Name-Surendra Baskey
Roll no-111601027

1. Create another view stud_cred containing ID, name and tot_cred of the students.

```
MariaDB [university]> create view stud_cred as
    -> (select ID,name,tot_cred from student);
Query OK, 0 rows affected (0.048 sec)

MariaDB [university]> select *from stud_cred;
+-------+----------+----------+
| ID    | name     | tot_cred |
+-------+----------+----------+
| 00128 | Zhang    |      102 |
| 12345 | Shankar  |       32 |
| 19991 | Brandt   |       80 |
| 23121 | Chavez   |      110 |
| 44553 | Peltier  |       56 |
| 45678 | Levy     |       46 |
| 54321 | Williams |       54 |
| 55739 | Sanchez  |       38 |
| 70557 | Snow     |        0 |
| 76543 | Brown    |       58 |
| 76653 | Aoi      |       60 |
| 98765 | Bourikas |       98 |
| 98988 | Tanaka   |      120 |
+-------+----------+----------+
13 rows in set (0.001 sec)

MariaDB [university]>
```

a. Remove 'Tanaka' from stud_cred. Show effect on stud_cred and student.

```
MariaDB [university]> delete from
    -> stud_cred where name="Tanaka";
Query OK, 1 row affected (0.048 sec)

MariaDB [university]> select *from stud_cred;
+--------+----------+----------+
| ID     | name     | tot_cred |
+--------+----------+----------+
| 00128  | Zhang    |      102 |
| 12345  | Shankar  |       32 |
| 19991  | Brandt   |       80 |
| 23121  | Chavez   |      110 |
| 44553  | Peltier  |       56 |
| 45678  | Levy     |       46 |
| 54321  | Williams |       54 |
| 55739  | Sanchez  |       38 |
| 70557  | Snow     |        0 |
| 76543  | Brown    |       58 |
| 76653  | Aoi      |       60 |
| 98765  | Bourikas |       98 |
+--------+----------+----------+
12 rows in set (0.001 sec)
```

```
MariaDB [university]> select *from student;
+--------+----------+------------+----------+
| ID     | name     | dept_name  | tot_cred |
+--------+----------+------------+----------+
| 00128  | Zhang    | Comp. Sci. |      102 |
| 12345  | Shankar  | Comp. Sci. |       32 |
| 19991  | Brandt   | History    |       80 |
| 23121  | Chavez   | Finance    |      110 |
| 44553  | Peltier  | Physics    |       56 |
| 45678  | Levy     | Physics    |       46 |
| 54321  | Williams | Comp. Sci. |       54 |
| 55739  | Sanchez  | Music      |       38 |
| 70557  | Snow     | Physics    |        0 |
| 76543  | Brown    | Comp. Sci. |       58 |
| 76653  | Aoi      | Elec. Eng. |       60 |
| 98765  | Bourikas | Elec. Eng. |       98 |
+--------+----------+------------+----------+
12 rows in set (0.001 sec)
```

b. Insert Tanaka back into stud_cred. Show effect on stud_cred and student.

```
MariaDB [university]> insert into stud_cred(name) values("Tanaka");
Query OK, 1 row affected (0.035 sec)

MariaDB [university]> select *from stud_cred;
+-------+----------+----------+
| ID    | name     | tot_cred |
+-------+----------+----------+
|       | Tanaka   |    NULL  |
| 00128 | Zhang    |     102  |
| 12345 | Shankar  |      32  |
| 19991 | Brandt   |      80  |
| 23121 | Chavez   |     110  |
| 44553 | Peltier  |      56  |
| 45678 | Levy     |      46  |
| 54321 | Williams |      54  |
| 55739 | Sanchez  |      38  |
| 70557 | Snow     |       0  |
| 76543 | Brown    |      58  |
| 76653 | Aoi      |      60  |
| 98765 | Bourikas |      98  |
+-------+----------+----------+
13 rows in set (0.001 sec)

MariaDB [university]> █
```

```
MariaDB [university]> select *from student;
+-------+----------+------------+----------+
| ID    | name     | dept_name  | tot_cred |
+-------+----------+------------+----------+
|       | Tanaka   | NULL       |    NULL  |
| 00128 | Zhang    | Comp. Sci. |     102  |
| 12345 | Shankar  | Comp. Sci. |      32  |
| 19991 | Brandt   | History    |      80  |
| 23121 | Chavez   | Finance    |     110  |
| 44553 | Peltier  | Physics    |      56  |
| 45678 | Levy     | Physics    |      46  |
| 54321 | Williams | Comp. Sci. |      54  |
| 55739 | Sanchez  | Music      |      38  |
| 70557 | Snow     | Physics    |       0  |
| 76543 | Brown    | Comp. Sci. |      58  |
| 76653 | Aoi      | Elec. Eng. |      60  |
| 98765 | Bourikas | Elec. Eng. |      98  |
+-------+----------+------------+----------+
13 rows in set (0.001 sec)

MariaDB [university]> █
```

