

Lab Task #10

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QUESTION #1

CREATE DATABASE person;

SHOW databases;

 c:\wamp64\bin\mysql\mysql5.7.31\bin\mysql.exe

```
mysql>
mysql> CREATE DATABASE person;
Query OK, 1 row affected (0.00 sec)

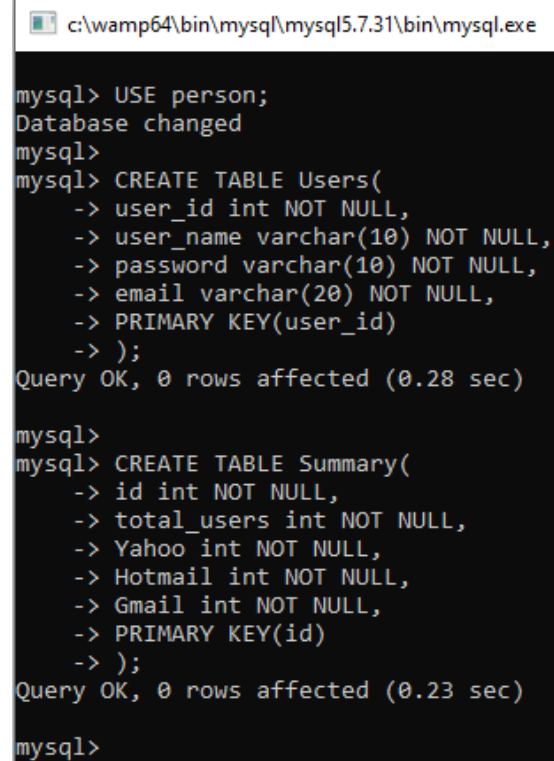
mysql> SHOW databases;
+-----+
| Database |
+-----+
| information_schema |
| bank |
| bs_6b |
| employees_v2 |
| mysql |
| nutec |
| performance_schema |
| person |
| sales_co |
| school_system |
| sys |
| user_reg |
| useraccount |
+-----+
13 rows in set (0.00 sec)
```

USE person;

CREATE TABLE Users(

```
user_id int NOT NULL,  
user_name varchar(10) NOT NULL,  
password varchar(10) NOT NULL,  
email varchar(20) NOT NULL,  
PRIMARY KEY(user_id));
```

```
CREATE TABLE Summary(  
id int NOT NULL,  
total_users int NOT NULL,  
Yahoo int NOT NULL,  
Hotmail int NOT NULL,  
Gmail int NOT NULL,  
PRIMARY KEY(id));
```



The screenshot shows a MySQL command prompt window with the title bar "c:\wamp64\bin\mysql\mysql5.7.31\bin\mysql.exe". The window contains the following text:

```
mysql> USE person;  
Database changed  
mysql>  
mysql> CREATE TABLE Users(  
-> user_id int NOT NULL,  
-> user_name varchar(10) NOT NULL,  
-> password varchar(10) NOT NULL,  
-> email varchar(20) NOT NULL,  
-> PRIMARY KEY(user_id)  
-> );  
Query OK, 0 rows affected (0.28 sec)  
  
mysql>  
mysql> CREATE TABLE Summary(  
-> id int NOT NULL,  
-> total_users int NOT NULL,  
-> Yahoo int NOT NULL,  
-> Hotmail int NOT NULL,  
-> Gmail int NOT NULL,  
-> PRIMARY KEY(id)  
-> );  
Query OK, 0 rows affected (0.23 sec)  
  
mysql>
```

SHOW TABLES;

 c:\wamp64\bin\mysql\mysql5.7.31\bin\mysql.exe

```
mysql>
mysql>
mysql> SHOW TABLES;
+-----+
| Tables_in_person |
+-----+
| summary          |
| users            |
+-----+
2 rows in set (0.00 sec)
```

DELIMITER \$\$

CREATE PROCEDURE PRC_Summary(IN

id int,

total_users INT ,

Yahoo INT,

Hotmail INT,

Gmail INT)

BEGIN

INSERT INTO Summary(id,total_users,Yahoo,Hotmail,Gmail)

VALUES (id,total_users,Yahoo,Hotmail,Gmail);

END\$\$

DELIMITER ;

CALL PRC_Summary('1','2','1','0','1');

DELIMITER ;

