Introduction to SQL/PLSQL Accelerated Ed 2

Duration: 5 Days

What you will learn

This Introduction to SQL/PLSQL Accelerated course will teach you SQL and PL/SQL programming language concepts. Learn how to write SQL commands, develop stored PL/SQL procedures, functions, packages and database triggers. This accelerated course covers 10 days worth of content in only 5 days.

Learn To:

Understand the fundamental and core concepts of relational databases.
Create reports of sorted and restricted data. Run data manipulation statements (DML). Retrieve row and column data from tables. Control privileges at the object and system level. Create indexes and constraints; alter existing schema objects.
Create and query external tables.
Create anonymous PL/SQL blocks, functions and procedures. Conditionally control code flow (loops, control structures).

Create stored procedures, functions and packages. Conditionally control code flow (loops, control structures).
Use PL/SQL packages to group and contain related constructs.
Create triggers to solve business challenges. Leverage the Oracle supplied PL/SQL packages for various programming tasks.

Benefits to You

By enrolling in this course, you'll gain expertise in relational database data management as you learn how to effectively use SQL commands against your business data. These features will help you query and manipulate data within the database, use the dictionary views to retrieve metadata and create reports about their schema objects. Extend the functionality of the SQL language with PL/SQL language to write application code.

Participate in Hands-On Exercises

Through hands-on instruction from expert Oracle instructors, you'll learn to develop stored procedures, functions, packages and more. Hands-on exercises will help reinforce your learning. Course Bundle Note This course is a combination of Oracle Database: Introduction to SQL and Oracle Database: Program with PL/SQL courses.

Audience

Application Server Administrators
Data Warehouse Administrator
Database Administrators
Developer
Forms Developer
PL/SQL Developer
System Analysts
Technical Consultant

Related Training

Required Prerequisites

Data processing

Familiarity with data processing concepts and techniques

Suggested Prerequisites
Previous programming experience

Course Objectives

Utilize views to display data

Write SELECT statements that include queries

Write dynamic SQL for more coding flexibility

Control database access to specific objects

Design PL/SQL anonymous blocks that execute efficiently

Design PL/SQL packages to group related constructs

Display data from multiple tables using JOIN syntax

Create overloaded package subprograms for more flexibility

Create reports of aggregated data

Create tables to store data

Identify the major structural components of the Oracle Database 12c

Leverage the functionality of the various Oracle Supplied PL/SQL packages

Manage schema objects

Retrieve row and column data from tables

Run data manipulation statements (DML) in Oracle Database 12c

Use conditional compilation to customize the functionality in a PL/SQL application without removing any source code

Course Topics

Introduction to Oracle Database
List the features of Oracle Database 12c
Discuss the basic design, theoretical, and physical aspects of a relational database

Categorize the different types of SQL statements
Describe the data set used by the course
Log on to the database using SQL Developer environment
Save queries to files and use script files in SQL Developer

Working with Oracle Cloud Exadata Express Cloud Service
Introduction to Oracle Database Exadata Express Cloud Service
Accessing Cloud Database using SQL Workshop
Connecting to Exadata Express using Database Clients

Retrieve Data using the SQL SELECT Statement
List the capabilities of SQL SELECT statements
Generate a report of data from the output of a basic SELECT statement
Select All Columns
Select Specific Columns
Use Column Heading Defaults
Use Arithmetic Operators
Understand Operator Precedence
Learn the DESCRIBE command to display the table structure

Learn to Restrict and Sort Data
Write queries that contain a WHERE clause to limit the output retrieved
List the comparison operators and logical operators that are used in a WHERE clause
Describe the rules of precedence for comparison and logical operators
Use character string literals in the WHERE clause
Write queries that contain an ORDER BY clause to sort the output of a SELECT statement
Sort output in descending and ascending order

Usage of Single-Row Functions to Customize Output
Describe the differences between single row and multiple row functions
Manipulate strings with character function in the SELECT and WHERE clauses
Manipulate numbers with the ROUND, TRUNC, and MOD functions
Perform arithmetic with date data
Manipulate dates with the DATE functions