2. List down the views in the current database. Check the view that you created last week -

stud_dept_budg, if it is not present create it again.

```
MariaDB [university]> show full tables where table_type like "view";
+----------------------+------------+
| Tables_in_university | Table_type |
+----------------------+------------+
| stud_cred            | VIEW       |
| stud_dept_budg       | VIEW       |
+----------------------+------------+
2 rows in set (0.001 sec)
```

a. Remove 'Zhang' from stud_dept_budg view. Show effect on stud_dept_budg and
Student.

```
MariaDB [university]> delete  from stud_dept_budg
    -> where name="Zhang";
ERROR 1395 (HY000): Can not delete from join view 'university.stud_dept_budg'
MariaDB [university]> select *from stud_dept_budg;
+-----------+------------+-----------+
| name      | dept_name  | budget    |
+-----------+------------+-----------+
| Zhang     | Comp. Sci. | 100000.00 |
| Shankar   | Comp. Sci. | 100000.00 |
| Williams  | Comp. Sci. | 100000.00 |
| Brown     | Comp. Sci. | 100000.00 |
| Aoi       | Elec. Eng. |  85000.00 |
| Bourikas  | Elec. Eng. |  85000.00 |
| Chavez    | Finance    | 120000.00 |
+-----------+------------+-----------+
7 rows in set (0.000 sec)

MariaDB [university]> select *from student;
+-------+----------+------------+----------+
| ID    | name     | dept_name  | tot_cred |
+-------+----------+------------+----------+
|       | Tanaka   | NULL       |     NULL |
| 00128 | Zhang    | Comp. Sci. |      102 |
| 12345 | Shankar  | Comp. Sci. |       32 |
| 19991 | Brandt   | History    |       80 |
| 23121 | Chavez   | Finance    |      110 |
| 44553 | Peltier  | Physics    |       56 |
| 45678 | Levy     | Physics    |       46 |
| 54321 | Williams | Comp. Sci. |       54 |
| 55739 | Sanchez  | Music      |       38 |
| 70557 | Snow     | Physics    |        0 |
| 76543 | Brown    | Comp. Sci. |       58 |
| 76653 | Aoi      | Elec. Eng. |       60 |
| 98765 | Bourikas | Elec. Eng. |       98 |
+-------+----------+------------+----------+
13 rows in set (0.000 sec)

MariaDB [university]> 
```

b. Insert (Rahul, Management, 60000) into stud_dept_budg.

```
MariaDB [university]> insert into stud_dept_budg
    -> values("Rahul","Management",60000);
ERROR 1394 (HY000): Can not insert into join view 'university.stud_dept_budg' wi
thout fields list
MariaDB [university]>
```

c. Insert (Dance, 60000) into stud_dept_budg.

```
MariaDB [university]> insert into stud_dept_budg values("Dance",60000);
ERROR 1394 (HY000): Can not insert into join view 'university.stud_dept_budg' wi
thout fields list
MariaDB [university]>
```

d. Delete Zhang from student table. Show the effect in stud_dept_budg view.

```
MariaDB [university]> delete from student where name="Zhang";
ERROR 1451 (23000): Cannot delete or update a parent row: a foreign key constrai
nt fails (`university`.`takes`, CONSTRAINT `student_fbk` FOREIGN KEY (`ID`) REFE
RENCES `student` (`ID`))
MariaDB [university]>
```

3. Modify department table add default value for dept_name as NULL.

```
MariaDB [university]> alter table department
    -> alter dept_name set default 'null';
Query OK, 0 rows affected (0.028 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [university]>
```