SELECT * FROM Summary;

c:\wamp64\bin\mysql\mysql5.7.31\bin\mysql.exe

```
mysql>
mysql> DELIMITER $$
mysql> CREATE PROCEDURE PRC_Summary(IN
  -> id int,
  -> total_users INT ,
  -> Yahoo INT,
  -> Hotmail INT,
  -> Gmail INT)
  -> BEGIN
  -> INSERT INTO Summary(id,total_users,Yahoo,Hotmail,Gmail)
  ->          VALUES (id,total_users,Yahoo,Hotmail,Gmail);
  ->      END$$
Query OK, 0 rows affected (0.01 sec)

mysql>
mysql> DELIMITER ;
mysql> CALL PRC_Summary('1','2','1','0','1');
Query OK, 1 row affected (0.06 sec)

mysql>
mysql> DELIMITER ;
mysql>
mysql> SELECT * FROM Summary;
+-----+-----+-----+-----+-----+
| id | total_users | Yahoo | Hotmail | Gmail |
+-----+-----+-----+-----+-----+
| 1 | 2 | 1 | 0 | 1 |
+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql>
```

QUESTION #2

DELIMITER \$\$

CREATE PROCEDURE PRC_Users(IN

user_id int,

user_name varchar(10) ,

```
password varchar(10),
email varchar(20))
BEGIN
INSERT INTO Users(user_id,user_name,password,email)
VALUES (user_id,user_name,password,email);
END$$
DELIMITER ;
CALL PRC_Users('1','abc123','def321','abc123@yahoo.com');
CALL PRC_Users('2','xyz789','asd123','xyz789@gmail.com');
DELIMITER ;
SELECT * FROM Users;
```

```
c:\wamp64\bin\mysql\mysql5.7.31\bin\mysql.exe
mysql>
mysql> DELIMITER $$
mysql> CREATE PROCEDURE PRC_Users(IN
  -> user_id int,
  -> user_name varchar(10) ,
  -> password varchar(10),
  -> email varchar(20))
  -> BEGIN
  -> INSERT INTO Users(user_id,user_name,password,email)
  ->          VALUES (user_id,user_name,password,email);
  ->
  -> END$$
Query OK, 0 rows affected (0.00 sec)

mysql>
mysql> DELIMITER ;
mysql> CALL PRC_Users('1','abc123','def321','abc123@yahoo.com');
Query OK, 1 row affected (0.01 sec)

mysql> CALL PRC_Users('2','xyz789','asd123','xyz789@gmail.com');
Query OK, 1 row affected (0.03 sec)

mysql>
mysql> DELIMITER ;
mysql>
mysql> SELECT * FROM Users;
+-----+-----+-----+-----+
| user_id | user_name | password | email |
+-----+-----+-----+-----+
|      1 | abc123   | def321   | abc123@yahoo.com |
|      2 | xyz789   | asd123   | xyz789@gmail.com |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

QUESTION #3

DELIMITER \$\$

CREATE PROCEDURE PRC_Summary_OUT(OUT AVG_Yahoo INT)

BEGIN

SELECT AVG(Yahoo) INTO AVG_Yahoo FROM Summary;

END\$\$

CALL PRC_Summary_OUT(@OUT)\$\$

DELIMITER ;

SELECT @OUT\$\$;

c:\wamp64\bin\mysql\mysql5.7.31\bin\mysql.exe

```
mysql>
mysql>
mysql>
mysql>
mysql> DELIMITER $$
mysql> CREATE PROCEDURE PRC_Summary_OUT(OUT AVG_Yahoo INT)
-> BEGIN
-> SELECT AVG(Yahoo) INTO AVG_Yahoo FROM Summary;
-> END$$
Query OK, 0 rows affected (0.00 sec)

mysql> CALL PRC_Summary_OUT(@OUT)$$
Query OK, 1 row affected (0.00 sec)

mysql>
mysql> DELIMITER ;
mysql>
```

```
mysql>
mysql>
mysql> SELECT @OUT$$
-> ;
+-----+
| @OUT$$ |
+-----+
| NULL   |
+-----+
1 row in set (0.00 sec)

mysql> _
```

QUESTION #4

DELIMITER \$\$

CREATE PROCEDURE PRC_Summary_OUT1(OUT MIN_Gmail INT)

BEGIN

SELECT MIN(Gmail) INTO MIN_Gmail FROM Summary;

END\$\$

CALL PRC_Summary_OUT(@C)\$\$

DELIMITER ;

SELECT @C\$\$;

