

Build the DOCTIME Knowledge Engine

Tuesday, August 14, 2018 1:03 PM

Purpose: The purpose of this project is to reinforce the knowledge you have gained so far about databases, specifically developing a database from business rules.

Required Items:

1. **The Business Rules** from the **Produce an ER Diagram** assignment
2. **ERD** you constructed as result of the **Produce an ER Diagram** assignment
3. The **3NF Dependency Diagram** you produced as part of the **Produce a 3NF Dependency Diagram** assignment
4. The final result of the **ETL: SQL Statements** exercise

Project deliverables (What you will submit to Blackboard):

1. Use the Steps below to build the database in MariaDB database.
2. You will produce 5 PDF Documents (Use the SAVE AS or EXPORT command to save as PDF)
3. The submission in BB should look similar to the example below...
 - ☐ a. The Submission in BB should appear similarly as follows
 - SUBMISSION-
 - BusinessRules.pdf
 - ERD.pdf
 - 3NF Dependency Diagram.pdf
 - SQL Documentation.pdf
 - Database Construction Screen Captures.pdf

Assignment description:

You will formally document and produce the **DOCTIME** database as a project portfolio. The **first attempt** will be due by the end of this module. I expect first attempt to include **documentation, staging and database construction** which should be completed by the end of **this module**. The **final attempt** which should include everything else including the selection and update queries will be *due* at the **same time** your **final exam** is *due*. See the syllabus for final exam due date.

Constraints:

In order to get credit you must:

1. Type the **business rules** you used to create your ERD into MS Word
2. Provide a **formalized version of your ERD, Dependency Diagram and SQL Statements** - This means you should...
 - a. Type all of the **SQL statements** into some text editor like Windows notepad.exe. It will be easier to copy and paste the statements from notepad than MS Word. For the final submission, paste them into MS Word.
 - b. Build your **ERD** in PowerPoint, Visio or some graphical software
 - c. Build your **3NF Dependency Diagram** in PowerPoint, Visio or some graphical software
3. I suggest you do the steps above FIRST before attempting the **Database Construction and Consultation procedure below**
4. Execute the **Database Construction and Consultation procedure below**
5. Provide screen captures or pictures from YOUR database session for EACH statement and its result
6. There should be a **separate document** with a **title page** for each of the following:
 - a. Business Rules
 - b. ERD
 - c. 3NF Dependency Diagram
 - d. SQL Documentation

- e. **Database construction screen captures**
7. Add the Title page to the **top** of each document using the following definition
 - a. **Section Title**
 - b. **Assignment Title**
 - c. **Student Name**
 - d. **Course and Section**
 - e. **Date and time the drawing was completed**
 - f. **Version in the form of v1, v2, v3 etc...**
8. The file name of the document should be the same as the section title
9. Upload **each** document to the assignment on BB

Database Construction and Consultation procedure:

- ▶ **Staging**
 - ▶ *Log into the Informatics desktop pool*
 - ▶ <https://spartangreensky.uscupstate.edu/portal/webclient/index.html#/>
 - ▶ *Install MariaDB Engine.* Click the link below or scroll down to the section.
 - ▶ [MariaDB Installation](#)
 - ▶ *Test Maria DB command line client.* Click the link below or scroll down to the section.
 - ▶ [MariaDB Test Procedure](#)
- ▶ *Build the **knowledge engine** using the SQL DDL statements from **ETL: SQL Statements Exercise** to*
 - ▶ *Create the **Database***
 - ▶ Name the database with the following convention:
 - ▶ **DOCTIME_<your last name><first initial>**
 - ▶ Example for Grover Walters: **DOCTIME_WALTERSG**
 - ▶ *Create **tables***
 - ▶ **IMPORTANT:** make sure you do not use any delimiters at all which is legal in this RDBMS platform.
 - ▶ **Example:**
 - ▶ `CREATE TABLE IF NOT EXISTS MAJOR (MAJOR_ID INT NOT NULL, MAJOR_NAME VARCHAR(25), PRIMARY KEY (MAJOR_ID)) ;`
 - ▶ ***Insert Data***
- ▶ Use SQL statements **ETL: SQL Statements Exercise** to *query and update* the knowledge engine. Use **ALL** of the statements you created as part of your documentation.
 - ▶ *Log screen captures* of each statement. Use the Snipping Tool or something similar in Windows to help you. Look up its usage on Youtube.com if you are not familiar with the tool.

▶ **Examples:**

```
MariaDB [(none)]>
MariaDB [(none)]>
MariaDB [(none)]>
MariaDB [(none)]>
MariaDB [(none)]>
MariaDB [(none)]>
MariaDB [(none)]>
MariaDB [(none)]>
MariaDB [(none)]> CREATE DATABASE DOCTIME_WALTERSG;
Query OK, 1 row affected (0.00 sec)

MariaDB [(none)]>
```

```
▶ MariaDB [(none)]> USE DOCTIME_WALTERSG;
Database changed
```

```
▶ MariaDB [DOCTIME_WALTERSG]> CREATE TABLE PATIENT (PAT_ID INT NOT NULL, PAT_NAME VARCHAR(45), PRIMARY KEY (PAT_ID));
Query OK, 0 rows affected (0.35 sec)
```

```
▶ MariaDB [DOCTIME_WALTERSG]> INSERT INTO PATIENT VALUES(100, 'Grover Walters');
Query OK, 1 row affected (0.05 sec)
```

```

MariaDB [DOCTIME_WALTERSG1]> SELECT PAT_NAME FROM PATIENT WHERE PAT_ID = 100;
+-----+
| PAT_NAME |
+-----+
| Grover Walters |
+-----+
1 row in set (0.02 sec)

MariaDB [DOCTIME_WALTERSG1]>

```

- ▶ Make sure your statements produce some result as indicated in the examples. You should *fix any errors* until you get a useable result. Since you are using your own inserted data, there should be no SQL statements that produce an empty set. Otherwise, your grade for this portion of the assignment will be affected.
- ▶ If you have to *fix* any **original SQL statement**, you should *apply* that change in your **SQL documentation** as well. Not doing so will result in a lower grade for this portion of the assignment.

