(My)SQL Cheat Sheet

Here are the most commonly used SQL commands and the most commonly used options for each. There are many more commands and options than listed here. In other words, the syntaxes as I have listed them are far from complete. See the links at the bottom for more complete syntaxes and more commands.

MySQL Command-Line

What	How	Example(s)
Running MySQL	mysql -uusername -ppassword	mysql -ucusack2RO -pegbdf5s
Importing	mysql -uusername -ppassword < filename	mysql -usomeDB -pblah < myNewDB.sql
Dumping (Saving)	mysqldump -uusername -ppassword database [tables] > filename	mysqldump -ume -pblah myDB > My.sql mysqldump -ume -pblah myDB table1 　　　table2 > my.sql

Common MySQL Column Types

Purpose	Data Type	Example
Integers	int(M)	int(5)
Floating-point (real) numbers	float(M,D)	float(12,3)
Double-precision floating-point	double(M,D)	double(20,3)
Dates and times	timestamp(M)	timestamp(8) (for YYYYMMDD) timestamp(12) (for YYYYMMDDHHMMSS)
Fixed-length strings	char(M)	char(10)
Variable-length strings	varchar(M)	varchar(20)
A large amount of text	blob	blob
Values chosen from a list	enum('value1',value2',...)	enum('apples','oranges','bananas')

M is maximum to display, and D is precision to the right of the decimal.

MySQL Mathematical Functions

What	How
Count rows per group	COUNT(column | *)
Average value of group	AVG(column)
Minumum value of group	MIN(column)
Maximum value of group	MAX(column)
Sum values in a group	SUM(column)

MySQL String Functions

What	How
Compare strings	strcmp(string1,string2)
Convert to lower case	lower(string)
Convert to upper case	upper(string)
Left-trim whitespace (similar right)	ltrim(string)
Substring of string	substring(string,index1,index2)

Absolute value	abs(number)	
Rounding numbers	round(number)	
Largest integer not greater	floor(number)	
Smallest integer not smaller	ceiling(number)	
Square root	sqrt(number)	
nth power	pow(base,exponent)	
random number n, 0<n < 1	rand()	
sin (similar cos, etc.)	sin(number)	

Encrypt password	password(string)
Encode string	encode(string,key)
Decode string	decode(string,key)
Get date	curdate()
Get time	curtime()
Extract day name from date string	dayname(string)
Extract day number from date string	dayofweek(string)
Extract month from date string	monthname(string)

Basic MySQL Commands

What	How	Example(s)
List all databases	SHOW DATABASES;	SHOW DATABASES;
Create database	CREATE DATABASE database;	CREATE DATABASE PhoneDB;
Use a database	USE database;	USE PhonDB;
List tables in the database	SHOW TABLES;	SHOW TABLES;
Show the structure of a table	DESCRIBE table; SHOW COLUMNS FROM table;	DESCRIBE Animals; SHOW COLUMNS FROM Animals;
Delete a database (Careful!)	DROP DATABASE database;	DROP DATABASE PhoneDB;

SQL Commands: Modifying

What	How	Example(s)
Create table	CREATE TABLE table (column1 type [[NOT] NULL] [AUTO_INCREMENT], column2 type [[NOT] NULL] [AUTO_INCREMENT], ... other options, PRIMARY KEY (column(s)));	CREATE TABLE Students (LastName varchar(30) NOT NULL, FirstName varchar(30) NOT NULL, StudentID int NOT NULL, Major varchar(20), Dorm varchar(20), PRIMARY KEY (StudentID));
Insert data	INSERT INTO table VALUES (list of values); INSERT INTO table SET column1=value1, column2=value2, ... columnk=valuek; INSERT INTO table (column1,column2,...) VALUES (value1,value2...);	INSERT INTO Students VALUES ('Smith','John',123456789,'Math','Selleck'); INSERT INTO Students SET FirstName='John', LastName='Smith', StudentID=123456789, Major='Math'; INSERT INTO Students (StudentID,FirstName,LastName) VALUES (123456789,'John','Smith');
Insert/Select	INSERT INTO table (column1,column2,...) SELECT statement; (See below)	INSERT INTO Students (StudentID,FirstName,LastName) SELECT StudentID,FirstName,LastName FROM OtherStudentTable;