```
c:\wamp64\bin\mysql\mysql5.7.31\bin\mysql.exe

mysql>
mysql>
mysql> DELIMITER $$
mysql> CREATE PROCEDURE PRC_Summary_OUT1(OUT MIN_Gmail INT)
  -> BEGIN
  -> SELECT MIN(Gmail) INTO MIN_Gmail FROM Summary;
  -> END$$
Query OK, 0 rows affected (0.00 sec)

mysql>
mysql>
mysql> CALL PRC_Summary_OUT(@C)$$
Query OK, 1 row affected (0.00 sec)

mysql>
mysql> DELIMITER ;
mysql>
mysql> SELECT @C$$;
+-----+
| @C$$ |
+-----+
| NULL |
+-----+
1 row in set (0.00 sec)

mysql>
```


QUESTION #5

DELIMITER \$\$

CREATE PROCEDURE PRC_Summary_OUT2(OUT Max_hotmail INT)

BEGIN

SELECT MAX(Hotmail) INTO Max_hotmail FROM Summary;

END\$\$

CALL PRC_Summary_OUT(@D)\$\$

DELIMITER ;

SELECT @D\$\$;

```
c:\wamp64\bin\mysql\mysql5.7.31\bin\mysql.exe
mysql>
mysql>
mysql>
mysql>
mysql> DELIMITER $$
mysql> CREATE PROCEDURE PRC_Summary_OUT2(OUT Max_hotmail INT)
  -> BEGIN
  -> SELECT MAX(Hotmail) INTO Max_hotmail FROM Summary;
  -> END$$
Query OK, 0 rows affected (0.00 sec)

mysql>
mysql>
mysql> CALL PRC_Summary_OUT(@D)$$
Query OK, 1 row affected (0.00 sec)

mysql>
mysql> DELIMITER ;
mysql>
mysql> SELECT @D$$;
+-----+
| @D$$ |
+-----+
| NULL |
+-----+
1 row in set (0.00 sec)

mysql>
```

QUESTION #6

DELIMITER \$\$

CREATE PROCEDURE PROC6_Summary()

BEGIN

UPDATE Summary

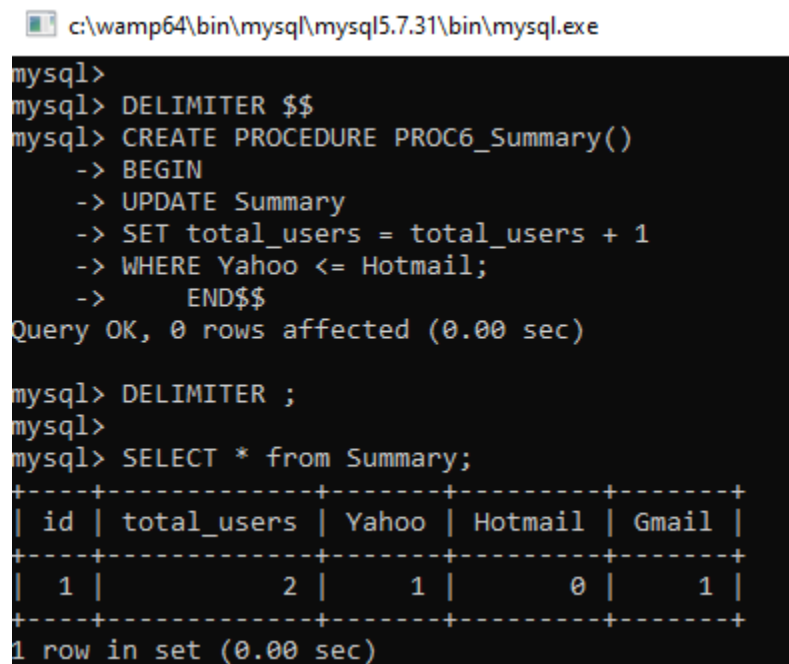
SET total_users = total_users + 1

WHERE Yahoo <= Hotmail;

END\$\$

DELIMITER ;

SELECT * from Summary;



