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MySQL 資料庫管理工作坊

Jan-Mar 2010

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Please let us know if you have any special needs while at HKPC training room

Class, Lunch and breaks

Class: 2 full days: 9:30– 5 pm;

Lunch Hour: 12:30 – 2 pm.

Check your desktop PC

- Mouse and keyboard function properly

Introduction to Database

What is Database and DBMS ?

A **Database** is an integrated collection of logically related records or files consolidated into a common pool that provides data for one or more multiple uses.

A **database management system (DBMS)** consists of software that organizes the storage of data.

Introduction to Database

What is inside?

- Interface drivers
- SQL Engines
- Database files
- Indexing
- Security
- Locking
- Applications

Introduction to MySQL



MySQL, the most popular open source SQL database, is developed and provided by MySQL AB.

Two Swedes found MySQL AB company. The MySQL software delivers a very fast, multi-threaded, multi-user SQL database server. MySQL is a trademark of MySQL AB. MySQL AB makes money on support, services, commercial licenses, and royalties. They use these revenues to fund product development and to expand the MySQL business.

Introduction to MySQL



Client-Server Model

MySQL installation

- MySQL Server
- Client Programs
- Non-Client Programs

MySQL Software Products

Database Products

1. MySQL Enterprise
2. MySQL Community Server
3. MySQL Cluster
4. MySQL Embedded Database
5. MySQL GUI Tools

MySQL Certifications

MySQL Certifications (Sun Microsystem)

Certified MySQL Associate

Certified MySQL Developer

Certified MySQL Database Administrator

Certified MySQL Cluster DBA

Certification web page

Lab

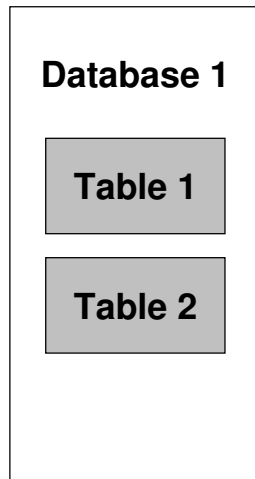
Use standalone copy to install MySQL server onto your desktop computer:

Your instructor will first guide you the instruction before installation.

Lab

This lab requires you to logon MySQL using command prompt and create a database using the script provided on your MYSQL folder:

MySQL Database



Basic MySQL Command

Syntax of Command

Create Table

```
CREATE [TEMPORARY] TABLE [IF NOT EXISTS] tbl_name [(create_definition,...)]
[table_options] [select_statement]
```

create_definition:

```
col_name type [NOT NULL | NULL] [DEFAULT default_value] [AUTO_INCREMENT]
  [PRIMARY KEY] [reference_definition]
or PRIMARY KEY (index_col_name,...)
or KEY [index_name] (index_col_name,...)
or INDEX [index_name] (index_col_name,...)
or UNIQUE [INDEX] [index_name] (index_col_name,...)
or [CONSTRAINT symbol] FOREIGN KEY index_name (index_col_name,...)
  [reference_definition]
or CHECK (expr)
```

Operations of Table

eg.

```
Create table myfirsttable  
( first_name CHAR(20) NOT NULL,  
last_name CHAR(20) );
```

Operations of Table

```
mysql> SHOW DATABASES;  
  
mysql> USE lab2;  
  
mysql> SHOW TABLES;  
  
mysql> DESCRIBE table123;  
  
mysql> DROP TABLE table123;  
  
mysql> SHOW TABLES;
```

This lab requires you to logon MySQL using command prompt

Type the command shown on previous slide

Basic MySQL Command

Query of Data

Query information

```
mysql> select * from lab4;  
Empty set
```

Add information

```
mysql> insert into lab4 values ('Chan','John',30);  
Query OK, 1 row affected (0.16 sec)
```

Update information

```
mysql> update lab4 set first_name = 'Cheung' where last_name = 'John';  
Query OK, 1 row affected (0.01 sec)
```


Query of Data

Check information

```
mysql > select * from lab4;
```

last_name	first_name	age
Cheung	Chan	30

1 row in set

Delete information

```
mysql > delete from lab4 where last_name = 'John';
```

Query OK, 0 row affected (0.01 sec)

```
mysql > delete from lab4 where last_name = 'Cheung';
```

Query OK, 1 row affected (0.01 sec)

```
mysql > select * from lab4;
```

Empty set

Data Type

numeric	bit, int, bigint, real, double (8 byte, 15 digits), float (4 byte, 7 digits), decimal (fixed-point data)
character	char(255), varchar(65565), text
binary	binary, varbinary
temporal	date, time, datetime

PHP is a reflective programming language originally designed for producing dynamic web pages. PHP is used mainly in server-side application software.

Linux

Linux is a Unix-like computer operating system kernel.

Apache

Apache HTTP Server

Apache is a free software/open source web server

MySQL

MySQL is a multithreaded, multi-user, SQL database management system (DBMS)

PHP

PHP is a reflective programming language designed for producing dynamic web pages.

WAMP

Windows alternatives to LAMP include WIMP and WAMP.

WAMP is a Windows web development environment. It allows you to create web applications with Apache, PHP and the MySQL database. It also comes with PHPMyAdmin to easily manage your databases.

Lab

Double-click wamp.exe to install WAMP package Your instructor will guide you the rest of setup and configuration

Create Database lab7 using lab7.sql on your MYSQL2 folder

Use notepad to edit [lab7program1.php](#) (to specify root password)

Open your Internet Explorer, and type: <http://localhost/lab7program1.php>

It should list all MTR stations as result

MySQL Backup Method

MySQL Backup Method

Backup Method	MySQL Server Running
mysqldump (command line)	Yes
mysqldump (phpMy Admin)	Yes
Navicat (SQL query)	Yes
File Copy	Yes
Replication	Yes
Snapshots	Yes

Copy your [lab7program1.php](#) to [lab7program2.php](#)

We need a web page to show district, population and density in the order by district name. Use notepad to edit [lab7program2.php](#)
(Hints: go to see your content of table district before editing program)

Copy your [lab7program1.php](#) to [lab7program3.php](#)

See instruction of file3.txt for details. Your instructor will guide you to complete this task

Copy your lab7program1.php to lab7program4.php

See instruction of file4.txt for details. Your instructor will guide you to complete this task

Copy your lab7program1.php to lab7program5.php

See instruction of file5.txt for details. Your instructor will guide you to complete this task