



## Oracle SQL & PL/SQL Fundamentals

**Duration: 5 Days    Course Code: OFUN    Delivery Method: Virtual Learning**

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### Overview:

The Oracle SQL & PL/SQL Fundamentals course is designed to give delegates practical experience in writing SQL statements and scripts using Oracle SQL. The basic SELECT statement, the use of SQL functions, SQL\*Plus parameters and the basic table and view handling statements are introduced.

The course also provides practical experience in using Oracle's PL/SQL programming language to implement conditional execution, loop control, cursor handling and exception handling.

### Virtual Learning

This interactive training can be taken from any location, your office or home and is delivered by a trainer. This training does not have any delegates in the class with the instructor, since all delegates are virtually connected. Virtual delegates do not travel to this course, Global Knowledge will send you all the information needed before the start of the course and you can test the logins.

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### Target Audience:

Anyone who needs to use and understand Oracle SQL to query and update an Oracle database; and who also needs an introduction to the PL/SQL programming language.

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### Objectives:

- To provide the skills needed to query and update data held in an Oracle Relational Database.
  - To provide an introduction to Oracle PL/SQL as a preparation for other Oracle products such as Forms and Reports.
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### Prerequisites:

There are no formal pre-requisites for the Oracle SQL & PL/SQL Fundamentals course, although an understanding of databases and exposure to information technology in general would be useful. This knowledge can be gained by attendance on the Relational Databases & Data Modelling Overview course.

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### Follow-on-Courses:

- Oracle PL/SQL Stored Program Units (OSPU)
  - Oracle Forms - Part I (OF19I)
  - Oracle Database 19c Administration (O19CDBA)
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## Content:

### Oracle SQL ; PL/SQL Fundamentals Training Course Course Contents - DAY 1

#### Course Introduction

- Administration and Course Materials
- Course Structure and Agenda
- Delegate and Trainer Introductions

#### Session 1: RELATIONAL DATABASE CONCEPTS

- What is an Oracle Database
- Relational Database Structures
- Tables, Rows and Columns
- Indexes, Primary Keys and Foreign Keys
- Data Types
- The Data Dictionary

#### Session 2: USING SQL\*PLUS

- What is SQL\*Plus
- Getting Started
- Entering and Executing SQL Statements
- Editing SQL Statements
- Creating, Editing and Executing SQL Files

#### Session 3: USING SQL DEVELOPER

- What is Oracle SQL Developer
- Starting SQL Developer
- Configure a Connection
- Navigation Tabs
- SQL Worksheet

#### Session 4: RETRIEVING DATA WITH THE SELECT STATEMENT

- The SELECT Statement
- The SELECT and FROM Clauses
- Conditions and the WHERE Clause
- Other Conditional Operators
- Logical Operators
- The ORDER BY Clause
- Column Aliases
- Arithmetic Expressions
- Precedence of Operators

#### Session 5: AGGREGATE FUNCTIONS

- Overview of Built In Aggregate Functions
- The GROUP BY Clause
- The HAVING Clause Oracle SQL ; PL/SQL Fundamentals Training Course Course Contents - DAY 2

#### Session 6: JOINING TABLES

- Overview of Table Joins
- Inner Joins
- Table Aliases
- Outer Joins
- Self Joins
- ANSI Standard Joins

#### Session 7: NUMERIC, CHARACTER AND DATE FUNCTIONS

- Function Types
- Using the Table dual to try out Functions
- Numeric Functions
- Character Functions
- String Concatenation
- Date Arithmetic and Date Functions

#### Session 8: CONVERSION AND MISCELLANEOUS FUNCTIONS

- Conversion Functions
- The NVL and NVL2 Functions
- The DECODE Function
- CASE Expressions
- The COALESCE and NULLIF Functions

#### Session 9: SQL\*PLUS PARAMETERS

- Command Line Substitution Parameters
- The ACCEPT Command
- The DEFINE and UNDEFINE Commands

#### Session 10: USING SUBQUERIES

- Overview of Subqueries
- Use a Subquery as an Alternative to Join
- Handle Multiple Records in Subqueries
- Subquery in a Having Clause
- Anti-Join
- In-Line Views
- Top-N Queries
- Complex Subqueries
- Multi Column Subqueries
- Correlated Subqueries
- Subquery Rules
- Combining Unrelated Aggregates
- Using the ANY, ALL and SOME Operators Oracle SQL ; PL/SQL Fundamentals Training Course Course Contents - DAY 3

#### Session 11: MANAGING DATA

- Inserting Rows
- Updating Rows
- Deleting Rows
- Verifying Updates
- Transaction Control
- Commit and Rollback
- Savepoints
- Commits and Constraints

#### Session 13: MANAGING INDEXES AND VIEWS

- Creating Indexes
- Dropping Indexes
- Listing Indexes
- Creating and Using Views
- Dropping Views
- Listing Views

#### Session 14: MANAGING SEQUENCES AND SYNONYMS

- Create a Sequence
- View Sequence Details
- Create a Synonym
- List Synonyms Oracle SQL ; PL/SQL Fundamentals Training Course Course Contents - DAY 4

#### Session 15: PL/SQL FUNDAMENTALS

- What is PL/SQL?
- Basic Elements
- Variables and Constants
- Data Types
- Initialising Variables and Assigning Values
- Using SQL Statements in Code
- Generating Output to SQL or SQL Developer

#### Session 16: PROGRAM LOGIC

- IF THEN ELSIF ELSE Statements
- CASE Statements
- The Basic Loop Construct
- WHILE and FOR Loops
- Nested and Labelled Loops
- The GOTO Statement
- The CONTINUE Statement

#### Session 17: USING CURSORS

- What is a Cursor?
- Implicit and Explicit Cursors
- Cursor Operations
- Declaring, Opening and Closing Cursors
- Fetching Rows
- Status Checking
- Using Cursors FOR UPDATE
- The Cursor FOR Loop
- Parameterised Cursors Oracle SQL ; PL/SQL Fundamentals Training Course Course Contents - DAY 5

#### Session 18: EXCEPTIONS AND NESTED BLOCKS

- The EXCEPTION Section
- Types of Exception
- Handling Named System-Raised Exceptions
- Handling Un-named System-Raised

- Amending Data in SQL Developer

#### Session 12: MANAGING TABLES

- Creating Tables
- Specifying Constraints
- Altering Tables,Columns and Constraints
- Dropping Tables,Columns and Constraints
- Copying Tables

#### Exceptions

- User-Declared Exceptions and Application Errors
- WHEN OTHERS THEN NULL
- Nested and Labelled Blocks
- Propagation of Exceptions
- Scope of Variables and Cursors
- Scope of Goto Statements

#### Session 19: PL/SQL RECORDS AND INDEX-BY TABLES

- Declaring Record Types
- Handling PL/SQL Records
- Nested Records
- Declaring PL/SQL Index-By Tables or Associative Arrays
- PL/SQL Table Built-in Functions
- Manipulating PL/SQL Tables or Associative Arrays

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### Further Information:

For More information, or to book your course, please call us on Head Office 01189 123456 / Northern Office 0113 242 5931

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