

Oracle Training Course Overview

Introduction to DBMS:

- Approach to Data Management
- Introduction to prerequisites
- File and File system
- Disadvantages of file
- Review of Database Management Terminology
- Database Models
 - Hierarchical Model
 - Network Model
 - Relational Model

Introduction to RDBMS

- Feature of RDBMS
- Advantages of RDBMS over FMS and DBMS
- The 12 rules (E.F Codd's Rules –RDBMS)
- Support of Normalization Process for Data Management
- Oracle Corporation Products
- Oracle Versions
- About SQL&SQL*PLUS

Sub Language Commands:

- Data Definition Language (DDL)
- Data Retrieval Language (DRL)
- Data Manipulation Language (DML)
- Transaction Control Language (TCL)
- Database Security and Privileges (DCL)

Introduction to SQL Database Object

- Oracle Pre Defined Data types
- DDL Commands
- Create, Alter (add, modify, rename, drop)Columns, Rename, truncate, drop
- DML-Insert, update, delete
- DQL-SELECT Statements using WHERE clause
- Comparison and Conditional Operators
- Arithmetic and Logical Operators
- Set Operators (UNION, UNION ALL, INTERSECT, MINUS)
- Special Operators – IN (NOT IN), BETWEEN (NOT BETWEEN), LIKE (NOTLIKE), IS NULL (IS NOT NULL)
- Working with DML, DRL Commands
- Operators Support

Built in Functions

- Arithmetic Functions, Character Functions, Date Functions, Conversion Functions
- Aggregate Functions, OLAP Functions & General Functions

Grouping the Result of a Query

- Using Group by and Having Clause of DRL Statement
- Using Order by clause

Working with Integrity Constraints

- Importance of Data Integrity
- Support of Integrity Constraints for Relating Table in RDBMS
 - NOT NULL constraint
 - UNIQUE constraint
 - PRIMARY KEY constraint
 - FOREIGN KEY constraint
 - CHECK constraint
- Working with different types of integrity Constraints

REF constraint

- Understanding ON DELETE clause in referential integrity constraint
- Working with composite constraint
- Applying DEFAULT option to columns
- Working with multiple constraints upon a column
- Adding constraints to a table
- Dropping of constraints
- Enabling / Disable constraints
- Querying for constraints information

Querying Multiple Tables (Joins)

- Equi Join/Inner Join/Simple Join
- Cartesian Join
- Non-Equi Join
- Outer Joins
- Self Join

Working with Sub Queries

- Understanding the practical approach to Sub Queries/Nested Select/Sub Select/Inner Select/Outer Select
- What is the purpose of a Sub Query?
- Sub Query Principle and Usage
- Types of Sub Queries
 - Single Row
 - Multiple Row
- Applying Group Functions in Sub Queries
- The Impact of Having Clause in Sub Queries
- IN/ANY/SOME, ALL Operators in Sub Queries
- Correlated Sub Queries
- Handling Data Retrieval with EXISTS and NOT EXISTS Operators

Working with DCL, TCL Commands

- Grant, Revoke
- Commit, Rollback, Savepoint
- SQL Editor Commands
- SQL Environment settings

Maintaining Database Objects

VIEWS in Oracle

- Understanding the Standards of VIEWS in Oracle
- Types of VIEWS
- Relational Views
- Object Views
- Prerequisites to work with views
- Practical approach of SIMPLE VIEWS and COMPLEX VIEWS
- Column definitions in VIEWS
- Using VIEWS for DML Operations
- Putting CHECK Constraint upon VIEWS
- Creation of READ ONLY VIEWS
- Understanding the IN LINE VIEWS
- About Materialized Views
- View Triggers

Working with Sequences

Working with Synonyms

Pseudo Columns in Oracle

- Understanding Pseudo Columns in Oracle
- Types of Pseudo Columns in Oracle
- CURRVAL and NEXTVAL
- LEVEL
- ROWID
- ROWNUM

Data Partitions & Parallel Processes

- Types of Partitions
- Range Partitions

Locks

- Row level Locks
- Table Level Locks
- Shared Lock
- Exclusive Lock
- Dead Lock

PL/SQL (Procedure Language – SQL)

- Introduction to Programming Languages
- Introduction to PL/SQL
- The Advantages of PL/SQL
- PL/SQL Architecture
- PL/SQL Data types
- Variable and Constants
- Using Built_in Functions
- Conditional and Unconditional Statements
- Simple if, if... else, nested if..else, if..else Ladder
- Selection Case, Simple Case, GOTO Label and EXIT
- Iterations in PL/SQL

- Simple LOOP, WHILE LOOP, FOR LOOP and NESTED LOOPS
- SQL within PL/SQL
- Composite Data types (Complete)
- Cursor Management in PL/SQL
- Implicit Cursors
- Explicit Cursors
- Cursor Attributes
- Cursor with Parameters
- Cursors with LOOPS Nested Cursors
- Cursors with Sub Queries
- Ref. Cursors
- Record and PL/SQL Table Types

Advanced PL/SQL

- **Procedures in PL/SQL**
- STORED PROCEDURES
- PROCEDURE with Parameters (IN, OUT and IN OUT)
- POSITIONAL Notation and NAMED Notation
- Procedure with Cursors
- Dropping a Procedure
 - **Functions in PL/SQL**
 - Difference between Procedures and Functions
 - User Defined Functions
 - Nested Functions
 - Using stored function in SQL statements
 - **Packages in PL/SQL**
 - Creating PACKAGE Specification and PACKAGE Body
 - Private and Public Objects in PACKAGE

EXCEPTIONS in PL/SQL

- **Types of exception**
- User Defined Exceptions
- Pre Defined Exceptions
- RAISE_APPLICATION_ERROR
- SQL Error Code Values

Database Triggers in PL/SQL

- Types of Triggers
- Row Level Triggers
- Statement Level Triggers
- DDL Triggers