

## 3612ICT Database Systems and Administration /7204ICT Database administration

MySQL Basic account management

MySQL meta data and data files

MySQL indexes

### Part I: Basic account management and observing MySQL data files and storage engines

- 1) Login as `root`
- 2) Create a database named `Lab2`
- 3) Create a user named `Lab2User` who can only connect to the server from `localhost`
- 4) Give all privileges to `Lab2User` on everything.
- 5) Reconnect to server as `Lab2User`. Check the current user is indeed `Lab2User@localhost`
- 6) Change the current database to `Lab2`
- 7) Show the available storage engines
- 8) Create a `student` table using the `InnoDB` engine, a `faculty` table using the `MyISAM` engine, a `course` table using the `MEMORY` engine (refer to lab1's schema file). Observe the data files created for these tables. How many files are created for each of the tables? What are they?
- 9) Now insert some sample data into the above tables. Do a selection and observe the result. Then stop the `MYSQ`L server, restart it, and relogin as `Lab2User` and observe the data files in the `Lab2` data directory, and observe the data in the three tables above. Are the data files still there? Are the rows still there in the tables?

Part II: **Observing MySQL meta data and data files**

- 10) Login as root
- 11) Display all available databases using *show databases;*
- 12) Observe the tables in the databases *information\_schema*
- 13) Observe the structure of the following tables:
  - a) tables
  - b) table\_constraints
  - c) referential\_constraints
  - d) user\_privileges
  - e) user
- 14) Observe the data in these tables using the select statements (choose those columns and rows you are interested in).

Part III: MySQL indexes

- 15) Drop the tables you created in database Lab2. Then create the tables using the supplied script file `Lab2DB_tables.sql`.
- 16) Show what indexes are available for each table.
- 17) Add an index on the column `score` in the `score` table. Show the query plans for the following queries (try to see whether index is used in the query).
  1. 

```
select * from score where score between 70 and 80;
```

2. `select * from score where score+1  
between 71 and 81;`
3. `select * from score where score <= 20  
or score >=80;`
4. `select * from score where score <= 20  
union select * from score where score >=80;`
5. `select event_id from score order by  
student_id ;`
6. `select student_id, avg(score) from  
score group by student_id;`
7. `select min(score) from score;`
8. `select name, score from score sc,  
student st where sc.student_id =  
st.student_id;`

## SUBMISSION

Complete all queries and tasks. Make sure you submit scripts and screen shots to provide **EVIDENCE THE TASKS IN THE LAB WERE COMPLETED**. Include this as part of a single submission file in PDF format.

Complement the submission with a

### **REFLECTIVE LABORATORY REPORT (in PDF format)**

than **analyzes** the screen shots and illustrations from the evidence that you completed the lab and also **discusses** in your own words what was the lab about, what concepts you discovered, and what did you learn in this lab. The reflective report is an account of your learning experience. You should **evaluate** the usefulness of the lab.