



SALIENT TECH SOLUTIONS'

ORACLE SQL DEVELOPER



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Week 1: SQL Basics, Data Control & Querying

Day 1: Introduction to SQL & Relational Databases

- What is SQL? Overview of Structured Query Language
- Understanding Relational Databases & DBMS
- **Project:** Design & Normalize an E-Commerce Database

Day 2: Data Definition & Data Manipulation Language (DDL & DML)

- DDL: CREATE, ALTER, DROP
- DML: INSERT, UPDATE, DELETE
- **Project:** Implement DDL & DML operations

Day 3: Data Control Language & SQL Operators

- DCL: GRANT, REVOKE
- SQL Operators: Mathematical and Logical
- **Project:** Manage user permissions and roles

Day 4: Basic SQL Querying & Data Filtering

- SELECT, FROM, WHERE
- Filtering: IN, BETWEEN, LIKE, DISTINCT
- **Project:** Write SELECT queries for E-Commerce use cases

Day 5: Intermediate Querying – Joins, Subqueries & Aggregation

- Joins: INNER, LEFT, RIGHT, FULL OUTER
- Subqueries, GROUP BY, HAVING
- **Project:** Implement JOINS and subqueries

Week 2: Advanced SQL & Performance Optimization

Day 6: Window Functions for Advanced Querying

- ROW_NUMBER(), RANK(), PARTITION BY
- **Project:** Write ranking and partitioning queries

Day 7: CASE Statements & Pivoting Techniques

- CASE Statements
- Pivot & Unpivot for data reporting
- **Project:** Categorize products and report sales

Day 8: Query Performance Optimization Techniques

- **Indexing:** Clustered vs Non-Clustered
- Reading Execution Plans
- **Project:** Analyze and optimize queries

Day 9: Transactions & Error Handling in SQL

- COMMIT, ROLLBACK, SAVEPOINT
- TRY-CATCH for error management
- **Project:** Implement transactions and error handling

Day 10: Stored Procedures & Triggers

- Creating Stored Procedures
- Triggers for automating changes
- **Project:** Create procedures and triggers

Week 3: Data Warehousing Concepts & Basics

Day 11: Introduction to Data Warehousing Concepts

- OLTP vs OLAP, Data Mart, Data Lake
- **Project:** Design a basic data warehouse

Day 12: Understanding Data Warehouse Architecture

- Layered Architecture & Bus Architecture
- **Project:** Create a layered DW architecture

Day 13: ETL Process Fundamentals

- Extract, Transform, Load (ETL)
- **Project:** Implement basic ETL

Day 14: Designing a Data Warehouse Schema

- Fact & Dimension Tables
- Star vs Snowflake Schema, Kimball vs Inmon
- **Project:** Schema design

Day 15: Normalization vs Denormalization in Warehousing

- Principles of Normalization & Denormalization
- **Project:** Apply both techniques to DW

Week 4: Intermediate Data Warehousing & Testing

Day 16: Starflake & Historical Schema Design

- Implementing Starflake Schema
- Managing Historical Data
- **Project:** Track sales trends historically

Day 17: Practical ETL Tools & Integration

- Advanced Extraction & Transformation
- Integration Techniques
- **Project:** Mock ETL process

Day 18: Data Quality & Cleansing Techniques

- Cleansing, Deduplication, Profiling
- **Project:** Apply quality checks



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Day 19: Data Warehouse Testing Strategies

- Source to Target Validation
- Transformation Testing
- **Project:** Perform DW testing

Day 20: SQL Functions for Analytical Processing

- Aggregate and Analytical SQL Functions
- **Project:** Write analytical queries

Week 5: Advanced Data Warehousing Techniques & Optimization

Day 21: Implementing Slowly Changing Dimensions (SCD)

- SCD Types 0 to 6
- **Project:** Track historical changes

Day 22: Indexing & Partitioning in Warehousing

- Clustered, Non-Clustered, Bitmap Indexes
- Range, Hash, Composite Partitioning
- **Project:** Apply optimization strategies

Day 23: ETL Performance Tuning

- Parallel Processing
- Incremental & Bulk Loading
- **Project:** Speed up your ETL pipeline

Day 24: Optimizing ETL Queries

- Execution Plans, Caching, Materialized Views
- **Project:** Optimize loading queries

Day 25: Advanced Optimization Techniques

- Review Indexing & Execution Plans
- Final Optimization Round
- **Project:** Tune warehouse queries

Week 6: Advanced SQL Query Optimization & Data Manipulation

Day 26: Advanced Joins & Set Operations

- Anti-Joins, Semi-Joins
- UNION, INTERSECT, EXCEPT
- Project: Build advanced join logic

Day 27: Recursive Queries & CTEs

- Correlated Subqueries & Recursive CTEs
- Project: Analyse hierarchical structures

Day 28: Managing Transactions & Concurrency

- ACID, Isolation Levels, Locking
- Project: Prevent deadlocks and manage isolation

Day 29: Final Query Optimization Review

- Query Caching, Partitioning, Indexing Review
- Project: Finalize optimization techniques

Day 30: Final Project Presentation

- Compile & Present Full Data Warehouse Solution
- Project: Final Presentation & Reporting