4. Modify department table drop default value for dept_name.

```
MariaDB [university]> desc department;
+-----------+---------------+------+-----+---------+-------+
| Field     | Type          | Null | Key | Default | Extra |
+-----------+---------------+------+-----+---------+-------+
| dept_name | varchar(20)   | NO   | PRI | null    |       |
| building  | varchar(15)   | YES  |     | NULL    |       |
| budget    | decimal(12,2) | YES  |     | NULL    |       |
+-----------+---------------+------+-----+---------+-------+
3 rows in set (0.002 sec)

MariaDB [university]> alter table department alter dept_name drop default;
Query OK, 0 rows affected (0.001 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [university]> desc department;
+-----------+---------------+------+-----+---------+-------+
| Field     | Type          | Null | Key | Default | Extra |
+-----------+---------------+------+-----+---------+-------+
| dept_name | varchar(20)   | NO   | PRI | NULL    |       |
| building  | varchar(15)   | YES  |     | NULL    |       |
| budget    | decimal(12,2) | YES  |     | NULL    |       |
+-----------+---------------+------+-----+---------+-------+
3 rows in set (0.002 sec)

MariaDB [university]>
```

5. Create a view bld_bdg containing building and budget from department table.

```
MariaDB [university]> create view bld_bdg as
    -> (select building,budget from department);
Query OK, 0 rows affected (0.040 sec)

MariaDB [university]> select *from bld_bdg;
+----------+-----------+
| building | budget    |
+----------+-----------+
| Watson   |  90000.00 |
| Taylor   | 100000.00 |
| Taylor   |  85000.00 |
| Painter  | 120000.00 |
| Painter  |  50000.00 |
| Packard  |  80000.00 |
| Watson   |  70000.00 |
+----------+-----------+
7 rows in set (0.001 sec)

MariaDB [university]>
```

6. Create user tom with login process using password iamtom. Then give tom permission to
see content of bld_bdg. Login as tom, check list of tables and views, content of student

and department table and bld_bdg view.

```
MariaDB [university]> create user tom identified by 'iamtom';
Query OK, 0 rows affected (0.001 sec)

MariaDB [university]> grant select on bld_bdg to tom;
Query OK, 0 rows affected (0.001 sec)

MariaDB [university]>
```

```
surendra@surendra-Acer-One-14-Z1-471:~$ mysql -u tom -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 59
Server version: 10.3.12-MariaDB-1:10.3.12+maria~bionic-log 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)]> 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 full tables;
+----------------------+------------+
| Tables_in_university | Table_type |
+----------------------+------------+
| bld_bdg              | VIEW       |
+----------------------+------------+
1 row in set (0.000 sec)

MariaDB [university]>
```

```
MariaDB [university]> select *from bld_bdg;
+----------+-----------+
| building | budget    |
+----------+-----------+
| Watson   |  90000.00 |
| Taylor   | 100000.00 |
| Taylor   |  85000.00 |
| Painter  | 120000.00 |
| Painter  |  50000.00 |
| Packard  |  80000.00 |
| Watson   |  70000.00 |
+----------+-----------+
7 rows in set (0.001 sec)

MariaDB [university]> \
MariaDB [university]> select *from student;
ERROR 1142 (42000): SELECT command denied to user 'tom'@'localhost' for table 'student'
MariaDB [university]> select *from department;
ERROR 1142 (42000): SELECT command denied to user 'tom'@'localhost' for table 'department'
MariaDB [university]>
```

7. Create user jerry to login with password iamjerry. Then give tom permission to see content of student table. Login as jerry, check list of tables and views, content of student and department table.

```
MariaDB [university]> create user jerry identified by 'iamjerry';
Query OK, 0 rows affected (0.001 sec)

MariaDB [university]> grant select on student to jerry;
Query OK, 0 rows affected (0.001 sec)

MariaDB [university]>
```

```
surendra@surendra-Acer-One-14-Z1-471:~$ mysql -u jerry -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 60
Server version: 10.3.12-MariaDB-1:10.3.12+maria~bionic-log 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)]> 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 full tables;
+----------------------+------------+
| Tables_in_university | Table_type |
+----------------------+------------+
| student              | BASE TABLE |
+----------------------+------------+
1 row in set (0.001 sec)
```

```
MariaDB [university]> select *from student;
+-------+----------+------------+----------+
| ID    | name     | dept_name  | tot_cred |
+-------+----------+------------+----------+
|       | Tanaka   | NULL       |     NULL |
| 00128 | Zhang    | Comp. Sci. |      102 |
| 12345 | Shankar  | Comp. Sci. |       32 |
| 19991 | Brandt   | History    |       80 |
| 23121 | Chavez   | Finance    |      110 |
| 44553 | Peltier  | Physics    |       56 |
| 45678 | Levy     | Physics    |       46 |
| 54321 | Williams | Comp. Sci. |       54 |
| 55739 | Sanchez  | Music      |       38 |
| 70557 | Snow     | Physics    |        0 |
| 76543 | Brown    | Comp. Sci. |       58 |
| 76653 | Aoi      | Elec. Eng. |       60 |
| 98765 | Bourikas | Elec. Eng. |       98 |
+-------+----------+------------+----------+
13 rows in set (0.000 sec)

MariaDB [university]> select *from department;
ERROR 1142 (42000): SELECT command denied to user 'jerry'@'localhost' for table 'department'
MariaDB [university]>
```

