

Department of Computer Science and Engineering

Course Name: Database Systems	Semester: Summer 24
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THEORY SECTION: 11

LAB SECTION: 08

Lab Assignment 1

Soon after joining Google's elite dev team, Area 120, you were assigned to a project using MySQL since it was your specialty. The project was a social media platform specialized in allowing developers from all over the globe to connect to each other, and it would have features similar to Facebook. For your first task, you have been assigned to work on the tables of one of the project databases. the table name is **"Developers"** which is shown below.

member_id	name	email	influence_count	Joining_date	multiplier
1	Taylor Otwell	otwell@laravel.com	739360	2020-6-10	10
2	Ryan Dahl	ryan@nodejs.org	633632	2020-04-22	10
3	Brendan Eich	eich@javascript.com	939570	2020-05-07	8
4	Evan You	you@vuejs.org	982630	2020-06-11	7
5	Rasmus Lerdorf	lerdorf@php.net	937927	2020-06-3	8
6	Guido van Rossum	guido@python.org	968827	2020-07-18	19
7	Adrian Holovaty	adrian@djangoproject.com	570724	2020-05-07	5

8	Simon Willison	simon@django-project.com	864615	2020-04-30	4
9	James Gosling	james@java.com	719491	2020-05-18	5
10	Rod Johnson	rod@spring.io	601744	2020-05-18	7
11	Satoshi Nakamoto	nakamoto@blockchain.com	630488	2020-05-10	10

Write the queries of the tasks given below [6 * 2 = 12].

1. Create the above table with the appropriate data type for each column.

ANSWER:

```
MariaDB [(none)]> create database social_med_project;

MariaDB [(none)]> use social_med_project;
Database changed
MariaDB [social_med_project]> create table Developers( member_id int, name varchar(50), email
char(56), influence_count int, Joining_date date, multiplier int(30));

MariaDB [social_med_project]> insert into developers values(1,"Taylor
Otwell","otwell@laravel.com",739360,"2020-6-10",10),(2,"Ryan Dahl
","ryan@nodejs.org",633632,"2020-04-22",10),(3,"Brendan Eich","eich@javascript.com",939570,"2020-
05-07",8),(4,"Evan You","you@vuejs.org",982630,"2020-06-11",7),(5,"Rasmus
Lerdorf","lerdorf@php.net",937927,"2020-06-3",8),(6,"Guido van
Rossum","guido@python.org",968827,"2020-07-18",19),(7,"Adrian
Holovaty","adrian@django-project.com",570724,"2020-05-07",5),(8,"Simon
Willison","simon@django-project.com",864615,"2020-04-30",4),(9,"James
Gosling","james@java.com",719491,"2020-05-18",5),(10,"Rod
Johnson","rod@spring.io",601744,"2020-05-18",7),(11,"Satoshi
Nakamoto","nakamoto@blockchain.com",630488,"2020-05-10",10);

MariaDB [social_med_project]> select * from developers;
```

```

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

MariaDB [(none)]> show databases;
+-----+
| Database |
+-----+
| demo     |
| information_schema |
| mysql    |
| performance_schema |
| phpmyadmin |
| project  |
| project  |
| social_med_project |
| test     |
+-----+
9 rows in set (0.001 sec)

MariaDB [(none)]> use social_med_project;
Database changed
MariaDB [social_med_project]> create table Developers( member_id int, name varchar(50), email char(56), influence_count int, Joining_date date, multiplier int(30));
Query OK, 0 rows affected (0.048 sec)

MariaDB [social_med_project]> insert into developers values(1,"Taylor Otwell","otwell@laravel.com",739360,"2020-6-10",10),(2,"Ryan Dahl ","ryan@nodejs.org",633632,"2020-04-22",10),(3,"Brendan Eich","eich@javascript.com",939570,"2020-05-07",8),(4,"Evan You","you@vuejs.org",982630,"2020-06-11",7),(5,"Rasmus Lerdorf","lerdorf@php.net",937927,"2020-06-3",8),(6,"Guido van Rossum","guido@python.org",960827,"2020-07-18",19),(7,"Adrian Holovaty","adrian@djangooproject.com",570724,"2020-05-07",5),(8,"Simon Willison","simon@djangooproject.com",864615,"2020-04-30",4),(9,"James Gosling","james@java.com",719491,"2020-05-18",5),(10,"Rod Johnson","rod@spring.io",601744,"2020-05-18",7),(11,"Satoshi Nakamoto","nakamoto@blockchain.com",630480,"2020-05-10",10);
Query OK, 11 rows affected (0.042 sec)
Records: 11 Duplicates: 0 Warnings: 0

MariaDB [social_med_project]> select * from developers;
+-----+-----+-----+-----+-----+-----+
| member_id | name          | email          | influence_count | Joining_date | multiplier |
+-----+-----+-----+-----+-----+-----+
| 1 | Taylor Otwell | otwell@laravel.com | 739360 | 2020-06-10 | 10 |
| 2 | Ryan Dahl     | ryan@nodejs.org   | 633632 | 2020-04-22 | 10 |
| 3 | Brendan Eich  | eich@javascript.com | 939570 | 2020-05-07 | 8 |
| 4 | Evan You      | you@vuejs.org     | 982630 | 2020-06-11 | 7 |
| 5 | Rasmus Lerdorf | lerdorf@php.net   | 937927 | 2020-06-03 | 8 |
| 6 | Guido van Rossum | guido@python.org  | 960827 | 2020-07-18 | 19 |
| 7 | Adrian Holovaty | adrian@djangooproject.com | 570724 | 2020-05-07 | 5 |
| 8 | Simon Willison | simon@djangooproject.com | 864615 | 2020-04-30 | 4 |
| 9 | James Gosling  | james@java.com    | 719491 | 2020-05-18 | 5 |
| 10 | Rod Johnson    | rod@spring.io     | 601744 | 2020-05-18 | 7 |
| 11 | Satoshi Nakamoto | nakamoto@blockchain.com | 630480 | 2020-05-10 | 10 |
+-----+-----+-----+-----+-----+-----+
11 rows in set (0.001 sec)

