



Oracle SQL and PLSQL Training Course Content

Oracle SQL and PLSQL Course Syllabus (Includes ANSI SQL / ISO SQL)

1. Basic DATABASE Concept and SQL

- Basic history of database concept: DBMS, RDBMS, ORDBMS
- Advantage of ORACLE database and version information
- Interface tools usage: sqlplus, isqlplus, sqldeveloper, Toad
- SQL Language overview : DQL, DML, DDL, DCL, TCL
- What is the usage of ANSI standard.
- SELECT Command - Column Alias Rules, String data,
- Concatenations with various data
- Null Value handling with number and characters,
- Arithmetic Operator
- Concatenation Operator,
- Eliminating Duplicate Rows

2. Restricting and Sorting Data

- WHERE Clause - Character Strings and Dates, number
- General Comparison Conditions = > >= < <= <>
- Other Comparison BETWEEN , IN , LIKE , NULL
- Logical Conditions AND OR NOT
- ORDER BY Clause, Sorting by Column Alias , Column Position, Multiple Columns

3. Single-Row Functions

- Character Functions: UPPER, LOWER, INITCAP, LENGTH, SUBSTR, INSTR, LPAD, RPAD, CONCAT, LTRIM, RTRIM, TRIM, REPLACE, TRANSLATE, REVERSE
- Number Functions: ROUND, TRUNC, MOD, POWER, CEIL , FLOOR, ABS

- Dates Functions: SYSDATE, MONTHS_BETWEEN, NEXT_DAY, LAST_DAY, ADD_MONTHS, ROUND, TRUNC, Arithmetic on Date
- Conversion Functions: Implicit Data-Type Conversion & Explicit Data-Type Conversion, TO_CHAR ,TO_NUMBER ,TO_DATE
- General Functions: NVL , NVL2 , NULLIF, COALESCE
- CASE Expression, DECODE
- Nested function with real-time usage

4. JOINS

- EQUI JOIN / SIMPLE JOIN / NORMAL JOIN
- ANSI JOIN, LEFT OUTER, RIGHT OUTER, FULL OUTER
- NATURAL JOIN, NATURAL OUTER JOINS
- INNER JOIN, JOIN ... USING clause, JOIN ... ON clause,
- CROSS JOIN, NON-EQUI JOIN, SELF JOIN
- ORACLE STANDARD OUTER JOINS.
- Multi table Joins, Complex Joins – How to simplified complex joins.

5. Multi-row Functions

- Group Functions Rules, SUM, MIN, MAX, COUNT, AVG
- Creating Groups of Data: GROUP BY Clause
- Filtering Group Results: The HAVING Clause

6. Sub-queries

- Single-Row Subqueries- Rules, Operators : = > >= < <= <>
- Null Values in a Subquery
- Multi-Row Subqueries- Rules, Operators : IN, ANY , ALL

7. Reporting data using interface commands

- pagesize, linesize , column heading , column format , colsep
- tTitle , bTitle , break on column, spool , CSV file generation, Text file generation

8. Data Manipulation Language DML and Transaction Control Language TCL

- DML : INSERT, UPDATE, DELETE, MERGE
- TCL : COMMIT, ROLLBACK, SAVEPOINT

9. Data Definition Language - DDL

- DDL : CREATE, ALTER, RENAME, DROP, TRUNCATE
- DEFAULT OPTION.

- Constrain table copy

10. Constraints

- NOT NULL, UNIQUE, PRIMARY KEY, FOREIGN KEY, CHECK
- Column Level Constraint, Table Level Constraint – Naming constraints and usage
- Adding a Constraint, Dropping a Constraint,
- Disabling Constraints, Enabling Constraints
- Validating Constraints

11. Views

- Simple Views and Complex Views – Create, Drop, Source Code
- Rules for Performing DML Operations on a View
- WITH CHECK OPTION , WITH READ ONLY
- Inline Views
- Materialized View – Create, Refresh, Drop - Usage

12. Other Database Objects

- Sequence- NEXTVAL and CURRVAL
- Index - When to Create an Index, When Not to Create an Index.
- Synonyms

13. DCL COMMANDS

- Creating Users
- Granting / Revoking Privileges
- Creating and Granting Privileges to a Role

14. Dictionary Tables

- Tables, Views, Synonyms, Index, Sequence, Constrains, Source and other Dictionary

15. SET Operators

- UNION ,
- UNION ALL ,
- INTERSECT ,
- MINUS

16. Advanced Date-time Functions

- TIME ZONES ,
- SYSDATE, SYSTIMESTAMP,

- CURRENT_DATE , CURRENT_TIMESTAMP
- SESSIONTIMEZONE ,
- Storing time zone data in Table
- EXTRACT ,
- TO_YMINTERVAL

17. Advanced GROUP BY Clause

- Group by with ROLLUP,
- Group by with CUBE,
- GROUPING SETS

18. Advanced Subqueries

- Pairwise Comparison Subquery ,
- Nonpairwise Comparison Subquery
- Correlated Subqueries,
- Correlated UPDATE,
- Correlated DELETE
- EXISTS , NOT EXISTS Operator

19. Hierarchical Retrieval

- Walking the Tree: From the Bottom Up , From the Top Down
- LEVEL Pseudo column,
- Connect by prior,

20. Multi-table Insert

- Unconditional INSERT ALL
- Conditional INSERT ALL
- Conditional FIRST INSERT

21. DATA LOADER –

- SQLLDR – Loading CSV file / Flat file into ORACLE table.

22. Analytic Functions

- WM_CONCAT, LAG, LEAD, RANK, DENSE_RANK
- Query by partition clause with sum, min, max, avg, count,
- Order by clause with sum, min, max, avg, count,
- Pseudo column : Rownum, Rowid, - Elimination duplicate data
- Connect by rownum , Connect by Level – Generating random numbers, random dates,

- Quote Operator syntax and usage

23. Backup

- Export / Import SCHEMA

24. General discussion

- What is migration?
- Migration Estimating, Planning, Preparation – Simple Scenario / Complex Scenario.

GREENS TECHNOLOGYS



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