8. Delete tom and jerry.

```
MariaDB [university]> drop user tom;
Query OK, 0 rows affected (0.001 sec)

MariaDB [university]> drop user jerry;
Query OK, 0 rows affected (0.001 sec)

MariaDB [university]>
```

9. Create role see_students. Give select permission to see_students for stud_cred view. Create user tom with password as above. Assign see_students role to tom. Log in as tom and list the tables and content of the student table and stud_cred view.

```
MariaDB [university]> create role see_students;
Query OK, 0 rows affected (0.000 sec)

MariaDB [university]> grant select on stud_cred to see_students;
Query OK, 0 rows affected (0.001 sec)

MariaDB [university]> create user tom identified by 'iamtom';
Query OK, 0 rows affected (0.001 sec)

MariaDB [university]> grant see_students to tom;
Query OK, 0 rows affected (0.000 sec)

MariaDB [university]>
```

```
surendra@surendra-Acer-One-14-Z1-471:~$ mysql -u tom -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 61
Server version: 10.3.12-MariaDB-1:10.3.12+maria~bionic-log 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)]> use university;
ERROR 1044 (42000): Access denied for user 'tom'@'%' to database 'university'
MariaDB [(none)]> set role see_students;
Query OK, 0 rows affected (0.000 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]> show full tables;
+---------------------+------------+
| Tables_in_university | Table_type |
+---------------------+------------+
| stud_cred           | VIEW       |
+---------------------+------------+
1 row in set (0.001 sec)
```

```
MariaDB [university]> select *from stud_cred;
+--------+----------+-----------+
| ID     | name     | tot_cred  |
+--------+----------+-----------+
|        | Tanaka   |     NULL  |
| 00128  | Zhang    |      102  |
| 12345  | Shankar  |       32  |
| 19991  | Brandt   |       80  |
| 23121  | Chavez   |      110  |
| 44553  | Peltier  |       56  |
| 45678  | Levy     |       46  |
| 54321  | Williams |       54  |
| 55739  | Sanchez  |       38  |
| 70557  | Snow     |        0  |
| 76543  | Brown    |       58  |
| 76653  | Aoi      |       60  |
| 98765  | Bourikas |       98  |
+--------+----------+-----------+
13 rows in set (0.001 sec)

MariaDB [university]> select *from student;
ERROR 1142 (42000): SELECT command denied to user 'tom'@'localhost' for table 'student'
MariaDB [university]>
```