Invoke Conversion Functions and Conditional Expressions
Describe implicit and explicit data type conversion
Use the TO_CHAR, TO_NUMBER, and TO_DATE conversion functions
Nest multiple functions
Apply the NVL, NULLIF, and COALESCE functions to data
Use conditional IF THEN ELSE logic in a SELECT statement

Aggregate Data Using the Group Functions
Use the aggregation functions to produce meaningful reports
Divide the retrieved data in groups by using the GROUP BY clause
Exclude groups of data by using the HAVING clause

Display Data From Multiple Tables Using Joins
Write SELECT statements to access data from more than one table
View data that generally does not meet a join condition by using outer joins
Join a table to itself by using a self join

Use Sub-queries to Solve Queries
Describe the types of problem that sub-queries can solve
Define sub-queries
List the types of sub-queries
Write single-row and multiple-row sub-queries

The SET Operators
Describe the SET operators
Use a SET operator to combine multiple queries into a single query
Control the order of rows returned

Data Manipulation Statements
Describe each DML statement
Insert rows into a table
Change rows in a table by the UPDATE statement
Delete rows from a table with the DELETE statement
Save and discard changes with the COMMIT and ROLLBACK statements
Explain read consistency

Use of DDL Statements to Create and Manage Tables
Categorize the main database objects
Review the table structure
List the data types available for columns
Create a simple table
Decipher how constraints can be created at table creation
Describe how schema objects work

Other Schema Object
Create a simple and complex view
Retrieve data from views
Create, maintain, and use sequences
Create and maintain indexes
Create private and public synonyms

Introduction to PL/SQL
Overview of PL/SQL
Identify the benefits of PL/SQL Subprograms
Overview of the types of PL/SQL blocks
Create a Simple Anonymous Block
How to generate output from a PL/SQL Block?

Declare PL/SQL Identifiers
List the different Types of Identifiers in a PL/SQL subprogram
Usage of the Declarative Section to Define Identifiers
Use variables to store data
Identify Scalar Data Types
The %TYPE Attribute
What are Bind Variables?
Sequences in PL/SQL Expressions

Write Anonymous PL/SQL blocks
Describe Basic PL/SQL Block Syntax Guidelines

Learn to Comment the Code
Deployment of SQL Functions in PL/SQL
How to convert Data Types?
Describe Nested Blocks
Identify the Operators in PL/SQL

SQL statements in PL/SQL blocks
Invoke SELECT Statements in PL/SQL
Retrieve Data in PL/SQL
SQL Cursor concept
Avoid Errors by using Naming Conventions when using Retrieval and DML Statements
Data Manipulation in the Server using PL/SQL
Understand the SQL Cursor concept
Use SQL Cursor Attributes to Obtain Feedback on DML
Save and Discard Transactions

Control Structures
Conditional processing using IF Statements
Conditional processing using CASE Statements
Describe simple Loop Statement
Describe While Loop Statement
Describe For Loop Statement
Use the Continue Statement

Composite Data Types
Use PL/SQL Records
The %ROWTYPE Attribute
Insert and Update with PL/SQL Records
INDEX BY Tables
Examine INDEX BY Table Methods
Use INDEX BY Table of Records

Explicit Cursors
What are Explicit Cursors?
Declare the Cursor
Open the Cursor
Fetch data from the Cursor
Close the Cursor
Cursor FOR loop
The %NOTFOUND and %ROWCOUNT Attributes
Describe the FOR UPDATE Clause and WHERE CURRENT Clause

Exception Handling
Understand Exceptions
Handle Exceptions with PL/SQL
Trap Predefined Oracle Server Errors
Trap Non-Predefined Oracle Server Errors
Trap User-Defined Exceptions
Propagate Exceptions
RAISE_APPLICATION_ERROR Procedure

Stored Procedures

Create a Modularized and Layered Subprogram Design
Modularize Development With PL/SQL Blocks
Understand the PL/SQL Execution Environment
List the benefits of using PL/SQL Subprograms
List the differences between Anonymous Blocks and Subprograms
Create, Call, and Remove Stored Procedures
Implement Procedures Parameters and Parameters Modes
View Procedure Information