

PL/SQL

Course Topics

Introduction

- Course Objectives, Course Agenda and Class Account Information
- Describe the Human Resources (HR) Schema
- Identify the Appendices Used in this Course
- Introduction to PL/SQL Development Environments
- Oracle Database 11g SQL Documentation and Additional Resources

Introduction to PL/SQL

- Understanding the benefits and structure of PL/SQL
- Examining PL/SQL Blocks
- Generating output messages in PL/SQL

Declaring PL/SQL Variables

- Identify valid and invalid identifiers
- Declare and initialize variables
- List and describe various data types
- Identify the benefits of using the %TYPE attribute
- Declare, use, and print bind variables

Writing Executable Statements

- List Lexical Units in a PL/SQL Block
- Use SQL Functions in PL/SQL
- Use Data Type Conversion
- Use Nested Blocks as Statements

- Reference an Identifier Value in a Nested Block
- Qualify an Identifier with a Label
- Use Operators in PL/SQL
- Using Sequences in PL/SQL Expressions

Using SQL Statements within a PL/SQL Block

- Identify and use the SQL Statements in PL/SQL
- Retrieve Data in PL/SQL with the SELECT statement
- Avoid Errors by Using Naming Conventions When Using Retrieval and DML Statements
- Manipulate Data in the Server Using PL/SQL
- The SQL Cursor concept
- Use SQL Cursor Attributes to Obtain Feedback on DML
- Save and Discard Transactions

Writing Control Structures

- Control PL/SQL Flow of Execution
- Conditional processing Using IF and CASE Statements
- Handle Nulls to Avoid Common Mistakes
- Build Boolean Conditions with Logical Operators
- Use Iterative Control with Looping Statements

Working with Composite Data Types

- Learn the Composite Data Types of PL/SQL Records and Tables
- Use PL/SQL Records to Hold Multiple Values of Different Type
- Inserting and Updating with PL/SQL Records
- Use INDEX BY Tables to Hold Multiple Values of the Same Data Type

Using Explicit Cursors

- Define Cursors
- Explain Explicit Cursor Operations

- Controlling Explicit Cursors
- Use Explicit Cursors to Process Rows
- Cursors and Records
- Cursor FOR Loops Using Subqueries
- Explicit Cursor Attributes
- The %NOTFOUND and %ROWCOUNT Attributes

Handling Exceptions

- Define Exception
- Handling Exceptions with PL/SQL
- Predefined Exceptions
- Trapping Predefined and Non-predefined Oracle Server Errors
- Functions that Return Information on Encountered Exceptions
- Trapping User-Defined Exceptions
- Propagate Exceptions

- Basic RAISE Statement

Creating Stored Procedures and Functions

- Overview of Stored Procedures and Functions
- Differentiate between anonymous blocks and subprograms
- Show the CREATE OR REPLACE PROCEDURE | FUNCTION
- Understand the Header Area of a Stored Procedure and Function
- Create Simple Procedures and Functions
- Create a Simple Procedure with an IN Parameter
- Execute a Procedure and a Function