10. Create role see_instructors. Give select permission to see_instructors for instructor table. Assign see_instructors role to tom. Log in as tom and list the tables and content of the instructor and student table. [full sequence of commands need to be shown .]

```
MariaDB [university]> create role see_instructors;
Query OK, 0 rows affected (0.001 sec)

MariaDB [university]> grant select on student to see_instructors;
Query OK, 0 rows affected (0.001 sec)

MariaDB [university]> grant see_instructors to tom
    -> ;
Query OK, 0 rows affected (0.001 sec)

MariaDB [university]>
```

```
MariaDB [university]> set role see_instructors;
Query OK, 0 rows affected (0.000 sec)

MariaDB [university]> show full tables;
+---------------------+------------+
| Tables_in_university | Table_type |
+---------------------+------------+
| student             | BASE TABLE |
+---------------------+------------+
1 row in set (0.001 sec)

MariaDB [university]> select *from student;
+-------+----------+------------+----------+
| ID    | name     | dept_name  | tot_cred |
+-------+----------+------------+----------+
|       | Tanaka   | NULL       |     NULL |
| 00128 | Zhang    | Comp. Sci. |      102 |
| 12345 | Shankar  | Comp. Sci. |       32 |
| 19991 | Brandt   | History    |       80 |
| 23121 | Chavez   | Finance    |      110 |
| 44553 | Peltier  | Physics    |       56 |
| 45678 | Levy     | Physics    |       46 |
| 54321 | Williams | Comp. Sci. |       54 |
| 55739 | Sanchez  | Music      |       38 |
| 70557 | Snow     | Physics    |        0 |
| 76543 | Brown    | Comp. Sci. |       58 |
| 76653 | Aoi      | Elec. Eng. |       60 |
| 98765 | Bourikas | Elec. Eng. |       98 |
+-------+----------+------------+----------+
13 rows in set (0.000 sec)

MariaDB [university]> select *from instructor;
ERROR 1142 (42000): SELECT command denied to user 'tom'@'localhost' for table 'instructor'
MariaDB [university]>
```

11. Withdraw see_students and see_instructos role from tom.

```
MariaDB [university]> drop role see_students;
Query OK, 0 rows affected (0.001 sec)

MariaDB [university]> drop role see_instructors;
Query OK, 0 rows affected (0.001 sec)

MariaDB [university]>
```

12. Create two admin roles: admin1, admin2. Give privilege to admin1 and admin2 to view content of department table. admin1 and admin2 will also to be able to give other users the same privilege.

```
MariaDB [university]> create role admin1;
Query OK, 0 rows affected (0.001 sec)

MariaDB [university]> create role admin2;
Query OK, 0 rows affected (0.001 sec)

MariaDB [university]> grant select on department to
    -> admin1 with grant option;
Query OK, 0 rows affected (0.001 sec)

MariaDB [university]> grant select on department to
    -> admin2 with grant option;
Query OK, 0 rows affected (0.001 sec)

MariaDB [university]>
```

13. Create a user jerry with password iamjerry. Create a user nibbles with password iamnibbles. Assign admin1 role to tom and admin2 role to jerry.

```
MariaDB [university]> create user jerry identified by 'iamjerry';
Query OK, 0 rows affected (0.001 sec)

MariaDB [university]> create user nibbles identified by 'iamnibbles';
Query OK, 0 rows affected (0.001 sec)

MariaDB [university]> grant admin1 to tom;
Query OK, 0 rows affected (0.000 sec)

MariaDB [university]> grant admin2 to jerry;
Query OK, 0 rows affected (0.001 sec)

MariaDB [university]>
```

14. tom and jerry should set role as admin1 and admin 2. Then independently they give privilege to nibbles to see content of department table.

```
surendra@surendra-Acer-One-14-Z1-471:~$ mysql -u tom -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 64
Server version: 10.3.12-MariaDB-1:10.3.12+maria~bionic-log mariadb.org binary di
stribution

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)]> set role admin1
    -> ;
Query OK, 0 rows affected (0.000 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]> grant select on department to nibbles;
Query OK, 0 rows affected (0.001 sec)

MariaDB [university]> 
```

```
surendra@surendra-Acer-One-14-Z1-471:~$ mysql -u jerry -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 65
Server version: 10.3.12-MariaDB-1:10.3.12+maria~bionic-log mariadb.org binary di
stribution

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

MariaDB [(none)]> set role admin2;
Query OK, 0 rows affected (0.000 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]> grant select on department to nibbles;
Query OK, 0 rows affected (0.001 sec)

MariaDB [university]> 
```

15. Login as nibbles. Go to university database and list the records from the department
Table.

```
surendra@surendra-Acer-One-14-Z1-471:~$ mysql -u nibbles -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 68
Server version: 10.3.12-MariaDB-1:10.3.12+maria~bionic-log 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)]> 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]> select *from department;
+------------+----------+-----------+
| dept_name  | building | budget    |
+------------+----------+-----------+
| Biology    | Watson   |  90000.00 |
| Comp. Sci. | Taylor   | 100000.00 |
| Elec. Eng. | Taylor   |  85000.00 |
| Finance    | Painter  | 120000.00 |
| History    | Painter  |  50000.00 |
| Music      | Packard  |  80000.00 |
| Physics    | Watson   |  70000.00 |
+------------+----------+-----------+
7 rows in set (0.001 sec)

MariaDB [university]> █
```

