**SQL BASIC**

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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 |

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| |  |  |  | | --- | --- | --- | | **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. | | | |

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| |  |  |  | | --- | --- | --- | | **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*) |  | |

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| |  |  |  | | --- | --- | --- | | **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; | |

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| |  |  |  | | --- | --- | --- | | **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; | |

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