Oracle Programming Using PL/SQL

Course Summary

Description

PL/SQL is an advanced programming language used in Oracle to aid students in creating their applications. Prior knowledge and experience with Oracle SQL is required before taking this course.

This course introduces the essential skills needed to use Oracle's Procedural Language (PL/SQL) to create stored procedures, functions, packages and triggers.

Students will demonstrate the use of parameters, variables, flow control statements, and PL/SQL cursors. They will learn how to perform error handling within their procedures, as well.

There are several hands-on labs in this course that will provide the student with the opportunity to practice the knowledge of Oracle that they will gain during these 3 days.

Topics

- SQL Review
- Introduction to PL/SQL
- Creating Subprograms with PL/SQL
- Packages and Cursors
- Triggers
- Appendix A – Exercises and Solutions
- Appendix B - Oracle Database Architecture

Audience

This course is designed for programmers and analysts who need to get a full understanding of PL/SQL.

Prerequisites

Experience with Windows operating system. One year of experience with programming and knowledge of Relational Database technology. MUST HAVE taken an Introduction to SQL or have equivalent experience with SQL on an Oracle database prior to taking this class.

Duration

Three days

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... to Your Success!"

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Course Outline

I. SQL Review
- A. Introduction
- B. Using SQL*PLUS
- C. Working with DUAL
- D. Using CASE
- E. Working with Dates
- F. Outer Joins
- G. Query Optimization

II. Introduction to PL/SQL
- A. Introduction
- B. Stored Procedures
- C. Advantages of Stored Procedures
- D. Procedure Structure
- E. Function Structure
- F. Trigger Structure
- G. Procedure Parameters
- H. Packages
- I. Tools for Creating Stored Procedures
- J. EXERCISE - Create Simple Stored Procedure
- K. Error Handling in PL/SQL
- L. Summary

III. Creating Subprograms with PL/SQL
- A. PL/SQL Data Types
- B. Declaring Variables and Constants
- C. Scope of Variables
- D. Statements and Assignments
- E. Using SELECT INTO
- F. EXERCISE - Customer Read Procedure
- G. Using INSERT, UPDATE, and DELETE
- H. Enhancing Your Error Messages
- I. EXERCISE - Create INSERT, UPDATE, and DELETE
- J. Stored Procedures for the Sales Customer Table
- K. Control Structures
- L. Decision Flow Control
- M. Loops

IV. Creating Subprograms with PL/SQL - continued
- A. GOTO and Labels
- B. EXERCISE - Create Customer Maintenance Procedure
- C. Creating and Testing Functions
- D. Overloading Functions and Procedures
- E. Recursion
- F. Removing Procedures and Functions
- G. Stored Subprograms and the Data Dictionary

V. Packages and Cursors
- A. PL/SQL Data Types
- B. Creating Packages
- C. Declaring a Cursor
- D. Opening a Cursor
- E. Fetching from a Cursor
- F. Closing a Cursor
- G. Cursor FOR Loops
- H. EXERCISE - Create Staff Salary Cursor
- I. Using Predefined Packages
- J. Summary

VI. Triggers
- A. Introduction
- B. Types of Triggers
- C. Constraints
- D. Order of Trigger Firing
- E. Trigger Components and Restrictions
- F. Creating Triggers
- G. Using :old and :new
- H. Using Trigger Predicates

VII. Appendix A – Exercises and Solutions

VIII. Appendix B - Oracle Database Architecture

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