Submission Checklist

- ☐ 1. A separate document/file **IN PDF FORMAT** with a **title page** for each of the following:
 - ☐ a. Business Rules
 - ☐ b. ERD
 - ☐ c. 3NF Dependency Diagram
 - ☐ d. SQL Documentation
 - ☐ e. Database construction and consultation screen captures
- ☐ 2. All images are clearly visible
- ☐ 3. Every document has a title page
- ☐ 4. Documents are named properly
- ☐ 5. Upload 5 PDF Documents

There will be a **grading rubric** applied so that you can see how your grade will be influenced by various assessment factors and ultimately understand your mistakes--after which you may revise and resubmit for a better grade. The rubric is indicated by a box at the top of the blackboard assignment.



Rubric Example Icon

MariaDB Installation

Monday, October 31, 2016 9:21 AM

MariaDB is a tool that uses the MySQL database standard. DO NOT DOWNLOAD MySQL.

Use this link to download and install MariaDB ONLY.

<https://mariadb.com/downloads?gclid=COuNicjJitACFQwQgQodz5YldQ>

MariaDB TX MariaDB AX

MariaDB Server MariaDB MaxScale Connectors Tools

MariaDB Server is an open source relational database with an extensible architecture. If you are downloading MariaDB Server for a production system or any evaluation that may lead to a production system, a [MariaDB TX Subscription](#) is recommended to provide access to features such as [MariaDB MaxScale](#), management and monitoring tools, notification services for security alerts and bug fixes, technical and consultative support which includes 24x7 support coverage as well as performance tuning, best practice recommendations and code review.

Release Current
Version 10.3.8 GA
OS Windows
OS Version 32 Bit
DOWNLOAD

Choose **Version 32bit**

Click the **DOWNLOAD** button

Don't worry about filling in the information... the download should just start

Download

HOME

Your download should begin automatically.

While you are waiting, take this opportunity to let us know a bit about you.

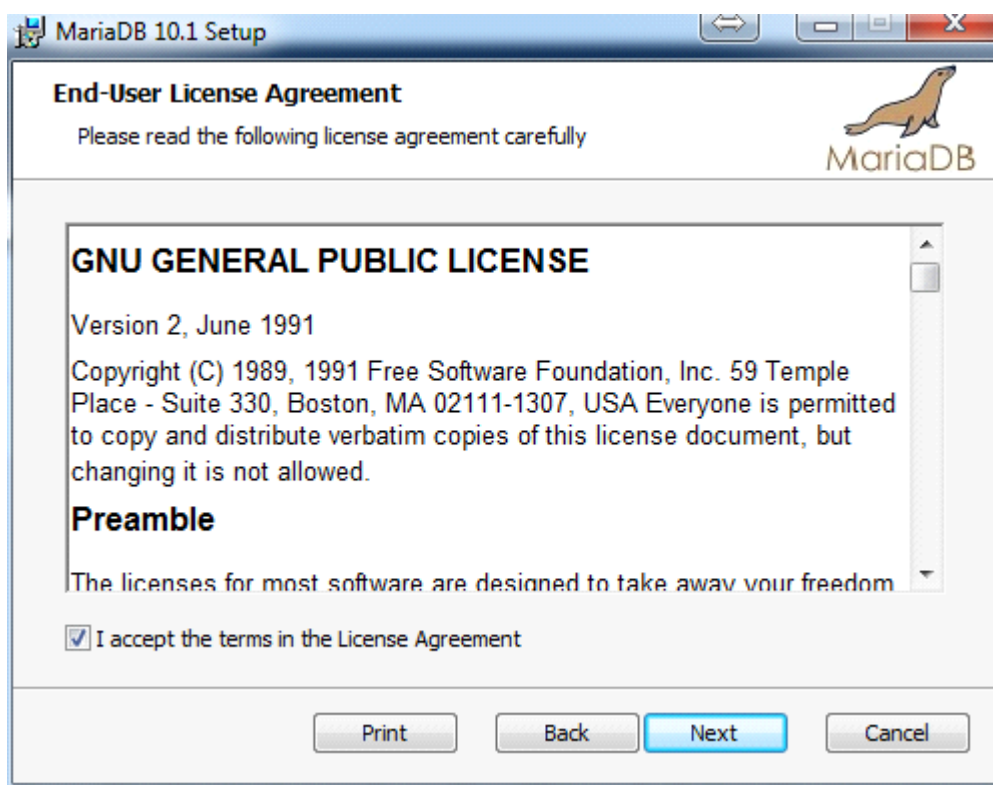
* Business Email:
[Input Field]

* First Name:
[Input Field]

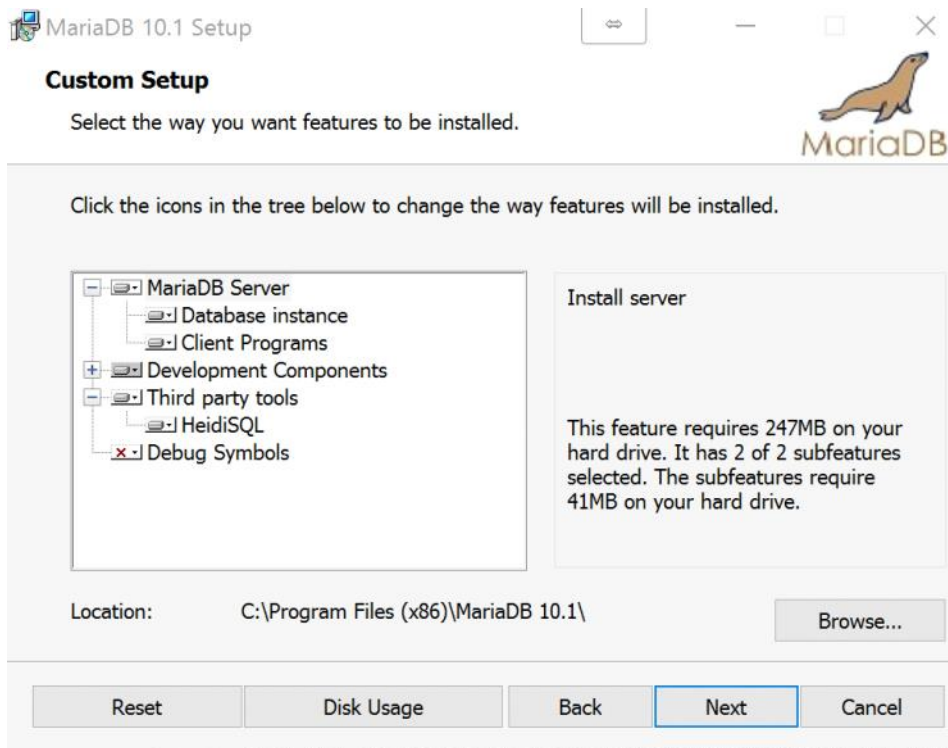
Start the install...



