What is MySql?

MySQL is the world's most used relational database management system (RDBMS) that runs as a server providing multi-user access to a number of databases. It is named after developer Michael Widenius' daughter, My. The SQL phrase stands for Structured Query Language.

The MySQL development project has made its source code available under the terms of the GNU General Public License, as well as under a variety of proprietary agreements. MySQL was owned and sponsored by a single for-profit firm, the Swedish company MySQL AB, now owned by Oracle Corporation.

Free-software-open source projects that require a full-featured database management system often use MySQL. For commercial use, several paid editions are available, and offer additional functionality. Applications which use MySQL databases include: TYPO3, Joomla, WordPress, phpBB, Drupal and other software built on the LAMP software stack. MySQL is also used in many high-profile, large-scale World Wide Web products, including Wikipedia, Google (though not for searches), Facebook, and Twitter.

Uses

MySQL is a popular choice of database for use in web applications, and is a central component of the widely used LAMP open source web application software stack—LAMP is an acronym for "Linux, Apache, MySQL, Perl/PHP/Python".

MySQL is an open source database management system and is used in some of the most frequently visited websites on the Internet, including Flickr, Nokia.com, YouTube and as previously mentioned, Wikipedia, Google, Facebook and Twitter.

What are DDL, DML and DQL?

- DDL (Data Definition Language) refers to the CREATE, ALTER and DROP statements

DDL allows to add / modify / delete the logical structures which contain the data or which allow users to access / mantain the data (databases, tables, keys, views...). DDL is about "metadata".

- DML (Data Manipulation Language) refers to the INSERT, UPDATE and DELETE statements

DML allows to add / modify / delete data itself.

- DQL (Data Query Language) refers to the SELECT, SHOW and HELP statements (queries)

SELECT is the main DQL instruction. It retrieves data you need. SHOW retrieves infos about the metadata. HELP... is for people who need help.

- DCL (Data Control Language) refers to the GRANT and REVOKE statements

DCL is used to grant / revoke permissions on databases and their contents. DCL is simple, but MySQL's permissions are rather complex. DCL is about security.

List out some tools through which we can draw E-R diagrams for mysql.

Case Studio, Smart Draw, TOAD

How can we repair a MySQL table?

The syntex for repairing a MySQL table is REPAIR TABLENAME, [TABLENAME,], [Quick],[Extended]
This command will repair the table specified if the quick is given the MySQL will do a repair of only the index tree if the extended is given it will create index row by row

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What are the advantages of stored procedures, triggers, indexes?

A stored procedure is a set of SQL commands that can be compiled and stored in the server. Once this has been done, clients don't need to keep re-issuing the entire query but can refer to the stored procedure. This provides better overall performance because the query has to be parsed only once, and less information needs to be sent between the server and the client. You can also raise the conceptual level by having libraries of functions in the server. However, stored procedures of course do increase the load on the database server system, as more of the work is done on the server side and less on the client (application) side.Triggers will also be implemented. A trigger is effectively a type of stored procedure, one that is invoked when a particular event occurs. For example, you can install a stored procedure that is triggered each time a record is deleted from a transaction table and that stored procedure automatically deletes the corresponding customer from a customer table when all his transactions are deleted.Indexes are used to find rows with specific column values quickly. Without an index, MySQL must begin with the first row and then read through the entire table to find the relevant rows. The larger the table, the more this costs. If the table has an index for the columns in question, MySQL can quickly determine the position to seek to in the middle of the data file without having to look at all the data. If a table has 1,000 rows, this is at least 100 times faster than reading sequentially. If you need to access most of the rows, it is faster to read sequentially, because this minimizes disk seeks.

What is the maximum length of a table name, database name, and fieldname in MySQL?

The following table describes the maximum length for each type of identifier.

Identifier Maximum Length (bytes)
Database 64
Table 64
Column 64
Index 64
Alias 255
There are some restrictions on the characters that may appear in identifiers:

How many values can the SET function of MySQL take?

MySQL set can take zero or more values but at the maximum it can take 64 values

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What are the other commands to know the structure of table using MySQL commands except explain command?

describe Table-Name;

How many tables will create when we create table, what are they?

The '.frm' file stores the table definition.
The data file has a '.MYD' (MYData) extension.
The index file has a '.MYI' (MYIndex) extension,

What is the purpose of the following files having extensions 1) .frm 2) .myd 3) .myi? What do these files contain?

