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# MySQL

## Introduction/Intermediate

**Duration: 3 Days**

### Overview:

Aspect Training's Introduction to MySQL 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.

Aspect Training's Introduction to MySQL course 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.

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## Course Topics:

### 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  
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

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### **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**

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