Oracle Database 11g Advanced Programming with PL/SQL





Course Duration: 3 days

Overview:

You will design and fine-tune PL/SQL to interface with the database and other applications using advance PL/SQL programming.

Target Student:

IT Professional with programming experience for Oracle and experience with PL/SQL.

Prerequisites:

Recommend: SQL Fundamentals I & II Require: Oracle Database 11g: Programming with PL/SQL or equivalent knowledge.

Course Objectives:

Upon successful completion of this course, students will be able to:

- Summarise the fundamental concepts of PL/SQL.
- Design PL/SQL code to develop procedures that are easier to use and maintain.
- Use collections to access, retrieve, and manipulate a set of similar data types.
- Use advanced interface methods.
- Implement Fine Grained Access Control to enforce security and control access to a database.
- Manipulate large objects using PL/SQL.
- Implement SecureFile LOBs.
- Compile and tune PL/SQL programs to improve performance.
- Use caching to improve performance.
- Analyse PL/SQL code.
- Profile and trace PL/SQL code.
- Identify the methods for safeguarding PL/SQL code against SQL injection attacks.

Course Content

Lesson 1: Fundamentals of PL/SQL

Topic 1A: PL/SQL Development Environments **Topic 1B:** Listing restrictions on calling functions from SQL expressions **Course content continues on next page:**

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Lesson 2: Designing PL/SQL Code

Topic 2A: Get Started with Cursor DesignTopic 2B: Use Cursor VariablesTopic 2C: Create Subtypes Based on Existing Data Types

Lesson 3: Using Collections

Topic 3A: Create Collections **Topic 3B:** Manipulate Collections Using Collection Methods

Lesson 4: Using Advanced Interface Methods

Topic 4A: Execute Procedures Overview **Topic 4B:** Execute External C Programs from PL/SQL **Topic 4C:** Execute Java Programs from PL/SQL

Lesson 5: Implementing VPD with Fine Grained Access Control

Topic 5A: Overview of Fine Grained Access Control **Topic 5B:** Implement FGAC

Lesson 6: Manipulating Larger Objects

Topic 6A: Use LOB Data Types Topic 6B: Use DBMS_LOB PL/SQL Package Topic 6C: Use Temporary LOBs Topic 6D: Manage LOB Data Type

Lesson 7: Implement SecureFile LOBs

Topic 7A: Migrate BasicFile LOB to the SecureFile LOB Format **Topic 7B:** Enable SecureFile LOB Deduplication, Compression, and Encryption

Lesson 8: Compiling and Tuning to Improve Performance

Topic 8A: Use Native and Interpreted Compilation Methods **Topic 8B:** Tune PL/SQL Codes **Topic 8C:** Enable IntraUnit Inlining

Lesson 9: Using Cache to Improve Performance

Topic 9A: Describe New Result Cache Features in Oracle 11g **Topic 9B:** Write Queries Using Result Cache Hint **Topic 9C:** Set up PL/SQL Functions to Use PL/SQL Result Caching

Lesson 10: Analyzing PL/SQL Code

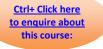
Topic 10A: Run Reports on Source Code **Topic 10B:** Use DBMS_METADATA to Retrieve Object Definitions

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Lesson 11: Profiling and Tracing PL/SQL Codes

Topic 11A: Profile PL/SQL Applications **Topic 11B:** Trace PL/SQL Program Execution

Lesson 12: Identifying Methods for Safeguarding PL/SQL Code Against SQL Injection Attacks

Topic 12A: Describe SQL Injection

Topic 12B: List Methods to Reduce the Attack Surface

Topic 12C: Discuss Methods to Filter Input with DBMS_ASSERT

Topic 12D: Identify Methods for Designing Code Immune to SQL Injections

Topic 12E: List Methods for Testing Code for SQL Injection Flaws