In MySql, the default table type is MyISAM. Each MyISAM table is stored on disk in three files. The files have names that begin with the table name and have an extension to indicate the file type.
The '.frm' file stores the table definition.
The data file has a '.MYD' (MYData) extension.
The index file has a '.MYI' (MYIndex) extension,

What is maximum size of a database in MySQL?

If the operating system or filesystem places a limit on the number of files in a directory, MySQL is bound by that constraint.The efficiency of the operating system in handling large numbers of files in a directory can place a practical limit on the number of tables in a database. If the time required to open a file in the directory increases significantly as the number of files increases, database performance can be adversely affected.
The amount of available disk space limits the number of tables. MySQL 3.22 had a 4GB (4 gigabyte) limit on table size. With the MyISAM storage engine in MySQL 3.23, the maximum table size was increased to 65536 terabytes (2567 â€“ 1 bytes). With this larger allowed table size, the maximum effective table size for MySQL databases is usually determined by operating system constraints on file sizes, not by MySQL internal limits.The InnoDB storage engine maintains InnoDB tables within a tablespace that can be created from several files. This allows a table to exceed the maximum individual file size. The tablespace can include raw disk partitions, which allows extremely large tables. The maximum tablespace size is 64TB.
The following table lists some examples of operating system file-size limits. This is only a rough guide and is not intended to be definitive. For the most up-to-date information, be sure to check the documentation specific to your operating system.
Operating System File-size Limit:
Linux 2.2-Intel 32-bit 2GB (LFS: 4GB)
Linux 2.4+ (using ext3 filesystem) 4TB
Solaris 9/10 16TB
NetWare w/NSS filesystem 8TB
Win32 w/ FAT/FAT32 2GB/4GB
Win32 w/ NTFS 2TB (possibly larger)
MacOS X w/ HFS+ 2TB

Give the syntax of Grant and Revoke commands?

The generic syntax for grant is as following
GRANT [rights] on [database/s] TO [username@hostname] IDENTIFIED BY [password]
now rights can be
a) All privileges
b) combination of create, drop, select, insert, update and delete etc.We can grant rights on all databse by using *.* or some specific database by database.* or a specific table by database.table_name username@hotsname can be either username@localhost, username@hostname and username@%
where hostname is any valid hostname and % represents any name, the *.* any condition password is simply the password of user.
The generic syntax for revoke is as following:
REVOKE [rights] on [database/s] FROM [username@hostname]
now rights can be as explained above
a) All privileges
b) combination of create, drop, select, insert, update and delete etc.
username@hotsname can be either username@localhost, username@hostname and username@% where hostname is any valid hostname and % represents any name, the *.* any condition

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Explain Normalization concept?

The normalization process involves getting our data to conform to three progressive normal forms, and a higher level of normalization cannot be achieved until the previous levels have been achieved (there are actually five normal forms, but the last two are mainly academic and will not be discussed).First Normal FormThe First Normal Form (or 1NF) involves removal of redundant data from horizontal rows. We want to ensure that there is no duplication of data in a given row, and that every column stores the least amount of information possible (making the field atomic).Second Normal Form. Where the First Normal Form deals with redundancy of data across a horizontal row, Second Normal Form (or 2NF) deals with redundancy of data in vertical columns. As stated earlier, the normal forms are progressive, so to achieve Second Normal Form, your tables must already be in First Normal Form.Third Normal Form I have a confession to make; I do not often use Third Normal Form. In Third Normal Form we are looking for data in our tables that is not fully dependant on the primary key, but dependant on another value in the table

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How can we find the number of rows in a table using MySQL?

Use this for mysql SELECT COUNT(*) FROM table_name;

How many ways we can we find the current date using MySQL?

SELECT CURDATE();
CURRENT_DATE() = CURDATE()
for time use
SELECT CURTIME();
CURRENT_TIME() = CURTIME()

What is the difference between GROUP BY and ORDER BY in Sql?

ORDER BY [col1],[col2],...,[coln]; Tels DBMS according to what columns it should sort the result. If two rows will have the same value in col1 it will try to sort them according to col2 and so on.GROUP BY [col1],[col2],...,[coln]; Tels DBMS to group results with same value of column col1. You can use COUNT(col1), SUM(col1), AVG(col1) with it, if you want to count all items in group, sum all values or view average

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What is the difference between char and varchar data types?

Set char to occupy n bytes and it will take n bytes even if u r
storing a value of n-m bytes Set varchar to occupy n bytes and it will take only the required space
and will not use the n bytes
eg. name char(15) will waste 5 bytes if we store 'romharshan', if each char takes a byte
eg. name varchar(15) will just use 10 bytes if we store 'romharshan', if each char takes a byte. rest 5 bytes will be free.

