

## 《数据库系统原理》实验报告（七）

题目：上机实验课（七）OceanBase

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实验环境：VMware 虚拟机 Cent OS 系统下的 OceanBase 环境

实验步骤及结果截图：

按照 mysql\_example 文件夹中的示例，自己编写 sql 语句完成如下步骤：

1. 创建一个 database，一个业务用户，设置密码并给予一定的权限

```
create database tjdb;
create user 'tjuser'@'localhost' identified by '123456';
grant all privileges on tjdb.* to tjuser identified by '123456';
grant select on oceanbase.* to tjuser;
create tablegroup tjdb_group partition by hash partitions 6;
show tablegroups;
show grants for tjdb;
```

```
OceanBase(root@oceanbase)>create database tjdb;
Query OK, 1 row affected (0.01 sec)
```

```
OceanBase(root@mysql)>create user 'tjuser'@'localhost' identified by '123456';
Query OK, 0 rows affected (0.02 sec)

OceanBase(root@mysql)>grant all privileges on tjdb.* to tjuser identified by '123456';
Query OK, 0 rows affected (0.04 sec)

OceanBase(root@mysql)>grant select on oceanbase.* to tjuser;
Query OK, 0 rows affected (0.00 sec)
```

```
OceanBase(root@mysql)>create tablegroup tjdb_group partition by hash partitions 6;
Query OK, 0 rows affected (0.04 sec)
```

```
OceanBase(root@mysql)>show tablegroups;
```

Tablegroup_name	Table_name	Database_name
oceanbase	ALL_ALL_TABLES	SYS
oceanbase	ALL_ARGUMENTS	SYS
oceanbase	ALL_COLL_TYPES	SYS
oceanbase	ALL_COL_COMMENTS	SYS

```

tjdb_group      | NULL                                | NULL
tj_group        | NULL                                | NULL
+-----+-----+-----+
+
748 rows in set (0.04 sec)

```

```

OceanBase(root@mysql)>show grants for tjdb;
+-----+-----+-----+
| Grants for tjdb@%                                |
+-----+-----+-----+
| GRANT USAGE ON *.* TO 'tjdb'                      |
| GRANT SELECT ON `oceanbase`.* TO 'tjdb'          |
+-----+-----+-----+
2 rows in set (0.01 sec)

```

## 2. 创建 1-2 个 table

```

create table studentsA (
  Sno varchar(9),
  Sname varchar(20),
  primary key(Sno)
);

create table coursesA (
  Cno varchar(9),
  Cname varchar(40),
  primary key(Cno)
);

```

```

OceanBase(root@oceanbase)>create table studentsA (
-> Sno varchar(9) ,
-> Sname varchar(20),
-> primary key ( Sno )
-> );
Query OK, 0 rows affected (0.09 sec)

```

```

OceanBase(root@oceanbase)>create table coursesA (
-> Cno varchar(9),
-> Cname varchar(40),
-> primary key (Cno)
-> );
Query OK, 0 rows affected (0.07 sec)

```

## 3. 每个 table 中初始化 1-2 条数据

```

insert into studentsA (Sno, Sname) VALUES ('200215121','LiYong');
insert into studentsA VALUES ('200215122','LiuChen');

insert into coursesA VALUES ('0001','Database');
insert into coursesA VALUES ('0002','Maths');

```

```
OceanBase(root@oceanbase)>insert into studentsA (Sno,Sname) VALUES ('200215121','LiYong');
Query OK, 1 row affected (0.00 sec)

OceanBase(root@oceanbase)>insert into coursesA VALUES ('0001','Database');
Query OK, 1 row affected (0.01 sec)

OceanBase(root@oceanbase)>insert into coursesA VALUES ('0002','Maths');
Query OK, 1 row affected (0.00 sec)

OceanBase(root@oceanbase)>insert into studentsA VALUES ('200215122','LiuChen');
Query OK, 1 row affected (0.01 sec)
```

```
select * from studentsA;
select * from coursesA;
```

```
OceanBase(root@oceanbase)>select * from studentsA;
+-----+-----+
| Sno      | Sname  |
+-----+-----+
| 200215121 | LiYong |
| 200215122 | LiuChen|
+-----+-----+
2 rows in set (0.00 sec)

OceanBase(root@oceanbase)>select * from coursesA;
+-----+-----+
| Cno  | Cname  |
+-----+-----+
| 0001 | Database|
| 0002 | Maths  |
+-----+-----+
2 rows in set (0.00 sec)
```

