

《数据库系统原理》实验报告 ()					
题目：实验三					
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实验环境: docker oceanbase					
实验步骤及结果截图:					
一、建立数据库 Major, 在 Major 数据库中创建表 Players					
<pre>obclient(root@sys)[(none)]> CREATE DATABASE Major; Query OK, 1 row affected (0.089 sec) obclient(root@sys)[(none)]> USE Major; Database changed obclient(root@sys)[Major]> CREATE TABLE Players -> (-> Sno VarChar(10), -> Sname VarChar(20) UNIQUE , -> Ssex VarChar(1), -> Sage SmallInt, -> Steam VarChar(20), -> PRIMARY KEY (Sno) ->); Query OK, 0 rows affected (0.239 sec)</pre>					
二、向 Players 表中插入两个元组					
<pre>obclient(root@sys)[Major]> INSERT INTO Players(Sno, Sname, Ssex, Sage, Steam) -> VALUES -> ('200215121', 'LuLu', 'M', 27, 'G2'), -> ('200215122', 'TiMo', 'M', 18, 'G2'); Query OK, 2 rows affected (0.031 sec) Records: 2 Duplicates: 0 Warnings: 0</pre>					
三、建立用户 Jay , 授予用户 Jay create table 的权限, 并赋予其再授 权的能力					
<pre>obclient(root@sys)[Major]> CREATE USER 'Jay'@'%' IDENTIFIED BY '2351753'; Query OK, 0 rows affected (0.058 sec) obclient(root@sys)[major]> GRANT CREATE ON major.* TO 'Jay'@'%' WITH GRANT OPTION; Query OK, 0 rows affected (0.042 sec)</pre>					
四、在 Jay 用户下尝试查询 Players (注意使用 Major.Players)					

```

sh-4.4# obclient -uJay@sys -h127.1 -p2351753
Welcome to the OceanBase. Commands end with ; or \g.
Your OceanBase connection id is 3221487628
Server version: OceanBase_CE 4.2.1.10 (r110000072024112010-28c1343085627e79a4f13c29121646bb889cf901) (Built Nov 20 2024 10:11:18)

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

obclient(Jay@sys)[(none)]> use major
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
obclient(Jay@sys)[major]> SELECT * FROM Major.Players;
ERROR 1142 (42000): SELECT command denied to user 'Jay'@'%' for table 'Players'
[172.17.0.2:2882] [2025-04-24 05:50:32.687640] [YB42AC110002-0006337F3D11FECD-0-0]

```

五、授予用户 Jay 对表 Players 的查询、插入、修改等对象特权，并赋予其再授 权的能力

```

sh-4.4# obclient -uroot@sys -h127.1 -P2881
Welcome to the OceanBase. Commands end with ; or \g.
Your OceanBase connection id is 3221487629
Server version: OceanBase_CE 4.2.1.10 (r110000072024112010-28c1343085627e79a4f13c29121646bb889cf901) (Built Nov 20 2024 10:11:18)

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

obclient(root@sys)[(none)]> use major
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
obclient(root@sys)[major]> use major
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
obclient(root@sys)[major]> GRANT SELECT, INSERT, UPDATE, DELETE ON Major.Players TO 'Jay' WITH GRANT OPTION;
Query OK, 0 rows affected (0.103 sec)

```

六、在 Jay 用户下查询 Players (注意使用 Major.Players)

```

sh-4.4# obclient -uJay@sys -h127.1 -p2351753
Welcome to the OceanBase. Commands end with ; or \g.
Your OceanBase connection id is 3221487630
Server version: OceanBase_CE 4.2.1.10 (r110000072024112010-28c1343085627e79a4f13c29121646bb889cf901) (Built Nov 20 2024 10:11:18)

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

obclient(Jay@sys)[(none)]> use major
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
obclient(Jay@sys)[major]> SELECT * FROM Major.Players;
+-----+-----+-----+-----+
| Sno   | Sname | Ssex | Sage | Steam |
+-----+-----+-----+-----+
| 200215121 | LuLu | M    | 27  | G2    |
| 200215122 | TiMo | M    | 18  | G2    |
+-----+-----+-----+-----+
2 rows in set (0.019 sec)

```

七、在 Jay 用户下再插入一个元组的数据('200215123','ZywOo','M',23,'Vit')，并在 Jay 用户下查询 (注意使用 Major.Players)

```
obclient(Jay@sys)[major]> INSERT INTO Major.Players(Sno, Sname, Ssex, Sage, Steam)
-> VALUES
->      ('200215123', 'ZywOo', 'M', 23, 'Vit');
Query OK, 1 row affected (0.021 sec)

obclient(Jay@sys)[major]> SELECT * FROM Major.Players;
+-----+-----+-----+-----+
| Sno   | Sname | Ssex | Sage  | Steam |
+-----+-----+-----+-----+
| 200215121 | LuLu  | M    | 27   | G2    |
| 200215122 | TiMo  | M    | 18   | G2    |
| 200215123 | ZywOo | M    | 23   | Vit   |
+-----+-----+-----+-----+
3 rows in set (0.001 sec)
```

八、删除 Jay 用户

```
sh-4.4# obclient -uroot@sys -h127.1 -P2881
Welcome to the OceanBase. Commands end with ; or \g.
Your OceanBase connection id is 3221487631
Server version: OceanBase_CE 4.2.1.10 (r11000072024112010-28c1343085627e79a4f13c29121646bb889cf901) (Built Nov 20 2024 10:11:18)

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

obclient(root@sys)[(none)]> DROP USER 'Jay'@'%';
Query OK, 0 rows affected (0.119 sec)

obclient(root@sys)[(none)]> SELECT user, host FROM mysql.user;
+-----+
| user | host |
+-----+
| root | %   |
+-----+
1 row in set (0.018 sec)
```

出现的问题：

1. 权限授予语句错误

```
obclient(root@sys)[Major]> grant CREATE TABLE on Major.* to 'Jay' with grant option;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your OceanBase version for the right syntax to use near 'TABLE on Major.* to 'Jay' with grant option' at line 1
[172.17.0.2:2882] [2025-04-24 05:14:10.172069] [YB42AC110002-0006337F3F51FEBC-0-0]
```

2. 建立用户后，查询时权限无效，Jay 在没有权限的情况下也能进行查询

3. 授予 Jay 用户查找、删除、修改权限错误

```
obclient(Jay@sys)[(none)]> GRANT SELECT, INSERT, UPDATE, DELETE ON Major.Players TO 'Jay' WITH GRANT OPTION;
ERROR 1142 (42000): DELETE command denied to user 'Jay'@'%' for table 'Players'
[172.17.0.2:2882] [2025-04-24 06:08:35.883691] [YB42AC110002-0006337F3F51FEE7-0-0]
```

解决方案：

1. **CREATE TABLE** 是一个系统权限，不能像表级权限那样 **GRANT** 给角色或用户。直接授予 **Create** 权限
2. 切换当前用户，使用 **SELECT CURRENT_USER();** 查询当前的用户状态

```
obclient(root@sys)[major]> SELECT CURRENT_USER();
+-----+
| CURRENT_USER() |
+-----+
| root@%        |
+-----+
1 row in set (0.003 sec)
```

说明此时不是 Jay 用户。使用 `obclient -uJay@sys -h127.1 -p2351753` 登录 Jay 用户

3. 对 Jay 进行权限授予的时候，需要登录到有对应授权权限能力的用户