



# **DATABASE SYSTEMS**

## **Final Assignment UserGuide 2024**

### **Olympics 2024 Database**

Unit Code : ISYS5008

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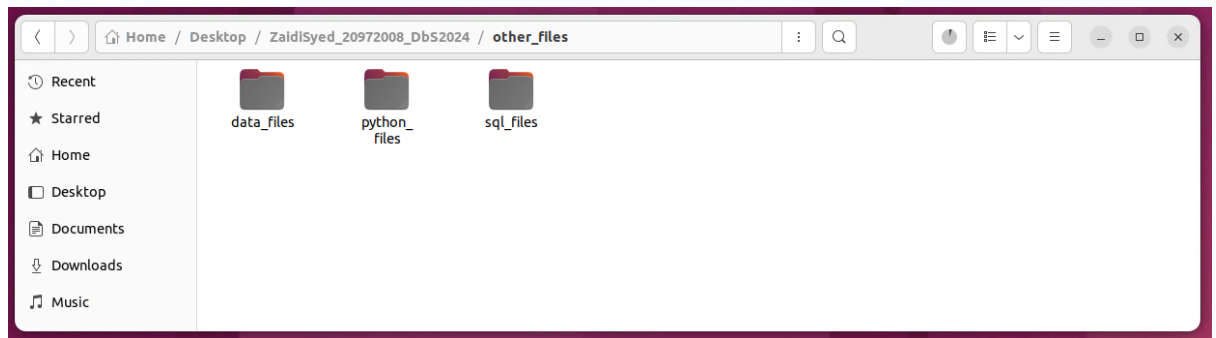
Lab Group : Thursday Sessions : 10 AM to 12 PM

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## Understanding File Management:

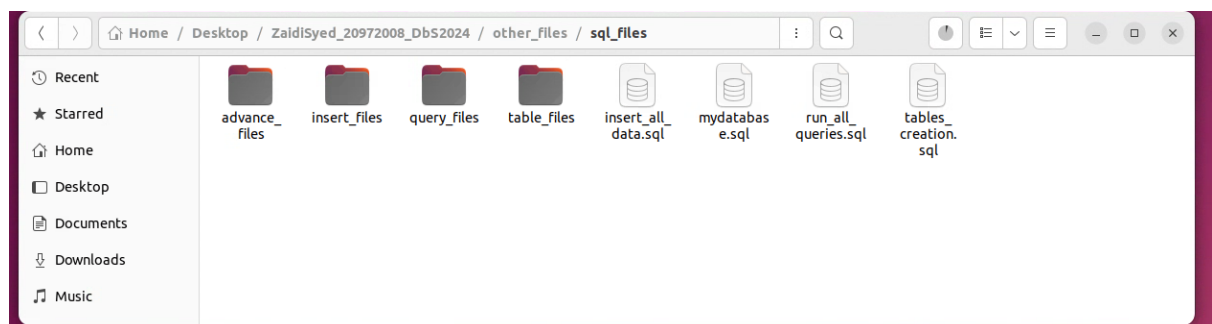
1. First is to download my file with the name ZaidiSyed\_20972008\_DbS2024 and place it on the desktop of vmware (Runs faster this way).
2. Open my folder for the project called ZaidiSyed\_20972008\_DbS2024
3. You will see many folders inside including the report and userguide
4. Open the folder “other\_files”



- a. This folder contains all the data files in the folder called “data\_files”. These are all csv files that were worked on to get the right entities and their attributes. A total of 10 files there
- b. You will see another folder called “sql\_files” which includes all the files that create tables, insert data, queries and advanced features. I have kept them organized to keep it divided and easy to read.
- c. Another folder is python\_files which contains the py files to connect to database.

## Logging into MySQL

1. First go into the folder called “sql\_files”



2. Apart from folder structure explained above, it also has combined files to source everything at once.

3. **Here** press right click and open the terminal (In 'sql\_files' folder!)
4. Check for MySQL version and Linux version
5. Mine was this in VMware : Mysql – 8.0.39 and Linux x86\_64

```
SyedZaidi_20972008_Dbs2024/other_files/sql_files$ mysql -V  
mysql Ver 8.0.39-0ubuntu0.22.04.1 for Linux on x86_64 ((Ubuntu))  
STUDENT\20972008@v-2204-hcs-075:/run/user/265363137/gvfs/smb-share:
```

6. Enter this : **mysql -u dsuser -p**
7. Enter this Password : **userCreateSQL**

## Creating Database

1. Here please write this command to source my Database and use it

**SOURCE mydatabase.sql;**

## Source Tables

1. Here please write this command to create all the tables in one attempt

**SOURCE tables\_creation.sql;**

2. If you want to see the code for each table please go into the folder called “table\_files”

## Source Values (Will take Time)

1. To insert all the values into the tables run this command

**SOURCE insert\_all\_data.sql;**

2. Ive used majority of data used in the Olympcis dataset from kaggle hence it has thousands of rows. It will take time (Around 5 mins on VMware) to load everything into the table.

