

## Oracle SQL & PL/SQL Fundamentals

Duration: 5 Days    Course Code: OFUN

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### Overview:

#### Oracle SQL & PL/SQL Fundamentals Course Overview

**English - Please note this course is only available in English.**

Nederlands - Let op: deze training is alleen in het Engels beschikbaar.

Français - Veuillez noter que ce cours est uniquement disponible en anglais.

The Oracle SQL & PL/SQL Fundamentals course is designed to give delegates practical experience in writing SQL statements and s

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### Target Audience:

#### Who will the Course Benefit?

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:

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  - 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:

#### Further Learning

- Oracle PL/SQL Stored Program Units
  - Oracle Database 19c Administration
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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 0800/84.009

[info@globalknowledge.be](mailto:info@globalknowledge.be)

[www.globalknowledge.com/en-be/](http://www.globalknowledge.com/en-be/)