		WHERE LastName like '%son';

Delete data	DELETE FROM table
	    [WHERE
	condition(s)];
	
	(Omit WHERE to delete all data)
		DELETE FROM Students
		    WHERE LastName='Smith';
		DELETE FROM Students
		    WHERE LastName like '%Smith%';
		    AND FirstName='John';
		DELETE FROM Students;

Updating Data	UPDATE table SET
	    column1=value1,
	    column2=value2,
	    ...
	    columnk=valuek
	    [WHERE
	condition(s)];
		UPDATE Students SET
		    LastName='Jones' WHERE
		    StudentID=987654321;
		UPDATE Students SET
		    LastName='Jones', Major='Theatre'
		    WHERE StudentID=987654321 OR
		    (MAJOR='Art' AND FirstName='Pete');

Insert column	ALTER TABLE table ADD COLUMN
	    column type options;
		ALTER TABLE Students ADD COLUMN
		    Hometown varchar(20);

Delete column	ALTER TABLE table
	    DROP COLUMN column;
		ALTER TABLE Students
		    DROP COLUMN Dorm;

Delete table (Careful!)	DROP TABLE [IF EXISTS] table;	DROP TABLE Animals;

SQL Commands: Querying		
What	How	Example(s)
All columns	SELECT * FROM table;	SELECT * FROM Students;
Some columns	SELECT column1,column2,... FROM table;	SELECT LastName, FirstName FROM Students;

Some rows/ columns	SELECT column1,column2,...
	    FROM table
	    [WHERE condition(s)];
		SELECT LastName,FirstName
		    FROM Students
		    WHERE StudentID LIKE '%123%';

No Repeats	SELECT [DISTINCT] column(s)
	    FROM table;
		SELECT DISTINCT LastName
		    FROM Students;

Ordering	SELECT column1,column2,...
	    FROM table
	    [ORDER BY column(s)
	[DESC]];
		SELECT LastName,FirstName
		    FROM Students
		    ORDER BY LastName, FirstName DESC;

Column Aliases	SELECT column1 [AS alias1],
	    column2 [AS alias2], ...
	    FROM table1;
		SELECT LastName,FirstName AS First
		    FROM Students;

Grouping	SELECT column1,column2,...
	    FROM table
	    [GROUP BY column(s)];
		SELECT LastName,COUNT(*)
		    FROM Students
		    GROUP BY LastName;

Group Filtering	SELECT column1,column2,...
	    FROM table
	    [GROUP BY column(s)]
	    [HAVING condition(s)];
		SELECT LastName,COUNT(*)
		    FROM Students
		    GROUP BY LastName
		    HAVING LastName like '%son';

Joins	SELECT column1,column2,...
	    FROM table1,table2,...
	    [WHERE condition(s)];
		SELECT LastName,Points
		    FROM Students,Assignments
		    WHERE AssignmentID=12 AND
		
		Students.StudentID=Assignments.StudentID;

Table Aliases	SELECT column1,column2,...
	    FROM table1 [alias1],
	    table2 [alias2],...
	    [WHERE condition(s)];
		SELECT LastName,Points
		    FROM Students S,Assignments A
		    WHERE S.StudentID=A.StudentID AND
		    A.AssignmentID=12;

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Everything    SELECT [DISTINCT]                 SELECT Points, COUNT(*) AS Cnt
                  column1 [AS alias1],              FROM Students S,Assignments A
                  column2 [AS alias2], ...          WHERE S.StudentID=A.StudentID AND
                  FROM table1 [alias1],             A.AssignmentID=12
                  table2 [alias2],...               GROUP BY Points
                  [WHERE condition(s)]              HAVING Points > 10
                  [GROUP BY column(s)]              ORDER BY Cnt, Points DESC;
                  [HAVING condition(s)]
                  [ORDER BY column(s)
          [DESC]];
```

For more details, see the following pages from MySQL.com.

- MySQL Reference Manual
- MySQL Column Types
- SHOW syntax
- CREATE TABLE syntax
- ALTER TABLE syntax
- INSERT syntax
- DELETE syntax
- UPDATE syntax
- SELECT syntax
- INSERT ... SELECT syntax
- MySQL Functions