

DBMS Lab

Assignment-1

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Part: 3

Semester: Odd

The operations and with screenshot and question list step by step of the tasks

Creation of Database:

```
mysql -u root -p
Stephen@STEPHEN-PC c:\xampp
# mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 12
Server version: 10.4.24-MariaDB mariadb.org binary distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> create database CSE370_Lab;
Query OK, 1 row affected (0.001 sec)

MariaDB [(none)]> use CSE370_Lab;
Database changed
```

Creation of Table:

```
MariaDB [CSE370_Lab]> create table Lab_Grades(
    -> Std_ID char(4),
    -> Name varchar(15),
    -> Major char(3),
    -> section char(1),
    -> Days_present int,
    -> Project_marks double,
    -> CGPA decimal(3,2),
    -> Submission_date date
    -> );
Query OK, 0 rows affected (0.442 sec)
```

Insertion of data in table:

```
MariaDB [CSE370_Lab]> insert into Lab_Grades values
    -> ('s001','Abir','CS','1','10','18.5','3.91','2018-09-15'),
    -> ('s019','Naima','CSE','2','12','20','3.7','2018-08-14'),
    -> ('s002','Nafis','CSE','1','12','20','3.86','2018-08-15'),
    -> ('s003','Tasneem','CS','1','8','18','3.57','2018-08-18'),
    -> ('s004','Nahid','ECE','2','7','16.5','3.25','2018-08-20'),
    -> ('s005','Arafat','CS','2','11','20','4.0','2018-09-13'),
    -> ('s006','Tasneem','CSE','1','12','17.5','3.7','2018-08-15'),
    -> ('s007','Muhtadi','ECE','1','10','19','3.67','2018-09-16'),
    -> ('s008','Farhana','CSE','2','6','15','2.67','2018-08-16');
Query OK, 9 rows affected (0.137 sec)
Records: 9 Duplicates: 0 Warnings: 0
```

How will you change the name of a column from submission_date to sub_date? [Google it!]

```
MariaDB [CSE370_Lab]> alter table Lab_Grades
-> change column Submission_date sub_date date not null;
Query OK, 0 rows affected (0.434 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

```
MariaDB [CSE370_Lab]> select * from Lab_Grades;
```

Std_ID	Name	Major	section	Days_present	Project_marks	CGPA	sub_date
s001	Abir	CS	1	10	18.5	3.91	2018-09-15
s019	Naima	CSE	2	12	20	3.70	2018-08-14
s002	Nafis	CSE	1	12	20	3.86	2018-08-15
s003	Tasneem	CS	1	8	18	3.57	2018-08-18
s004	Nahid	ECE	2	7	16.5	3.25	2018-08-20
s005	Arafat	CS	2	11	20	4.00	2018-09-13
s006	Tasneem	CSE	1	12	17.5	3.70	2018-08-15
s007	Muhtadi	ECE	1	10	19	3.67	2018-09-16
s008	Farhana	CSE	2	6	15	2.67	2018-08-16

```
9 rows in set (0.001 sec)
```

Task 2: Updating Wrong Data:

Oops! Arafat's major is actually CSE, so update the value in the table

Update *Lab_Grades* set Major = 'CSE' where name = 'Arafat';

Nahid's name is misspelled and also his project marks should be updated to 16.

Update *Lab_Grades* set Name = 'Naheed', Project_marks = 16 where Std_ID = 's004';

```
MariaDB [CSE370_Lab]> Update Lab_Grades set Major = 'CSE' where name = 'Arafat';
Query OK, 1 row affected (0.116 sec)
Rows matched: 1 Changed: 1 Warnings: 0
```

```
MariaDB [CSE370_Lab]> Update Lab_Grades set Name = 'Naheed' , Project_marks = 16 where Std_ID = 's004';
Query OK, 1 row affected (0.055 sec)
Rows matched: 1 Changed: 1 Warnings: 0
```

```
MariaDB [CSE370_Lab]> select * from Lab_Grades;
```

Std_ID	Name	Major	section	Days_present	Project_marks	CGPA	sub_date
s001	Abir	CS	1	10	18.5	3.91	2018-09-15
s019	Naima	CSE	2	12	20	3.70	2018-08-14
s002	Nafis	CSE	1	12	20	3.86	2018-08-15
s003	Tasneem	CS	1	8	18	3.57	2018-08-18
s004	Naheed	ECE	2	7	16	3.25	2018-08-20
s005	Arafat	CSE	2	11	20	4.00	2018-09-13
s006	Tasneem	CSE	1	12	17.5	3.70	2018-08-15
s007	Muhtadi	ECE	1	10	19	3.67	2018-09-16
s008	Farhana	CSE	2	6	15	2.67	2018-08-16

