

## ***Course outline: Oracle Database12c: Program with PL/SQL***

**Duration :( 5 days)**

### **What you will learn**

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..

- Database Administrator
- Developer
- Implementer
- Systems Administrator

### **Learn To:**

- Conditionally control code flow (loops, control structures).
- Create stored procedures and functions.
- 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 custom packages for applications.
- Write Dynamic SQL code for applications.

### **Benefits To You**

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.

### **Use Oracle SQL Developer**

You will use Oracle SQL Developer to develop these program units. SQL\*Plus is introduced in this course as optional tools.

### **Course Bundle**

Note: This course is a combination of Oracle Database: PL/SQL Fundamentals and Oracle Database: Develop PL/SQL Program Units courses.

### **Audience**

## **Course Objectives**

- 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

## **Course Topics**

### **Introduction**

- 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
- 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**

- 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

### Manage Dependencies