Introduction to Oracle 11g SQL Programming

Summary: In this class, students will learn how to create, retrieve, and manipulate objects in Oracle 11g Structured Query Language (SQL). Students will also be introduced to Oracle 11g database features and tools.

Length: 2 days

Audience: Application developers, database administrators, system administrators and users who write applications and procedures that access an Oracle 11g database.

Prerequisites: Familiarity with relational database concepts is recommended.

COURSE CONTENT

1. RELATIONAL DATABASE AND SQL OVERVIEW
- Review of relational database terminology
- Relational database management systems
- Introduction to sql
- Oracle versioning and history
- Logical and physical storage structures
- Connecting to a sql database
- Datatypes
- Sample database

2. USING ORACLE SQL*PLUS
- Sql*plus
- The sql buffer
- Buffer manipulation commands
- Running sql*plus scripts
- Tailoring your sql*plus environment
- Viewing table characteristics
- Sql*plus substitution variables
- Interactive sql*plus scripts
- Sql*plus lob support
- Graphical clients

3. SQL QUERIES - THE SELECT STATEMENT
- The select statement
- The case...when expression
- Choosing rows with the where clause
- Null values
- Compound expressions
- In and between
- Pattern matching: like and regexp_like
- Creating some order

4. SCALAR FUNCTIONS
- Sql functions
- Using sql functions
- String functions
- Regular expression functions
- Numeric functions
- Date functions
- Date formats
- Conversion functions
- Literal values
- Intervals
- Oracle pseudocolumns

5. SQL QUERIES - JOINS
- Selecting from multiple tables
- Joining tables
- Self joins
- Outer joins
- Aggregate functions and advanced techniques
- Subqueries
- Correlated subqueries
- The exists operator

6. THE AGGREGATE FUNCTIONS
- Nulls and distinct
- Grouping rows
- Combining select statements

7. DATA MANIPULATION AND TRANSACTIONS
- The insert statement
- The update statement
- The delete statement
- Transaction management
- Concurrency
- Explicit locking
- Data inconsistencies
- Loading tables from external sources

8. DATA DEFINITION AND CONTROL STATEMENTS
- Datatypes
- Defining tables
- Constraints
- Inline constraints
- Modifying table definitions
- Deleting a table definition
- Controlling access to your tables

9. OTHER DATABASE OBJECTS
- Views
- Creating views
- Updatable views
- Sequences
- Synonyms

10. APPENDIX A - THE DATA DICTIONARY
- Introducing the data dictionary
- Dba, all, and user data dictionary views
- Some useful data dictionary queries