```
9 rows in set (0.001 sec)
```

```
MariaDB [CSE370_Lab]> Bye
```

- What will happen if the where clause is not included in the update query, e.g . if you typed Update Lab_Grades set Major = 'CSE';? [Don't try it now, just write the answer]

Then all the fields will get updated with the same Major. With a different example:

```
MariaDB [(none)]> create database forcheck;
Query OK, 1 row affected (0.001 sec)

MariaDB [(none)]> use forcheck;
Database changed
MariaDB [forcheck]> create table checkWhere ( name varchar(30), age int);
Query OK, 0 rows affected (0.187 sec)

MariaDB [forcheck]> insert into checkWhere values
    -> ('jency',22),
    -> ('jevin',19),
    -> ('prima',17);
Query OK, 3 rows affected (0.033 sec)
Records: 3  Duplicates: 0  Warnings: 0

MariaDB [forcheck]> select * from forcheck;
ERROR 1146 (42S02): Table 'forcheck.forcheck' doesn't exist
MariaDB [forcheck]> select * from checkWhere;
+-----+-----+
| name | age |
+-----+-----+
| jency | 22 |
| jevin | 19 |
| prima | 17 |
+-----+-----+
3 rows in set (0.001 sec)

MariaDB [forcheck]> Update checkWhere set Name= 'ART';
Query OK, 3 rows affected (0.049 sec)
Rows matched: 3  Changed: 3  Warnings: 0

MariaDB [forcheck]> select * from checkWhere;
+-----+-----+
| name | age |
+-----+-----+
| ART | 22 |
| ART | 19 |
| ART | 17 |
+-----+-----+
3 rows in set (0.003 sec)

MariaDB [forcheck]> Bye
```

Here we can see there is no where condition given here for changing name. So, all the name field got updated with same name value.

Task 3: Deleting Data:

Naima dropped out of the course. So, delete her data from the table.

Delete from *Lab_Grades* where *Name*= 'Naima';

```
MariaDB [(none)]> use CSE370_Lab;  
Database changed
```

```
MariaDB [CSE370_Lab]> delete from lab_Grades where Name= 'Naima';  
Query OK, 1 row affected (0.055 sec)
```

```
MariaDB [CSE370_Lab]> select * from lab_grades;
```

Std_ID	Name	Major	section	Days_present	Project_marks	CGPA	sub_date
s001	Abir	CS	1	10	18.5	3.91	2018-09-15
s002	Nafis	CSE	1	12	20	3.86	2018-08-15
s003	Tasneem	CS	1	8	18	3.57	2018-08-18
s004	Naheed	ECE	2	7	16	3.25	2018-08-20
s005	Arafat	CSE	2	11	20	4.00	2018-09-13
s006	Tasneem	CSE	1	12	17.5	3.70	2018-08-15
s007	Muhtadi	ECE	1	10	19	3.67	2018-09-16
s008	Farhana	CSE	2	6	15	2.67	2018-08-16

8 rows in set (0.001 sec)

- What would have happened if there was another student named Naima?

In that case both data row with the name 'Naima' will get deleted

Delete the data of everyone who was less than 8 days present.

Delete from *Lab_Grades* where *Days_present* < 8 ;

```
MariaDB [CSE370_Lab]> Delete from Lab_Grades where Days_present<8;  
Query OK, 2 rows affected (0.052 sec)
```

```
MariaDB [CSE370_Lab]> select * from lab_grades;
```

Std_ID	Name	Major	section	Days_present	Project_marks	CGPA	sub_date
s001	Abir	CS	1	10	18.5	3.91	2018-09-15
s002	Nafis	CSE	1	12	20	3.86	2018-08-15
s003	Tasneem	CS	1	8	18	3.57	2018-08-18
s005	Arafat	CSE	2	11	20	4.00	2018-09-13
s006	Tasneem	CSE	1	12	17.5	3.70	2018-08-15
s007	Muhtadi	ECE	1	10	19	3.67	2018-09-16

6 rows in set (0.001 sec)

Task 5: Retrieving Data from Table:

- What is [select * from Lab_grades;] command used for?

To display all the columns and rows of the table Lab_Grades.

