

SQL LAB 4

LIBIN N GEORGE
111501015

A)

```
CREATE USER coordinator identified by 'abc';
```

```
CREATE ROLE reader;
```

```
GRANT SELECT ON University.* TO reader ;
```

```
GRANT reader TO coordinator;
```

```
CREATE ROLE writer;
```

```
GRANT INSERT ON University.* TO writer ;
```

```
CREATE USER datamaster;
```

```
GRANT writer TO datamaster;
```

```
CREATE USER moderator;
```

```
GRANT writer TO moderator;
```

```
GRANT reader TO moderator;
```

```
MariaDB [University]> Query OK, 0 rows affected (0.00 sec)
```

```

111501015@iitpkdd122:~/Database-Lab$ mysql -u coordinator -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 13
Server version: 10.0.33-MariaDB-0ubuntu0.16.04.1 Ubuntu 16.04

Copyright (c) 2000, 2017, Oracle, MariaDB Corporation Ab and others.

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

MariaDB [(none)]> set role reader;
Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> show databases;
+-----+
| Database |
+-----+
| University |
| information_schema |
+-----+
2 rows in set (0.00 sec)

MariaDB [(none)]> show tables;
ERROR 1046 (3D000): No database selected
MariaDB [(none)]> use University;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
MariaDB [University]> show tables;
+-----+
| Tables_in_University |
+-----+
| advisor |
| classroom |
| course |
| department |
| instructor |
| prereq |
| section |
| student |
| takes |
| teaches |
| time_slot |
| tot_C |
+-----+
12 rows in set (0.00 sec)

MariaDB [University]> select * from course;
+-----+-----+-----+-----+
| course_id | title | dept_name | credits |
+-----+-----+-----+-----+
| BIO-101 | Intro. to Biology | Biology | 4 |
| BIO-301 | Genetics | Biology | 4 |
| BIO-399 | Computational Biology | Biology | 3 |
| CS-101 | Intro. to Computer Science | Comp. Sci. | 4 |
| CS-190 | Game Design | Comp. Sci. | 4 |
| CS-315 | Robotics | Comp. Sci. | 3 |
| CS-319 | Image Processing | Comp. Sci. | 3 |
| CS-347 | Database System Concepts | Comp. Sci. | 3 |
| EE-181 | Intro. to Digital Systems | Elec. Eng. | 3 |
| FIN-201 | Investment Banking | Finance | 3 |

```

MariaDB [(none)]> Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> MariaDB [(none)]> Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> MariaDB [(none)]> Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> MariaDB [(none)]> MariaDB [(none)]> Query OK, 0 rows affected (0.00 sec)

```
111501015@iitpkdd122:~/Database-Lab$ mysql -u datamaster
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 17
Server version: 10.0.33-MariaDB-0ubuntu0.16.04.1 Ubuntu 16.04

Copyright (c) 2000, 2017, Oracle, MariaDB Corporation Ab and others.

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

MariaDB [(none)]> set role writer;
Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> set role writer;
Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> use University;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
MariaDB [University]> Insert into course (course_id, title, dept_name, credits) values ("test", "test", "Music", 2);
Query OK, 1 row affected (0.04 sec)

MariaDB [University]> █
```

MariaDB [University]> MariaDB [University]> Query OK, 0 rows affected (0.00 sec)

MariaDB [University]> MariaDB [University]> Query OK, 0 rows affected (0.00 sec)

MariaDB [University]> Query OK, 0 rows affected (0.00 sec)

```
111501015@iitpkdd122:~/Database-Lab$ mysql -u moderator
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 19
Server version: 10.0.33-MariaDB-0ubuntu0.16.04.1 Ubuntu 16.04

Copyright (c) 2000, 2017, Oracle, MariaDB Corporation Ab and others.

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

MariaDB [(none)]> set role writer;
Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> set role reader;
Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> Insert into course (course_id, title, dept_name, credits) values ("test1", "test1", "Music", 3);
ERROR 1046 (3D000): No database selected
MariaDB [(none)]> use University;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
MariaDB [University]> Insert into course (course_id, title, dept_name, credits) values ("test1", "test1", "Music", 3);
ERROR 1142 (42000): INSERT command denied to user 'moderator'@'localhost' for table 'course'
MariaDB [University]> set role writer;
Query OK, 0 rows affected (0.00 sec)

MariaDB [University]> Insert into course (course_id, title, dept_name, credits) values ("test1", "test1", "Music", 3);
Query OK, 1 row affected (0.05 sec)

MariaDB [University]> set role reader;
Query OK, 0 rows affected (0.00 sec)

MariaDB [University]> select * from course;
+-----+-----+-----+-----+
| course_id | title | dept_name | credits |
+-----+-----+-----+-----+
| BIO-101 | Intro. to Biology | Biology | 4 |
| BIO-301 | Genetics | Biology | 4 |
| BIO-399 | Computational Biology | Biology | 3 |
| CS-101 | Intro. to Computer Science | Comp. Sci. | 4 |
| CS-190 | Game Design | Comp. Sci. | 4 |
| CS-315 | Robotics | Comp. Sci. | 3 |
| CS-319 | Image Processing | Comp. Sci. | 3 |
| CS-347 | Database System Concepts | Comp. Sci. | 3 |
| EE-181 | Intro. to Digital Systems | Elec. Eng. | 3 |
| FIN-201 | Investment Banking | Finance | 3 |
| HIS-351 | World History | History | 3 |
| MU-199 | Music Video Production | Music | 3 |
| PHY-101 | Physical Principles | Physics | 4 |
| test | test | Music | 2 |
| test1 | test1 | Music | 3 |
+-----+-----+-----+-----+
15 rows in set (0.00 sec)

MariaDB [University]> 
```

```
SET @avg_cred = 0;
```

```
SET @avg_cred = (select AVG(tot_cred) FROM student);
```

```
SELECT @avg_cred;
```

```
| @avg_cred |
```

| 5.384615384 |

1 row in set (0.00 sec)

