TechyEdz Solutions

Training | Consulting | Developement | Outsourcing

Oracle SQL PLSQL

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Oracle SQL / PLSQL

- **Course Overview:**

This course introduces students to PL/SQL, Oracle's procedural extension language for SQL and the Oracle relational database. Participants explore the differences between SQL and PL/SQL. They also examine the characteristics of PL/SQL and how it is used to extend and automate SQL to administer the Oracle database. This course culminates with a project that challenges students to program, implement, and demonstrate a database solution for a business or organization.

- **Course Outline:**

SQL

1: Introduction to Oracle Database (SQL):

- What is Database
- Why Oracle
- Introduction to SQL and SQL *Plus, More SQL*Plus Commands
- The Data Dictionary

2: Data Query Language (DQL):

- Categories of SQL Statements
- Oracle Data types
- The SELECT Statement
- Practical examples

3: Data Definition Language (DDL):

- DDL Statements
  The CREATE Statement

- The DROP Command
- The ALTER Command
- Practical examples

4: Data Manipulation Language (DML):

- DML Statements,
- The INSERT Statement
- The DELETE Statement
- The UPDATE Statement

5: Transaction Control Language (TCL):

- TCL Statements
- COMMIT Statement
- ROLLBACK Statement
- SAVEPOINT Statement

6: Data Control Language (DCL):

- DCL Statements
- GRANT Statement
- REVOKE Statement

7: Integrity Constraints:

- Introduction to Integrity Constraints
- Categories of Integrity Constraints
- NOT NULL Constraints
- UNIQUE KEY Constraints
- PRIMARY KEY Constraints
- FOREIGN KEY or Referential Integrity Constraints
- CHECK Constraints, Practical examples

8: SQL Operators:

- Simple Selects
- Comparison Operators
- IN and NOT IN Operators

- BETWEEN Operator
- The LIKE Operator
- Logical Operators
- IS NULL and IS NOT NULL
- ANY
- ALL
- EXISTS

9: Set Operators:

- Introduction
- Selection Criteria
- Union
- Union All
- Intersect
- Minus

10: Joining Tables:

- Joins
- Table Aliases
- Cartesian Product
- Inner Joins
- Equi- Join
- Non-Equi Join
- Non-Key Join
- Reflexive / Self Join
- Natural Join
- Outer Joins
- Right Outer Join
- Left Outer Join
- Full Outer Join

11: SQL Sub queries:

- Introduction
- Using a Sub query with a DML Statement
- Typical Sub queries
- Sub query Operators
- Standard vs. Correlated Sub queries
- Correlated Sub query

12: Groups:

- SQL Statements
- GROUP BY Clause
- HAVING Clause
- Order of a SELECT Statement

13: SQL BUILT-IN FUNCTIONS:

- Introduction, Pseudo Columns
- GROUP Functions
- MATHEMATICAL / NUMERIC Functions
- STRING / CHARACTER Functions
- DATE / TIME Functions
- CONVERSION Functions
- MISCELLANEOUS Functions

14: More Database Objects:

- More Database Objects
- VIEWS
- SEQUENCE
- SYNONYMS

PLSQL

1: Fundamentals

- Introduction to PL/SQL
- Benefits of PL/SQL
- Creating PL/SQL Blocks

2: Defining Variables and Datatypes

- Using Variables in PL/SQL
- Recognizing PL/SQL Lexical Units
- Recognizing Data Types
- Using Scalar Data Types
- Writing PL/SQL Executable Statements
- Nested Blocks and Variable Scope
- Good Programming Practices

3: Using SQL in PL/SQL

- Review of SQL DML
- Retrieving Data in PL/SQL
- Manipulating Data in PL/SQL
- Using Transaction Control Statements

4: Program Structures to Control Execution Flow

- Conditional Control: IF Statements
- Conditional Control: CASE Statements
- Iterative Control: Basic Loops
- Iterative Control: WHILE and FOR Loops
- Iterative Control: Nested Loops

5: Using Composite Datatypes

- User-Defined Records
- Indexing Tables of Records

6: Using Cursors and Parameters

- Introduction to Explicit Cursors
- Using Explicit Cursor Attributes

- Cursor FOR Loops
- Cursors with Parameters
- Using Cursors for UPDATE
- Using Multiple Cursors

7: Exception Handling

- Handling Exceptions
- Trapping Oracle Server Exceptions
- Trapping User-Defined Exceptions
- Recognizing the Scope of Exceptions

8: Using and Managing Procedures

- Creating Procedures
- Using Parameters in Procedures
- Passing Parameters

9: Using and Managing Functions

- Creating Functions
- Using Functions in SQL Statements
- Review of the Data Dictionary
- Managing Procedures and Functions
- Review of Object Privileges
- Using Invoker's Rights and Autonomous Transactions

10: Using and Managing Packages

- Creating Packages
- Managing Package Concepts
- Advanced Package Concepts

11: Getting the Best out of Packages

- Persistent State of Package Variables
- Using Oracle-Supplied Packages

12: Improving PL/SQL Performance

- Using Dynamic SQL
- Improving PL/SQL Performance

13: Using and Managing Triggers

- Introduction To Triggers
- Creating DML Triggers, Part I
- Creating DML Triggers, Part II
- Creating DDL and Database Event Triggers
- Managing Triggers

14: Recognizing and Managing Dependencies

- Introduction to Dependencies
- Understanding Remote Dependencies

15: Using the PL/SQL Compiler

- Using PL/SQL Initialization Parameters
- Displaying Compiler Warning Messages
- Using Conditional Compilation
- Hiding Your Source Code

Prerequisites:

- Previous experience with at least one programming language
- Database Design and Database Programming with SQL

Who Can attend:

- Students who wish to learn the techniques and tools to automate database application tasks
- Students who possess basic mathematical, logical, and analytical problem-solving skills
- Novice programmers, as well as those at advanced levels, to learning the PL/SQL programming language to an advanced level

Number of Hours: 50hrs

Certification: OCA / OCP

Key Features:

- One to One Training
- Online Training
- Fastrack & Normal Track
- Resume Modification
- Mock Interviews
- Video Tutorials
- Materials
- Real Time Projects
- Virtual Live Experience
- Preparing for Certification