```
MariaDB [cse370_lab]> select * from lab_grades;
```

Std_ID	Name	Major	section	Days_present	Project_marks	CGPA	sub_date
s001	Abir	CS	1	10	18.5	3.91	2018-09-15
s002	Nafis	CSE	1	12	20	3.86	2018-08-15
s003	Tasneem	CS	1	8	18	3.57	2018-08-18
s005	Arafat	CSE	2	11	20	4.00	2018-09-13
s006	Tasneem	CSE	1	12	17.5	3.70	2018-08-15
s007	Muhtadi	ECE	1	10	19	3.67	2018-09-16

6 rows in set (0.001 sec)

Let's say you want to retrieve only the student id, name and project marks.

Select Std_ID, Name, Project_marks from Lab_Grades;

```
MariaDB [cse370_lab]> select Std_ID, Name, Project_marks from Lab_grades;
```

Std_ID	Name	Project_marks
s001	Abir	18.5
s002	Nafis	20
s003	Tasneem	18
s005	Arafat	20
s006	Tasneem	17.5
s007	Muhtadi	19

6 rows in set (0.001 sec)

Retrieve the name and total marks of students out of 25 (project + attendance)

Select Name, Project_marks+Days_present*5/12 as Total_marks from Lab_Grades;

```
MariaDB [cse370_lab]> select name, Project_marks+ days_present*5/12 as Total_marks from Lab_Grades;
```

name	Total_marks
Abir	22.66666666
Nafis	25
Tasneem	21.33333333
Arafat	24.58333333
Tasneem	22.5
Muhtadi	23.16666666

6 rows in set (0.029 sec)

- The "as" keyword in the above query is known as an alias. Check out what happens if you remove the "as Total_marks" portion from the above command. State the difference below.

```
MariaDB [cse370_lab]> select name, Project_marks+ days_present*5/12 from Lab_Grades;
+-----+
| name      | Project_marks+ days_present*5/12 |
+-----+
| Abir      | 22.666666666                      |
| Nafis     | 25                               |
| Tasneem   | 21.333333333                      |
| Arafat    | 24.583333333                      |
| Tasneem   | 22.5                               |
| Muhtadi   | 23.166666666                      |
+-----+
6 rows in set (0.004 sec)
```

There is no alias name here, just the command we gave.

- Try the command below, and state what the Upper() and Lower() functions mean.

```
Select Upper(Name), Lower(Name) from Lab_Grades;
```

```
MariaDB [cse370_lab]> Select Upper(Name), Lower(Name) from Lab_Grades;
+-----+
| Upper(Name) | Lower(Name) |
+-----+
| ABIR        | abir        |
| NAFIS       | nafis       |
| TASNEEM     | tasneem     |
| ARAFAT      | arafat      |
| TASNEEM     | tasneem     |
| MUHTADI     | muhtadi     |
+-----+
6 rows in set (0.109 sec)
```

- Try the two commands below. What is the difference and why is the distinct keyword used?

```
Select Major from Lab_Grades;
```

```
Select distinct Major from Lab_Grades;
```

```
MariaDB [cse370_lab]> select Major from Lab_Grades;
+-----+
| Major |
+-----+
| CS    |
| CSE   |
| CS    |
| CSE   |
| CSE   |
| ECE   |
+-----+
6 rows in set (0.001 sec)

MariaDB [cse370_lab]> select distinct Major from Lab_Grades;
+-----+
| Major |
+-----+
| CS    |
| CSE   |
| ECE   |
+-----+
3 rows in set (0.001 sec)
```

Now you want to view all the details sorted by name. You can use the order by keyword

Select * from **Lab_Grades** order by **Name**;

```
MariaDB [cse370_lab]> Select * from Lab_Grades order by Name;
```

Std_ID	Name	Major	section	Days_present	Project_marks	CGPA	sub_date
s001	Abir	CS	1	10	18.5	3.91	2018-09-15
s005	Arafat	CSE	2	11	20	4.00	2018-09-13
s007	Muhtadi	ECE	1	10	19	3.67	2018-09-16
s002	Nafis	CSE	1	12	20	3.86	2018-08-15
s003	Tasneem	CS	1	8	18	3.57	2018-08-18
s006	Tasneem	CSE	1	12	17.5	3.70	2018-08-15

6 rows in set (0.014 sec)

Was it sorted in ascending or descending order? How can you sort in the opposite order?[Hint: check next command]

