

PL/SQL Course Content:35-40hours

Course Outline

Introduction to PL/SQL

- PL/SQL Overview
- Benefits of PL/SQL Subprograms
- Overview of the Types of PL/SQL blocks
- Creating and Executing a Simple Anonymous Block
- Generating Output from a PL/SQL Block

Declaring PL/SQL Identifiers

- Different Types of Identifiers in a PL/SQL subprogram
- Using the Declarative Section to Define Identifiers
- Storing Data in Variables
- Scalar Data Types
- %TYPE Attribute
- Using Sequences in PL/SQL Expressions

Writing Executable Statements

- Describing Basic PL/SQL Block Syntax Guidelines
- Commenting Code
- SQL Functions in PL/SQL
- Data Type Conversion
- Nested Blocks
- Operators in PL/SQL

Interacting with the Oracle Server

- Including SELECT Statements in PL/SQL to Retrieve data
- Manipulating Data in the Server Using PL/SQL
- The SQL Cursor concept
- Using SQL Cursor Attributes to Obtain Feedback on DML
- Saving and Discarding Transactions

Writing Control Structures

- Conditional processing Using IF Statements

- Conditional processing Using CASE Statements
- Simple Loop Statement
- While Loop Statement
- For Loop Statement
- The Continue Statement

Working with Composite Data Types

- Using PL/SQL Records
- Using the %ROWTYPE Attribute
- Inserting and Updating with PL/SQL Records
- INDEX BY Tables
- INDEX BY Table Methods
- INDEX BY Table of Records

Using Explicit Cursors

- Understanding Explicit Cursors
- Declaring the Cursor Opening the Cursor
- Fetching data from the Cursor
- Closing the Cursor
- Cursor FOR loop
- Explicit Cursor Attributes

Handling Exceptions

- Understanding Exceptions
- Handling Exceptions with PL/SQL
- Trapping Predefined Oracle Server Errors
- Trapping Non-Predefined Oracle Server Errors
- Trapping User-Defined Exceptions
- Propagate Exceptions
- RAISE_APPLICATION_ERROR Procedure

Creating Stored Procedures

- Creating a Modularize and Layered Subprogram Design
- Modularizing Development With PL/SQL Blocks
- Understanding the PL/SQL Execution Environment
- The Benefits of Using PL/SQL Subprograms
- The Differences Between Anonymous Blocks and Subprograms
- Creating, Calling, and Removing Stored Procedures Using the CREATE Command
- Using Procedures Parameters and Parameters Modes
- Viewing Procedures Information Using the Data Dictionary Views and SQL Developer

Creating Stored Functions

- Creating, Calling, and Removing a Stored Function Using the CREATE Command
- Identifying the Advantages of Using Stored Functions in SQL Statements
- Identify the steps to create a stored function
- Using User-Defined Functions in SQL Statements
- Restrictions When Calling Functions from SQL statements
- Controlling Side Effects When Calling Functions from SQL Expressions
- Viewing Functions Information

Creating Packages

- Listing the Advantages of Packages
- Describing Packages
- The Components of a Package
- Developing a Package
- The Visibility of a Package's Components
- Creating the Package Specification and Body Using the SQL CREATE Statement and SQL Developer
- Invoking the Package Constructs
- Viewing the PL/SQL Source Code Using the Data Dictionary

Creating Triggers

- Working with Triggers
- Identifying the Trigger Event Types and Body
- Business Application Scenarios for Implementing Triggers
- Creating DML Triggers Using the CREATE TRIGGER Statement and SQL Developer
- Identifying the Trigger Event Types, Body, and Firing (Timing)
- Statement Level Triggers Versus Row Level Triggers
- Creating Instead of and Disabled Triggers
- Managing, Testing, and Removing Triggers