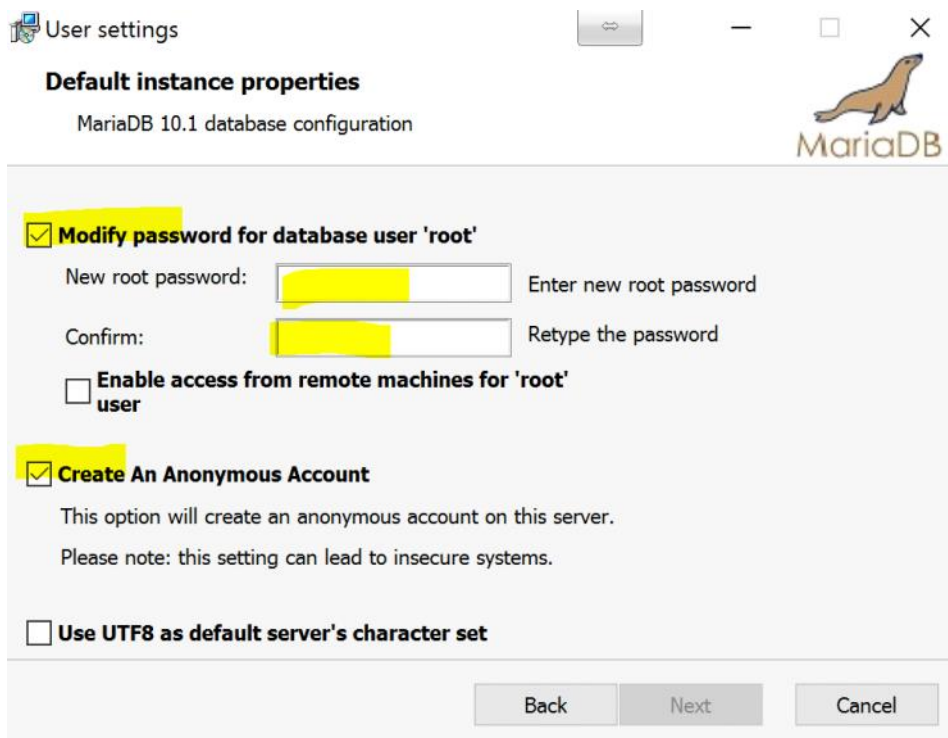
Click **next**



Click **"I accept"**, then click **next**



Leave everything as-is, just *click next*...



Click **Modify password**...
 Type **upstate325** as the password
 Retype **upstate325** as the password
 Click **Create an anonymous account**...
 Then *click next*...

Database settings

Default instance properties
MariaDB 10.1 database configuration



☒ **Install as service**
Service Name:

☒ **Enable networking**
TCP port:

☒ **Optimize for transactions**
(Uses transactional storage engine and "strict" SQL mode)
Buffer pool size: MB

Leave everything default

Click **next**...

MariaDB 10.1 Setup

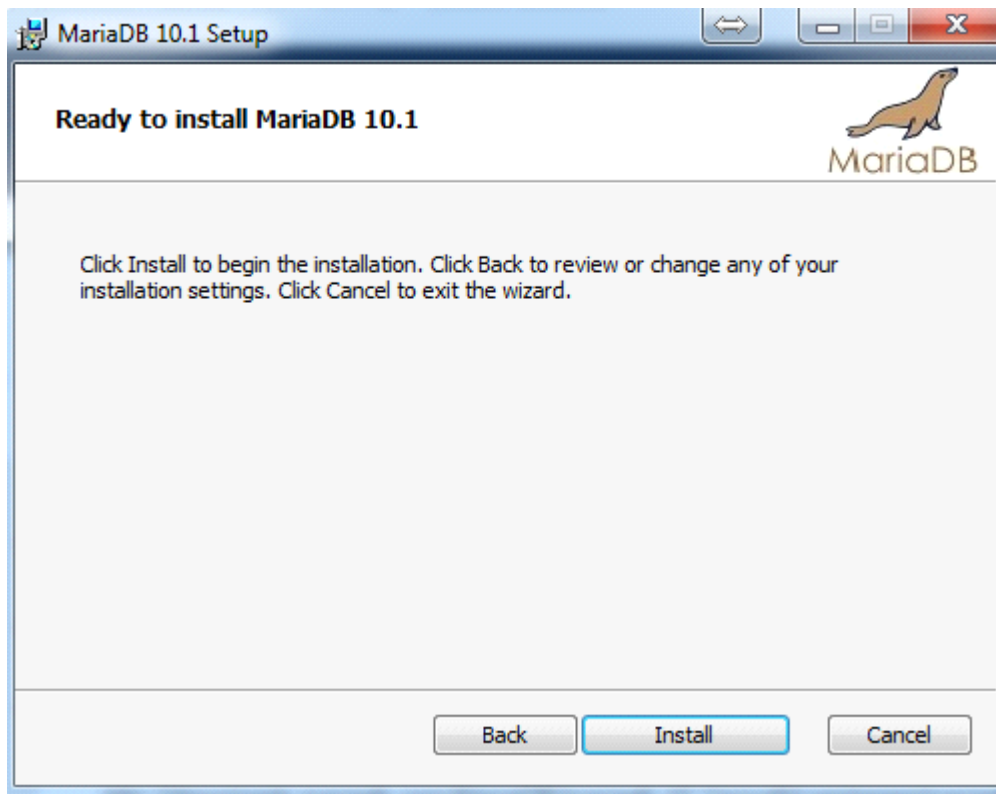
MariaDB 10.1 setup
Submit usage information



