

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 Secure File 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 Secure File 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 inclining

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

Analysing 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 Exa data Express

What is in Exa data Express? Exadata Express for Users & Developers

Oracle Exadata Express Cloud Service

Getting Started with Exadata Express

Service Console & Web Access through Service Console