# Advanced Oracle PL/SQL Programming

PL/SQL is Oracle's embedded procedural database language, allowing developers and administrators to write scripts, stored procedures, functions, packages, and database triggers which run in the optimized environment of the Oracle Database server. This advanced course helps PL/SQL programmers take advantage of language features, advanced techniques, and packages and facilities provided by Oracle to develop and tune efficient and effective PL/SQL subprograms.

**Course Objectives:**

- Use detailed understanding of the PL/SQL execution environment in your application design and tuning.
- Develop programs that make sophisticated and effective use of cursors.
- Use all kinds of dynamic SQL in your PL/SQL code.
- Design and write solutions using Oracle's object types.
- Use Oracle's tools and supplied packages to trace, profile, and tune your PL/SQL programs.
- Use a variety of techniques and tools for debugging PL/SQL code.
- Write programs that interface between PL/SQL, and external procedures and programs.
- Use package state to solve application problems.
- Use autonomous transactions in stored subprograms and triggers.
- Choose which user's application context and rights will apply when a stored subprogram runs.
- Write high-performance code using NOCOPY and pipelined table functions.
- Create functions to implement fine-grained access control.
- Use DBMS_PIPE to set up inter-session communication between PL/SQL programs.

**Audience:** Oracle application developers and database administrators.

**Prerequisites:** *Introduction to Oracle PL/SQL Programming*

**Number of Days:** 2 days

**1. Course Introduction**
- Course Objectives
- Overview
- Suggested References

**2. The PL/SQL Execution Environment**
- The Server Process
- PL/SQL Execution
- The PL/SQL Compiler
- Compiler Optimization
- SQL — Parse
- SQL — Execute and Fetch
- Server Memory
- Latches
- Locks

**3. Advanced Cursors**
- Cursor Types
- Cursors and Storage
- Spanning Commits Across FETCHes

**4. Dynamic SQL**
- Dynamic SQL in PL/SQL
- Bulk Operations
- Bulk Returns
- Limiting Results
- Cursor Parameters
- Cursor Variables
- Strong and Weak Cursors
- Using Cursor Variables
- Cursor Type Errors
- Cursor Subqueries

Extracting XML Data
Generating XML
XMLQuery
XMLType Views
Oracle XML DB Repository