

**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