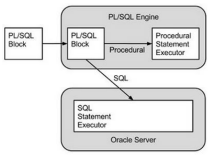
DAT150 : Oracle PL-SQL Programming

Code : DAT150 **Duration :** 3 days **Category :** Databases



Audience :

This course is intended for developers who want to use PL-SQL in applications that access an Oracle database.

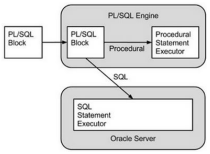
Prerequisites :

To participate in this course knowledge of and experience with the SQL query language is required. Experience with programming in a procedural programming language is beneficial for the understanding.

Realization :

The theory is treated on the basis of presentation slides. Demos are used to clarify the theory further. There is ample opportunity to practice and the theory is interspersed with exercises. The course works with Oracle 11g but is also suitable for other Oracle versions.

Oracle PL-SQL Programming



Contents :

In the course PL-SQL Programming participants learn how to program in PL-SQL, Oracle's procedural database language. PL-SQL is consistent with the SQL query language but extends the capabilities of SQL and improves its performance. In the first place the course discusses the place of PL-SQL in the midst of the different Oracle tools. Next the focus is put on the syntax of PL-SQL, i.e. the structure of PL SQL programs and statements, declarations and expressions. Also control flow in PL-SQL is discussed using if else and case statements and the various loop constructions. Next attention is paid to cursors and how they are used in accessing the database. Also more advanced topics like creating and calling local and stored procedures and the use of packages will be treated. Finally attention is paid to triggers. In this course the focus is on Oracle 11g, but where necessary Oracle9i, 10g and 11g features are specifically mentioned.

Module 1 : PL-SQL Intro

What is PL-SQL
Strenght of PL/SQL
Procedural possibilities
Enhanced performance
Oracle Suppport tools
Oracle Specifics
SQL Developer

Module 2 : PL-SQL Syntax

Basic Concepts
PL-SQL Structure
Statements
Declarations
Assignments
%TYPE and %ROWTYPE
Expressions
Comments
NULL
Nested blocks
Syntax errors

Module 3 : Control Flow

IF-THEN-ELSE statement
CASE statements
GOTO
WHILE loops
FOR loops with index
FOR loops with cursor
Infinite loops

Module 4 : Cursors

Implicit cursor
Query with SELECT INTO
Query with cursor
OPEN-FETCH-CLOSE
FOR loops with cursor
Parameters
Controls
Cursor attributes
Self defined records

Module 5 : Transactions

Transaction in PL-SQL
Queries for changes
Autonomous transactions
Locking
Read consistency

Module 6 : Error Handling

Exceptions
RAISE
EXCEPTION_INIT
SQLCODE
SQLERRM

Module 7 : Procedures and functions

Local versus stored procedures
Parameters
DEFAULT values
Removing procedures
Local and stored functions
Functions in SQL
Operators
Dependencies
Recompilation
Remote dependencies

Module 8 : Packages

Benefits of Packages
Package specification
Package body
Calling a function in SQL
RAISE_APPLICATION_ERROR
DESCRIBE
Removing Packages
NDS Packages
Standard packages for SQL

Module 9 : Triggers

DML-triggers
Statement triggers
Row triggers
Instead-of-triggers
Trigger Limitations
Auditing
Data integrity
Cascading triggers
System Event en DDL-triggers
Triggers on user logon and logoff
Server error triggers
Shutdown and startup triggers