```

2. Change the column name "influence_count". The new name should be "followers," and the data type should be integer.

ANSWER:

```

MariaDB [social_med_project]> alter table developers change influence_count followers int;

```

```

MariaDB [social_med_project]> select * from developers;

```

```
MariaDB [social_med_project]> alter table developers change influence_count followers int;
Query OK, 0 rows affected (0.045 sec)
Records: 0 Duplicates: 0 Warnings: 0
MariaDB [social_med_project]> select * from developers;
```

member_id	name	email	followers	Joining_date	multiplier
1	Taylor Otwell	otwell@laravel.com	739360	2020-06-10	10
2	Ryan Dahl	ryan@nodejs.org	633632	2020-04-22	10
3	Brendan Eich	eich@javascript.com	939570	2020-05-07	8
4	Evan You	you@vuejs.org	982630	2020-06-11	7
5	Rasmus Lerdorf	lerdorf@php.net	937927	2020-06-03	8
6	Guido van Rossum	guido@python.org	968827	2020-07-18	19
7	Adrian Holovaty	adrian@django-project.com	570724	2020-05-07	5
8	Simon Willison	simon@django-project.com	864615	2020-04-30	4
9	James Gosling	james@java.com	719491	2020-05-18	5
10	Rod Johnson	rod@spring.io	601744	2020-05-18	7
11	Satoshi Nakamoto	nakamoto@blockchain.com	630488	2020-05-10	10

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

3. Update the number of followers of each developer by +10.

ANSWER:

```
MariaDB [social_med_project]> update developers set followers=followers+10;
```

```
MariaDB [social_med_project]> update developers set followers=followers+10;
Query OK, 11 rows affected (0.043 sec)
Rows matched: 11 Changed: 11 Warnings: 0
MariaDB [social_med_project]> select * from developers;
```

member_id	name	email	followers	Joining_date	multiplier
1	Taylor Otwell	otwell@laravel.com	739370	2020-06-10	10
2	Ryan Dahl	ryan@nodejs.org	633642	2020-04-22	10
3	Brendan Eich	eich@javascript.com	939580	2020-05-07	8
4	Evan You	you@vuejs.org	982640	2020-06-11	7
5	Rasmus Lerdorf	lerdorf@php.net	937937	2020-06-03	8
6	Guido van Rossum	guido@python.org	968837	2020-07-18	19
7	Adrian Holovaty	adrian@django-project.com	570734	2020-05-07	5
8	Simon Willison	simon@django-project.com	864625	2020-04-30	4
9	James Gosling	james@java.com	719501	2020-05-18	5
10	Rod Johnson	rod@spring.io	601754	2020-05-18	7
11	Satoshi Nakamoto	nakamoto@blockchain.com	630498	2020-05-10	10

```
11 rows in set (0.000 sec)
```

4. There is a formula to find the efficiency of the developers. Efficiency = ((followers*100/1000000) * (multipliers*100/20))/100. Show the efficiency of each developer in a column named "Efficiency" along with their name.

