# Week 2 ,Lab 1 : 26/9/2014

**What are the MySQL installation paths for the server and data ?**

They were installed here

* Install Path : C:\progargmFiles\mySQL
* Data Path : C:\programdata\MySQL\MYSQLSERVER5.6\

**Describe why there are 2 client utilities**

* CMD line more advanced, beginner users may struggle to .
* GUI is more user friendly with graphics allowing mouse clicks.
* CMD line uses less computer resources due to being a simple command line so has its advantages over GUI.
* GUI hogs more computer resources due to graphics etc.

**SQL for finding countries in the world :**

SELECT count(\*) FROM country;

**How many countries are in the world database ?**

* There where 239 Counties

**What commands did you use to display the current Processlist?**

* SHOW DATABASES;
* USE information\_schema;
* SHOW TABLES;
* SELECT \* FROM processlist;

**What commands did you use to display the first 3 columns of User?**

* USER
* CURRENT\_CONNECTIONS
* TOTOAL\_CONNECTIONS

**Are all Mysql log visible in the MySQL Workbench untility ?**

* MySQL Workbench can only view logs if your log destination is set to TABLE.

**What is the MySql data dictionary made of how casn it be processed ?**

* The mapping between variables and their corresponding data is stored by MySQL Workbench in what is known as a data dictionary.
* It can be processed though

**What is MySQL My.ini file ?**

* Its the settings file for MySql ( there is other terms for it too)
* **Default Character set** - Utf8
* **Sever Type Number** Server\_type=3
* **Sql mode :** sql-mode ="STRICT\_TRANS\_TABLES, NO\_AUTOcREATE\_USER,NO ENGINE\_SUBSTITUTION"

**Why are some MySql files hidden ?**

* So the general user doesn't delete them by mistake and for safe keeping.

**How did you display the hidden files ?**

* I had to go to folder options in windows explorer settings and allow hidden folders to be shown.

**Why do we use roles in database management ?**

* A role can be thought of as either a database user, or a group of database users, depending on how the role is set up. Roles can own database objects (for example, tables) and can assign privileges on those objects to other roles to control who has access to which objects. Furthermore, it is possible to grant *membership* in a role to another role, thus allowing the member role use of privileges assigned to the role it is a member of.
* Makes it easier to manage then having to manage every user (set up included) each time.

**What are the difference between the different server types ?**

* Developer Machine : a typical desktop workstation where MySQL is intended only for personal use.The MySQL server is configured to use minimal system resources.
* Server Machine : Where the MySQL server is running alongside other server applications such as FTP, email, and Web servers. The MySQL server is configured to use a medium level system resources.
* Dedicated Machine : only the MySQL server. It is assumed that no other applications are running. The MySQL server is configured to use all available system resources.

**What the different log types and what are they ?**

**Bin Log**

* The binary log contains “events” that describe database changes such as table creation operations or changes to table data.

**Gernial Log**

* The general query log is a general record of what mysql is doing. The server writes information to this log when clients connect or disconnect, and it logs each SQL statement received.

**Slow Query Log**

* The slow query log consists of SQL statements that took more than [long\_query\_time](http://dev.mysql.com/doc/refman/5.0/en/server-system-variables.html#sysvar_long_query_time) **(in the ini file)** seconds to execute. The minimum and default values are 1 and 10, respectively.

# Week 3 - Lab 2 - 03/10/14

**What command can you use to create a database in Ingres**

* createdb Collegedb

**Compare Ingrues and SQl**

**Ingres**

Ingres begins installation by offering 4 different types of system configuration based on concurrency

Allows for multiple instances on the same machine.

Multiple Instances: yes

Transaction Log size: 256 MB(default), changeable

Prompt for dual log's different physical location: yes

Different data locations: Database, Backup, Journal, Dump, Temporary

SQL-92 compliance: yes

**MySQL**

MySQL offers specific features to be installed.

Multiple users :No

Multiple Instances: No

Not specified. Allows for 3 types of logs to be included

none

Only two locations: one for server, one for data

None

**What is the SQL to create a table in Ingure and SQL**

Create table student

(

Cao\_no Integer,

Cit\_no Integer,

Dept\_code Varchar(10),

Dept\_name Varchar(52),

Entry\_date Varchar(8),

Course\_code Varchar(15),

Course\_type (13),

Year Varchar (6),

Status Varchar(16)

);

# Week 4 - Lab 2(Continued) - 10/10/14

**What is the command to create an index in Ingrus and Sql**

* CREATE INDEX index\_name ON table\_name (column\_name)

**Create index of non key column and see which different queries involving that column actually use the index if any.**

Did use on the index on the heap.