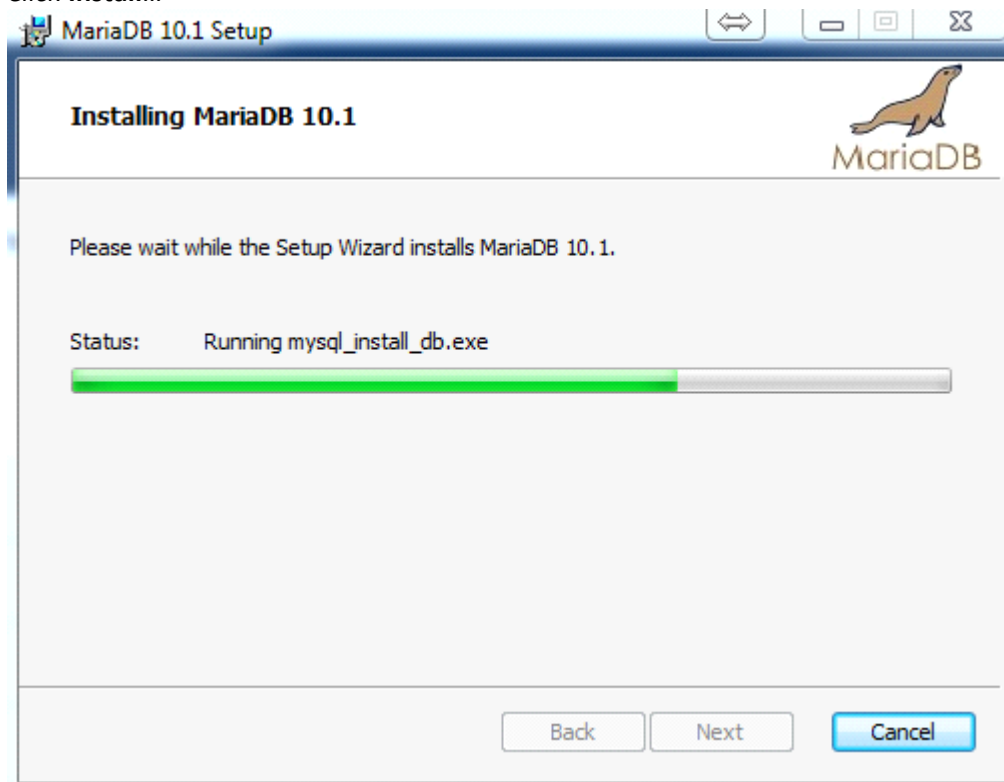
☐ **Enable the Feedback plugin and submit anonymous usage information**

Monty Program has created a Feedback plugin for MariaDB which, if enabled, collects basic anonymous statistical information. This information is used by the developers to improve MariaDB. Enabling this plugin is an easy way to help with MariaDB development. Collected statistics, and more information on the plugin, can be viewed at http://mariadb.org/feedback_plugin

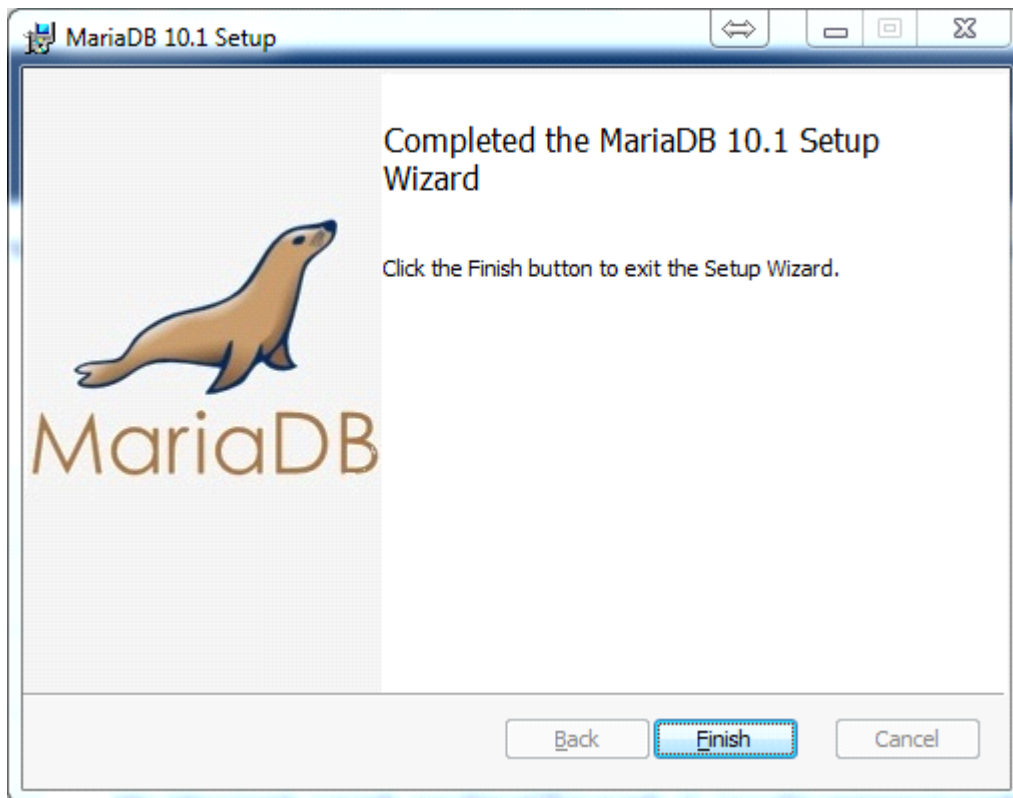
Click **next** without changing anything...



