



Oracle Database: PL/SQL Fundamentals

Duration: 5 Days

Course Description

This course introduces students to PL/SQL and explains the benefits of this programming language. Participants learn to create PL/SQL blocks of application code that can be shared by multiple forms, reports, and data management applications. The course also imparts how to create anonymous PL/SQL blocks, stored procedures, and functions. Participants learn about declaring identifiers and trapping exceptions. Demonstrations and hands-on practice reinforce the fundamental concepts.

Students who can benefit from this course:

- Forms Developer
- PL/SQL Developer
- Portal Developer
- System Analysts
- Technical Consultant

Course Objectives

- Handle runtime errors
- Describe stored procedures and functions
- Use cursors to process rows
- Design PL/SQL anonymous block that execute efficiently
- Describe the features and syntax of PL/SQL
- Use PL/SQL programming constructs and conditionally control code flow (loops, control structures, and explicit cursors)

Course Topics

Introduction

- Course Objectives
- Course Agenda
- Describing the Human Resources (HR) Schema
- Introduction to SQL Developer



Introduction to PL/SQL

- PL/SQL Overview
- Benefits of PL/SQL Subprograms
- Overview of the Types of PL/SQL blocks
- Create a Simple Anonymous Block
- Generate Output from a PL/SQL Block

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
- Comment Code
- Deployment of SQL Functions in PL/SQL
- How to convert Data Types?
- Nested Blocks
- Operators in PL/SQL

Interaction with the Oracle Server

- Invoke SELECT Statements in PL/SQL to Retrieve data
- Data Manipulation in the Server Using PL/SQL
- SQL Cursor concept
- Usage of SQL Cursor Attributes to Obtain Feedback on DML
- Save and Discard Transactions

Control Structures

- Conditional processing Using IF Statements
- Conditional processing Using CASE Statements
- Use Simple Loop Statement
- Use While Loop Statement



- Use For Loop Statement
- Describe the Continue Statement

Composite Data Types

- Use PL/SQL Records
- The %ROWTYPE Attribute
- Insert and Update with PL/SQL Records
- Associative Arrays (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
- Explicit Cursor Attributes
- 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 and Functions

- Understand Stored Procedures and Functions
- Differentiate between anonymous blocks and subprograms
- Create a Simple Procedure
- Create a Simple Procedure with IN parameter
- Create a Simple Function
- Execute a Simple Procedure
- Execute a Simple Function