

Course Description: This course is designed to give users an understanding of Oracle SQL and Oracle PL/SQL languages using Oracle's SQL*Plus and iSQL*Plus tools. The course covers SQL commands for DML, DDL, Query, and Transaction Control operations. Students are also introduced to procedural programming using PL/SQL. The course topics are applicable to all versions of Oracle through Oracle 10g.

Who Should Attend: Application designers and developers, database administrators and operators, and end users should attend this course.

Prerequisites: There are no prerequisites for this course.

Benefits of Attendance: Upon completion of this course, students will be able to:

- Explain the difference between SQL, PL/SQL and SQL*PLUS.
- Write basic SQL queries to retrieve desired data.
- Use DML statements (insert, update, and delete).
- Use DDL statements (create, alter, and drop).
- Use transaction control statements to commit, rollback, and create savepoints.
- Write advanced queries.
- Write scripts to do queries and display SQL*PLUS reports.
- Control access to your database objects.
- Write a PL/SQL block using all elements of block structure.
- Write PL/SQL statements using lexical units, declared variables, and assignment statements.
- Use control structures to loop, branch, and jump.
- Use PL/SQL named exceptions and user-defined exceptions.
- Use explicit cursors.

Course Outline:

<p>Database Design Database Models Beginnings Some Introductory Terminology Codd's 12 Rules Normalization First Normal Form Higher Order Normal Forms</p> <p>Oracle Standard Interfaces SQL SQL*Plus Oracle Architecture Interfaces to Oracle Command Line Interface Viewing a Sample Table The Graphical User Interface The SQL Buffer The Web-Based Interface Describe</p> <p>The Sample Database The Entity Relationship Model Entity Relationship Diagrams The Sample Database ER Diagram for Sample Database Creating the Sample Data Viewing Sample Data Data Types of the Sample Data</p> <p>Data Definition Language Categories of SQL Statements Oracle Datatypes The CREATE Statement The DROP Command The ALTER Command Integrity Constraints Entity Integrity Constraints Referential Integrity Constraints Modifying Table to Use Constraints Checking Constraints The Data Dictionary</p> <p>Data Manipulation Language DML Statements The SELECT Statement The INSERT Statement The DELETE Statement The UPDATE Statement</p>	<p>More SQL*Plus Commands</p> <p>Transaction Control Transactions Command Classification Savepoints The SET TRANSACTION Command</p> <p>SQL Operators Simple Selects Comparison Operators IN and NOT IN Operators BETWEEN Operator The LIKE Operator Logical Operators IS NULL and IS NOT NULL ANY ALL</p> <p>SQL FUNCTIONS Introduction The DISTINCT Keyword Aliases Miscellaneous Functions Mathematical Functions String Functions Date Functions Conversion Functions Pseudo Columns</p> <p>Joining Tables Joins Cartesian Product Inner Joins Equi-Join Table Aliases Non-Equi Join Non-Key Join Reflexive Join Natural Join Outer Joins Right Outer Join Left Outer Join Full Outer Join Oracle-Specific Syntax for Outer Joins</p> <p>Set Operators Introduction Selection Criteria Union</p>	<p>Union All Intersect Minus</p> <p>SQL Subqueries Introduction Using a Subquery with a DML Statement Typical Subqueries Subquery Operators Standard vs. Correlated Subqueries Correlated Subquery Example Predicate Operators</p> <p>Groups SQL Statements GROUP BY Clause HAVING Clause Order of a SELECT Statement</p> <p>More Database Objects More Database Objects Relational Views Updating a View Create or Replace Forcing a View The Data Dictionary Revisited Indexes Synonyms</p> <p>Reports Report Features Session Control The SET Command The COLUMN Command The BREAK Command The COMPUTE Command</p> <p>Introduction SQL vs. PL/SQL A Few Simple Examples Saving Procedures A More Complete Picture Comments Variable Substitution Simple Exception Handling Advantages of PL/SQL Assignments</p> <p>Declarations and Data Types</p>	<p>Declarations Standard Data Types Initialization Variable Names Specialized Data Types - %TYPE Specialized Data Types - %ROWTYPE Building Your Own Data Types - Records A Quick look at Loops Arrays Tables Nested Blocks</p> <p>Language Components Introduction Assignments Decision Making Statements Simple Loops Loops - for Loops - indefinite Loops - while Simple Loops Nested Loops Boolean Variables PL/SQL Relational Operators PL/SQL Logical Operators The CASE Construct</p> <p>Cursors Introduction Cursor Manipulation Using the Cursor For Loops Cursors Cursor Attributes Cursor Parameters Nested Cursors Cursor Exceptions</p> <p>Exceptions Errors in Programs Run Time Exceptions Oracle Built In Exceptions Unnamed Exceptions Built in Exception Functions Creating Your Own Exceptions Building Non Terminating Exceptions</p> <p>Functions and Procedures Introduction</p>	<p>Creating a Procedure Example Procedure Using Parameters Functions Procedures and Exceptions</p> <p>Appendix A: An SQL and SQL*Plus Reference DDL Statements DML Statements Transaction Control Statements Operators Common SQL*Plus Commands</p>
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