```
MariaDB [cse370_lab]> Select * from Lab_Grades order by Name desc;
```

Std_ID	Name	Major	section	Days_present	Project_marks	CGPA	sub_date
s003	Tasneem	CS	1	8	18	3.57	2018-08-18
s006	Tasneem	CSE	1	12	17.5	3.70	2018-08-15
s002	Nafis	CSE	1	12	20	3.86	2018-08-15
s007	Muhtadi	ECE	1	10	19	3.67	2018-09-16
s005	Arafat	CSE	2	11	20	4.00	2018-09-13
s001	Abir	CS	1	10	18.5	3.91	2018-09-15

6 rows in set (0.001 sec)

Sort all details according to name and then by submission date. There are two students named Tasneem, observe what happens.

Select * from **Lab_Grades** order by **Name** desc, **Submission_date** asc;

```
MariaDB [cse370_lab]> select * from Lab_Grades order by Name desc, Sub_date asc;
```

Std_ID	Name	Major	section	Days_present	Project_marks	CGPA	sub_date
s006	Tasneem	CSE	1	12	17.5	3.70	2018-08-15
s003	Tasneem	CS	1	8	18	3.57	2018-08-18
s002	Nafis	CSE	1	12	20	3.86	2018-08-15
s007	Muhtadi	ECE	1	10	19	3.67	2018-09-16
s005	Arafat	CSE	2	11	20	4.00	2018-09-13
s001	Abir	CS	1	10	18.5	3.91	2018-09-15

6 rows in set (0.000 sec)

Now, you want to view the name and project marks for only CSE students.

Select *Name, Project_marks* from *Lab_Grades* where *Major='CSE'* ;

```
MariaDB [cse370_lab]> select Name, Project_marks from Lab_grades where Major='CSE';
+-----+-----+
| Name   | Project_marks |
+-----+-----+
| Nafis  | 20            |
| Arafat | 20            |
| Tasneem | 17.5          |
+-----+-----+
3 rows in set (0.001 sec)
```

Retrieve the names, days present and marks of students whose project marks is greater than 17

```
MariaDB [cse370_lab]> select Name, Days_present, Project_Marks from Lab_Grades where Project_Marks >17;
+-----+-----+-----+
| Name   | Days_present | Project_Marks |
+-----+-----+-----+
| Abir   | 10           | 18.5          |
| Nafis  | 12           | 20            |
| Tasneem | 8            | 18            |
| Arafat | 11           | 20            |
| Tasneem | 12           | 17.5          |
| Muhtadi | 10           | 19            |
+-----+-----+-----+
6 rows in set (0.010 sec)
```

Retrieve the name and marks of students whose marks is between 17 and 19

Select *Name, Project_marks* from *Lab_Grades* where *Project_marks* between 17 and 19 ;

```
MariaDB [cse370_lab]> Select Name, Project_marks from Lab_Grades where Project_marks between 17 and 19;
+-----+-----+
| Name   | Project_marks |
+-----+-----+
| Abir   | 18.5          |
| Tasneem | 18            |
| Tasneem | 17.5          |
| Muhtadi | 19            |
+-----+-----+
4 rows in set (0.001 sec)
```

Retrieve the details of students who are majoring in either CS or CSE

Select * from *Lab_Grades* where *Major* in ('CSE', 'CS');

```
MariaDB [cse370_lab]> Select * from Lab_grades where Major in ('CSE','CS');
+-----+-----+-----+-----+-----+-----+-----+-----+
| Std_ID | Name   | Major | section | Days_present | Project_marks | CGPA | sub_date   |
+-----+-----+-----+-----+-----+-----+-----+-----+
| s001   | Abir   | CS    | 1       | 10           | 18.5          | 3.91 | 2018-09-15 |
| s002   | Nafis  | CSE   | 1       | 12           | 20            | 3.86 | 2018-08-15 |
| s003   | Tasneem | CS    | 1       | 8            | 18            | 3.57 | 2018-08-18 |
| s005   | Arafat | CSE   | 2       | 11           | 20            | 4.00 | 2018-09-13 |
| s006   | Tasneem | CSE   | 1       | 12           | 17.5          | 3.70 | 2018-08-15 |
+-----+-----+-----+-----+-----+-----+-----+-----+
5 rows in set (0.010 sec)
```

- What is the use of the "in" keyword in the above query? You can write the same command using an "or" and "=" operators in the where clause. Try to figure it out!

