Oracle Database 11gR2 PL/SQL Fundamentals

Course information

Days : 4
Total lessons : 16
Suggested Prerequisites :

- Oracle Database 11g: SQL Fundamentals I and/or Oracle Database 11g: SQL Fundamentals II
- Previous programming experience

Training includes :

- Experienced trainer(s)
- Pre-test and Post-test
- Practices and solutions

Public price for :

- 15,000 baht(THB) : 1 person

In-house price :

- 45,000 baht(THB) : Economic Class : 1 - 5 people
- 56,000 baht(THB) : Small Class : 6 - 10 people
- 63,000 baht(THB) : Middle Class : 11 - 20 people

All prices exclude VAT 7 %

Course details

Day 1

Lesson 1 : Introduction to PL/SQL
Lesson 2 : Declaring PL/SQL Variables
Lesson 3 : Writing Executable Statements
Lesson 4 : Interacting with the Oracle Server

Day 2

Lesson 5 : Writing Control Structures
Lesson 6 : Working with Composite Data Types
Lesson 7 : Using Explicit Cursors
Lesson 8 : Handling Exceptions

Day 3

Lesson 9 : Creating Stored Procedures
Lesson 10 : Creating Stored Functions
Lesson 11 : Creating Packages
Lesson 12 : Working with Packages

Day 4

Lesson 13 : Using Oracle-Supplied Packages in Application Development
Lesson 14 : Using Dynamic SQL
Lesson 15 : Creating Triggers
Lesson 16 : Creating Compound, DDL, and Event Database Triggers

Lesson details

Lesson 1 : Introduction to PL/SQL

- Explain the need for PL/SQL
- Explain the benefits of PL/SQL
- Identify the different types of PL/SQL blocks
- Use iSQL*Plus as a development environment for PL/SQL
- Output messages in PL/SQL

Lesson 2 : Declaring PL/SQL Variables

- Identify valid and invalid identifiers
- List the uses of variables
- Declare and initialize variables
- List and describe various data types
- Identify the benefits of using the %TYPE attribute
- Declare, use, and print bind variables

Lesson 3 : Writing Executable Statements

- Identify lexical units in a PL/SQL block
- Use built-in SQL functions in PL/SQL
- Describe when implicit conversions take place and when explicit conversions have to be dealt with
- Write nested blocks and qualify variables with labels
- Write readable code with appropriate indentations

Lesson 4 : Interacting with the Oracle Server

- Determine which SQL statements can be directly included in a PL/SQL executable block
- Manipulate data with DML statements in PL/SQL
- Use transaction control statements in PL/SQL
- Make use of the INTO clause to hold the values returned by a SQL statement
- Differentiate between implicit cursors and explicit cursors
- Use SQL cursor attributes

Lesson 5 : Writing Control Structures

- Identify the uses and types of control structures
- Construct an IF statement
- Use CASE statements and CASE expressions
- Construct and identify different loop statements
- Use guidelines when using conditional control structures

Lesson 6 : Working with Composite Data Types

- Create user-defined PL/SQL records
- Create a record with the %ROWTYPE attribute
- Create an INDEX BY table
- Create an INDEX BY table of records
- Describe the differences among records, tables, and tables of records

Lesson 7 : Using Explicit Cursors

- Distinguish between implicit and explicit cursors
- Discuss the reasons for using explicit cursors
- Declare and control explicit cursors
- Use simple loops and cursor FOR loops to fetch data
- Declare and use cursors with parameters
- Lock rows with the FOR UPDATE clause
- Reference the current row with the WHERE CURRENT clause

Lesson 8 : Handling Exceptions

- Define PL/SQL exceptions
- Recognize unhandled exceptions
- List and use different types of PL/SQL exception handlers
- Trap unanticipated errors
- Describe the effect of exception propagation in nested blocks
- Customize PL/SQL exception messages

Lesson 9 : Creating Stored Procedures

- Describe and create a stored procedure
- Create procedures with parameters
- Differentiate between formal and actual parameters
- Use different parameter-passing modes
- Invoke a procedure
- Handle exceptions in procedures
- Remove a procedure

Lesson 10 : Creating Stored Functions

- Describe the uses of functions
- Create stored functions
- Invoke a function
- Remove a function
- Differentiate between a procedure and a function

Lesson 11 : Creating Packages

- Describe packages and list their components
- Create a package to group together related variables, cursors, constants, exceptions, procedures, and functions
- Designate a package construct as either public or private
- Invoke a package construct
- Describe the use of a bodiless package

Lesson 12 : Working with Packages

- Overload package procedures and functions
- Use forward declarations
- Create an initialization block in a package body
- Manage persistent package data states for the life of a session
- Use PL/SQL tables and records in packages
- Wrap source code stored in the data dictionary so that it is not readable

Lesson 13 : Using Oracle-Supplied Packages in Application Development

- Describe how the DBMS_OUTPUT package works
- Use UTL_FILE to direct output to operating system files
- Use the HTP package to generate a simple Web page
- Describe the main features of UTL_MAIL
- Call the DBMS_SCHEDULER package to schedule PL/SQL code for execution

Lesson 14 : Using Dynamic SQL

- Describe the execution flow of SQL statements
- Build and execute SQL statements dynamically using Native Dynamic SQL (that is, with EXECUTE IMMEDIATE statements)
- Compare Native Dynamic SQL with the DBMS_SQL package approach
- Use the DBMS_METADATA package to obtain metadata from the data dictionary as XML or creation DDL that can be used to re-create the objects

Lesson 15 : Creating Triggers

- Describe database triggers and their uses
- Describe the different types of triggers
- Create database triggers
- Describe database trigger-firing rules
- Remove database triggers
- Display trigger information

Lesson 16 : Creating Compound, DDL, and Event Database Triggers

- Describe compound triggers
- Describe mutating tables
- Create triggers on DDL statements
- Create triggers on system events
- Display information about triggers

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