

MASTER SQL

IN 20 DAYS

Beginner to Advanced



Curated by  tutort academy

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Stage 1: Getting Started



Day 1



Understand the role of SQL in managing and querying data.

Learn basic terminology like tables, rows, columns, and queries.

Understand the role of SQL in managing and querying data.



Day 2



Setting Up the Environment:

Install a relational database management system (RDBMS) like MySQL, PostgreSQL, or SQLite.

Familiarize yourself with a SQL client or command-line interface.

Free Resources

[SQLZoo](#)



[Khan Academy - Intro to SQL](#)



Stage 2: Core Concepts



Day 3



Creating and Modifying Tables:

Design and create database tables with proper data types and constraints.

Understand primary keys, foreign keys, and indexing.



Day 4



Basic Querying:

Write SELECT statements to retrieve data from a single table.

Use WHERE clause for data filtering.

Sort and limit results with ORDER BY and LIMIT.

Free Resources

[SQLBolt](#)



Stage 2: Core Concepts



Day 5



Data Manipulation:

INSERT, UPDATE, and DELETE data in tables.

Practice altering table data safely.

Stage 3: Advanced Queries



Day 6



Joins and Relationships:

Understand different JOIN operations (INNER, LEFT, RIGHT, FULL).

Learn about one-to-many and many-to-many relationships.



Day 7



Subqueries and Derived Tables:

Write subqueries for complex filtering and aggregation.

Utilize derived tables for intermediate results.

Stage 3: Advanced Queries



Day 8



Conditional Logic and Functions:

Use CASE statements for conditional logic.

Explore SQL functions for string manipulation, date calculations, and more.

Free Resources:

[SQLZoo Advanced Tutorials](#)



Stage 4: Database Design and Optimization



Day 9



Normalization:

Deep dive into database normalization for optimized data structure.

Understand the importance of reducing data redundancy.



Day 10



Indexes and Performance:

Learn about indexes for improved query performance.

Optimize queries using execution plans.

Free Resources:

[Coursera - Database Management Essentials](#)



Stage 4: Database Design and Optimization



Day 11

► Transactions and ACID:

Grasp transactions and their role in data integrity.

Understand ACID properties (Atomicity, Consistency, Isolation, Durability).



Stage 5: Advanced Topics



Day 12



Window Functions:

Explore window functions for advanced analytical queries.

Learn about ranking, aggregation, and pagination.



Day 13



Stored Procedures and Functions:

Create stored procedures and functions for encapsulated logic.

Understand the benefits of procedural SQL.

Free Resources:

[Modern SQL](#)



Stage 5: Advanced Topics



Day 14

► Database Security:

Learn about SQL injection and securing databases.

Understand user roles, permissions, and encryption.



Stage 6: Practice, Practice, Practice



Day 15



Free Resources for Practice

SQLZoo: This platform offers interactive tutorials and exercises that cover a wide range of SQL concepts and queries. It's suitable for beginners and more advanced learners.

[SQLZoo](#)



Day 16



Free Resources for Practice

LeetCode: While primarily known for coding challenges, LeetCode also has a database section with SQL problems that help you practice various SQL skills.

[LeetCode SQL](#)



Stage 6: Practice, Practice, Practice



Day 17



Free Resources for Practice

HackerRank: HackerRank provides a variety of coding and technical challenges, including SQL problems. It offers a great way to test and improve your SQL skills.

[HackerRank SQL](#)



Day 18



Free Resources for Practice

SQLBolt is an online resource that provides interactive lessons and exercises to help you learn and practice SQL directly in your browser.

[SQLBolt Exercises](#)



Stage 6: Practice, Practice, Practice



Day 19



Free Resources for Practice

Codecademy: Codecademy offers a free SQL course with hands-on exercises that help you practice SQL queries and database manipulation.

[Codecademy SQL Course](#)



Day 20



Free Resources for Practice

W3Schools SQL Exercises: W3Schools offers interactive SQL exercises that allow you to practice different SQL queries and concepts.

[W3Schools SQL Exercises](#)



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