

Learn SQL from basic to advanced level in 30 days

Week 1: SQL Basics

Day 1: Introduction to SQL and Relational Databases

Overview of SQL Syntax

Setting up a Database (MySQL, PostgreSQL, or SQL Server)

Day 2: Data Types (Numeric, String, Date, etc.)

Writing Basic SQL Queries:

SELECT, FROM

Day 3: WHERE Clause for Filtering Data

Using Logical Operators:

AND, OR, NOT

Day 4: Sorting Data: ORDER BY

Limiting Results: LIMIT and OFFSET

Understanding DISTINCT

Day 5: Aggregate Functions:

COUNT, SUM, AVG, MIN, MAX

Day 6: Grouping Data: GROUP BY and HAVING

Combining Filters with Aggregations

Day 7: Review Week 1 Topics with Hands-On Practice

Solve SQL Exercises on platforms like HackerRank, LeetCode, or W3Schools

Week 2: Intermediate SQL

Day 8: SQL JOINS:

INNER JOIN, LEFT JOIN

Day 9: SQL JOINS Continued:

RIGHT JOIN, FULL OUTER JOIN, SELF JOIN

Day 10: Working with NULL Values

Using Conditional Logic with CASE Statements

Day 11: Subqueries: Simple Subqueries (Single-row and Multi-row)

Correlated Subqueries

Day 12: String Functions:

CONCAT, SUBSTRING, LENGTH, REPLACE

Day 13: Date and Time Functions:

NOW, CURDATE, DATEDIFF, DATEADD

Day 14: Combining Results:

UNION, UNION ALL, INTERSECT, EXCEPT

Review Week 2 Topics and Practice

Week 3: Advanced SQL

Day 15: Common Table Expressions (CTEs)

WITH Clauses and Recursive Queries

Day 16: Window Functions:

ROW_NUMBER, RANK, DENSE_RANK, NTILE

Day 17: More Window Functions:

LEAD, LAG, FIRST_VALUE, LAST_VALUE

Day 18: Creating and Managing Views

Temporary Tables and Table Variables

Day 19: Transactions and ACID Properties

Working with Indexes for Query Optimization

Day 20: Error Handling in SQL

Writing Dynamic SQL Queries

Day 21: Review Week 3 Topics with Complex Query Practice

Solve Intermediate to Advanced SQL Challenges

Week 4: Database Management and Advanced Applications.

Day 22: Database Design and Normalization:

1NF, 2NF, 3NF

Day 23: Constraints in SQL:

PRIMARY KEY, FOREIGN KEY, UNIQUE, CHECK, DEFAULT

Day 24: Creating and Managing Indexes

Understanding Query Execution Plans

Day 25: Backup and Restore Strategies in SQL

Role-Based Permissions

Day 26: Pivoting and Unpivoting Data

Working with JSON and XML in SQL

Day 27: Writing Stored Procedures and Functions

Automating Processes with Triggers

Day 28: Integrating SQL with Other Tools (e.g., Python, Power BI, Tableau)

SQL in Big Data: Introduction to NoSQL

Day 29: Query Performance Tuning:

Tips and Tricks to Optimize SQL Queries

Day 30: Final Review of All Topics

Attempt SQL Projects or Case Studies (e.g., analyzing sales data, building a reporting dashboard)