Click **Install...**



Wait for the process to finish...



Click **Finish**...

Click the following link to view (and print if necessary) MySQL commands for testing...

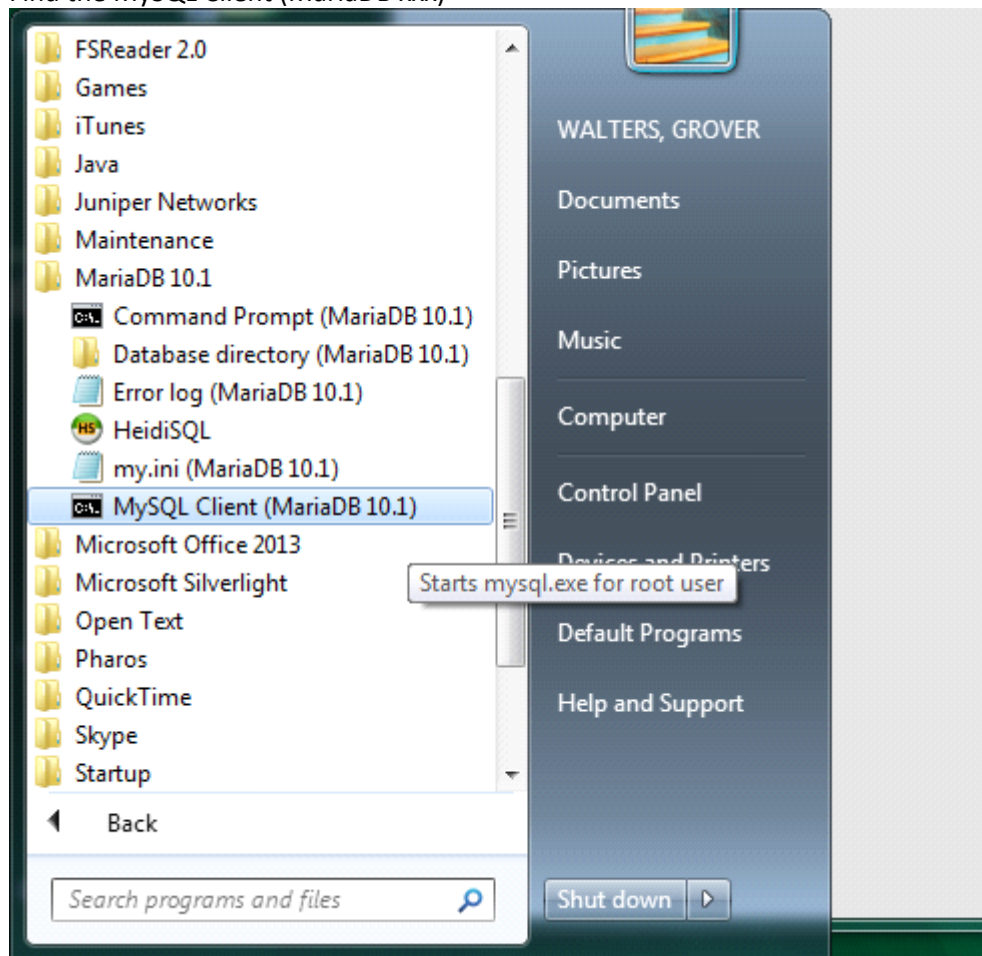
<http://g2pc1.bu.edu/~qzpeng/manual/MySQL%20Commands.htm>