```
c:\wamp64\bin\mysql\mysql5.7.31\bin\mysql.exe
mysql>
mysql> DELIMITER $$
mysql> CREATE PROCEDURE PROC6_Summary()
  -> BEGIN
  -> UPDATE Summary
  -> SET total_users = total_users + 1
  -> WHERE Yahoo <= Hotmail;
  -> END$$
Query OK, 0 rows affected (0.00 sec)

mysql> DELIMITER ;
mysql>
mysql> SELECT * from Summary;
+-----+-----+-----+-----+-----+
| id | total_users | Yahoo | Hotmail | Gmail |
+-----+-----+-----+-----+-----+
| 1 | 2 | 1 | 0 | 1 |
+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

QUESTION #7

1)

DELIMITER \$\$

CREATE TRIGGER NEW_ENTRY after INSERT

on person.Users


for each row begin

UPDATE Summary

SET total_users = total_users + 1;

END\$\$

DELIMITER ;

 c:\wamp64\bin\mysql\mysql5.7.31\bin\mysql.exe

```
mysql>
mysql>
mysql>
mysql> DELIMITER $$
mysql> CREATE TRIGGER NEW_ENTRY after INSERT
      -> on person.Users
      -> for each row begin
      -> UPDATE Summary
      -> SET total_users = total_users + 1;
      -> END$$
Query OK, 0 rows affected (0.06 sec)

mysql> DELIMITER ;
mysql>
mysql>
mysql> DELIMITER $$
```

2)

DELIMITER \$\$

CREATE TRIGGER RECORD after DELETE

on person.Users

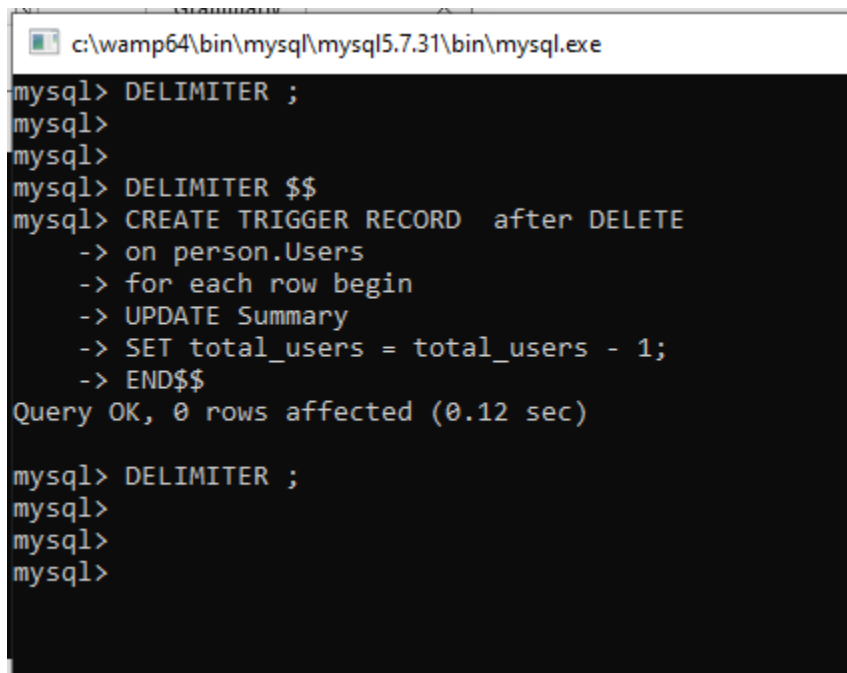
for each row begin

UPDATE Summary

SET total_users = total_users - 1;

END\$\$

DELIMITER ;

A screenshot of a MySQL command prompt window. The title bar shows the path 'c:\wamp64\bin\mysql\mysql5.7.31\bin\mysql.exe'. The prompt shows the following commands and their output:
mysql> DELIMITER ;
mysql>
mysql>
mysql> DELIMITER \$\$
mysql> CREATE TRIGGER RECORD after DELETE
-> on person.Users
-> for each row begin
-> UPDATE Summary
-> SET total_users = total_users - 1;
-> END\$\$
Query OK, 0 rows affected (0.12 sec)

mysql> DELIMITER ;
mysql>
mysql>
mysql>

Insert data in the users table (at least 5-10 records) with different email addresses using the stored procedure created in (Exercise 2).

