Oracle Database 12c R2: Program with PL SQL

Category: AI, Data & Analytics | **Vendor:** Oracle

Duration: 40.00 hours (5 days) **32.5 CPD Hours** **Rating:** ⭐ 4.6 (5,878 reviews)

Course Information

Delivery Format: Instructor Led - Online

Course Overview

This Oracle Database: Program with PL/SQL training starts with an introduction to PL/SQL and then explores the benefits of this powerful programming language. Through hands-on instruction from expert Oracle instructors, you'll learn to develop stored procedures, functions, packages and more.

About This Course

- Conditionally control code flow (loops, control structures).
- Use PL/SQL packages to group and contain related constructs.
- Create triggers to solve business challenges.
- Use some of the Oracle supplied PL/SQL packages to generate screen output and file output.
- Create anonymous PL/SQL blocks, functions and procedures.
- Declare PL/SQL Variables.

Who Should Attend

- PL/SQL Developer
- Forms Developer
- Application Developers
- Database Administrators
- Technical Consultant
- Portal Developer
- System Analysts
- Developer

Prerequisites & Entry Requirements

General Prerequisites:

- Oracle Database: Introduction to SQL
- Oracle Database: SQL Workshop I
- Oracle Database: SQL Workshop II

Learning Outcomes

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

Ensure fast, reliable, secure and easy to manage performance. Optimize database workloads, lower IT costs and deliver a higher quality of service by enabling consolidation onto database clouds.

You'll use Oracle SQL Developer to develop these program units. SQL*Plus and JDeveloper are introduced in this course as optional tools.

At the end of this course you will be able to:

- Use conditional compilation to customize the functionality in a PL/SQL application without removing any source code
- Design PL/SQL packages to group related constructs
- Create overloaded package subprograms for more flexibility
- Design PL/SQL anonymous blocks that execute efficiently
- Use the Oracle supplied PL/SQL packages to generate screen output, file output and mail output
- Write dynamic SQL for more coding flexibility
- Describe the features and syntax of PL/SQL
- Create and debug stored procedures and functions
- Use PL/SQL programming constructs and conditionally control code flow (loops, control structures, and explicit cursors)
- Manage dependencies between PL/SQL subprograms
- Handle runtime errors
- Create triggers to solve business challenges

Detailed Course Outline

Introduction

- Course Objectives

- Course Agenda

- Describe the Human Resources (HR) Schema

- PL/SQL development environments available in this course

- Introduction to SQL Developer

Introduction to PL/SQL

- Overview of PL/SQL

- Identify the benefits of PL/SQL Subprograms

- Overview of the types of PL/SQL blocks

- Create a Simple Anonymous Block

- How to generate output from a PL/SQL Block?

Declare PL/SQL Identifiers

- List the different Types of Identifiers in a PL/SQL subprogram

- Usage of the Declarative Section to Define Identifiers

- Use variables to store data

- Identify Scalar Data Types

- The %TYPE Attribute

- What are Bind Variables?

- Sequences in PL/SQL Expressions

Write Executable Statements

- Describe Basic PL/SQL Block Syntax Guidelines

- Learn to Comment the Code

- Deployment of SQL Functions in PL/SQL

- How to convert Data Types?

- Describe Nested Blocks

- Identify the Operators in PL/SQL

Interaction with the Oracle Server

- Invoke SELECT Statements in PL/SQL

- Retrieve Data in PL/SQL

- SQL Cursor concept

- Avoid Errors by using Naming Conventions when using Retrieval and DML Statements

- Data Manipulation in the Server using PL/SQL

- Understand the SQL Cursor concept

- Use SQL Cursor Attributes to Obtain Feedback on DML

- Save and Discard Transactions

Control Structures

- Conditional processing using IF Statements

- Conditional processing using CASE Statements

- Describe simple Loop Statement

- Describe While Loop Statement

- Describe For Loop Statement

- Use the Continue Statement

Composite Data Types

- Use PL/SQL Records

- The %ROWTYPE Attribute

- Insert and Update with PL/SQL Records

- INDEX BY Tables

- Examine INDEX BY Table Methods

- Use INDEX BY Table of Records

Explicit Cursors

- What are Explicit Cursors?

- Declare the Cursor

- Open the Cursor

- Fetch data from the Cursor

- Close the Cursor

- Cursor FOR loop

- The %NOTFOUND and %ROWCOUNT Attributes

- Describe the FOR UPDATE Clause and WHERE CURRENT Clause

Exception Handling

- Understand Exceptions

- Handle Exceptions with PL/SQL

- Trap Predefined Oracle Server Errors

- Trap Non-Predefined Oracle Server Errors

- Trap User-Defined Exceptions

- Propagate Exceptions

- RAISE_APPLICATION_ERROR Procedure

Stored Procedures

- Create a Modularized and Layered Subprogram Design

- Modularize Development With PL/SQL Blocks

- Understand the PL/SQL Execution Environment

- List the benefits of using PL/SQL Subprograms

- List the differences between Anonymous Blocks and Subprograms

- Create, Call, and Remove Stored Procedures

- Implement Procedures Parameters and Parameters Modes

- View Procedure Information

Stored Functions and Debugging Subprograms

- Create, Call, and Remove a Stored Function

- Identify the advantages of using Stored Functions

- Identify the steps to create a stored function

- Invoke User-Defined Functions in SQL Statements

- Restrictions when calling Functions

- Control side effects when calling Functions

- View Functions Information

- How to debug Functions and Procedures?

Packages

- Listing the advantages of Packages

- Describe Packages

- What are the components of a Package?

- Develop a Package

- How to enable visibility of a Package's Components?