## Running Queries

There are two ways you can run the queries. One is to run them all together and see information about them in the report. This can be done through the following way

1. Be in the same folder 'sql\_files' with mysql already connected and data all sourced through the above mentioned scripts

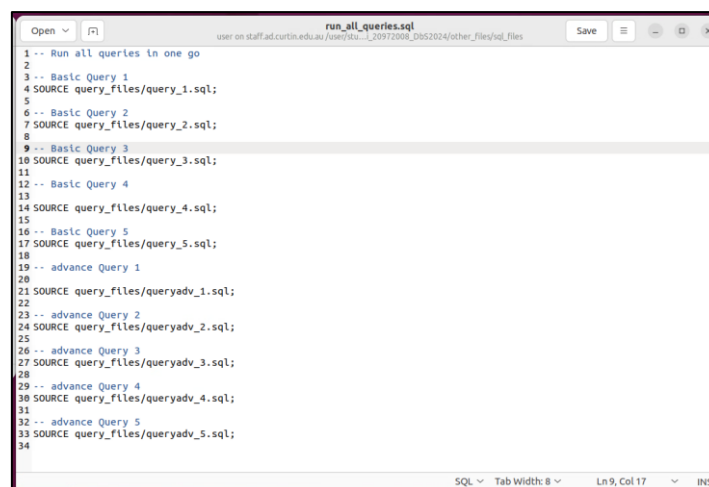
- Here source the run all queries file by using the following code to run all the queries at once. Use this command

**SOURCE run\_all\_queries.sql;**

- This will show you the results from all the queries. Any information about the question, code or details can be seen from the report.

Another way of doing it is to do one query at a time. This can be done through the following way

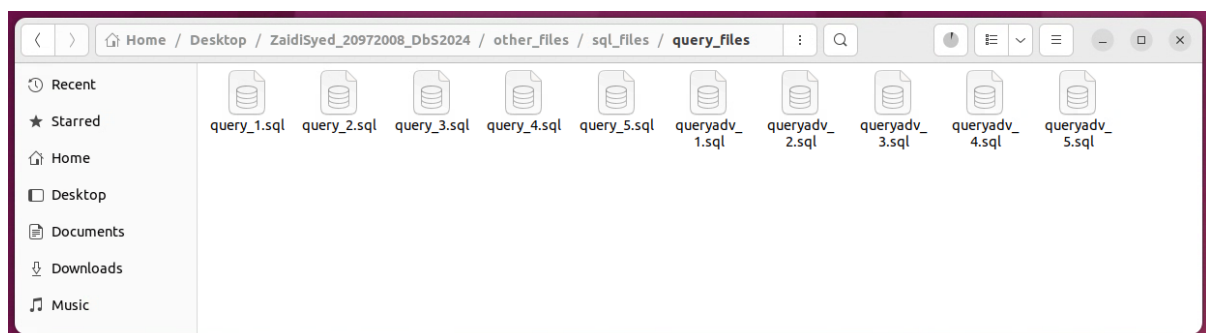
- Be in the same folder 'sql\_files' with mysql already connected and data all sourced
- Now open the file called 'run\_all\_queries.sql'



```

1 -- Run all queries in one go
2
3 -- Basic Query 1
4 SOURCE query_files/query_1.sql;
5
6 -- Basic Query 2
7 SOURCE query_files/query_2.sql;
8
9 -- Basic Query 3
10 SOURCE query_files/query_3.sql;
11
12 -- Basic Query 4
13
14 SOURCE query_files/query_4.sql;
15
16 -- Basic Query 5
17 SOURCE query_files/query_5.sql;
18
19 -- advance Query 1
20
21 SOURCE query_files/queryadv_1.sql;
22
23 -- advance Query 2
24 SOURCE query_files/queryadv_2.sql;
25
26 -- advance Query 3
27 SOURCE query_files/queryadv_3.sql;
28
29 -- advance Query 4
30 SOURCE query_files/queryadv_4.sql;
31
32 -- advance Query 5
33 SOURCE query_files/queryadv_5.sql;
34
  
```

- You will see the code to source each query at a time. They are organized with 5 of them being basic and 5 being advanced.
- If you want to see the question and code of each query you can go into the folder called "query\_files" which can be found in the same folder of "sql\_files".
- Here you can open each of them to see the question and commented code for each of the queries.



## Advanced Concepts

### Procedure 1 : AddMedalEntry

- Be in the same folder 'sql\_files' with mysql already connected and data all sourced
- Here Source the first procedure by entering this code  
**SOURCE advance\_files/procedure\_1.sql;**
- Once the procedure has been add we can call it. Use this example to add an entry for BONTUS Valentin (athlete\_id = 1566437) who won a gold in Judo Men with the venue\_id of 'JUDMXK012'

**CALL AddMedalEntry('Athlete', '1566437', 'JUDMXK012', 1, 'Gold');**

- In order to confirm if the procedure has successfully added an entry to medals table, you may use the following code to confirm.