```
MariaDB [cse370_lab]> Select * from Lab_grades where Major= 'CSE' OR Major ='CS';
```

Std_ID	Name	Major	section	Days_present	Project_marks	CGPA	sub_date
s001	Abir	CS	1	10	18.5	3.91	2018-09-15
s002	Nafis	CSE	1	12	20	3.86	2018-08-15
s003	Tasneem	CS	1	8	18	3.57	2018-08-18
s005	Arafat	CSE	2	11	20	4.00	2018-09-13
s006	Tasneem	CSE	1	12	17.5	3.70	2018-08-15

5 rows in set (0.001 sec)

Retrieve the details of the students who submitted their project in August and whose marks is greater than 18

Select * from *Lab_Grades* where Project_marks>18 and *Submission_date* between '2018-08-01' and '2018-08-31';

```
MariaDB [cse370_lab]> Select * from Lab_Grades where Project_marks>18 and Sub_date between '2018-08-01' and '2018-08-31';
```

Std_ID	Name	Major	section	Days_present	Project_marks	CGPA	sub_date
s002	Nafis	CSE	1	12	20	3.86	2018-08-15

1 row in set (0.001 sec)

- How can you find the students whose Submission_date is not in August?

```
MariaDB [cse370_lab]> Select * from Lab_Grades where Project_marks>18 and Sub_date Not between '2018-08-01' and '2018-08-31';
```

Std_ID	Name	Major	section	Days_present	Project_marks	CGPA	sub_date
s001	Abir	CS	1	10	18.5	3.91	2018-09-15
s005	Arafat	CSE	2	11	20	4.00	2018-09-13
s007	Muhtadi	ECE	1	10	19	3.67	2018-09-16

3 rows in set (0.001 sec)

Retrieve the details of students whose name start with 'a'

Select * from *Lab_Grades* where *Name* like 'a%';

```
MariaDB [cse370_lab]> select * from Lab_Grades where Name like 'a%';
```

Std_ID	Name	Major	section	Days_present	Project_marks	CGPA	sub_date
s001	Abir	CS	1	10	18.5	3.91	2018-09-15
s005	Arafat	CSE	2	11	20	4.00	2018-09-13

2 rows in set (0.014 sec)

Retrieve the details of students whose name contains at least 2 a's

Select * from *Lab_Grades* where *Name* like '%a%a%';

```
MariaDB [cse370_lab]> select * from Lab_Grades where Name like '%a%a%';
+-----+-----+-----+-----+-----+-----+-----+-----+
| Std_ID | Name   | Major | section | Days_present | Project_marks | CGPA | sub_date   |
+-----+-----+-----+-----+-----+-----+-----+-----+
| s005   | Arafat | CSE    | 2       | 11           | 20            | 4.00 | 2018-09-13 |
+-----+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.001 sec)
```

- Try the following command and explain what happens : Select * from *Lab_Grades* where *Name* like 'a___'; [There are 3 underscores]

```
MariaDB [cse370_lab]> select * from Lab_Grades where Name like 'a___';
+-----+-----+-----+-----+-----+-----+-----+-----+
| Std_ID | Name   | Major | section | Days_present | Project_marks | CGPA | sub_date   |
+-----+-----+-----+-----+-----+-----+-----+-----+
| s001   | Abir   | CS     | 1       | 10           | 18.5          | 3.91 | 2018-09-15 |
+-----+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.005 sec)
```

Task 6: Basic Select Quiz

Go to https://sqlzoo.net/wiki/SELECT_Quiz and answer the Quiz to test your knowledge of basic select queries.

The screenshot shows a web browser window with the URL https://sqlzoo.net/wiki/SELECT_Quiz. The page title is "SELECT Quiz - SQLZOO". The browser's address bar shows "Not secure | https://sqlzoo.net/wiki/SELECT_Quiz". The page content includes a list of 7 questions, each with a text input field for the answer. The questions are:

- FROM world WHERE area > 50000 AND population > 10000000
- SELECT name, area, population FROM world WHERE area > 50000 AND population > 10000000
7. Select the code that shows the population density of China, Australia, Nigeria and France
- SELECT name, area/population FROM world WHERE name IN ('China', 'Nigeria', 'France', 'Australia')
- SELECT name, area/population FROM world WHERE name LIKE ('China', 'Nigeria', 'France', 'Australia')
- SELECT name, population/area FROM world WHERE name IN ('China', 'Nigeria', 'France', 'Australia')
- SELECT name, population/area FROM world WHERE name LIKE ('China', 'Nigeria', 'France', 'Australia')
- SELECT name, population FROM world WHERE name IN ('China', 'Nigeria', 'France', 'Australia')

Below the questions, there is a "Score the test" button. The score is displayed as "Your score is: 7 out of 7". At the bottom, there are links for "Categories: Languages pages | Quizzes" and a footer with "This page was last edited on 24 March 2020, at 11:37." and links for "Privacy policy", "About SQLZOO", and "Disclaimer".

Thank you