ANSWER:

MariaDB [social_med_project]> alter table developers add efficiency int;

MariaDB [social_med_project]> update developers set efficiency=((followers*100/1000000) * (multiplier*100/20))/100 ;

MariaDB [social_med_project]> select name,efficiency from developers;

```
MariaDB [social_med_project]> alter table developers add efficiency int;
Query OK, 0 rows affected (0.044 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [social_med_project]> update developers set efficiency=((followers*100/1000000) * (multiplier*100/20))/100 ;
Query OK, 11 rows affected (0.004 sec)
Rows matched: 11  Changed: 11  Warnings: 0

MariaDB [social_med_project]> select name,efficiency from developers;
+-----+-----+
| name          | efficiency |
+-----+-----+
| Taylor Otwell |          37 |
| Ryan Dahl     |          32 |
| Brendan Eich  |          38 |
| Evan You      |          34 |
| Rasmus Lerdorf |          38 |
| Guido van Rossum |          92 |
| Adrian Holovaty |          14 |
| Simon Willison |          17 |
| James Gosling |          18 |
| Rod Johnson   |          21 |
| Satoshi Nakamoto |          32 |
+-----+-----+
11 rows in set (0.001 sec)
```

5. Show the name of the developers in UpperCase and the descending order of their Joining_date.

ANSWERS:

MariaDB [social_med_project]> select upper(name), joining_date from developers order by joining_date desc;

```
MariaDB [social_med_project]> select upper(name), joining_date from developers order by joining_date desc;
+-----+-----+
| upper(name)    | joining_date |
+-----+-----+
| GUIDO VAN ROSSUM | 2020-07-18 |
| EVAN YOU       | 2020-06-11 |
| TAYLOR OTWELL  | 2020-06-10 |
| RASMUS LERDORF | 2020-06-03 |
| JAMES GOSLING  | 2020-05-18 |
| ROD JOHNSON    | 2020-05-18 |
| SATOSHI NAKAMOTO | 2020-05-10 |
| BRENDAN EICH   | 2020-05-07 |
| ADRIAN HOLOVATY | 2020-05-07 |
| SIMON WILLISON | 2020-04-30 |
| RYAN DAHL      | 2020-04-22 |
+-----+-----+
11 rows in set (0.000 sec)
```

6. Retrieve the member_id, name, email and followers of the developers who have either ".com" or ".net" in their email address.

ANSWERS:

```
MariaDB [social_med_project]> select member_id, name, email, followers from developers where email like '%.com' or email like '%.net';
```

```
MariaDB [social_med_project]> select member_id, name, email, followers from developers where email like '%.com' or email like '%.net';
+-----+-----+-----+-----+
| member_id | name      | email              | followers |
+-----+-----+-----+-----+
| 1 | Taylor Otwell | otwell@laravel.com | 739370 |
| 3 | Brendan Eich  | eich@javascript.com | 939580 |
| 5 | Rasmus Lerdorf | lerdorf@php.net    | 937937 |
| 7 | Adrian Holovaty | adrian@django project.com | 570734 |
| 8 | Simon Willison | simon@django project.com | 864625 |
| 9 | James Gosling  | james@java.com     | 719501 |
| 11 | Satoshi Nakamoto | nakamoto@blockchain.com | 630498 |
+-----+-----+-----+-----+
7 rows in set (0.001 sec)
```

AFTER ALL THE TASKS BEING PERFORMED, THE FINAL TABLE “DEVELOPERS” IS AS FOLLOWS :

```
MariaDB [social_med_project]> select * from developers;
+-----+-----+-----+-----+-----+-----+-----+
| member_id | name      | email              | followers | Joining_date | multiplier | efficiency |
+-----+-----+-----+-----+-----+-----+-----+
| 1 | Taylor Otwell | otwell@laravel.com | 739370 | 2020-06-10 | 10 | 37 |
| 2 | Ryan Dahl     | ryan@nodejs.org    | 633642 | 2020-04-22 | 10 | 32 |
| 3 | Brendan Eich  | eich@javascript.com | 939580 | 2020-05-07 | 8 | 38 |
| 4 | Evan You     | you@vuejs.org      | 982640 | 2020-06-11 | 7 | 34 |
| 5 | Rasmus Lerdorf | lerdorf@php.net    | 937937 | 2020-06-03 | 8 | 38 |
| 6 | Guido van Rossum | guido@python.org   | 968837 | 2020-07-18 | 19 | 92 |
| 7 | Adrian Holovaty | adrian@django project.com | 570734 | 2020-05-07 | 5 | 14 |
| 8 | Simon Willison | simon@django project.com | 864625 | 2020-04-30 | 4 | 17 |
| 9 | James Gosling  | james@java.com     | 719501 | 2020-05-18 | 5 | 18 |
| 10 | Rod Johnson   | rod@spring.io      | 601754 | 2020-05-18 | 7 | 21 |
| 11 | Satoshi Nakamoto | nakamoto@blockchain.com | 630498 | 2020-05-10 | 10 | 32 |
+-----+-----+-----+-----+-----+-----+-----+
11 rows in set (0.000 sec)
```

As a column for efficiency was updated (in task4) , it caused the “developers’ database to have an extra column with its inputs as well . Followers have been increased by 10 for each users due to updating it (in task3). And all the tasks done by select query didn’t bring any change to the database as it only shows selective data per conditioning.