**SELECT \* FROM Medals WHERE winner\_id = '1566437' AND event\_id = 'JUDMXK012' AND medal\_code = 1;**

### Procedure 2 : GetCountryMedalCount

- Be in the same folder 'sql\_files' with mysql already connected and data all sourced
- Here Source the first procedure by entering this code  
**SOURCE advance\_files/procedure\_2.sql;**
- Once the procedure has been added, we can call it. Use the example of calling the procedure for 'USA' to see the summary of their results. Below is the code to do it and confirm the results.

**CALL GetCountryMedalCount('USA');**

### Trigger 1 : BeforeAthleteInsert

- Be in the same folder 'sql\_files' with mysql already connected and data all sourced
- Here Source the first procedure by entering this code  
**SOURCE advance\_files/trigger\_1.sql;**
- To test the code, enter the correct sql statement to insert data into the database. It should not give any errors. Try using this

**INSERT INTO Athletes (athlete\_id, ath\_name, ath\_gender, ath\_dob, country\_code) VALUES ('123456', 'Syed Zaidi', 'M', '1997-12-17', 'PAK');**

- This should work fine. Now try with an incorrect Gender of X.

**INSERT INTO Athletes (athlete\_id, ath\_name, ath\_gender, ath\_dob, country\_code) VALUES ('123456', 'Syed Zaidi', 'X', '1997-12-17', 'PAK');**

- This should give an error of gender being incorrect. Now try making me a born next year.

```
INSERT INTO Athletes (athlete_id, ath_name, ath_gender, ath_dob, country_code)
VALUES ('123456', 'Syed Zaidi', 'M', '2025-12-17', 'PAK');
```

- It should give an error of incorrect DOB.

### Trigger 2 : EventDuplicate

- Be in the same folder 'sql\_files' with mysql already connected and data all sourced
- Here Source the first procedure by entering this code

**SOURCE advance\_files/trigger\_2.sql;**

- To test the code, enter the correct sql statement to insert data into the database with a new event\_id. It should not give any errors. Use this as example

```
INSERT INTO Events (event_id, discipline_code, event_date, event_name,
venue_id) VALUES ('EVNT001', 'ATH', '2024-08-05', '100m Sprint', 'VEN1');
```

- It shouldn't give an error since it is not ever added before. However, lets try using a event\_id of Skateboarding for men which is already added in the database. Here you will see an error.

```
INSERT INTO Events (event_id, discipline_code, event_date, event_name,
venue_id) VALUES ('SKBMS001', 'ATH', '2024-08-05', '100m Sprint', 'VEN1');
```

### View 1 : Top10EventParticipationSummary

- Be in the same folder 'sql\_files' with mysql already connected and data all sourced
- Here Source the first procedure by entering this code

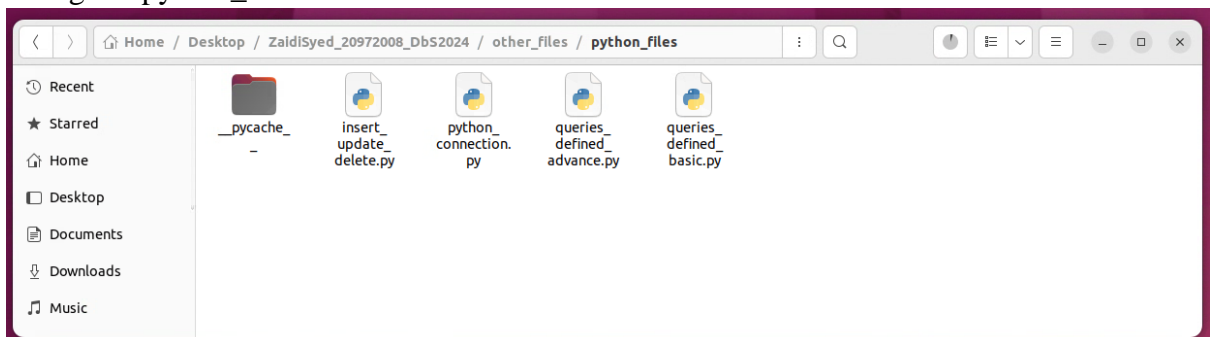
**SOURCE advance\_files/view\_1.sql;**

- To test the view enter the following code to see the top 10 events and their corresponding participants.

```
SELECT * FROM Top10EventParticipationSummary;
```

## Python Connection

1. In order to connect to python please go back a folder into other\_files and then from here go to python\_files



2. Here right click and open a new terminal.
3. Now enter this code to install the mysql-connector with python

**pip3 install mysql-connector-python**

4. Now in order to connect to my database that is already created enter this command in terminal

**python3 python\_connection.py**

5. If you want to see the details of the code you can open this py files to see how ive connected it.
6. Now to run the basic queries that has already been defined in sql, please write this command in the terminal

**python3 queries\_defined\_basic.py**

7. This should show the results of all 5 queries. Now in order to run the advanced queries that have already been defined, please run the following command

**python3 queries\_defined\_advance.py**

8. Now last section was to insert, update and delete entries from database through python. For this please run the following command.

**python3 insert\_update\_delete.py**

9. This py file has all three commands to insert a new query into the athletes tables, update it with my full name and finally delete it. You may see the code of every file by opening these py files.