MariaDB Test Procedure

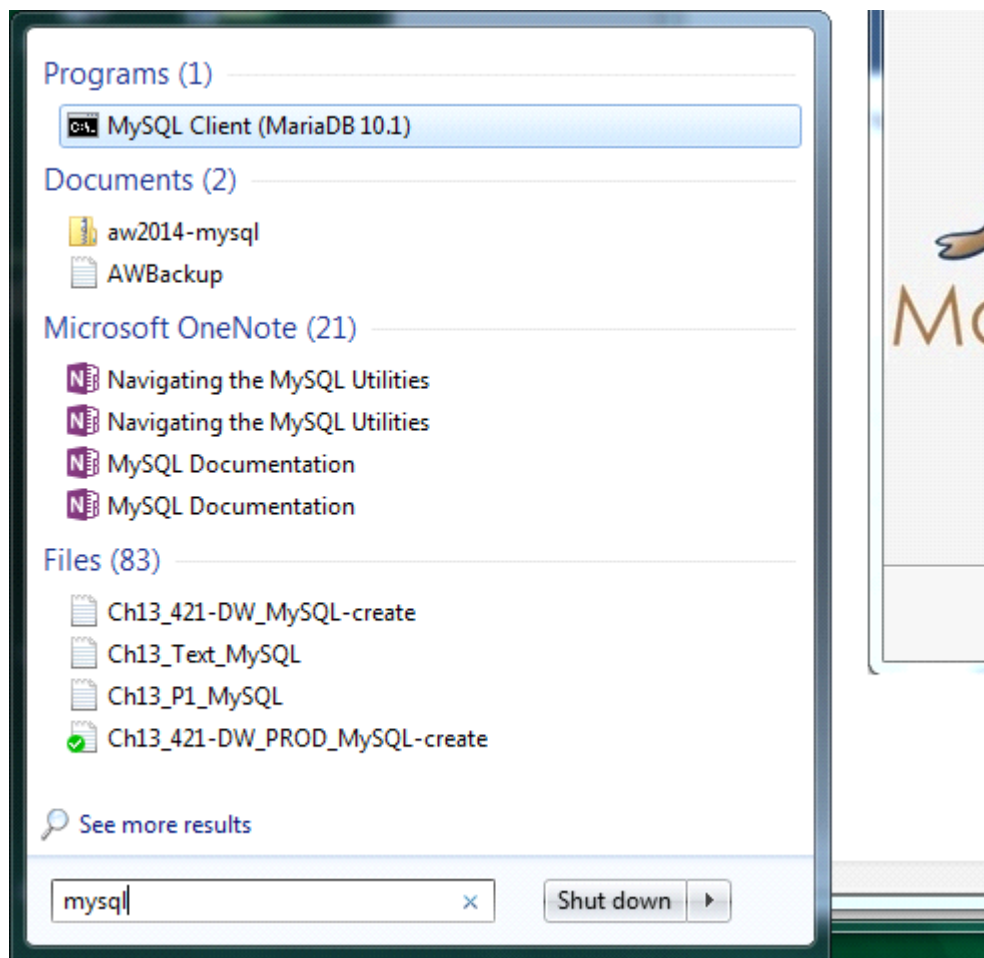
Wednesday, November 02, 2016 1:32 PM

1. Find the MySQL Client (MariaDB xxx)

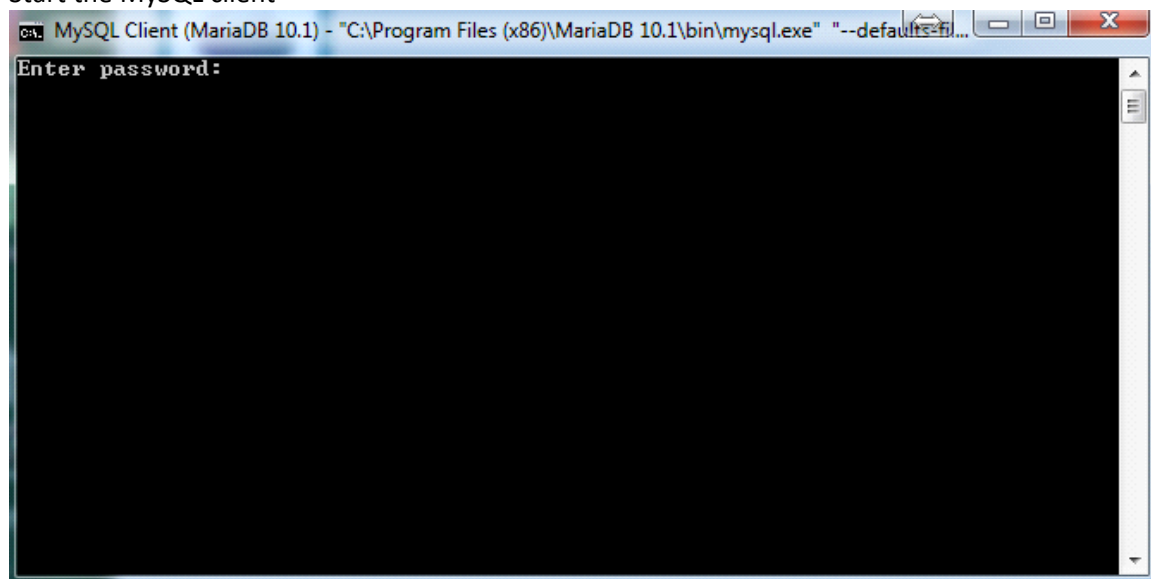
- 2.



