Oracle SQL & PL/SQL Fundamentals

Duration: 5 Days   Course Code: OFUN   Delivery Method: Company Event

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.

Company Events

These events can be delivered exclusively for your company at our locations or yours, specifically for your delegates and your needs. The Company Events can be tailored or standard course deliveries.

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.

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.

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.

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

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

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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