4. \*可以额外实现外键/约束等各种内容，不添加不扣分。
5. 以创建的业务用户身份进入数据库查看创建内容  
从外面进入，内部没有实现切换用户身份

```
./hap.py ob1.obmysql -u tpcc -p
use tpccdb;
```

```
[root@admin mini-ob-deploy]# ./hap.py ob1.obmysql -u tpcc -p
2020-11-25 07:07:35.490634 call.py:3 CALL: top make_local_etc_dir
2020-11-25 07:07:35.498203 call.py:3 CALL: top ob1.obmysql
2020-11-25 07:07:35.499885 call.py:3 CALL: top.ob1 sql
2020-11-25 07:07:35.501636 call.py:3 CALL: top.ob1 obs0.sql
Enter password:
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MySQL connection id is 3221494749
Server version: 5.7.25 OceanBase 2.2.50 (r1-1c6441e8fb858c80da395f934f67ed305425864e) (Built Mar  6 2020 18:41:01)

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

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

```
OceanBase(tpcc@oceanbase)>use tpccdb;
Database changed
OceanBase(tpcc@tpccdb)>
```

进入数据库查看创建内容

```
use tjdb;
show tables;
select * from studentsA;
select * from coursesA;
```

```
OceanBase(root@oceanbase)>use tjdb;
Database changed
```

```
OceanBase(root@tjdb)>show tables;
+-----+
| Tables_in_tjdb |
+-----+
| coursesA       |
| studentsA      |
+-----+
```

```
OceanBase(root@tjdb)>select * from studentsA;
+-----+-----+
| Sno      | Sname |
+-----+-----+
| 200215121 | LiYong |
| 200215122 | LiuChen |
+-----+-----+
2 rows in set (0.01 sec)
```

```
OceanBase(root@tjdb)>select * from coursesA;
+-----+-----+
| Cno      | Cname |
+-----+-----+
| 0001     | Database |
| 0002     | Maths   |
+-----+-----+
2 rows in set (0.00 sec)
```

#### 6. 删除 database、业务用户和所有表格数据

```
drop database tjdb;
purge recyclebin;
drop tablegroup tjdb_group;
drop user tj_user;
```

```
OceanBase(root@tjdb)>drop database tjdb;
Query OK, 2 rows affected (0.05 sec)

OceanBase(root@tjdb)>purge recyclebin;
Query OK, 0 rows affected (0.14 sec)

OceanBase(root@tjdb)>drop tablegroup tjdb_group;
Query OK, 0 rows affected (0.07 sec)

OceanBase(root@tjdb)>drop user tj_user;
Query OK, 0 rows affected (0.02 sec)
```

出现的问题:

没有找到在数据库内部切换业务用户的方法，导致只能在进入数据库前切换业务用户。

**解决方案:**

一开始不要用 `./hap.py obl.obmysql` 这个命令进入 `mysql`，而是用 `./hap.py obl.mysqlmode` 命令进入，如果要自己创建用户的话，用户名和密码只能是 `tpcc` 和 `123456`，数据库名字也只能是 `tpccdb`。

可能切换不了用户的原因是：按照实验要求进入 OceanBase 是进入的 `obl.obmysql`。而 `readme` 切换用户执行的脚本是 `obl.mysqlmode`，所以不行；如果进入数据库是用的 `obl.mysqlmode`，再执行 `readme` 里面的切换用户指令，就不会产生冲突。