

## Introduction to Oracle for Db2 Developers and DBAs

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### Course Summary

#### Description

This course provides students that have a background with SQL and/or another programming language in a non-Oracle environment with an introduction to Oracle. A discussion of the Oracle architecture will provide the foundation for students to understand both SQL statement and PL/SQL program processing. Students will add to their SQL knowledge Oracle's proprietary extensions to the SQL language. Students will also learn how to write PL/SQL stored procedures, functions, packages and triggers. Hands-on workshops provide students with a solid understanding of the concepts presented in the lectures. This course can be taught for any Oracle version.

#### Topics

- Oracle Architecture for Developers
- Oracle SQL – Proprietary
- Introduction to Oracle PL/SQL
- The PL/SQL DECLARE Section
- The PL/SQL BEGIN Section
- Embedded SQL in PL/SQL Programs
- Processing Multiple Records in PL/SQL Programs
- Declaring, Raising and Handling Program Exceptions in PL/SQL Programs
- PL/SQL Stored Procedures and Functions
- PL/SQL Packages
- PL/SQL Triggers

#### Audience

Experienced Db2 or SQL Server developers.

#### Prerequisites:

There are no prerequisites for this course.

#### Duration

Four days

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### Course Outline

#### I. Oracle Architecture for Developers

- A. Architecture Components
  1. Instance
  2. Database
  3. Tablespace
  4. Segment
  5. Extent
  6. Block
  7. Memory Structures
- B. SQL Behind the Scenes
- C. SQL Performance Considerations
- D. External Tables
- E. Development Tools

#### II. Oracle SQL - Proprietary

- A. Inner Join Options
- B. Outer Join Options
- C. Row Functions
  1. Types
  2. Character
  3. Numeric
  4. Date / Time
  5. Conversion
  6. Miscellaneous
- D. Multi-table INSERT Command
- E. Sequences
- F. Oracle View Options

#### III. Introduction to Oracle PL/SQL

- A. Types of PL/SQL Programs
  1. Anonymous Blocks
  2. Stored Procedures
  3. Functions
  4. Packages
  5. Triggers
- B. Program Sections
  1. DECLARE
  2. BEGIN
  3. EXCEPTION

#### IV. The PL/SQL DECLARE Section

- A. Declaring Variables
- B. Data Types
- C. Initialization
- D. PL/SQL Records
- E. PL/SQL Arrays

#### V. The PL/SQL BEGIN Section

- A. Decision Constructs
  1. IF-THEN-ELSE
  2. IF-THEN-ELSIF
  3. CASE
  4. Simple CASE
  5. Searched CASE
- B. Loop Constructs
  1. Simple / Basic Loop
  2. FOR Loop
  3. While Loop

#### VI. Embedded SQL in PL/SQL Programs

- A. The SELECT Statement
  1. Restrictions
  2. The INTO Clause
  3. Exceptions Raised
- B. INSERTS, UPDATES, DELETES
- C. COMMIT, ROLLBACK
- D. Using SQL Attributes to test SQL results
  1. SQL%FOUND
  2. SQL%NOTFOUND
  3. SQL%ROWCOUNT

#### VII. Processing Multiple Records in PL/SQL Programs

- A. Explicit Cursors
- B. Basic Loop Cursor
- C. FOR Loop Cursor
- D. Using Cursor Attributes

#### VIII. Declaring, Raising and Handling Program Exceptions in PL/SQL Programs

- A. Predefined Exceptions
- B. User defined Exceptions
- C. The EXCEPTION Section
- D. Other types of Exceptions

#### IX. PL/SQL Stored Procedures and Functions

- A. Creating / Compiling a Stored Procedure / Function
- B. Stored Procedure / Function Benefits
- C. Fixing Compilation Errors
- D. Viewing Stored Procedure / Function Code
- E. Input / Output Parameters
- F. Executing Stored Procedures / Functions

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### Course Outline (cont'd)

#### X. *PL/SQL Packages*

- A. Benefits of Packages
- B. Package Structure
- C. The Package Specification
- D. The Package Body
- E. Creating / Compiling a Package
- F. Fixing Compilation Errors
- G. Viewing Package Code
- H. Executing Programs in a Package

#### XI. *PL/SQL Triggers*

- A. Trigger Uses
- B. Trigger Structure
- C. Trigger Events
- D. Row Level vs. Statement Level Triggers
- E. Creating / Compiling a Trigger
- F. Fixing Compilation Errors
- G. Viewing Trigger Code
- H. Autonomous Triggers