
- Checking Multiple Conditions with Boolean Operators
  - AND
  - OR
  - Order of Evaluation
- The WHERE Clause and Logical Operator Keywords
  - The BETWEEN Operator
  - The IN Operator
  - The LIKE Operator
  - The NOT Operator
- Limiting Rows
  - Fetching a Percent of Records

Oracle SQL Functions

- The DUAL Table and Column Aliases
  - Column Aliases
- Calculated Fields '
  - Concatenation
  - Mathematical Calculations
- ROW_NUMBER()
- Numeric Functions

- ABS(), POWER(), and SQRT()
- CEIL(), FLOOR(), and ROUND()
- ROUND(num1, num2) and TRUNC(num1, num2)
- MOD()

Character Functions Returning Character Values
- TO_CHAR(number, format_model)
- CONCAT()
- LOWER(), UPPER(), and INITCAP()
- LPAD() and RPAD()
- TRIM(), LTRIM(), and RTRIM()
- REPLACE() and SUBSTR()

Character Functions Returning Number Values
- INSTR() and LENGTH()

Datetime Functions
- CURRENT_DATE, CURRENT_TIMESTAMP, SYSDATE, and SYSTIMESTAMP
- TO_DATE()
- TO_CHAR(datetime, format_model)
- ROUND() and TRUNC()

NULL-Related Functions
- COALESCE()
- NVL()
- NVL2()

Other Functions
- DECODE()
- GREATEST() and LEAST()

Aggregate Functions

Introduction to Aggregate Functions

Grouping Data
- GROUP BY
- HAVING
- Order of Clauses
- Grouping Rules

Selecting Distinct Records

ROLLUP() and CUBE()
- ROLLUP()
- CUBE()

Joins

Inner Joins

Outer Joins
- Left Joins
- Right Joins
- Full Outer Joins

Subqueries

- Subquery Basics
- Subqueries in the SELECT Clause
  - Combining SELECT and WHERE Subqueries

Set Operators

- Set Operators
- Rules for Set Operations
- UNION
- UNION ALL
- INTERSECT
- MINUS

Conditional Processing with CASE

- Using CASE
- Selected Case
- Searched Case

Data Manipulation Language

- INSERT
- UPDATE
- DELETE
- Updating and Deleting Multiple Records

Creating Views

- Creating Views
  - Dropping Views
- Benefits of Views
- Inline Views

Class Materials

Each student in our Live Online and our Onsite classes receives a comprehensive set of materials, including course notes and all the class examples.