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



```

DELIMITER //

CREATE PROCEDURE sp_top_avg (IN N INT,
                             OUT avg_buget FLOAT)
BEGIN
    SELECT AVG(D.budget) INTO avg_buget FROM (SELECT * FROM department ORDER BY budget DESC LIMIT N) AS
    D;

END;//
DELIMITER ;
set @avg = 0;
call sp_top_avg(3, @avg);
select @avg;

```

```

MariaDB [University]> +-----+
| @avg                  |
+-----+
| 103333.3359375      |
+-----+
1 row in set (0.00 sec)

```

```

DELIMITER //

CREATE PROCEDURE update_budget ()
BEGIN

declare avg_buget FLOAT;
SELECT AVG(D.budget) INTO avg_buget FROM department AS D;

UPDATE department SET budget=(avg_buget/2) where budget< avg_buget/2;

END;//
DELIMITER ;
^GMariaDB [University]> MariaDB [University]> MariaDB [University]> MariaDB [University]> MariaDB [
University]> MariaDB [University]> MariaDB [University]>      ->      ->      ->      ->      ->      ->
      ->      -> Query OK, 0 rows affected (0.04 sec)

insert into department values ('Dance', 'Watson', 10000);
MariaDB [University]> MariaDB [University]> Query OK, 1 row affected (0.04 sec)

call update_budget();
MariaDB [University]> Query OK, 1 row affected (0.04 sec)

select * from department;
MariaDB [University]> +-----+-----+-----+
| dept_name | building | budget |
+-----+-----+-----+
| Biology   | Watson   | 90000.00 |
| Comp. Sci. | Taylor   | 100000.00 |
| Dance     | Watson   | 37812.50 |
| Elec. Eng. | Taylor   | 85000.00 |
| Finance    | Painter   | 120000.00 |
| History    | Painter   | 50000.00 |
| Music     | Packard   | 80000.00 |
| Physics    | Watson    | 70000.00 |
+-----+-----+-----+
8 rows in set (0.00 sec)

```

```

drop database canteen;
create database canteen;
use canteen;
create table menu (
id int not null,
name varchar(50) not null,
type enum('healthy','unhealthy'),
PRIMARY KEY(id)
);
create table `order`(
id INT not null,
count int not null,
PRIMARY KEY(id)
);
Create table price(
id INT not NULL,
amount float,
FOREIGN KEY (id) REFERENCES menu(id)
);

```

MariaDB [(none)]> Query OK, 1 row affected (0.01 sec)

MariaDB [(none)]> Database changed

MariaDB [canteen]> -> -> -> -> -> Query OK, 0 rows affected (0.29 sec)


```

DELIMITER //
CREATE TRIGGER price_checker
before insert ON price
FOR EACH ROW
BEGIN
    IF NEW.amount < 0 THEN
        SIGNAL SQLSTATE '45000' SET MESSAGE_TEXT = 'price can not be negative';
    END IF;
END; //
DELIMITER ;

MariaDB [canteen]> MariaDB [canteen]> MariaDB [canteen]> MariaDB [canteen]> MariaDB [canteen]>
s->      ->      ->      ->      ->      ->      ->      -> Query OK, 0 rows affected (0.07 sec)
.....

```

```

DELIMITER //
CREATE TRIGGER spicy_checker
before insert ON menu
FOR EACH ROW
BEGIN
    IF NEW.spicy<>'Y' AND NEW.spicy<>'N' THEN
        SIGNAL SQLSTATE '45000' SET MESSAGE_TEXT = 'wrong spicy level!';
    END IF;
END; //
DELIMITER ;

```

```

^GMariaDB [canteen]> MariaDB [canteen]> MariaDB [canteen]> MariaDB [canteen]> MariaDB [canteen]> Ma ;
MariaDB [canteen]> MariaDB [canteen]> MariaDB [canteen]>      ->      ->      ->      ->      ->      -> ;
-> Query OK, 0 rows affected (0.08 sec)

```

```

MariaDB [canteen]> insert into menu values (1, 'test', 'healthy', 'N');
Query OK, 1 row affected (0.03 sec)

```

```

MariaDB [canteen]> select * from price;

```

```

+-----+
| id | amount |
+-----+
| 1 | 10 |
+-----+

```

```

1 row in set (0.00 sec)

```

```

MariaDB [canteen]> insert into menu values (1, 'test', 'unhealthy', 'N');
ERROR 1062 (23000): Duplicate entry '1' for key 'PRIMARY'

```

```

MariaDB [canteen]> insert into menu values (2, 'test', 'unhealthy', 'N');
Query OK, 1 row affected (0.10 sec)

```

```

MariaDB [canteen]> select * from price;

```

```

+-----+
| id | amount |
+-----+

```

```

ALTER table menu
add spicy VARCHAR(2)

```

```

;
^GMariaDB [canteen]> MariaDB [canteen]> MariaDB [canteen]> MariaDB [canteen]> MariaDB [canteen]>
->      ->      -> Query OK, 0 rows affected (0.44 sec)
Records: 0 Duplicates: 0 Warnings: 0

```

```

+-----+
| 1 | test | healthy | N |
| 2 | test | unhealthy | N |
+-----+
2 rows in set (0.00 sec)

```

```

MariaDB [canteen]> insert into menu values (2, 'test', 'unhealthy', 'yes');
ERROR 1644 (45000): wrong spicy level!

```

```

MariaDB [canteen]> insert into price values (1, -1);
ERROR 1644 (45000): price can not be negative
MariaDB [canteen]>

```

--