Oracle Database 10*g*: PL/SQL Fundamentals

Duration 2 Days

What you will learn:

This course introduces students to PL/SQL and helps them understand the benefits of this powerful programming language. In the class, students learn to create PL/SQL blocks of application code that can be shared by multiple forms, reports, and data management applications.

Students learn to create anonymous PL/SQL blocks and are introduced to stored procedures and functions. They learn about declaring variables, trapping exceptions and they also learn to declare and control cursors.

Learn To:

- Declaring PL/SQL Variables
- Working with Composite Data Types
- Creating the Executable Section
- Using Explicit Cursors
- Writing Control Structures
- Including Exception Handling

Audience:

- Application Developers
- Database Designers
- Database Administrators
- Forms Developer
- PL/SQL Developer
- Technical Consultant

Prerequisites:

Required Prerequisites:

- Oracle Database 10*g*: Introduction to SQL

Course Objectives:

- Write PL/SQL code to interface with the database
- Design PL/SQL program units that execute efficiently

- Use PL/SQL programming constructs and conditional control statements
- Handle run-time errors
- Describe stored procedures and functions

Course Topics:

Introduction to PL/SQL

- What is PL/SQL
- PL/SQL Environment
- Benefits of PL/SQL
- Overview of the Types of PL/SQL blocks
- Create and Execute a Simple Anonymous Block
- Generate Output from a PL/SQL Block
- iSQL*Plus as PL/SQL Programming Environment

Declaring PL/SQL Identifiers

- Identify the Different Types of Identifiers in a PL/SQL subprogram
- Use the Declarative Section to Define Identifiers
- List the Uses for Variables
- Store Data in Variables
- Declare PL/SQL Variables

Writing Executable Statements

- Describe Basic Block Syntax Guidelines
- Use Literals in PL/SQL
- Customize Identifier Assignments with SQL Functions
- Use Nested Blocks as Statements
- Reference an Identifier Value in a Nested Block
- Qualify an Identifier with a Label
- Use Operators in PL/SQL
- Use Proper PL/SQL Block Syntax and Guidelines

Interacting with the Oracle Server

- Identify the SQL Statements You Can Use in PL/SQL
- Include SELECT 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 Statements
- Conditional Processing 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 Types
- Inserting and Updating with PL/SQL Records
- Use INDEX BY Tables to Hold Multiple Values of the Same Data Type

Using Explicit Cursors

- Cursor FOR Loops Using Sub-queries
- Increase the Flexibility of Cursors By Using Parameters
- Use the FOR UPDATE Clause to Lock Rows
- Use the WHERE CURRENT Clause to Reference the Current Row
- Use Explicit Cursors to Process Rows
- Explicit Cursor Attributes
- Cursors and Records

Handling Exceptions

- Handling Exceptions with PL/SQL
- Predefined Exceptions
- Trapping Non-predefined Oracle Server Errors
- Functions that Return Information on Encountered Exceptions
- Trapping User-Defined Exceptions
- Propagate Exceptions
- Use The RAISE_APPLICATION_ERROR Procedure To Report Errors To Applications

Creating Stored Procedures and Functions

- Differences Between Anonymous Blocks and Subprograms
- Creating and invoking Procedure
- Creating and invoking Functions
- Passing Parameter to the Function