Oracle Database 12c: Advanced PL/SQL

Duration: 3 Days

What you will learn

This Oracle Database 12c: Advanced PL/SQL training teaches you how to use the advanced features of PL/SQL to design and tune PL/SQL to interface with the database and other applications. Expert Oracle University instructors will help you explore advanced features of program design, packages, cursors, extended interface methods and collections. In this course, you will be introduced to Oracle Database Exadata Express Cloud Service.

Learn To:

Write powerful PL/SQL programs.
Explore programming efficiency.
Use external C and Java routines.
Apply PL/SQL designing best practices.
Create PL/SQL applications that use collections.
Implement a virtual private database with fine-grained access control.
Write code to interface with external C and Java applications.
Write code to interface with large objects and use SecureFile LOBs.
Write and tune PL/SQL code effectively to maximize performance.
Gain an understanding of the Oracle Database Exadata Express Cloud Service.

Benefits to You

Discover how to write PL/SQL routines that analyze the PL/SQL applications and caching techniques that can improve performance. By investing in this course, you'll be introduced to the Virtual Private Database(VPD) to implement security policies and explore techniques and tools to strengthen your applications against SQL injection attacks. Expand programming resources by creating PL/SQL programs that interface with C and Java code.

Audience

Application Developers
Database Administrators

Related Training

Required Prerequisites

Basic Knowledge of SQL, PL/SQL

Familiarity with programming languages

Oracle Database: Develop PL/SQL Program Units

Oracle Database: SQL Workshop I

Course Objectives

Design PL/SQL packages and program units that execute efficiently

Write code to interface with external applications and the operating system

Create PL/SQL applications that use collections

Write and tune PL/SQL code effectively to maximize performance

Implement a virtual private database with fine-grained access control

Write code to interface with large objects and use SecureFile LOBs

Gain an understanding of the Oracle Database Exadata Express Cloud Service

Course Topics

Introduction
Course Objectives
Course Agenda
Describe the development environments
Identify the tables, data, and tools used in this course

PL/SQL Programming Concepts: Review
Identify PL/SQL block structure
Packages, procedures and functions
Cursors
Handle exceptions
Dependencies

Designing PL/SQL Code
Describe the predefined data types
Create subtypes based on existing types for an application
List the different guidelines for cursor design
Describe cursor variables
White List

Overview of Collections
Overview of collections
Use Associative arrays
Navigate using associative methods
Use Nested tables
Use Varrays
Compare nested tables and varrays

Using Collections
Write PL/SQL programs that use collections
Use Collections effectively
Enhancements to PL/SQL Type Binds

Manipulating Large Objects
Working with LOBs
Overview of SecureFile LOBs

Using Advanced Interface Methods
Calling External Procedures from PL/SQL
Benefits of External Procedures
Understand how an external routine is called from PL/SQL
C advanced interface methods
Java advanced interface methods

Performance and Tuning
Understand and influence the compiler
Tune PL/SQL code
Enable intra unit inlining
Identify and tune memory issues
Recognize network issues

Improving Performance with Caching
Describe result caching
Use SQL query result cache
Use PL/SQL function cache
Review PL/SQL function cache considerations

Analyzing PL/SQL Code
Finding Coding Information
PL/Scope Concepts
DBMS_METADATA Package
PL/SQL Enhancements

Profiling and Tracing PL/SQL Code
Tracing PL/SQL Execution
Tracing PL/SQL: Steps

12:Implementing VPD with Fine-Grained Access Control
Understand how fine-grained access control works overall
Describe the features of fine-grained access control
Describe an application context
Create an application context
Set an application context
List the DBMS_RLS procedures
Implement a policy
Query the dictionary views holding information on fine-grained access

Safeguarding Your Code Against SQL Injection Attacks
SQL Injection Overview
Reducing the Attack Surface

Filtering Input with DBMS_ASSERT

Oracle Cloud Overview

Introduction to Oracle Cloud & Oracle Cloud Services
Cloud Deployment Models
Evolving from On-premises to Exadata Express
What is in Exadata Express?
Exadata Express for Users & Developers
Oracle Exadata Express Cloud Service
Getting Started with Exadata Express
Service Console & Web Access through Service Console