

**Oracle SQL Programming**

**Course Number:** ORC-330  
**Duration:** 4 days

**Overview**

Accelebrate's Introduction to Oracle SQL Programming training teaches students how to create, retrieve, and manipulate objects in Oracle Structured Query Language (SQL). Students will also be introduced to Oracle® database features and tools.

**Prerequisites**

No prior experience is presumed.

**Materials**

All students receive comprehensive courseware and a related textbook.

**Software Needed on Each Student PC**

* At least 8 GB RAM
* A complete installation of Oracle 19 or higher
* Oracle SQL Developer
* Please contact us for detailed setup instructions if you have purchased this class.

**Objectives**

* Use SQL Developer and other available SQL interfaces.
* Write simple SQL queries and format & sort the data as needed.
* Write moderately complex SQL queries using various join techniques.
* Supplement SQL code with references to pseudo columns and system functions.
* Summarize, group, and combine data to obtain more meaningful query results.
* Draw conclusions and make business decisions based upon the data processed.
* Learn advanced query techniques such as set operations, sub-queries, and summary functions.
* Create and maintain database tables using the SQL Data Definition Language (DDL).
* Manage data within tables using the SQL Data Manipulation Language (DML).
* Take advantage of regular expressions and support for international data and time zones.
* Learn to use the SQL99 join syntax.
* Perform advanced SQL queries using techniques e.g. CASE structures, rollup, and cube operations.
* Use advanced table definitions and the creation of indexes, sequences, and views.
* Use the powerful set of built-in SQL functions.
* Handle DML errors without application interruption.
* Obtain database object metadata from the data dictionary.
* Understand basic database security and object privileges.
* Protect database integrity and extend the conceptual data model using declarative constraints.
* Use SQL Developer and other available SQL interfaces.

**Outline**

* Introduction
* Relational Database Basics
  + Brief History of SQL
  + Relational Databases
  + Popular Databases
  + Schemas and Users
* Creating Tables
  + Data Types
  + Creating Tables
  + Creating Tables (Exercise)
  + Adding Constraints
  + Altering the departments\_copy Table (Exercise)
  + UNIQUE Constraints
  + Adding and Dropping Columns
  + Dropping Tables
* Basic Selects
  + Comments
  + Whitespace and Semi-colons
  + Case Sensitivity
  + SELECTing All Columns in All Rows
  + Exploring the Tables (Exercise)
  + SELECTing Specific Columns
  + SELECTing Specific Columns (Exercise)
  + Sorting Records
  + Sorting Results (Exercise)
  + The WHERE Clause and Logical Operator Symbols
  + Using the WHERE Clause to Check for Equality or Inequality (Exercise)
  + Checking for Greater Than or Less Than
  + Using the WHERE Clause to Check for Greater or Less Than (Exercise)
  + Checking for Null and Not Null
  + Checking for NULL (Exercise)
  + WHERE and ORDER BY
  + Using WHERE and ORDER BY Together (Exercise)
  + Checking Multiple Conditions with Boolean Operators
  + Writing SELECTs with Multiple Conditions (Exercise)
  + The WHERE Clause and Logical Operator Keywords
  + More SELECTs with WHERE (Exercise)
  + Limiting Rows
  + Working with FETCH (Exercise)
* Oracle SQL Functions
  + The DUAL Table and Column Aliases
  + Calculated Fields
  + Calculating Commissions (Exercise)
  + ROW\_NUMBER()
  + Numeric Functions
  + Using MOD() (Exercise)
  + Character Functions Returning Character Values
  + Concatenation (Exercise)
  + More Character Functions Returning Character Values
  + Character Functions Returning Number Values
  + Datetime Functions
  + Dates (Exercise)
  + SQL\*Plus column Command
  + NULL-Related Functions
  + NULL Functions (Exercise)
  + Other Functions
* Aggregate Functions
  + Introduction to Aggregate Functions
  + Working with Aggregate Functions (Exercise)
  + Grouping Data
  + Grouping Results (Exercise)
  + Selecting Distinct Records
  + ROLLUP() and CUBE()
* Joins
  + Inner Joins
  + Inner Joins (Exercise)
  + Outer Joins
  + Outer Joins (Exercise)
* Subqueries
  + Subquery Basics
  + Subqueries (Exercise)
  + Subqueries in the SELECT Clause
  + Subqueries in SELECTs (Exercise)
* Set Operators
  + Set Operators
  + UNION
  + UNION ALL
  + INTERSECT
  + MINUS
  + Working with Set Operators (Exercise)
  + Set Operators and Aliases
* Conditional Processing with CASE
  + Selected Case
  + Searched Case
  + Working with CASE (Exercise)
* Data Manipulation Language
  + Transactions and Sessions
  + INSERT
  + Inserting Records (Exercise)
  + UPDATE
  + DELETE
  + Updating and Deleting Records (Exercise)
  + Updating and Deleting Multiple Records
* Creating Views
  + Creating Views
  + Benefits of Views
  + Creating a View (Exercise)
  + Inline Views
* Conclusion