

## 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