

**Introduction to SQL Using MySQL**

**Course Number:** SQL-170  
**Duration:** 2 days

**Overview**

Accelebrate's Introduction to SQL using MySQL course is designed for students new to writing SQL queries using MySQL.

**Note:** This class can also be taught using MariaDB.

**Prerequisites**

Experience in basic computer literacy with previous experience with command-line programs and some knowledge of database concepts is required. Some knowledge of data retrieval and reporting would be beneficial.

**Materials**

All SQL using MySQL training students receive comprehensive courseware and a related textbook.

**Software Needed on Each Student PC**

* Modern version of Windows, macOS, or Linux
* MySQL version 5, 8, or above (we will provide detailed installation instructions)
* Local admin privileges
* Related lab files and database content that the students will extract and install at the start of class

**Objectives**

* Understand how MySQL works
* Learn to use SQL to output reports with MySQL
* Learn to modify MySQL data with SQL
* Learn to create a simple MySQL database
* Learn to create simple work with Views in MySQL
* Learn to create tables in MySQL

**Outline**

* Relational Database Basics
  + Brief History of SQL
  + Relational Databases
    - Tables
    - Rows
    - Columns
    - Relationships
    - Datatypes
    - Primary Keys
    - Foreign Keys
    - Relational Database Management System
  + Popular Databases
    - Commercial Databases
    - Popular Open Source Databases
    - Valid Object References
  + SQL Statements
    - Database Manipulation Language (DML)
    - Database Definition Language (DDL)
    - Database Control Language (DCL)
* Simple SELECTs
  + Introduction to the Northwind Database
  + Some Basics
    - Comments
    - Whitespace and Semi-colons
    - Case Sensitivity
  + SELECTing All Columns in All Rows
  + Exploring the Tables
  + SELECTing Specific Columns
  + SELECTing Specific Columns
  + Sorting Records
    - Sorting By a Single Column
    - Sorting By Multiple Columns
    - Sorting By Column Position
    - Ascending and Descending Sorts
  + Sorting Results
  + The WHERE Clause and Operator Symbols
    - Checking for Equality
    - Checking for Inequality
    - Checking for Greater or Less Than
    - Checking for NULL
    - WHERE and ORDER BY
  + Using the WHERE clause to check for equality or inequality
  + Using the WHERE clause to check for greater or less than
  + Checking for NULL
  + Using WHERE and ORDER BY Together
  + The WHERE Clause and Operator Words
    - The BETWEEN Operator
    - The IN Operator
    - The LIKE Operator
    - The NOT Operator
  + More SELECTs with WHERE
  + Checking Multiple Conditions
    - AND
    - OR
    - Order of Evaluation
  + Writing SELECTs with Multiple Conditions
* Advanced SELECTs
  + Calculated Fields
    - Concatenation
    - Mathematical Calculations
    - Aliases
  + Calculating Fields
  + Aggregate Functions and Grouping
    - Aggregate Functions
    - Grouping Data
    - Selecting Distinct Records
  + Working with Aggregate Functions
  + Built-in Data Manipulation Functions
    - Common Math Functions
    - Common String Functions
    - Common Date Functions
  + Data Manipulation Functions
* Subqueries, Joins and Unions
  + Subqueries
  + Subqueries
  + Joins
    - Table Aliases
    - Multi-table Joins
  + Using Joins
  + Outer Joins
  + Unions
    - UNION ALL
    - UNION Rules
  + Working with Unions
* Conditional Processing with CASE
  + Using CASE
  + Working with CASE
* Inserting, Updating and Deleting Records
  + INSERT
  + Inserting Records
  + UPDATE
  + DELETE
  + Updating and Deleting Records
* Creating and Modifying Tables
  + Data Types
  + Creating Tables
    - NULL Values
    - Primary Keys
    - Foreign Keys
  + Creating Tables
  + Adding and Dropping Columns
  + Renaming Tables
    - SQL Server
    - Oracle and MySQL
  + Dropping Tables
* Views
  + Creating Views InnoDB
  + Dropping Views
  + Benefits of Views
  + Creating a View
* Conclusion