(My)SQL Cheat Sheet

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MySQL Command-Line

What	How	Example(s)
Running MySQL	mysql -u*username* -p*password*	mysql -ucusack2RO -pegbdf5s
Importing	mysql -u*username* -p*password* < *filename*	mysql -usomeDB -pblah < myNewDB.sql
Dumping (Saving)	mysqldump -u*username* -p*password 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*)
Absolute value	abs(*number*)
Rounding numbers	round(*number*)
Largest integer not greater	floor(*number*)
Smallest integer not smaller	ceiling(*number*)
Square root	sqrt(*number*)
*n*th power	pow(*base*,*exponent*)
random number *n*, 0<*n* < 1	rand()
sin (similar cos, etc.)	sin(*number*)

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*)
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) &nbsp);

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;

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