

DATABASE SYSTEMS LAB



LAB TASK

Submitted By

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Submitted to

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Creating Database and Tables :

```
mysql> create database person;  
Query OK, 1 row affected (0.18 sec)  
  
mysql> use person;  
Database changed
```

```
mysql> create table users(user_id NUMERIC PRIMARY KEY,  
-> username VARCHAR(25) NOT NULL,  
-> password VARCHAR(20) NOT NULL,  
-> email VARCHAR(20) NOT NULL);  
Query OK, 0 rows affected (0.48 sec)
```

```
mysql> insert into users VALUES(1, 'abc123', 'def321','abc123@yahoo.com');  
Query OK, 1 row affected (0.27 sec)  
  
mysql> insert into users VALUES(2, 'xyz789', 'asd123','xyz789@gmail.com');  
Query OK, 1 row affected (0.10 sec)
```

```
mysql> create table summary(id NUMERIC PRIMARY KEY
-> ,total_users NUMERIC NOT NULL,
-> Yahoo NUMERIC NOT NULL,
-> Hotmail NUMERIC NOT NULL,
-> Gmail NUMERIC NOT NULL);
```

Query OK, 0 rows affected (1.28 sec)

```
mysql> insert into summary values(1,2,1,0,1);
```

Query OK, 1 row affected (0.09 sec)

```
mysql> show tables;
```

```
+-----+
| Tables_in_person |
+-----+
| summary          |
| users            |
+-----+
2 rows in set (0.00 sec)
```

```
mysql> select * from summary;
```

```
+----+-----+-----+-----+-----+
| id | total_users | Yahoo | Hotmail | Gmail |
+----+-----+-----+-----+-----+
|  1 |           2 |      1 |        0 |      1 |
+----+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

```
mysql> select * from users;
```

```
+-----+-----+-----+-----+
| user_id | username | password | email |
+-----+-----+-----+-----+
|        1 | abc123   | def321   | abc123@yahoo.com |
|        2 | xyz789   | asd123   | xyz789@gmail.com |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

1. Write a procedure that take id, total_user, Yahoo, Hotmail, Gmail values as an input and insert the data into the table summary.

```
mysql> DELIMITER $$
mysql> create procedure insert_into_summary(IN id INT, IN total_users INT ,
-> IN Yahoo INT, IN Hotmail INT, IN Gmail INT)
-> BEGIN
-> insert into summary values(id, total_users, Yahoo, Hotmail, Gmail);
-> END $$
Query OK, 0 rows affected (0.19 sec)
```

```
mysql> call insert_into_summary(2,1,0,0,1) $$
Query OK, 1 row affected (0.19 sec)
```

2. Write a procedure that take user_id, username, password, email values as an input and insert the data into the table Users.

```
mysql> create procedure insert_into_users(IN user_id INT, IN user_name VARCHAR(20), IN password VARCHAR(20), IN email VARCHAR(20))
-> BEGIN
-> insert into users VALUES (user_id, user_name, password, email);
-> END
-> $$
Query OK, 0 rows affected (0.18 sec)

mysql> call insert_into_users(4, 'Ertugrul', '123', 'kayi@gmail.com') $$
Query OK, 1 row affected (0.10 sec)

mysql> select * from users $$
ERROR 1146 (42S02): Table 'person.users' doesn't exist
mysql> select * from users $$
+-----+-----+-----+-----+
| user_id | username | password | email |
+-----+-----+-----+-----+
| 1 | abc123 | def321 | abc123@yahoo.com |
| 2 | xyz789 | asd123 | xyz789@gmail.com |
| 4 | Ertugrul | 123 | kayi@gmail.com |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

3. Write a procedure that output the average value of yahoo

```
mysql> create procedure yahoo_avg(OUT ret_avg DECIMAL)
-> BEGIN
-> SELECT AVG(Yahoo) into ret_avg from summary;
->
->
-> END $$
Query OK, 0 rows affected (0.15 sec)

mysql> call yahoo_avg(@out)$$
Query OK, 1 row affected, 1 warning (0.00 sec)

mysql> select @out $$
+-----+
| @out |
+-----+
|    1 |
+-----+
1 row in set (0.00 sec)
```

4. Write a procedure that output the min value of Gmail.