Or



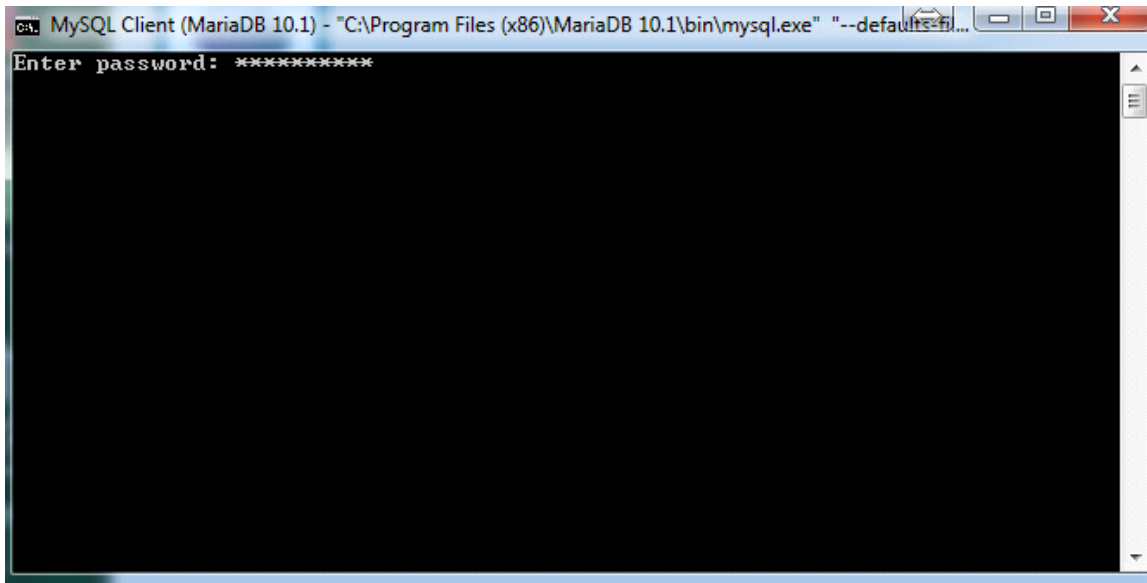
3. Start the MySQL client



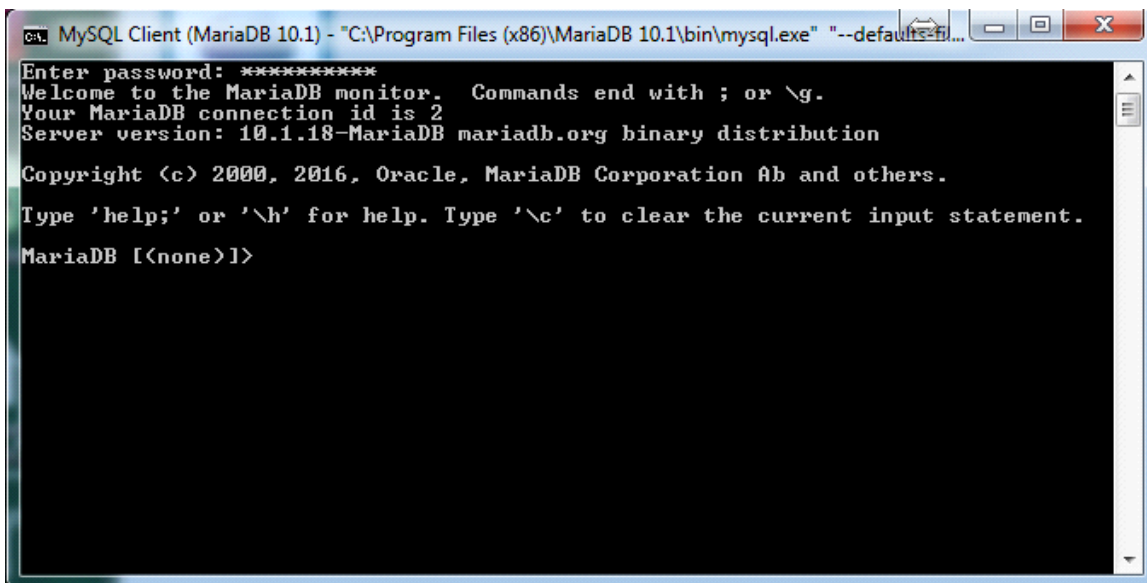
- 4.

5. Enter the password **upstate325**

6.

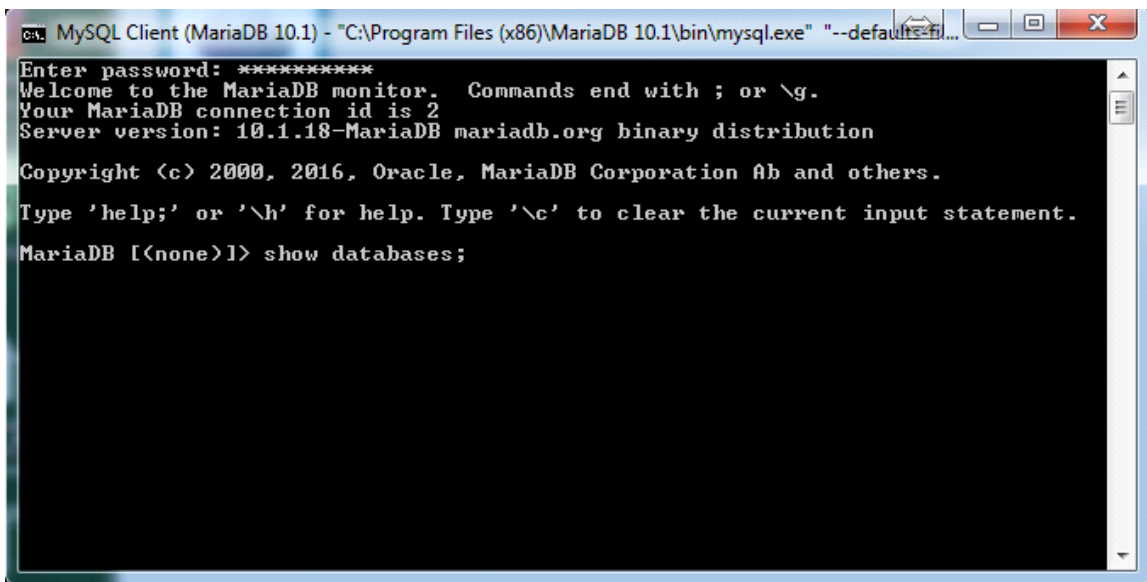


7.



8. If the password is correct and access is granted the screen should appear as above

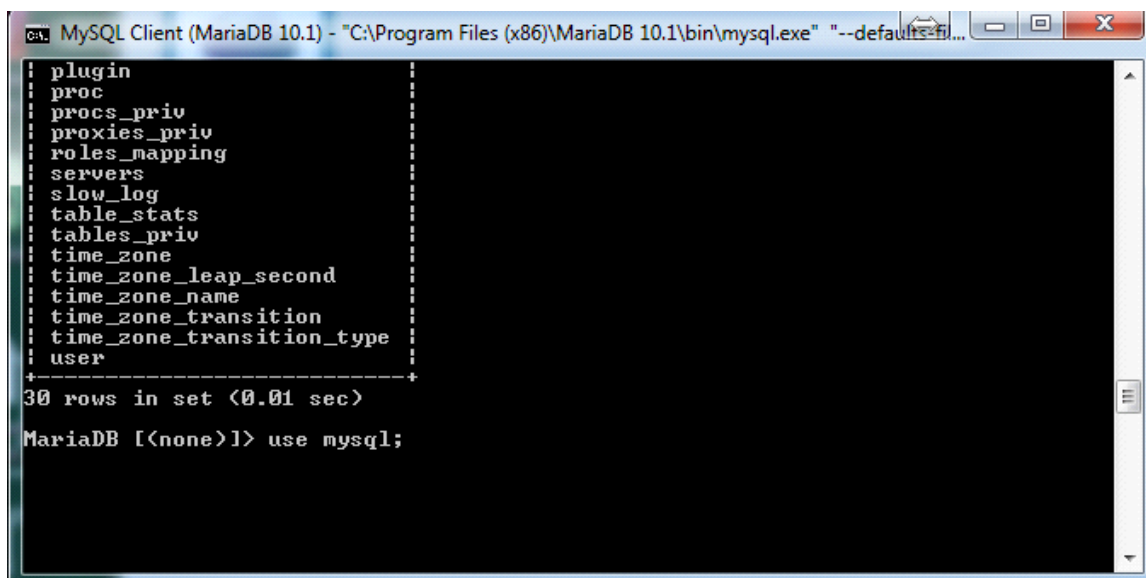
9.



10. Type **show databases;** and **hit enter.**

16. **30 rows** should *appear* in a list of all the tables in the **mysql** table

17.