DELIMITER \$\$

CREATE PROCEDURE PRC_Users1(IN

user_id int,

user_name varchar(10) ,

password varchar(10),

email varchar(20))

BEGIN

INSERT INTO Users(user_id,user_name,password,email)

VALUES (user_id,user_name,password,email);

END\$\$

DELIMITER ;

CALL PRC_Users('3','aaa123','abcdef','aaa123@Hotmail.com');

CALL PRC_Users('4','bbb123','abcdef','bbb123@gmail.com');

CALL PRC_Users('5','ccc123','abcdef','ccc123@Yahoo.com');

CALL PRC_Users('6','ddd123','abcdef','ddd123@Hotmail.com');

CALL PRC_Users('7','eee123','abcdef','eee123@gmail.com');

CALL PRC_Users('8','fff123','abcdef','fff123@Yahoo.com');

CALL PRC_Users('9','ggg123','abcdef','ggg123@Hotmail.com');

CALL PRC_Users('2','xyz789','asd123','xyz789@gmail.com');

CALL PRC_Users('10','hhh123','abcdef','hhh123@gmail.com');

DELIMITER ;

c:\wamp64\bin\mysql\mysql5.7.31\bin\mysql.exe

```
mysql> DELIMITER $$
mysql> CREATE PROCEDURE PRC_Users1(IN
  -> user_id int,
  -> user_name varchar(10) ,
  -> password varchar(10),
  -> email varchar(20))
  -> BEGIN
  -> INSERT INTO Users(user_id,user_name,password,email)
  ->          VALUES (user_id,user_name,password,email);
  ->
  -> END$$
Query OK, 0 rows affected (0.00 sec)

mysql>
mysql> DELIMITER ;
mysql> CALL PRC_Users('3','aaa123','abcdef','aaa123@Hotmail.com');
Query OK, 1 row affected (0.06 sec)

mysql> CALL PRC_Users('4','bbb123','abcdef','bbb123@gmail.com');
Query OK, 1 row affected (0.03 sec)

mysql> CALL PRC_Users('5','ccc123','abcdef','ccc123@Yahoo.com');
Query OK, 1 row affected (0.05 sec)

mysql> CALL PRC_Users('6','ddd123','abcdef','ddd123@Hotmail.com');
Query OK, 1 row affected (0.03 sec)

mysql> CALL PRC_Users('7','eee123','abcdef','eee123@gmail.com');
Query OK, 1 row affected (0.01 sec)

mysql> CALL PRC_Users('8','fff123','abcdef','fff123@Yahoo.com');
Query OK, 1 row affected (0.02 sec)

mysql> CALL PRC_Users('9','ggg123','abcdef','ggg123@Hotmail.com');
Query OK, 1 row affected (0.03 sec)


mysql> CALL PRC_Users('2','xyz789','asd123','xyz789@gmail.com');
ERROR 1062 (23000): Duplicate entry '2' for key 'PRIMARY'
mysql> CALL PRC_Users('10','hhh123','abcdef','hhh123@gmail.com');
Query OK, 1 row affected (0.02 sec)

mysql>
mysql> DELIMITER ;
mysql>
```

Check the summary table each time you add a new user or delete a user to check if the trigger(s) are working correctly.

```
SELECT * FROM Users;
```

```
SELECT * FROM Summary;
```

 c:\wamp64\bin\mysql\mysql5.7.31\bin\mysql.exe

Query OK, 1 row affected (0.02 sec)

mysql>

```
mysql> DELIMITER ;
```

```
mysql>
```

```
mysql> SELECT * FROM Users;
```

user_id	user_name	password	email
1	abc123	def321	abc123@yahoo.com
2	xyz789	asd123	xyz789@gmail.com
3	aaa123	abcdef	aaa123@Hotmail.com
4	bbb123	abcdef	bbb123@gmail.com
5	ccc123	abcdef	ccc123@Yahoo.com
6	ddd123	abcdef	ddd123@Hotmail.com
7	eee123	abcdef	eee123@gmail.com
8	fff123	abcdef	fff123@Yahoo.com
9	ggg123	abcdef	ggg123@Hotmail.com
10	hhh123	abcdef	hhh123@gmail.com

```
10 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM summary;
```

id	total_users	Yahoo	Hotmail	Gmail
1	10	1	0	1

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

mysql>

[illegible]