How can I load data from a text file into a table?

you can use LOAD DATA INFILE file_name; syntax to load data
from a text file. but you have to make sure that
a) data is delimited
b) columns and data matched correctly

How can we know the number of days between two given dates using MySQL?

SELECT DATEDIFF("2007-03-07","2005-01-01");

How can we take a backup of a MySQL table and how can we restore it ?

To backup: BACKUP TABLE tbl_name[,tbl_name] TO '/path/to/backup/directory'
RESTORE TABLE tbl_name[,tbl_name] FROM '/path/to/backup/directory'mysqldump: Dumping Table Structure and DataUtility to dump a database or a collection of database for backup or for transferring the data to another SQL server (not necessarily a MySQL server). The dump will contain SQL statements to create the table and/or populate the table.
-t, no-create-info. Don't write table creation information (the CREATE TABLE statement).
-d, no-data. Don't write any row information for the table. This is very useful if you just want to get a dump of the structure for a table!

How can we optimize or increase the speed of a MySQL select query?

first of all instead of using select * from table1, use select column1, column2, column3.. from table1. Look for the opportunity to introduce index in the table you are querying. use limit keyword if you are looking for any specific number of rows from the result set.

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how to do login in mysql with unix shell

By below method if password is pass and user name is root
[mysql dir]/bin/mysql -h hostname -u root -p pass

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how you will Create a database on the mysql server with unix shell

mysql> create database databasename;

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how to list or view all databases from the mysql server.

mysql> show databases;

How Switch (select or use) to a database.

mysql> use databasename;

How To see all the tables from a database of mysql server.

mysql> show tables;

How to see table's field formats or description of table .

mysql> describe tablename;

How to delete a database from mysql server.

mysql> drop database databasename;

How we get Sum of column

mysql> SELECT SUM(*) FROM [table name];

How to delete a table

mysql> drop table tablename;

How you will Show all data from a table.

mysql> SELECT * FROM tablename;

How to returns the columns and column information pertaining to the designated table

mysql> show columns from tablename;

How to Show certain selected rows with the value "pcds"

mysql> SELECT * FROM tablename WHERE fieldname = "pcds";

How will Show all records containing the name "sonia" AND the phone number '9876543210'

mysql> SELECT * FROM tablename WHERE name = “sonia” AND phone_number = ’9876543210′;

How you will Show all records not containing the name “sonia” AND the phone number ’9876543210′ order by the phone_number field.

mysql> SELECT * FROM tablename WHERE name != “sonia” AND phone_number = ’9876543210′ order by phone_number;

How to Show all records starting with the letters ‘sonia’ AND the phone number ’9876543210′

mysql> SELECT * FROM tablename WHERE name like “sonia%” AND phone_number = ’9876543210′;

How to show all records starting with the letters ‘sonia’ AND the phone number ’9876543210′ limit to records 1 through 5.

mysql> SELECT * FROM tablename WHERE name like “sonia%” AND phone_number = ’9876543210′ limit 1,5;

Use a regular expression to find records. Use “REGEXP BINARY” to force case-sensitivity. This finds any record beginning with r.

mysql> SELECT * FROM tablename WHERE rec RLIKE “^r”;

How you will Show unique records.

mysql> SELECT DISTINCT columnname FROM tablename;

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how we will Show selected records sorted in an ascending (asc) or descending (desc)

mysql> SELECT col1,col2 FROM tablename ORDER BY col2 DESC;
mysql> SELECT col1,col2 FROM tablename ORDER BY col2 ASC;

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how to Return total number of rows.

mysql> SELECT COUNT(*) FROM tablename;

How to Join tables on common columns.

mysql> select lookup.illustrationid, lookup.personid,person.birthday from lookup left join person on lookup.personid=person.personid=statement to join birthday in person table with primary illustration id

How to Create a new user. Login as root. Switch to the MySQL db. Make the user. Update privileges.

```
# mysql -u root -p
mysql> use mysql;
mysql> INSERT INTO user (Host,User,Password) VALUES('%','username',PASSWORD('password'));
mysql> flush privileges;
```

How to Change a users password from unix shell.

```
# [mysql dir]/bin/mysqladmin -u username -h hostname.blah.org -p password 'new-password'
```