- Create the Package Specification and Body using the SQL CREATE Statement and SQL Developer

- Invoke the Package Constructs

- View the PL/SQL Source Code using the Data Dictionary

Deploying Packages

- Overloading Subprograms in PL/SQL

- Use the STANDARD Package

- Use Forward Declarations to solve Illegal Procedure Reference

- Implement Package Functions in SQL and Restrictions

- Persistent State of Packages

- Persistent State of a Package Cursor

- Control side effects of PL/SQL Subprograms

- Invoke PL/SQL Tables of Records in Packages

Implement Oracle-Supplied Packages in Application Development

- What are Oracle-Supplied Packages?

- Examples of some of the Oracle-Supplied Packages

- How does the DBMS_OUTPUT Package work?

- Use the UTL_FILE Package to Interact with Operating System Files

- Invoke the UTL_MAIL Package

- Write UTL_MAIL Subprograms

Dynamic SQL

- The Execution Flow of SQL

- What is Dynamic SQL?

- Declare Cursor Variables

- Dynamically Executing a PL/SQL Block

- Configure Native Dynamic SQL to Compile PL/SQL Code

- How to invoke DBMS_SQL Package?

- Implement DBMS_SQL with a Parameterized DML Statement

- Dynamic SQL Functional Completeness

Design Considerations for PL/SQL Code

- Standardize Constants and Exceptions

- Understand Local Subprograms

- Write Autonomous Transactions

- Implement the NOCOPY Compiler Hint

- Invoke the PARALLEL_ENABLE Hint

- The Cross-Session PL/SQL Function Result Cache

- The DETERMINISTIC Clause with Functions

- Usage of Bulk Binding to Improve Performance

Triggers

- Describe Triggers

- Identify the Trigger Event Types and Body

- Business Application Scenarios for Implementing Triggers

- Create DML Triggers using the CREATE TRIGGER Statement and SQL Developer

- Identify the Trigger Event Types, Body, and Firing (Timing)

- Differences between Statement Level Triggers and Row Level Triggers

- Create Instead of and Disabled Triggers

- How to Manage, Test and Remove Triggers?

Creating Compound, DDL, and Event Database Triggers

- What are Compound Triggers?

- Identify the Timing-Point Sections of a Table Compound Trigger

- Understand the Compound Trigger Structure for Tables and Views

- Implement a Compound Trigger to Resolve the Mutating Table Error

- Comparison of Database Triggers to Stored Procedures

- Create Triggers on DDL Statements

- Create Database-Event and System-Events Triggers

- System Privileges Required to Manage Triggers

PL/SQL Compiler

- What is the PL/SQL Compiler?

- Describe the Initialization Parameters for PL/SQL Compilation

- List the new PL/SQL Compile Time Warnings

- Overview of PL/SQL Compile Time Warnings for Subprograms

- List the benefits of Compiler Warnings

- List the PL/SQL Compile Time Warning Messages Categories

- Setting the Warning Messages Levels: Using SQL Developer, PLSQL_WARNINGS Initialization Parameter, and the DBMS_WARNING Package Subprograms

- View Compiler Warnings: Using SQL Developer, SQL*Plus, or the Data Dictionary Views

Manage Dependencies

- Overview of Schema Object Dependencies

- Query Direct Object Dependencies using the USER_DEPENDENCIES View
- Query an Object's Status
- Invalidation of Dependent Objects
- Display the Direct and Indirect Dependencies
- Fine-Grained Dependency Management in Oracle Database 12c
- Understand Remote Dependencies
- Recompile a PL/SQL Program Unit

Skills You Will Learn:

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Frequently Asked Questions

Q: What delivery options are available for Oracle Database 12c R2: Program with PL SQL?

We offer multiple delivery formats:

- Live Instructor-Led Classroom Online (Virtual/Live Online)
- Traditional Instructor-Led Classroom Training (ILT)
- On-site delivery at your offices anywhere in United Kingdom
- Private dedicated courses customized for your team

Q: How many CPD hours does this course provide?

The 5-day Oracle Database 12c R2: Program with PL SQL course provides up to 32.5 CPD hours of structured learning. CPD certificates can be provided upon request.

Q: What is the duration of the Oracle Database 12c R2: Program with PL SQL training?

The training takes place over 5 day(s), with each day lasting approximately 40.00 hours including breaks for lunch and refreshments.

Q: Do you provide corporate training for Oracle Database 12c R2: Program with PL SQL?

Yes, we provide corporate training, dedicated training, and closed classes for Oracle Database 12c R2: Program with PL SQL. Training can take place anywhere in United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online allowing teams from across United Kingdom or internationally to attend.

Q: What related terms do people search for?

Popular related searches include: Oracle Database 12c R2: Program with PL SQL, Oracle Database Training, OC12CPLSQL

Q: Why choose Nexus Human for Oracle Database 12c R2: Program with PL SQL?

Nexus Human is recognized as one of the leading training providers. Our trainers have won multiple awards including:

- Small Firms Best Trainer Award
- National Training Partner of the Year (Ireland) - Multiple Years
- Global Top 30 Instructor Awards (2012, 2019, 2021)
- Tech Excellence Award Nominations
- Learning Performance Institute (LPI) External Training Provider Sponsor 2024

Q: Are there any discount codes available?

Yes! Use discount code **PENPAL5** when booking your Oracle Database 12c R2: Program with PL SQL training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.

Nexus Human

Professional Training & Development

Email: info@nexushuman.com

Website: www.nexushuman.com

Phone: +353 1 889 8700 (Ireland) | +44 20 8142 8961 (UK)

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