

Course Outline | MySQL Introduction-Intermediate

3 day(s)

Overview

This course is designed to provide the skills needed to create and alter a MySQL database and query and modify data held within such a database.

It covers the basics of the SQL language as implemented by MySQL. The course is designed to give delegates practical experience in writing SQL statements using the MySQL client program and MySQL Query Browser. The basic SQL statements, including the use of SQL functions and the basic table and view handling statements are introduced.

The delegates will practise:

Using client programs to access a MySQL database

Creating, altering and dropping a MySQL database

Writing SQL statements to select data from a MySQL database

Writing joins and subqueries

Using SQL expressions

Using SQL aggregate functions and scalar functions

Inserting, updating, deleting and replacing rows,

Creating and altering tables, indexes and views

Using transactions

Granting and revoking access privileges on tables and views

Exporting and importing data

Prerequisites

There are no formal pre-requisites, although an understanding of databases and exposure to information technology in general would be useful.

Course Outline

Database concepts

- What is a database?
- Database management systems
- Tables, rows and columns
- Indexes, primary keys, unique constraints and foreign keys
- Client-Server architecture
- Supported data types
- Storage engines and table types
- The Information_Schema and MySQL
- Databases
- Exercise: Using a MySQL Database

USING THE mysql CLIENT

- What is the MySQL client?
- Getting started and Logging in
- Selecting a database

Course Outline | MySQL Introduction-Intermediate

- Client commands
- Entering and executing SQL statements
- Retrieving previous commands
- Creating, editing and executing SQL files
- Redirecting output into a file
- Command line execution of MySQL Scripts
- Exercise: Using the MySQL Client

Basic select

- The SQL SELECT statement
- Case sensitivity
- Quotes
- Statement terminator
- Syntax conventions
- The select clause
- The FROM clause
- Conditions and the WHERE clause
- Logical operators
- The ORDER BY clause
- Column aliases
- Arithmetic expressions
- Precedence of operators
- Exercises: Querying the sample database

Limit, union and aggregate functions

- The LIMIT clause
- UNION
- UNION ALL
- Aggregate functions
- The GROUP BY clause
- Using Rollup with GROUP BY
- The HAVING clause
- Exercises: Using Limit, Union and Aggregate Functions

Subqueries and joins

- Subqueries
- Cartesian products
- Joins with original syntax
- Table aliases
- Natural joins
- Join using
- Join on
- Multi-table joins
- Exercises: Using Subqueries and Joins

Numeric and character functions

- Function types
- Testing functions
- Numeric functions
- Character functions
- Exercise: Using Numeric and Character Functions

Date, time and other functions

- Date and time column types
- Date and time formats
- The date format function

Course Outline | MySQL Introduction-Intermediate

- Functions to return date time
- Functions to extract components from date time
- Date time arithmetic
- Miscellaneous functions
- Exercise: Using Date, Time and other functions

Databases and tables

- Creating a database
- Selecting a database
- Creating tables
- Auto_increment
- Show create table
- Column operations
- Constraint operations
- Copying tables
- Renaming tables
- Changing engine for tables
- Dropping tables
- Temporary tables
- Exercises: Maintaining databases and tables
- Indexes and views
- What is an index?
- Creating an index
- Reviewing indexes
- Dropping indexes
- What is a view?
- Creating views
- View restrictions
- Dropping views
- Exercise: Maintaining indexes and views

Date, time and other functions

- Date and time column types
- Date and time formats
- The date format function
- Functions to return date time
- Functions to extract components from date time
- Date time arithmetic
- Miscellaneous functions
- Exercise: Using Date, Time and other functions

Databases and tables

- Creating a database
- Selecting a database
- Creating tables
- Auto_increment
- Show create table
- Column operations
- Constraint operations
- Copying tables
- Renaming tables
- Changing engine for tables
- Dropping tables
- Temporary tables
- Exercises: Maintaining databases and tables

Indexes and views

Course Outline | MySQL Introduction-Intermediate

- What is an index?
- Creating an index
- Reviewing indexes
- Dropping indexes
- What is a view?
- Creating views
- View restrictions
- Dropping views
- Exercise: Maintaining indexes and views

Managing data

- Inserting rows
- Replacing rows
- Updating rows
- Deleting rows
- The truncate statement
- The COMMIT and ROLLBACK commands
- Savepoints
- Implicit commits

Access control

- Creating users
- Renaming users
- Dropping users
- Granting privileges
- Revoking privileges
- Exercise: Creating users, granting and revoking

Import and export

- Exporting using SQL
- Importing using SQL
- Exporting from the command line
- Importing from the command line
- Exercise: Export and import data