How to Change a users password from MySQL prompt. Login as root. Set the password. Update privs.

```
# mysql -u root -p
mysql> SET PASSWORD FOR 'user'@'hostname' = PASSWORD('passwordhere');
mysql> flush privileges;
```

How to Recover a MySQL root password. Stop the MySQL server process. Start again with no grant tables. Login to MySQL as root. Set new password. Exit MySQL and restart MySQL server.

```
# /etc/init.d/mysql stop
# mysqld_safe –skip-grant-tables &
# mysql -u root
mysql> use mysql;
mysql> update user set password=PASSWORD("newrootpassword") where User='root';
mysql> flush privileges;
mysql> quit
# /etc/init.d/mysql stop
# /etc/init.d/mysql start
```

How to Set a root password if there is on root password.

```
# mysqladmin -u root password newpassword
```

How to Update a root password.

```
# mysqladmin -u root -p oldpassword newpassword
```

How to allow the user “sonia” to connect to the server from localhost using the password “passwd”. Login as root. Switch to the MySQL db. Give privs. Update privileges.

```
# mysql -u root -p
mysql> use mysql;
mysql> grant usage on *.* to sonia@localhost identified by ‘passwd’;
mysql> flush privileges;
```

How to give user privilages for a db. Login as root. Switch to the MySQL db. Grant privs. Update privs.

```
# mysql -u root -p
mysql> use mysql;
mysql> INSERT INTO user (Host,Db,User,Select_priv,Insert_priv,Update_priv,Delete_priv,Create_priv,Drop_priv) VALUES
(‘%’,'databasename’,'username’,'Y’,'Y’,'Y’,'Y’,'Y’,'N’);
mysql> flush privileges;
or
mysql> grant all privileges on databasename.* to username@localhost;
mysql> flush privileges;
```

How To update info already in a table and Delete a row(s) from a table.

```
mysql> UPDATE [table name] SET Select_priv = ‘Y’,Insert_priv = ‘Y’,Update_priv = ‘Y’ where [field name] = ‘user’;
mysql> DELETE from [table name] where [field name] = ‘whatever’;
```

How to Update database permissions/privilages.

```
mysql> flush privileges;
```

How to Delete a column and Add a new column to database

```
mysql> alter table [table name] drop column [column name];
mysql> alter table [table name] add column [new column name] varchar (20);
```

Change column name and Make a unique column so we get no dupes.

```
mysql> alter table [table name] change [old column name] [new column name] varchar (50);
mysql> alter table [table name] add unique ([column name]);
```

How to make a column bigger and Delete unique from table.

mysql> alter table [table name] modify [column name] VARCHAR(3);
mysql> alter table [table name] drop index [colmn name];

How to Load a CSV file into a table

mysql> LOAD DATA INFILE '/tmp/filename.csv' replace INTO TABLE [table name] FIELDS TERMINATED BY ',' LINES TERMINATED BY '\n' (field1,field2,field3);

How to dump all databases for backup. Backup file is sql commands to recreate all db's.

[mysql dir]/bin/mysqldump -u root -ppassword –opt >/tmp/alldatabases.sql

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How to dump one database for backup.

[mysql dir]/bin/mysqldump -u username -ppassword –databases databasename >/tmp/databasename.sql

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How to dump a table from a database.

[mysql dir]/bin/mysqldump -c -u username -ppassword databasename tablename > /tmp/databasename.tablename.sql

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Restore database (or database table) from backup.

[mysql dir]/bin/mysql -u username -ppassword databasename < /tmp/databasename.sql

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How to Create Table show Example

mysql> CREATE TABLE [table name] (firstname VARCHAR(20), middleinitial VARCHAR(3), lastname VARCHAR(35),suffix VARCHAR(3),officeid VARCHAR(10),userid VARCHAR(15),username VARCHAR(8),email VARCHAR(35),phone VARCHAR(25), groups VARCHAR(15),datestamp DATE,timestamp time,pgpemail VARCHAR(255));

How to search second maximum(second highest) salary value(integer)from table employee (field salary)in the manner so that mysql gets less load?

By below query we will get second maximum(second highest) salary value(integer)from table employee (field salary)in the manner so that mysql gets less load?
SELECT DISTINCT(salary) FROM employee order by salary desc limit 1 , 1 ;
(This way we will able to find out 3rd highest , 4th highest salary so on just need to change limit condtion like LIMIT 2,1 for 3rd highest and LIMIT

3,1 for 4th some one may finding this way useing below query that taken more time as compare to above query SELECT salary FROM employee where salary < (select max(salary) from employe) order by salary DESC limit 1 ;