

Course overview:

Oracle Database 10g Program With PL/SQL

(D108eng, 5-day)



**the courseware
company**

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Overview and objectives

The Oracle PL/SQL language provides for programming logic features not contained within SQL. The grammar, syntax and benefits of using the PL/SQL language within an Oracle database environment are considered. This course also discusses the subjects of database triggers and stored procedures. Advanced topics such as using system-supplied packages, programming for superior performance, object oriented encapsulation of logic into packages and many others are discussed in detail.

The primary objective of this course is to provide an introduction to the PL/SQL database programming language. Major subject areas to be explored are:

- Declaring variables and complex datatypes.
- Developing logic within PL/SQL program blocks.
- Fetching data from the database into program variables.
- Returning program output to users.
- Handling program exceptions.
- Using explicit and implicit database cursors.
- Using the advanced features of nested blocks and subprograms.
- Build comprehensive database triggers
- Build new Oracle system triggers
- Developer stored procedures and functions
- Encapsulate program units into packages
- Use Oracle Procedure Builder for debugging and code development

Who should attend?

All Oracle professionals including developers, database administrators, designers and analysts

Suggested prerequisites

Oracle Database 10g Introduction to SQL

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LANGUAGE FEATURES

- WHY USE PL/SQL? • Where PL/SQL Program Units May Be Deployed • The Java Alternative To PL/SQL • STRUCTURE OF A PL/SQL PROGRAM BLOCK • PL/SQL FROM INTERACTIVE TOOLS • GENERATING OUTPUT

DECLARE CLAUSE

- DATATYPES • DECLARE Example • SPECIAL DATATYPES • %TYPE VARIABLE • %ROWTYPE RECORD • TYPE TABLE

BEGIN CLAUSE

- DATA MANIPULATION • CHAR and VARCHAR • Numeric • Date • Boolean • Comparison Operators • Functions • Date Calculations • SELECT INTO • LOGIC CONTROL & BRANCHING • GOTO • LOOP • IF-THEN-ELSE • CASE

EXCEPTION

- HANDLING EXCEPTION • SPECIAL FEATURES • SYSTEM DEFINED EXCEPTIONS • USING SQLCODE & SQLERRM • IMPLICIT CURSORS • USER-DEFINED EX_INED • PRAGMA EXCEPTION_INIT

EXPLICIT CURSORS

- UNDERSTANDING CURSORS • EXPLAINING THE CURSOR EXAMPLE • DECLARE Cursor E • OPEN Cursor Example • FETCH Cursor Example • CLOSE Cursor Example • INCLUDING CURSOR PARAMETERS • PERFORMING UPDATES FROM CURSORS • USING FORLOOP CURSORS

ADVANCED

- USING NESTED BLOCKS • USING DECLARED SUBPROGRAMS • DISPLAY_MESSAGE() Procedure Example • GET_SPOUSE_NAME() Function Example

UNDERSTANDING APPLICATION PARTITIONING

- Client-Side Call To SALARY_VALID() • Client-Centric • Application Partition

CREATING DATABASE TRIGGERS

- ABOUT DATABASE TRIGGERS • SECURITY_TIME_CHECK Transaction • TRIGGER EXECUTION • The PL/SQL Cache • DEVELOPING TRIGGER LOGIC • CREATE TRIGGER Format (Statement Trigger) • UPDATE Event With Column Specification • IMPLEMENTING TRIGGERS • RAISE_APPLICATION_ERROR() • ROW TRIGGERS • CREATE TRIGGER Format (Row Trigger) • TRIGGER PROCESSING • EMPLOYEE_SALARY_CHECK • EMPLOYEE_JOURNAL • BUDGET_EVENT

MAINTAINING DATABASE TRIGGERS

- INSTEAD OF Triggers • MAINTAIN EXISTING TRIGGERS • DROP TRIGGER • ALTER TRIGGER • INSTEAD OF TRIGGERS • DATA DICTIONARY STORAGE • USER_TRIGGERS

PROCEDURE BUILDER, TRIGGER EDITOR

SYSTEM TRIGGERS

- SYSTEM EVENT ATTRIBUTES • REQUIRED PRIVILEGES • GRANT

CREATING STORED PROCEDURES & FUNCTIONS

- CREATE PROCEDURE / CREATE FUNCTION Statement Format • RAISE_SALARY(), SALARY_VALID() • EXECUTING PROCEDURES & FUNCTIONS • DEVELOPING PROCEDURES & FUNCTIONS • IN, OUT Parameters • PL/SQL Program Restrictions • LONG and LONG RAW Datatypes • CALLING FUNCTIONS FROM SQL • COMPUTE_RAISE()

MAINTAINING STORED PROCEDURES & FUNCTIONS

- ABOUT DEPENDENCIES • ALTERING PROCEDURES & FUNCTIONS • ALTER PROCEDURE • ALTER FUNCTION • DROPPING PROCEDURES & FUNCTIONS • DROP PROCEDURE • DROP FUNCTION • SESSION STATE • DATA DICTIONARY STORAGE • USER_OBJECTS • USER_SOURCE • USER_OBJECT_SIZE • SHOW ERRORS

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PROCEDURE BUILDER & THE DEBUGGER

- WHAT IS THE PL/SQL INTERPRETER? • DEVELOPING SUBPROGRAMS • RAISE_SALARY() • PREPARING A DEBUGGING SESSION • USING THE PL/SQL INTERPRETER • PL/SQL Editor Window • STEP Dialog Box

CREATING & MAINTAINING PACKAGES

- ABOUT, CREATE, DROP, ALTER PACKAGE • PERFORMANCE CONSIDERATIONS

USING CURSOR VARIABLES

SYSTEM-SUPPLIED PACKAGES

- ABOUT SYSTEM-SUPPLIED PACKAGES • DBMS_ROWID() • ROWID_TO_RESTRICTED() • ROWID_TO_EXTENDED() • DBMS_SQL()

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