Oracle11g Advanced SQL Queries

Course Summary

Description

This course is intended to provide experienced Oracle developers with the advanced SQL skills needed to effectively design and code complex queries and applications required to solve enterprise business problems. Coding examples and workshops serve to reinforce the material presented in class.

Topics

- Multi-table Operations
- Grouping Data
- Analytic Functions
- Hierarchic Queries
- Transaction Control
- Table Alternatives
- Multiset Operators
- Expression Filter Type
- Flashback Query
- ETL Support

Audience

This course is designed for programmers, analysts, database administrators, and users who require advanced SQL techniques to access data in an Oracle database.

Prerequisites

Students should have taken the Oracle11g SQL & SQL*Plus. Students are expected to be experienced in the development of single table operations.

Duration

Two days

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Course Outline

I. Multi-table Operations
- A. Joins
- B. Subqueries
- C. Subqueries with Multiple Columns
- D. Correlated Subqueries
- E. EXISTS Keyword
- F. Inline SELECT

II. Grouping Data
- A. Aggregate Functions
- B. Grouping Multiple Columns
- C. HAVING Clause
- D. ROLLUP Operations
- E. Partial ROLLUP
- F. CUBE Operations
- G. GROUPING Function
- H. GROUPING SETS
- I. Cross-Tabulation Queries
- J. PIVOT Operation
- K. UNPIVOT Operation

III. Analytic Functions
- A. Introduction to Analytic Functions
- B. Partition Clause
- C. Order-By Clause
- D. Windowing Clause
- E. Ranking Functions
- F. Top-N Queries
- G. LAG and LEAD

IV. Hierarchic Queries
- A. CONNECT BY Clause
- B. START WITH Clause
- C. LEVEL Pseudocolumn
- D. Sort by LEVEL
- E. SIBLINGS
- F. SYS_CONNECT_BY_PATH
- G. CONNECT_BY_ISLEAF
- H. CONNECT_BY_ROOT
- I. CONNECT_BY_ISCYCLE
- J. NOCYCLE

V. Transaction Control
- A. Transaction Review
- B. Statement Level Read Consistency
- C. Transaction Level Read Consistency
- D. Oracle Isolation Levels
- E. Phantom and Non-Repeatable Reads
- F. Read Committed
- G. Serializable

VI. Table Alternatives
- A. Temporary Table Concepts
- B. Creating Temporary Tables
- C. Temporary Table Limitations
- D. Materialized View Concepts
- E. Query Rewrite

VII. Multiset Operators
- A. Nested Table Concepts
- B. MULTISET EXCEPT
- C. MULTISET INTERSECT
- D. MULTISET UNION

VIII. Regular Expressions
- A. Regular Expression Concepts
- B. Metacharacters
- C. REGEXP_LIKE
- D. REGEXP_SUBSTR
- E. REGEXP_INSTR
- F. REGEXP_REPLACE

IX. Expression Filter Type
- A. Expression Column
- B. DBMS_EXPFIL Package
- C. Applying the EVALUATE Operator
- D. Evaluation Semantics

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Course Outline (cont'd)

X. Flashback Query

A. Flashback Technology Overview
B. Flashback Queries
C. Using Flashback Queries
D. DBMS_FLASHBACK Package
E. Flashback Version Query
F. Flashback Transaction Query
G. Flashback Limitations
H. UNDO and Flashback

XI. ETL Support

A. MERGE statement
B. External Tables - Concepts
C. Using External Tables
D. Multitable Insert

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