Advanced PL/SQL: Oracle 11g

Duration: 40 Hours
Prerequisites

- Oracle SQL

Course Content

1. **Language Fundamentals**
   - Identifiers
   - literals
   - Anonymous Block Structure
   - Nested Block or Named Block or PRAGMA
   - Scope & Visibility of variables
2. **Different Types of Loops (Iterative Processes)**
   - Simple Loop
   - WHILE- Loop
   - FOR- Loop
   - Labels in Loop
   - Scope Rules
   - Exit
3. **Working with Objects & Collection**
   - Describing Object
   - Constructor method on objects
   - Nested Table
   - VARRAY
   - Associative Array
   - Collection Methods
   - Manipulate Collection
   - Distinguish between the different types of collections and when to use them
4. **Dynamic SQL and PL/SQL**
   - Declaring dynamic SQL and PL/SQL by using DBMS_SQL package
   - Declaring dynamic SQL and PL/SQL by using Execute Immediate
   - Using Dynamic SQL in FORALL statement
   - Dynamic statement using binding variables
   - Advantage of using Dynamic SQL, PL/SQL
5. **Tuning of PL/SQL Program**
6. **First PL/SQL code**
7. **Working with different type of Data types**
   - Date, Time and Interval Types
   - Boolean Types
   - Characters, String and National Character Types
   - Number Types
   - LOB Types
   - Composite Data Types
8. **Exception Handler**
   - What is Exception Handling
   - How to Handle Exception
   - Structure of Exception Handling
   - Types of Exception Handling
   - PRAGMA init Exception
9. **Working with Records**
   - Declaring Records
   - Benefit of using Record
   - Passing Values To and From Record
   - Comparing two Records
10. **Bulk Processing of Data**
    - What is Bulk collect operation
    - How does it impact performance
    - Declaring BULK COLLECT operation with simple select statement
    - BULK COLLECT with cursors
    - BULK COLLECT using FORALL statement
    - Catching exception in Bulk collect using SAVE EXCEPTION
11. **Design Considerations for PL/SQL Code**
    - Standardize Constants and Exceptions
    - Understand Local Subprograms
    - Write Autonomous Transactions
    - Implement the NOCOPY Compiler Hint
    - Invoke the PARALLEL_ENABLE Hint
    - The Cross-Session PL/SQL Function Result Cache
    - The DETERMINISTIC Clause with Functions
    - Usage of Bulk Binding to Improve Performance
12. **Control Structures**
    - IF-THEN-ELSE Statement
    - Case Statement
    - GOTO Statement
    - NULL Statement

13. **Cursors in PL/SQL**
    - Why cursor is used
    - Declaring Cursors
    - Different Types of cursor
    - Cursor Attributes
    - Sending parameter to cursor
    - Different ways of using cursor
    - Cursor Variable (Reference Cursor)
    - Passing Cursor variable as parameter
    - Restriction on cursor Variables
14. **Working with Procedures, Functions and Packages**
    - Basic of stored procedure
    - Basics of functions
    - Basics of packages
    - Advantage of using procedures , function and packages
    - Passing cursor variables to procedures , function and packages
    - Recompiling functions and stored procedures
    - Forward declaration
    - Declaring and using persistent global variables in packages
    - Creating table Function
    - Function overloading
    - Restrict Reference Pragma
    - Pinning packages in the SGA with dbms_shared_pool.keep
15. **Working with Triggers.**
    - Describe Triggers
    - Identify the Trigger Event Types and Body
    - Business Application Scenarios for Implementing Triggers
    - Create DML Triggers using the CREATE TRIGGER Statement and SQL Developer
16. **Identify the Trigger Event Types, Body, and Firing (Timing)**
    - Differences between Statement Level Triggers and Row Level Triggers
    - Create Instead of and Disabled Triggers
    - How to Manage, Test and Remove Triggers?

❖ **Oracle Architecture- Complimentary Session**