16. Login as jerry. Remove select privilege from nibbles.

```
surendra@surendra-Acer-One-14-Z1-471:~$ mysql -u jerry -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 69
Server version: 10.3.12-MariaDB-1:10.3.12+maria~bionic-log mariadb.org binary di
stribution

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)]> set role admin2;
Query OK, 0 rows affected (0.000 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]> revoke select on department from nibbles;
Query OK, 0 rows affected (0.001 sec)
```

17. Login as nibbles. Go to university database and list the records from the department

```
surendra@surendra-Acer-One-14-Z1-471:~$ mysql -u nibbles -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 70
Server version: 10.3.12-MariaDB-1:10.3.12+maria~bionic-log mariadb.org binary di
stribution

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)]> use university;
ERROR 1044 (42000): Access denied for user 'nibbles'@'%' to database 'university
'
MariaDB [(none)]>
```

table.

18. Login as tom. Give select privilege to nibbles for department table.

```
surendra@surendra-Acer-One-14-Z1-471:~$ mysql -u tom -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 71
Server version: 10.3.12-MariaDB-1:10.3.12+maria~bionic-log 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)]> set role admin1;
Query OK, 0 rows affected (0.000 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]> select grant on department to nibbles;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds t
x to use near 'grant on department to nibbles' at line 1
MariaDB [university]>  grant select  on department to nibbles;
Query OK, 0 rows affected (0.000 sec)

MariaDB [university]>
```

19. Login as nibbles. Go to university database and list the records from the department
Table.

```
surendra@surendra-Acer-One-14-Z1-471:~$ mysql -u nibbles -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 72
Server version: 10.3.12-MariaDB-1:10.3.12+maria~bionic-log 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)]> 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]> select *from departments;
ERROR 1142 (42000): SELECT command denied to user 'nibbles'@'localhost' for table 'departments'
MariaDB [university]> select *from department;
+------------+----------+-----------+
| dept_name  | building | budget    |
+------------+----------+-----------+
| Biology    | Watson   |  90000.00 |
| Comp. Sci. | Taylor   | 100000.00 |
| Elec. Eng. | Taylor   |  85000.00 |
| Finance    | Painter  | 120000.00 |
| History    | Painter  |  50000.00 |
| Music      | Packard  |  80000.00 |
| Physics    | Watson   |  70000.00 |
+------------+----------+-----------+
7 rows in set (0.000 sec)

MariaDB [university]> ▮
```

20. Login as root. Release tom from admin1 role.

```
surendra@surendra-Acer-One-14-Z1-471:~$ mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 73
Server version: 10.3.12-MariaDB-1:10.3.12+maria~bionic-log mariadb.org binary di
stribution

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)]> 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]> revoke admin1 from tom1;
ERROR 1962 (HY000): Cannot revoke role 'admin1' from: 'tom1'@'%'
MariaDB [university]> revoke admin1 from tom;
Query OK, 0 rows affected (0.000 sec)

MariaDB [university]>

MariaDB [university]> revoke admin1 from tom;
```

21. Login as tom. Go to university database and list the records from the department table.

```
surendra@surendra-Acer-One-14-Z1-471:~$ mysql -u tom -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 74
Server version: 10.3.12-MariaDB-1:10.3.12+maria~bionic-log mariadb.org binary di
stribution

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)]> use unioversity;
ERROR 1044 (42000): Access denied for user 'tom'@'%' to database 'unioversity'
MariaDB [(none)]> use university;
```

22. Login as nibbles. Go to university database and list the records from the department
table.

```
surendra@surendra-Acer-One-14-Z1-471:~$ mysql -u nibbles -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 75
Server version: 10.3.12-MariaDB-1:10.3.12+maria~bionic-log 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)]> 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]> select *from department;
+------------+----------+-----------+
| dept_name  | building | budget    |
+------------+----------+-----------+
| Biology    | Watson   |  90000.00 |
| Comp. Sci. | Taylor   | 100000.00 |
| Elec. Eng. | Taylor   |  85000.00 |
| Finance    | Painter  | 120000.00 |
| History    | Painter  |  50000.00 |
| Music      | Packard  |  80000.00 |
| Physics    | Watson   |  70000.00 |
+------------+----------+-----------+
7 rows in set (0.000 sec)

MariaDB [university]>
```