Beijing-Dublin International College
COMP2013J - Databases
MySQL and SQLite Comparison

Database Management Systems (DBMS)

Different systems are designed for different kinds of uses. This influences how they are used and how we can use them.

MySQL

MySQL is a server based DBMS, it is designed for larger systems with a central server maintaining the database. Other programs and processes connect to the database over the network and execute queries on the data. MySQL has processes for managing users as well as what databases they can access and what statements they use in the databases that they have access to.

SQLite

SQLite is designed for smaller applications, it is commonly included in mobile phone applications for maintaining smaller databases. Each database is stored in a single file, there is no user accounts or access controls.

1 Differences

This section will list some of the differences between MySQL and SQLite. These may be useful to know as you assignments will be executing using SQLite, but your assignment should be complete in MySQL. Many of hte items below in the tables will be the same.

1.1 Basics and Types

Operation	MySQL	SQLite
Data types supported	Tinyint, Smallint, Mediumint, Int, Bigint, Double, Float, Real, Decimal, Double precision, Numeric, Timestamp, Date, Datetime, Char, Varchar, Year, Tinytext, Tinyblob, Blob, Text, MediumBlob, MediumText, Enum, Set, Longblob, Longtext	Blob, Integer, Null, Text, Real
Choose a database	`USE db_name;`	`.open db_file_name`
Show tables in a database	`SHOW TABLES;`	`.tables`
Show Attributes in a Table	`DESCRIBE table_name`	`pragma table_info("table_name");`
Drop column from table	`ALTER TABLE DROP COLUMN`	Not Supported (must replace with a new table)
Rename column	`ALTER TABLE MODIFY`	Not Supported (must replace with a new table)
Restricted Domain	`ENUM("small", "medium", "large")`	`CHECK(c_name = "small" or c_name = "medium" or c_name = "large") (added as a constraint)`
Date and Time	Built in types	Stored as text with addition of functions for calculations

1.2 Comparisons

Comparison Operators	=, ! =, <>, >, <, <=, >=	=, ! =, <>, >, <, <=, >=
Comparison Functions	`IN, LIKE, BETWEEN AND, IS NULL, IS NOT NULL`	`IN, LIKE, BETWEEN AND, IS NULL, IS NOT NULL`
Pattern Matching	`LIKE`	`LIKE`
Length of String	`LENGTH`	`LENGTH`
Substring	`LEFT, RIGHT, SUBSTR`	`SUBSTR`

1.3 Date and Time Operations

Operation	MySQL	SQLite
Current Date	`CURDATE`	`date('now')`
Current Time	`CURTIME`	`time('now')`
Current DateTime	`NOW`	`datetime('now')`
Num Days Between A and B	`DATEDIFF(A,B)`	`julianday(A) - julianday(B)`

1.4 Aliases and Joining

Operation	MySQL	SQLite
Alias	`AS`	`AS`
Inner Join	`Yes`	`Yes`
Left Join	`Yes`	`Yes`
Right Join	`Yes`	`No`
Full Join	`No`	`No`
Natural Join	`Yes`	`Yes`
Using	`Yes`	`Yes`
Grouping	`GROUP BY`	`GROUP BY`

1.5 Ordering and Limiting

Operation	MySQL	SQLite
Order results	`ORDER BY`	`ORDER BY`
Show only X rows	`LIMIT X`	`LIMIT X`
Show only X rows starting with Y	`LIMIT Y, X`	`LIMIT Y, X`
Removing Duplicates	`DISTINCT`	`DISTINCT`

1.6 Aggregate Functions

Operation	MySQL	SQLite
Count Rows	`COUNT(*)`	`COUNT(*)`
Count Values	`COUNT(att)`	`COUNT(att)`
Count Distinct Values	`COUNT(DISTINCT att)`	`COUNT(DISTINCTatt)`
Sum an attribute	`SUM(att)`	`SUM(att`
Find smallest	`MIN`	`MIN`
Find biggest	`MAX`	`MAX`
Average of attribute	`AVG`	`AVG`