MySQL Fundamentals Training

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Duration: **4 Day**

Overview

The MySQL Fundamentals training is the first step in mastering MySQL, the world's most popular open source database. Develop solid understanding and practical experience using relational databases, SQL and the MySQL Server and tools.

Learn To:

- Describe the features and benefits of MySQL.
- Install and configure the MySQL server and clients.
- Use Structured Query Language (SQL) to build your database and query data.
- Query JSON data with SQL.
- Employ appropriate MySQL tools.
- Protect your data with security best practices.
- Benefits to You

This course will teach you everything you need to know to start using the popular MySQL database in your Web, Cloud and embedded applications. In learning about MySQL you will also gain an understanding of relational databases. Furthermore, you will harness that power by learning SQL and using it to build databases, populate them with data and query that data through extensive hands-on practices.

Prerequisites

- Architects
- Database Administrators
- Developers
- End Users

What You Will Learn

- Describe the features and benefits of MySQL
- Explain the basics of relational databases
- Issue MySQL statements from the mysql command-line client
- Perform database operations by using MySQL Workbench
- Select appropriate data types for your database
- Build a database and tables by using SQL
- Modify the structure of your database
- Create indexes and keys
- Add or update database data
- Query data with SELECT statements
- Join data from multiple tables
- Use built-in MySQL functions
- Retrieve JSON data
- Backup and restore database data
- Explain database transactions

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Outline

Introduction to MySQL

- Course Goals
- Course Lesson Map
- Classroom Environment
- MySQL Overview
- MySQL Community Resources
- How an instance of MySQL Cloud Service differs from having an on-premises instance
- MySQL Courses and Certification

MySQL Server and Client

- MySQL Client/Server Model
- MySQL Connectors
- Installation of the MySQL server
- Starting and stopping the MySQL server
- Using the mysql client
- MySQL Workbench

Querying Table Data

- The SELECT Statement
- Query Data From An Application
- Troubleshooting Problems

Data Types

- Data Types as Part of Database Design
- Numeric Data Types
- Temporal Data Type
- String Data Types
- Character Set and Collation Support
- Data Type Considerations
- The Meaning Of NULL

Functions

- Functions in MySQL Expressions
- Using Functions
- String Functions
- Date And Time Functions
- Numeric Functions
- Aggregate Functions
- Spaces in Function Names
- RANK Window Functions

Joins and Unions

- Querying Multiple Tables
- Joining Tables with SELECT
- Inner Joins

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- Outer Joins
- Table Name Aliases
- Combining Multiple Queries with UNION

Subqueries

- Nesting Queries
- Writing Simple Subqueries
- Writing Complex Subqueries

Creating Databases and Tables

- Creating a Database
- Creating a Table
- Showing How a Table Was Created
- Column Options
- Table Options
- Copying an Existing Table Structure
- Confirming the Creation of a New Table
- Copying an Existing Table Structure
- Creating a Temporary Table
- Indexes, Keys, and Constraints

Modifying Databases and Tables

- Deleting Databases and Tables
- Adding, Removing and Modifying Table Columns
- Adding, Removing and Modifying Indexes and Constraints

Modifying Table Data

- Manipulating Data
- Inserting Records
- Replacing Existing Records
- Updating Existing Records
- Deleting Records
- Exporting and Importing A Script
- Multistatement Transactions
- Modifying Data From An Application

Securing Your Database

- Layers of Security
- Creating Users
- Creating Roles
- Assigning Privileges to Users And/Or Roles
- Creating Views to Control Access

Backing Up Your Database

- Importance Of Backups
- Creating a Backup
- Options for Backup
- Restoring a Backup

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JSON

- JSON Use Cases
- Retrieving Data From JSON Columns
- Creating a JSON Column
- Inserting Data Into a JSON Column
- Updating a JSON Column

Conclusion

- Course Goals
- MySQL Curriculum Path
- MySQL Resources
- Evaluation
- Final Q&A