Oracle 11g SQL for Business or Data Analysis (3 Days) CTI 602

*This course gives students a basic knowledge of how to extract data from Oracle using SQL, SQL*Plus and PL/SQL. This training covers topics that are necessary to query data for analysis from an Oracle 11g database.*

Prerequisites: A general understanding of relational database design concepts. Minimum software requirements: Windows Server 2003, Windows XP Pro or Vista Pro; Oracle 11g. Minimum hardware requirements for all machines: Minimum 512 MB RAM (2 GB preferred); 20 GB of free space on hard drive (before installation). Machines need static IP addresses. Microsoft PowerPoint and Internet access on instructor's workstation for presentation purposes.

Module 1: Introduction to Structure Query Language (SQL) for Analyst
- SQL the Language
- Data Manipulation Language (DML)
- Data Definition Language (DDL)
- SQL*Plus the Environment
- Scripting using Oracle's Procedural Language Option (PL/SQL)
- Overview of Complete SQL SELECT Syntax

Module 2: Introduction to Oracle's RDBMS Objects
- Objects, Tables, Columns, Pseudo Columns, Rows
- Data Domains, Duplicate Values, Null Values
- Indexes, Views, Sequences, Synonyms
- Declarative Constraints
- Primary, Foreign, Unique Keys
- Check, Not Null, Default

Module 3: Using SQL in Different Scenarios

SQL Using SQL*Plus
- Starting SQL*Plus
- Entering and Executing SQL Commands
- The SQL Command Buffer within SQL*Plus
- Editors, Editing Commands in the Buffer
- SQL*Plus Commands
- Set, Show, Column, Others
- Using SQL*Plus Worksheet

SQL Developer
- Starting iSQLPlus
- Entering and Executing SQL Commands

Module 4: More SQL SELECT
- Arithmetic Calculations
- Character, Comparison and Logical Operators
- WHERE Clause, Pattern Matching, Using SQL*Plus Substitution Variables
- &, &&, &1
- ORDER BY Clause
- How NULLS are Processed
- Multiple Columns
- ASC vs. DESC
- DISTINCT vs. UNIQUE

Module 5: Single Row FUNCTIONS
- What are Functions?
- 1. Analytic
- 2. Character
- 3. Numeric
- 4. Date
- 5. Conversion
- 6. Miscellaneous

Module 6: GROUP BY Clause and Group FUNCITONS
- What are GROUP Functions?
- Aggregate (Group)
- Analytic Functions
- COUNT(*) vs. COUNT(column_name)
- SUM(), AVG(), MIN(), MAX()
- VARIANCE(), STDDEV()
- GROUP BY and HAVING Clause
- ROLLUP(), CUBE(), GROUPING()

Module 7: Advanced Topics
- Joining Tables
- Subqueries
- Correlated Subqueries
- IF EXIST

Module 8: SQL*Plus Reporting
- Building a SQL Script
- COLUMN Command
- Titles, Control Breaks, Sorting
- TITLE vs. REPHEADER
- BTITLE vs. REPFOOTER
- BREAK Command
- COMPUTE Command (Aggregates)
- Using Variables in SQL*Plus
- SQL*Plus Substitution Variables
- &, && and &1
- ACCEPT and PROMPT Commands
- DEFINE and BIND Variables

Module 9: Getting Data Into Oracle
- SQL*Loader
- Field Delimited Files
- CSV Files

Module 10: Getting Data Out of Oracle
- Field Delimited Files
- CSV Files
- ODBC Connections Like: Excel, Access, Crystal Reports, and SAS

Module 11: Introduction to PL/SQL Scripting
- What is This Thing Called PL/SQL
- Features and Benefits
- Where Do You Fit?

Module 12: PL/SQL Basics
- An Anonymous Block Structure
- Lexical Units
- Variable Declarations, Expressions and Operators
- Branching
- IF and CASE Statements
- Looping: Simple and WHILE
- FOR Loops

Module 13: Working with Database Data
- SELECT Statement (Single Row)
- Other DML

Module 14: Introduction to CURSORs
- Implicit and Declared CURSOR
- SELECT Statement (Multiple Rows)
- Using a LOOP to FETCH a CURSOR

Module 15: Exception Handling
- What are EXCEPTIONS?
- Oracle Pre-Defined, User-Defined, and Other Oracle Exceptions

Module 16: Writing Scripts
- How to Automate Routine Recurring Tasks

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