

SQL Basics & PL-SQL

Complete Practical & Real-time Training Sessions



A Unit of SequelGate Innovative Technologies Pvt. Ltd.

ISO Certified Training Institute

Microsoft Certified Partner

Training Highlights

- ✓ Complete Practical and Real-time Scenarios
- ✓ Session wise Material and Practice Labs
- ✓ Session wise Notes & Doubts Clarifications
- ✓ Certification Material & Resume Preparation
- ✓ Interview Preparation and Guidance
- ✓ Technical Support and Placements Assistance
- ✓ One Real-time Project and FAQs with Answers
- ✓ Mock Interview and Course Completion Certificate

All Training Sessions are Completely Practical & Real-time

Every session includes Study Material and Practice Material.

Course includes total of 21 Chapters.

SQL Basics & Oracle PL/SQL Developer Training

All Our Training Sessions are COMPLETELY PRACTICAL & REALTIME with Hands-On Lab.

Chapter 1 : INTRODUCTION TO DBMS

- ✓ What is Data and Information?
- ✓ Purpose of Data Management
- ✓ File and File System For Data Storage
- ✓ Disadvantages of File Data Management
- ✓ Database : Purpose, Basic Terminology
- ✓ Advantages of Database for Data Storage
- ✓ Possible Operations on the Database
- ✓ Database Models – Hierarchical Model
- ✓ Network Model and Relational Model
- ✓ History, Real-time Database Examples (LIVE)

Chapter 2 : INTRODUCTION TO RDBMS

- ✓ Features of RDBMS
- ✓ Advantages of RDBMS
- ✓ E.F Codd Rules for RDBMS
- ✓ Normalization Concepts & Process
- ✓ Client Server Communication
- ✓ Oracle Corporation Products
- ✓ RDBMS from Other Vendors: Microsoft, IBM, etc
- ✓ Oracle Versions about SQL & SQL*PLUS
- ✓ Database Types: OLTP and OLAP Databases
- ✓ Real-world Advantage of OLTP & OLAP
- ✓ Applicative use of RDBMS Databases

Chapter 3 : SQL LANGUAGE COMMANDS

- ✓ Structured Query Language (SQL) Basics
- ✓ Possible Operations with SQL
- ✓ Data Definition Language (DDL)
- ✓ Data Retrieval Language (DRL)
- ✓ Data Manipulation Language (DML)
- ✓ Transaction Control Language (TCL)
- ✓ Database Security and Privileges (DCL)
- ✓ Rules of SQL Queries and Statements
- ✓ Real-world applicative uses of SQL

Chapter 4 : SQL BASICS

- ✓ Creating Databases and Tables

Chapter 12 : PL/SQL (PROCEDURE LANGUAGE – SQL)

- ✓ Introduction to Programming Languages
- ✓ Introduction & Advantage 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 Statements
- ✓ Ladder, Selection, Simple Case Statements
- ✓ GOTO Label and EXIT Statements in PL/SQL
- ✓ Iterations in PL/SQL, Simple LOOP, WHILE
- ✓ FOR LOOP and NESTED LOOPS in PLSQL
- ✓ SQL within PL/SQL, Composite Data Types
- ✓ Cursor Variables and Management in PL/SQL
- ✓ Implicit & Explicit Cursors and Attributes
- ✓ Cursor with Parameters and Nested LOOPS
- ✓ Cursors with Sub Queries, Reference Cursors
- ✓ Record and PL/SQL Table Types. Real-time Use

Chapter 13 : ADVANCED PL/SQL - 1

- ✓ Procedures in PL/SQL: STORED PROCEDURE
- ✓ PROCEDURES @ Parameters (IN, OUT, IN OUT)
- ✓ POSITIONAL Notation and NAMED Notation
- ✓ Procedure with Cursors and Sub Queries
- ✓ ALTER and DROP of Stored Procedures
- ✓ Functions in PL/SQL: Real-time Usage
- ✓ User Defined Functions, Nested Functions
- ✓ Using Functions in SQL Statements
- ✓ Working with Procedures and Functions
- ✓ Comparing Stored Procedures and Functions
- ✓ Using SPs with Table Value Functions
- ✓ Using SPs for Dynamic SQL Statements
- ✓ Loops and Table Variables in SQL Programs
- ✓ Merge, NVL2(), NULLIF(), COALESCE()
- ✓ CASE & Temporary /Global Tables

Chapter 14 : ADVANCED PL/SQL - 2

- ✓ Pragma_Autonomous_Transaction() with SPs
- ✓ Returning into clause, Bulk Collect
- ✓ For All, Definer/Invoker Rights & Usage
- ✓ About Flash Back Queries, Dynamic SQL
- ✓ Flash Back Command, Purge Command
- ✓ Recycle Bin, Regular Expressions in PLSQL
- ✓ DML Error Logging and Virtual Columns
- ✓ Types of Triggers, Row Level Triggers

