数据库系统　实验4

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实验过程

1. 在使用root身份登录数据库之后，创建新的用户 `tester`

```
1  create user  'tester'@'localhost' IDENTIFIED BY '123456';
```

结果如下

```
db15_445> create user  'tester'@'localhost' IDENTIFIED BY '123456
[2022-03-24 15:09:27] 在 25 ms 内完成
```

2. 使用新的用户登录数据库，可以发现，用户查询root拥有的数据表depositor

```
1  select * from homework.depositor
```

```
[42000][1044] Access denied for user 'tester'@'localhost' to database 'homework'
[42000][1044] Access denied for user 'tester'@'localhost' to database 'homework'
```

3. 回到root，给该用户授权

```
1  grant select on homework.depositor to 'tester'@'localhost'
```

```
Query OK, 0 rows affected
Time: 0.008s
```

查看tester@localhost拥有的权限

```
1  show grants for 'tester'@'localhost
```

结果如下

```
Grants for tester@localhost                                                    |
+------------------------------------------------------------------------------+
GRANT USAGE ON *.* TO `tester`@`localhost`                                      |
GRANT SELECT ON `homework`.`depositor` TO `tester`@`localhost`                  |
+------------------------------------------------------------------------------+
```

查看在表depositor上拥有权限的用户

```
1  select * from mysql.tables_priv where table_name = 'depositor'
```

```
| Host      | Db       | User   | Table_name | Grantor       | Timestamp           | Table_priv | Column_priv |
| localhost | homework | tester | depositor  | root@localhost | 2022-03-24 15:14:35 | Select     |             |
```

4. 回到tester@localhost身份,指令成功执行

🔢 customer_name ⬍	🔢 account_number ⬍
1	test	1
2	zyf	123456

5. 收回权限

```
1  revoke select on homework.depositor from 'tester'@'localhost'
```

6. 建立表，考察表的生成者拥有该表的哪些权限。

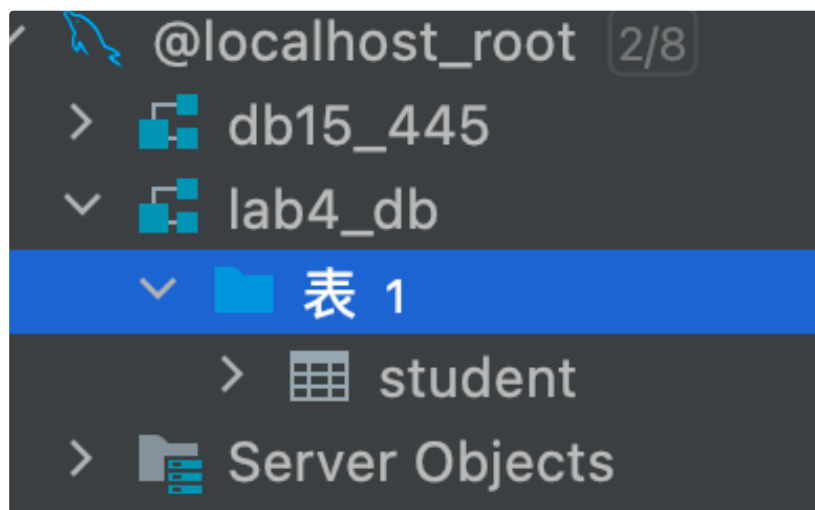   首先，以root身份授予tester在lab4_db上建立数据表的权限

```
1  grant create on lab4_db.* to 'tester'@'localhost';
```

   接下来，以tester身份建立数据表student

```
use lab4_db;
create table student(
    uid int primary key,
💡  name varchar(20)
);
```

root身份查看，发现表创建成功

发现表创建成功。

7. 使用SQL 的grant 和revoke命令对其他用户进行授权和权力回收，考察相应的作用。

   这一步在上述过程中已经完成

8. 建立视图，并把该视图的查询权限授予其他用户，考察通过视图进行权限控制的作用。

   首先，以root身份在数据库homework中创建视图view_test

```
1  use homework;
2  create view view_test as
3  select * from student join takes
4  on (student.`studentID` = takes.sid);
```

在tester权限下，执行select * from homework.view_test,报错

```
SELECT command denied to user 'tester'@'localhost' for table 'view_test'
SELECT command denied to user 'tester'@'localhost' for table 'view_test'
```

root授权

```
1 | grant select on homework.view_test to 'tester'@'localhost';
```

在执行对视图查询，成功:

	studentID	name	dept_name	haveGraduated	id	sid
1	12345	john	Physics	1	1	12345
2	12345	john	Physics	1	2	12345
3	85625	alice	Physics	0	3	85625
4	52807	cris	Physics	0	4	52807
5	49605	gg	Physics	0	5	49605
6	47928	tom	computer science	0	6	47928
7	47928	tom	computer science	0	7	47928
8	49605	gg	Physics	0	9	49605
9	85625	alice	Physics	0	10	85625
10	49605	gg	Physics	0	11	49605

通过设置合适的视图权限，我们可以设置特定的用户或角色可视的数据库内容。