```

mysql> select min(Gmail) from summary $$
+-----+
| min(Gmail) |
+-----+
|          1 |
+-----+
1 row in set (0.00 sec)

mysql> create procedure min_gmail(OUT ret_min int)
-> BEGIN
->   select min(Gmail) into ret_min from summary ;
->
->
-> END $$
Query OK, 0 rows affected (0.15 sec)

mysql> call min_gmail($out) $$
ERROR 1054 (42S22): Unknown column '$out' in 'field list'
mysql> call min_gmail(@out) $$
Query OK, 1 row affected (0.00 sec)

mysql> select @out $$
+-----+
| @out |
+-----+
|     1 |
+-----+
1 row in set (0.00 sec)

```

5. Write a procedure that output the max value of Hotmail.


```
mysql> create procedure max_hotmail(OUT ret_max int)
-> BEGIN
-> select max(Gmail) into ret_max from summary ;
->
-> END $$
Query OK, 0 rows affected (0.17 sec)

mysql> call max_hotmail(@out) $$
Query OK, 1 row affected (0.00 sec)

mysql> select @out $$
+-----+
| @out |
+-----+
| 1 |
+-----+
1 row in set (0.00 sec)
```

6. Write a procedure that increment the total user by 1 when yahoo value is less than equal to Hotmail.

```
mysql> select * from summary $$
+-----+-----+-----+-----+-----+
| id | total_users | Yahoo | Hotmail | Gmail |
+-----+-----+-----+-----+-----+
| 1 | 2 | 1 | 0 | 1 |
+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> create procedure inc_totaluser_on_condition()
-> BEGIN
->
-> update summary set total_users = total_users + 1 where Yahoo <= Hotmail;
->
-> END $$
Query OK, 0 rows affected (0.13 sec)

mysql> call inc_totaluser_on_condition() $$
Query OK, 0 rows affected (0.00 sec)

mysql> select * from summary $$
+-----+-----+-----+-----+-----+
| id | total_users | Yahoo | Hotmail | Gmail |
+-----+-----+-----+-----+-----+
| 1 | 2 | 1 | 0 | 1 |
+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

```
mysql> update summary set Yahoo = 0 where id = 1 $$
Query OK, 1 row affected (0.11 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from summary $$
+----+-----+-----+-----+-----+
| id | total_users | Yahoo | Hotmail | Gmail |
+----+-----+-----+-----+-----+
| 1  |          2 |      0 |        0 |      1 |
+----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> call inc_totaluser_on_condition() $$
Query OK, 1 row affected (0.09 sec)

mysql> select * from summary $$
+----+-----+-----+-----+-----+
| id | total_users | Yahoo | Hotmail | Gmail |
+----+-----+-----+-----+-----+
| 1  |          3 |      0 |        0 |      1 |
+----+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

7. Create trigger(s) to update the records in the summary table. The summary table will contain only one record and will be updated each time a new entry is made to the users table, or a user is deleted from the users table. You need to create the following two triggers.

I. Whenever a new entry is made to the user's table then total_user attribute in the summary table must be incremented by 1.


```
mysql> select * from summary $$
```

id	total_users	Yahoo	Hotmail	Gmail
1	3	0	0	1

```
1 row in set (0.00 sec)
```

```
mysql> CREATE
```

```
-> TRIGGER insert_into_user_trigger AFTER INSERT
```

```
-> ON users
```

```
-> FOR EACH ROW BEGIN
```

```
-> update summary set total_users = total_users + 1;
```

```
-> END $$
```

```
Query OK, 0 rows affected (0.12 sec)
```

```
mysql> select count(*) from users $$
```

count(*)
3

3

```
1 row in set (0.00 sec)
```

Create a database named users

1. Write a procedure to insert a new user

input and insert it into the summary table

2. Write a procedure to delete a user

```
mysql> insert into users values(5, 'Turgut', '123', 'turgut@gmail.com') $$  
Query OK, 1 row affected (0.14 sec)
```

```
mysql> select * from summary $$
```

id	total_users	Yahoo	Hotmail	Gmail
1	4	0	0	1

```
1 row in set (0.00 sec)
```

```
mysql> select count(*) from users $$
```

count(*)
4

4

```
1 row in set (0.00 sec)
```

II. Whenever a record is deleted from the user's table then total_user attribute

in the summary table must be decremented by 1.