- ✓ Table Data Inserts and Validations
- ✓ Schema & Schema Objects
- ✓ Oracle Data Types
- ✓ DDL Commands with Examples
- ✓ CREATE, ALTER, DELETE Statements
- ✓ DML Command DRL Commands Operators
- ✓ INSERT, UPDATE, DELETE Statements
- ✓ SELECT Statements with Multiplier
- ✓ WHERE Keyword for Query Conditions
- ✓ SET, AND, OR, NOT, IN
- ✓ Special Operators – IN (NOT IN)
- ✓ BETWEEN (NOT BETWEEN),
- ✓ Arithmetic and Logical Operators
- ✓ UNION, UNION ALL, INTERSECT, MINUS
- ✓ LIKE (NOT LIKE), IS NULL (IS NOT NULL)

Chapter 5 : BUILT-IN FUNCTIONS in SQL

- ✓ Arithmetic Functions
- ✓ Character Functions
- ✓ Date & Time Functions
- ✓ Character, String Functions
- ✓ Conversion Functions
- ✓ Aggregate Functions
- ✓ General Functions
- ✓ OLAP Functions
- ✓ Other Functions

Chapter 6 : GROUPING QUERY RESULTS

- ✓ Identify Distinct Values in Tables
- ✓ Group By Operations in Queries
- ✓ Having Clause of DRL Statements
- ✓ Aggregate Functions with Group By
- ✓ Order By Clause and Group By
- ✓ Query Execution Order with Group By
- ✓ Sequences, Working with Synonyms
- ✓ Creating Index Tables - Purpose
- ✓ Creating Cluster Tables
- ✓ Implementing Locks For Concurrent Access
- ✓ Working with Roles and Permissions

Chapter 7 : CONSTRAINTS & KEYS

- ✓ Importance of Data Integrity
- ✓ Working with Integrity constraints
- ✓ NOT NULL Constraint, UNIQUE Constraint
- ✓ PRIMARY KEY Constraint and Usage
- ✓ FOREIGN KEY Constraints and Relations
- ✓ ON UPDATE Clause in Foreign Keys
- ✓ ON DELETE Clause in Foreign Keys

- ✓ Statement Level Triggers, DML Triggers
- ✓ DDL Triggers and Schema Level Triggers
- ✓ Using OLD & NEW References, Trigger Auditing
- ✓ Enabling / Disabling Triggers, Dropping Triggers
- ✓ Triggers in PL/SQL and Data Manipulations
- ✓ Using Memory Tables in Triggers
- ✓ DML and DDL Events with Triggers
- ✓ Compound Triggers, New data types
- ✓ Working with LARGE Tables in PLSQL
- ✓ New: EXTRACT(), Autonomous Transaction

Chapter 15 : ADVANCED PL/SQL - 3

- ✓ Cross Tab Views using Pivot/Unpivot Operators
- ✓ Follows Clause and READONLY Tables
- ✓ VIEWS IN ORACLE, Understanding Views & Use
- ✓ Relational Views and Standard Views
- ✓ SIMPLE VIEWS and COMPLEX VIEWS in PLSQL
- ✓ Column Definitions in VIEWS
- ✓ Using VIEWS for DML Operations
- ✓ Forced Views, CHECK Constraints in Views
- ✓ Creation of READ ONLY VIEWS - Realtime Use
- ✓ TOP-N Analysis, (Indexed) Materialized Views
- ✓ IN-LINE VIEWS. Manipulations with Triggers
- ✓ Purity Levels in Oracle - with Examples
- ✓ User_Source Dictionary Table Packages
- ✓ Creating PACKAGE Specifications with PLSQL
- ✓ PACKAGE Body - Examples with Big Data Tables
- ✓ Private and Public Objects in PACKAGE
- ✓ Types of Exceptions: User Defined Exceptions
- ✓ EXCEPTIONS in PL/SQL with Real-time
- ✓ Event Handling and Error Handling Techniques
- ✓ Important Error Code Values in PL/SQL

Chapter 16 : PERFORMANCE (QUERY) TUNING

- ✓ Indexes - Definition and Architecture
- ✓ B Tree Concept in Indexes
- ✓ Clustered and Non clustered Indexes
- ✓ Primary Key and Clustered Index
- ✓ Unique Key and Non Clustered Indexes
- ✓ Materialized Views - Indexed Views
- ✓ Partitioning Tables using PL/SQL
- ✓ Working with Very Large Tables
- ✓ Range Partitions and Hash Partition
- ✓ List Partition and Composite Partition
- ✓ Parallel Query Process with Partitions
- ✓ Performance Tuning Advantages

