



SQL Skills Lab Internship

Duration: 30 Days

Course Objectives (with Projects)

By the end of this course, learners will be able to:

- Understand and apply **SQL fundamentals and advanced techniques**.
- Perform **data querying, filtering, and aggregation** using SELECT, WHERE, GROUP BY, HAVING, and ORDER BY.
- Use **joins, subqueries, UNION, and CTEs** to manage complex relational data.
- Implement **data cleaning, transformation, and analysis** for real-world datasets.
- Work with **stored procedures, triggers, and events** to automate database tasks.
- Complete **hands-on projects** including analyzing layoffs data, payroll calculations, and employee statistics.
- Build a **portfolio of real-world SQL projects** demonstrating advanced database skills.

Prerequisites

- Basic understanding of **computer usage and file systems**.
- Familiarity with **spreadsheet tools** (Excel or Google Sheets) is helpful but not required.
- **Logical thinking** and attention to detail for writing queries.
- No prior SQL or programming experience required.

Tools & Environment

- **MySQL** (Community Server or Workbench) for database management.
- **Visual Studio Code** or any preferred SQL editor.
- Sample datasets provided by the course (employees, layoffs, sales data).
- Optional: **SQL Server** or other relational database for comparative learning.

Beyond Objectives Learning

- Explore **advanced SQL concepts** like window functions, CTEs, and stored procedures in more depth.
- Learn **best practices for database design and query optimization**.
- Gain exposure to **real-world datasets and analytics projects** to enhance employability.
- Develop **data-driven problem-solving skills** applicable in business intelligence, analytics, and reporting roles.
- Prepare for **interviews and assessments** involving SQL queries and database management.
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Sr.	Title	Topic	Objective
1	SQL Fundamentals Overview	SQL Basics	Learn SQL fundamentals and advanced techniques through practical exercises
2	Installing MySQL	Setup	Install MySQL using Developer Default Setup
3	MySQL Configuration & Starting Instance	Setup	Complete MySQL configuration and start the local instance
4	Creating Sample Database	Database Setup	Set up a sample database for SQL practice
5	SELECT Statement	Querying Data	Retrieve and filter data effectively using SELECT
6	SQL Query Execution & Database Selection	Query Basics	Understand query execution order and selecting databases
7	Order of Operations in SQL	Calculations	Learn how SQL processes calculations
8	DISTINCT & Unique Values	Querying Data	Retrieve unique values using DISTINCT
9	Salary Comparison Operators	Filtering Data	Apply comparison operators in queries
10	Filtering Data	Filtering Data	Use NOT EQUAL and logical operators to filter results
11	LIKE Statement & Pattern Matching	String Matching	Perform flexible string matching using LIKE and wildcards
12	Grouping Data	Aggregation	Use GROUP BY for non-aggregated columns and grouping by occupation/salary
13	ORDER BY Multiple Columns	Sorting Data	Sort query results by multiple columns
14	Risks of Using Column Positions	Best Practices	Understand issues with using column positions in queries
15	HAVING Clause & LIMIT	Aggregation & Filtering	Filter grouped data with HAVING and limit results with LIMIT
16	Aliasing Columns	Query Readability	Use column and table aliases for clearer query outputs
17	INNER JOIN & Table Joins	Joins	Join multiple tables specifying ambiguous column names
18	Aliases in Joins	Query Readability	Simplify joins and improve readability with aliases
19	LEFT, RIGHT, SELF Joins	Joins	Explore different types of joins with practical examples
20	UNION Queries	Combining Data	Combine results from multiple queries using UNION
21	Filtering & Labeling Data	Data Categorization	Filter and categorize employees by salary and gender
22	Data Cleaning Techniques	Data Preparation	Standardize case, trim data, and ensure correct length
23	String Manipulation Functions	Data Transformation	Use TRIM, LEFT, RIGHT, SUBSTRING, and REPLACE functions
24	CASE Statements	Conditional Logic	Categorize age groups and calculate pay increases/bonuses
25	Subqueries	Advanced Querying	Filter employee demographics and calculate metrics using subqueries
26	Aggregations & Averages	Data Analysis	Calculate overall averages and compare group vs window functions
27	Window Functions & Rolling Totals	Advanced Analytics	Learn ROW_NUMBER, RANK, DENSE_RANK, and partitioning calculations
28	Common Table Expressions (CTEs)	Advanced Querying	Use CTEs for temporary data representation and readability
29	Temporary Tables	Data Handling	Create and manage temporary tables effectively
30	Advanced CTEs & Stored Procedures	Automation	Build and execute stored procedures with best practices
31	Triggers	Automation	Automate data updates using triggers
32	Events	Automation	Create and manage events for scheduled tasks
33	Importing Data	Data Loading	Import datasets into SQL tables
34	Data Cleaning Projects	Data Preparation	Remove duplicates, standardize labels, handle null values



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36	Data Analysis – Layoffs Dataset	Analytics	Analyze layoffs, monthly totals, industry & country trends
37	Advanced SQL Projects	Real-World Projects	Apply CTEs, ranking, and analytics on real datasets
38	Portfolio Enhancement	Career Development	Build a strong portfolio using SQL projects

Minimum Completion Criteria:

- Complete all modules and MCQs
- Attempt weekly marathons
- Submit at least 2 out of 5 projects in the final level
- Attend minimum 80% of lessons

Certificate Details

- Upon successful completion of the Internship, learners will receive a Government-Recognized Certificate from Vidyawan, a registered MSME enterprise (*Udyam Registration No: UDYAM-WB-14-0205610*).



One Month Internship Certificate



Weekly Marathon Participation Certificate

Performance-Based Badge System

- Gold Badge – For Top Performers (90%+ score, completed 4+ projects)
- Silver Badge – For consistent performance (70–89%)
- Copper/Participant Badge – For all learners who complete the program

Contact Information

For queries, registration, or collaboration, feel free to contact us:

Vidyawan – Internship & Skill Development Platform

(A Government-registered MSME – UDYAM-WB-14-0205610)

- Email: contact.vidyawan@gmail.com
- Website: www.vidyawan.in (Get in touch section)
- Location: West Bengal, India
- Follow us for updates and upcoming internships