Get 2 values from index

Values Picked

* SELECT \* from STUDENT WHERE Course\_code = ''Ev\_BARRTN';
* Exec = 31ms
* Cost 127 io
* Rows Returned : 128
* Index Used used
* SELECT \* from STUDENT WHERE Course\_code="BS1"
* Exec = 31ms
* Cost 196 io
* Rows retruend : 1540
* Index used.

**IMPORT . CSV FILE INTO THE TABLE**

* load data infile 'C:\Databases\Student.csv' into table student fields terminated by ',';

**Explain why SQL dialect and portability are linked.**

* Having different dialects of SQL hinders portability in an effort to have customers use a specific database. aka vender locking.

# Week 5 - Lab 3 - 17/10/14

**What was the load statement used**

* load data infile 'C:\Databases\Student.csv' into tabel student fields terminated by ',';

**Explain Mysql export issues**

MySQL has added specific things to their sql to vendor lock the user.

like **engine=MyISAM** in the Create Table sections

Also the **LOCK TABLES** command is specific to MySQL

**Note 2 of the data type transforms that can be used to handle data type variations in SQL dialects.**

* MySQL offers Data Type Mapping tool to help with different data types from when importing . This helps change the structre of the files to match what is needed.
* int2 can be handled as SMALLINT
* int8 can be handled as BIGINT

**Explain the difference between .sql vs csv**

* CSV won't let you create indexes for fast searching.
* If you always need all data from a single table (like for application settings), CSV is faster, otherwise not.
* if you use a CSV, you need to be really careful to handle multiple threads / processes correctly, otherwise you'll get bad data or corrupt your file.
* Using a CSV is a very bad idea if you ever need UPDATEs, DELETEs, ALTER TABLE or to access the file from more than one process at once.
* Csv file contains string data values that are delimited with ',' symbol
* File containing SQL code to represent data values and its structure

**Inserting**

* insert into orders (idorders,product,qty)
* Values (86,’toys’,1);

**Trigger**

Delimiter $$

Create trigger sale\_bi\_trg

before insert on orders

for each row

begin

insert into logs

values(‘insert’,now());

END $$

Delimiter ;

Trigger result: Row inserted into logs table containing 'insert' string and datetime stamp when the trigger was activated.

**Tables**

order -> orderids (int ) -> project(varchar 255) -> qty (int)

logs -> PRODUCT -> DATE

CREATE TABLE logs (

inserts varchar(10),

dateandtime datetime

);

CREATE TABLE orders (

idorders int,

product varchar(10),

qty int

);

# Week 6 - No Lab - 24/10/14

No Lab

# Week 7 - Lab 4 - 31/10/14

**You'll need to find if MySQL uses an 'autocommit' setting and find what it defaults to.**

**Show variable like '%autocommit%'**

The default setting for auto commit is "ON"

**FInd default Engine**

**Show Engines**

The default storage engine is InnoDB

**FInd default setting for isolation level**

**Repeatble-Read.** What command did you use to find it **Show variable like '%isolation%';**

**READ UNCOMMITTED**

* Specifies that statements can read rows that have been modified by other transactions but not yet committed.

**READ COMMITTED**

* Specifies that statements cannot read data that has been modified but not committed by other transactions. This prevents dirty reads. Data can be changed by other transactions between individual statements within the current transaction, resulting in nonrepeatable reads or phantom data. This option is the SQL Server default.

**REPEATABLE READ**

* Specifies that statements cannot read data that has been modified but not yet committed by other transactions and that no other transactions can modify data that has been read by the current transaction until the current transaction completes.

**SERIALIZABLE**

* Specifies the following:
* Statements cannot read data that has been modified but not yet committed by other transactions.
* No other transactions can modify data that has been read by the current transaction until the current transaction completes.
* Other transactions cannot insert new rows with key values that would fall in the range of keys read by any statements in the current transaction until the current transaction completes.

**Errors**

* Error message from deadlock was **1213**
* Deadlock found when trying to get lock try restarting transactions.