```
mysql> select * from summary $$
+-----+-----+-----+-----+-----+
| id | total_users | Yahoo | Hotmail | Gmail |
+-----+-----+-----+-----+
| 1 |          4 |    0 |    0 |    1 |
+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> select count(*) from users $$
+-----+
| count(*) |
+-----+
|          4 |
+-----+
1 row in set (0.00 sec)

mysql> CREATE
  -> TRIGGER delete_into_user_trigger AFTER DELETE
  -> ON users
  -> FOR EACH ROW BEGIN
  -> update summary set total_users = total_users - 1 ;
  -> END $$
Query OK, 0 rows affected (0.12 sec)
```

```
mysql> DELETE FROM users where user_id = 1 $$
Query OK, 1 row affected (0.11 sec)

mysql> select count(*) from users $$
+-----+
| count(*) |
+-----+
|          3 |
+-----+
1 row in set (0.00 sec)

mysql> select * from summary $$
+-----+-----+-----+-----+-----+
| id | total_users | Yahoo | Hotmail | Gmail |
+-----+-----+-----+-----+-----+
| 1 |          3 |    0 |    0 |    1 |
+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> DELETE FROM users where user_id = 2 $$
Query OK, 1 row affected (0.10 sec)

mysql> select * from summary $$
+-----+-----+-----+-----+-----+
| id | total_users | Yahoo | Hotmail | Gmail |
+-----+-----+-----+-----+-----+
| 1 |          2 |    0 |    0 |    1 |
+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

```
mysql> select * from summary $$
+-----+-----+-----+-----+
| id | total_users | Yahoo | Hotmail | Gmail |
+-----+-----+-----+-----+
| 1 | 2 | 0 | 0 | 1 |
+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> insert into users values (6, 'my_name', '434', 'my_name@gmail.com') $$
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that
to use near '@gmail.com')' at line 1
mysql> insert into users values (6, 'my_name', '434', 'my_name@gmail.com') $$
Query OK, 1 row affected (0.08 sec)

mysql> insert into users values (7, 'fdsa', 'sdfs', 'fdsfe@hotmail.com') $$
Query OK, 1 row affected (0.12 sec)

mysql> insert into users values (7, 'ffds', 'sdasf', 'fdsfe@yahoo.com') $$
ERROR 1062 (23000): Duplicate entry '7' for key 'users.PRIMARY'
mysql> insert into users values (8, 'ffds', 'sdasf', 'fdsfe@yahoo.com') $$
Query OK, 1 row affected (0.08 sec)

mysql> insert into users values (9, 'ffds', 'sdasf', 'fdsfe@gmail.com') $$
Query OK, 1 row affected (0.10 sec)

mysql> insert into users values (10, 'ffds', 'sdasf', 'fdsfe@gmail.com') $$
Query OK, 1 row affected (0.12 sec)

mysql> insert into users values (11, 'ffds', 'sdasf', 'fdsfe@gmail.com') $$
Query OK, 1 row affected (0.12 sec)
```

```
mysql> select * from summary $$
+-----+-----+-----+-----+
| id | total_users | Yahoo | Hotmail | Gmail |
+-----+-----+-----+-----+
| 1 | 8 | 0 | 0 | 1 |
+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> select count(*) from users $$
+-----+
| count(*) |
+-----+
| 8 |
+-----+
1 row in set (0.00 sec)
```

```
mysql> select * from summary $$
+-----+-----+-----+-----+-----+
| id | total_users | Yahoo | Hotmail | Gmail |
+-----+-----+-----+-----+
| 1 |      8 |      0 |      0 |      1 |
+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> select count(*) from users $$
+-----+
| count(*) |
+-----+
|      8 |
+-----+
1 row in set (0.00 sec)

mysql> delete from users where user_id = 11 $$
Query OK, 1 row affected (0.08 sec)

mysql> delete from users where user_id = 10 $$
Query OK, 1 row affected (0.11 sec)

mysql> delete from users where user_id = 19 $$
Query OK, 0 rows affected (0.00 sec)

mysql> delete from users where user_id = 9 $$
Query OK, 1 row affected (0.10 sec)

mysql> delete from users where user_id = 8 $$
Query OK, 1 row affected (0.16 sec)

mysql> delete from users where user_id = 7 $$
Query OK, 1 row affected (0.10 sec)
```

```
mysql> select * from summary $$
+-----+-----+-----+-----+-----+
| id | total_users | Yahoo | Hotmail | Gmail |
+-----+-----+-----+-----+-----+
| 1 |      3 |      0 |      0 |      1 |
+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> select count(*) from users $$
+-----+
| count(*) |
+-----+
|      3 |
+-----+
1 row in set (0.00 sec)

mysql> delimiter ;
mysql>
```

Thank You