Chapter 17 : LOCKS in ORACLE TABLES

- ✓ Open Transactions and Lock Concepts
- ✓ Lock Types and Locking Mechanism
- ✓ Row Level Locks for Table Data Access

- ✓ Multiple Constraints on Columns
- ✓ Adding Constraints to Tables
- ✓ Enabling - Dropping Constraints
- ✓ Disabling Constraints on Tables
- ✓ Querying for Constraints Information
- ✓ Data Validations using Constraints
- ✓ Constraints Limitations and Usage

Chapter 8 : SUB QUERIES, NESTED QUERIES

- ✓ Sub Queries in Real-world
- ✓ Dynamic Conditions with Sub Queries
- ✓ Sub Queries and Nested Sub Queries
- ✓ Inner Select and Outer Select Queries
- ✓ Usage of Sub Queries with WHERE, HAVING
- ✓ Impact of Having Clause in Sub Queries
- ✓ IN, ANY SOME, ALL Operators in Sub Queries
- ✓ PAIR WISE and NON PAIR WISE in Sub Queries
- ✓ NULLs and Correlated Sub Queries in SQL
- ✓ Data Retrieval with EXISTS, NOT EXISTS

Chapter 9 : QUERIES & JOINS

- ✓ Need for Joins and Table Comparisons
- ✓ SET Operations on Tables and Joins
- ✓ Join Types : Equi Join, Simple Join
- ✓ Inner Join and Query Conditions
- ✓ Cross Join (Cartesian Join), Conditions
- ✓ Non-Equi Join and Self Join
- ✓ Outer Joins – Types, Advantages and Usage
- ✓ Cross Joins – Advantages and Limitations
- ✓ Self Joins, Merge Joins and Sub Queries
- ✓ Using Aliases in Joins and Conditions
- ✓ Using Inner Self Joins with HAVING
- ✓ JOINS and GROUP BY Queries

Chapter 10 : DCL, TCL COMMANDS

- ✓ Understanding DCL and TCL Commands
- ✓ Transaction Concepts in Databases with SQL
- ✓ Transaction Types and Uses
- ✓ Commit and Rollback Operations
- ✓ Nested Transactions with Savepoints
- ✓ Database Read Consistency with SQL
- ✓ DDL and DML Operations with Transactions

Chapter 11 : PSEUDO COLUMNS in ORACLE

- ✓ Understanding Pseudo Columns in Oracle
- ✓ Type of Pseudo Columns in Oracle
- ✓ CURRVAL AND NEXTVAL, LEVEL
- ✓ ROWID, ROWNUM

- ✓ Table Level Locks and Query Blocking
- ✓ Shared Lock and Real-time Use
- ✓ DeadLock : Detection, Prevention, Avoidance
- ✓ Implicit Locking Concepts in Oracle with PLSQL
- ✓ LOCK Hints and Query Blocking

Chapter 18 : IMPLEMENTING OBJECT TECHNOLOGY

- ✓ Object Technology and Applicative Use
- ✓ OOPS-Object Instances, Creation of Objects
- ✓ Creating User Defined Data Types
- ✓ Creating Object Tables in Oracle
- ✓ Inserting rows in Table using Object
- ✓ Retrieving data from Object Based Tables
- ✓ Calling a Method, Indexing Abstract
- ✓ Data type Attributes in PLSQL

Chapter 19 : USING COLLECTIONS

- ✓ Advantages of Collections
- ✓ Ref Cursor (Dynamic Cursor), Weak Ref Cursor
- ✓ Strong Ref Cursors and Nested Tables
- ✓ Associative Arrays, VARRAYS/VARYING arrays
- ✓ Creating tables using Nested Tables
- ✓ Inserting, Updating & Deleting
- ✓ Nested, Table Records

Chapter 20 : ORACLE BUILT-IN PACKAGES

- ✓ DBMS_OUTPUT Package
- ✓ DBMS_DDL Package
- ✓ DBMS_JOB Package
- ✓ DBMS_SCHEDULER Package
- ✓ UTL_FILE Package
- ✓ UTL_MAIL Package
- ✓ Architecture
- ✓ Physical Structures Logical structures
- ✓ DB Memory Structures

Chapter 21 : ORACLE UTILITIES

- ✓ Oracle Data Pump
- ✓ SQL * Loader
- ✓ External Tables

Course includes:

- ✓ Real-time Case Studies
- ✓ Interview Questions
- ✓ Resume Guidance
- ✓ Placement Support

Free Demo / Further Clarifications, Please Reach us:

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Thank You!