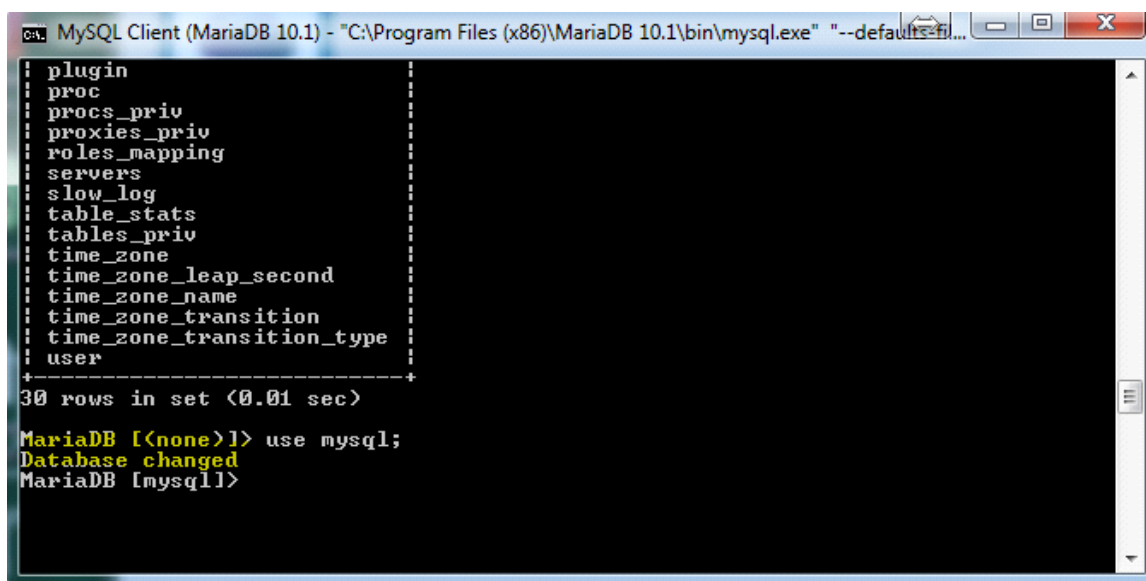


```
MySQL Client (MariaDB 10.1) - "C:\Program Files (x86)\MariaDB 10.1\bin\mysql.exe" "--default-fi...
+-----+
| plugin      |
| proc        |
| procs_priv  |
| proxies_priv|
| roles_mapping|
| servers     |
| slow_log    |
| table_stats  |
| tables_priv  |
| time_zone   |
| time_zone_leap_second|
| time_zone_name|
| time_zone_transition|
| time_zone_transition_type|
| user        |
+-----+
30 rows in set (0.01 sec)

MariaDB [(none)]> use mysql;
```

18. Type **use mysql;**

19.



```
MySQL Client (MariaDB 10.1) - "C:\Program Files (x86)\MariaDB 10.1\bin\mysql.exe" "--default-fi...
+-----+
| plugin      |
| proc        |
| procs_priv  |
| proxies_priv|
| roles_mapping|
| servers     |
| slow_log    |
| table_stats  |
| tables_priv  |
| time_zone   |
| time_zone_leap_second|
| time_zone_name|
| time_zone_transition|
| time_zone_transition_type|
| user        |
+-----+
30 rows in set (0.01 sec)

MariaDB [(none)]> use mysql;
Database changed
MariaDB [mysql]>
```

20. If successful, the result **Database changed** will *appear*

21.

```

MySQL Client (MariaDB 10.1) - "C:\Program Files (x86)\MariaDB 10.1\bin\mysql.exe" "--defaults-f...
+-----+
| help_relation |
| help_topic   |
| host         |
| index_stats  |
| innodb_index_stats |
| innodb_table_stats |
| plugin       |
| proc         |
| procs_priv   |
| proxies_priv |
| roles_mapping |
| servers      |
| slow_log     |
| table_stats  |
| tables_priv  |
| time_zone    |
| time_zone_leap_second |
| time_zone_name |
| time_zone_transition |
| time_zone_transition_type |
| user         |
+-----+
30 rows in set (0.01 sec)

MariaDB [(none)]> show columns from user;

```

22. Type `show columns from user;` and *hit enter*

23.

```

+-----+
| Lock_tables_priv | enum('N','Y') | NO | | N |
| Execute_priv     | enum('N','Y') | NO | | N |
| Repl_slave_priv  | enum('N','Y') | NO | | N |
| Repl_client_priv | enum('N','Y') | NO | | N |
| Create_view_priv | enum('N','Y') | NO | | N |
| Show_view_priv   | enum('N','Y') | NO | | N |
| Create_routine_priv | enum('N','Y') | NO | | N |
| Alter_routine_priv | enum('N','Y') | NO | | N |
| Create_user_priv  | enum('N','Y') | NO | | N |
| Event_priv       | enum('N','Y') | NO | | N |
| Trigger_priv     | enum('N','Y') | NO | | N |
| Create_tablespace_priv | enum('N','Y') | NO | | N |
| ssl_type         | enum('', 'ANY', 'X509', 'SPECIFIED') | NO | | N |
| ssl_cipher       | blob          | NO | | NULL |
| x509_issuer      | blob          | NO | | NULL |
| x509_subject     | blob          | NO | | NULL |
| max_questions    | int(11) unsigned | NO | | 0 |
| max_updates      | int(11) unsigned | NO | | 0 |
| max_connections  | int(11) unsigned | NO | | 0 |
| max_user_connections | int(11)       | NO | | 0 |
| plugin           | char(64)       | NO | |  |
| authentication_string | text          | NO | | NULL |
| password_expired | enum('N','Y') | NO | | N |
| is_role          | enum('N','Y') | NO | | N |
| default_role     | char(80)       | NO | |  |
| max_statement_time | decimal(12,6)  | NO | | 0.000000 |
+-----+
46 rows in set (0.04 sec)

MariaDB [mysql]>

```

24. Approx. 46 rows should appear in a list.

25. If all statements return no errors, the test of the installation is complete