



# OR5460: Introduction to Oracle PL/SQL Programming

Course ID #: 0370-240-DB-W

Hours: 21

## Course Content

### Course Description:

The course provides a comprehensive introduction to PL/SQL, Oracle's procedural language extension to SQL. PL/SQL is used to write stored procedures, packages, and database triggers. PL/SQL will be of particular interest to individuals developing applications in a client-server or multi-tier environment.

- This course can be taught for any Oracle version.
- This course presents information and skills that are appropriate for users of the Office 2019 or Office 365 desktop applications. However, the instructional environment for the delivery of this course utilizes Office 365

### Target Audience:

Programmers and Database Administrators responsible for the development or maintenance of application systems which access an Oracle database.

### Prerequisites:

OR5450 Oracle SQL or equivalent experience

### Topics:

#### I. Overview of PL/SQL

#### II. Variables and Constants

- Identifiers
- Datatypes
- Variables
- Using the %TYPE Attribute
- Using the %ROWTYPE Attribute
- Declaring PL/SQL Records
- Declaring an Array

#### III. PL/SQL Executable Statements

- Control Structures
- IF-THEN-ELSE
- IF-THEN-ELSIF
- Nested IF Statements
- Simple CASE Statement
- Searched CASE Statement
- Loops
- Basic (Simple) Loop
- FOR Loop
- WHILE Loop

#### IV. Embedding SQL Within PL/SQL

- Implicit Cursors
- SELECT ... INTO
- INSERT, UPDATE, DELETE
- COMMIT, ROLLBACK
- Using SQL Attributes
- SQL%FOUND, SQL%NOTFOUND
- SQL%ROWTYPE

#### V. Explicit Cursors

- Cursor Steps
- DECLARE, OPEN, FETCH, CLOSE
- Choosing a Loop Structure
- The FOR Loop Cursor

#### VI. Handling Exceptions

- Predefined Exceptions
- User-Defined Exceptions
- DECLARE, RAISE, HANDLE
- RAISE Statement
- Propagation of Exceptions



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## VII. PL/SQL Stored Programs

- Stored Procedures
- Using Parameters
- Functions
- The RETURN Statement
- Executing Stored Programs
- Stored Procedures vs. Functions
- Packages
- Benefits of Packages
- The Package Specification
- The Package Body
- Triggers
- Trigger Events
- Trigger Types
- Row Level Triggers
- Statement Level Triggers
- Trigger Behavior

## VIII. Oracle 18c New Features

- Non-Persistence Support for Object Types
- Polymorphic Table Functions
- PL/SQL Hierarchical Profiler (DBMS\_HPROF) Enhancements
- PL/SQL Qualified Expressions
- Non-Persistable Data Types
- Private Temporary Tables
- SQL\*Plus Changes
- SQL Developer Changes
- Miscellaneous PL/SQL Changes
- Deprecated Features
- Desupported Features