# Oracle Database 19c/21c/23ai PL/SQL Fundamentals

## Course information

Days : 2
Total lessons : 9
Suggested Prerequisites :

- Oracle : SQL Fundamentals I
- Previous programming experience

Training includes :

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

Public price for :

- 10,000 baht(THB) : 1 person

In-house price :

- 27,000 baht(THB) : Economic Class : 1 - 5 people
- 38,000 baht(THB) : Small Class : 6 - 10 people
- 47,000 baht(THB) : Middle Class : 10 - 15 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
Lesson 5 : Writing Control Structures

### Day 2

Lesson 6 : Working with Composite Data Types
Lesson 7 : Using Explicit Cursors
Lesson 8 : Handling Exceptions
Lesson 9 : Creating Stored Procedures and Functions

## 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 and Functions**

- Differentiate between anonymous blocks and subprograms
- Create a simple procedure and invoke it from an anonymous block
- Create a simple function
- Create a simple function that accepts a parameter
- Differentiate between procedures and functions

*For more information please contact :*
*VT Technology Co.,Ltd.*
*Tel +66 0 2594 5185*
*contact@vttech.co.th*
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