

数据库实验十三

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实验任务

- 以下练习均在school数据库中students表上进行。
- (1)设置“未提交读”隔离级别（READ UNCOMMITTED），在students表上演示读“脏”数据。
 - (2)设置“提交读”隔离级别(READ COMMITTED)，在students表上演示避免读“脏”数据。
 - (3)设置“可重复读”隔离级别(REPEATABLE READ)，在students表上演示避免读“脏”数据、不可重复读，但不能避免幻象读。
 - (4)设置“可串行化”隔离级别(SERIALIZABLE)，在students表上演示防止其他用户在事务提交之前更新数据。

解决方案

```
(1)

-- 查询1
begin tran
    update STUDENTS set sname='kon' where sid='002'
    waitfor delay '00:00:10'
    select * from STUDENTS where sid='002'
rollback tran
    select * from STUDENTS where sid='002'

-- 查询2
set transaction isolation level read uncommitted
select * from STUDENTS where sid='002'
waitfor delay '00:00:10'
select *from STUDENTS where sid='002'
```

结果

消息

	sid	sname	email	grade
1	002	kon	NULL	NULL

	sid	sname	email	grade
1	002	zty	NULL	NULL

✓ 查询已成功执行。

(local) (10.0 RTM) | KON\zty (51) | School | 00:00:10 | 2 行

	sid	sname	email	grade
1	002	kon	NULL	NULL

	sid	sname	email	grade
1	002	zty	NULL	NULL

✓ 查询已成功执行。
(local) (10.0 RTM)
KON\zty (52)
School
00:00:10
2 行

(2)

```
-- 查询1
set transaction isolation level read committed
begin tran
    update STUDENTS set sname='kon' where sid='002'
    waitfor delay '00:00:10'
    select * from STUDENTS where sid='002'
rollback tran
    select * from STUDENTS where sid='002'

-- 查询2
set transaction isolation level read committed
select * from STUDENTS where sid='002'
waitfor delay '00:00:10'
select *from STUDENTS where sid='002'
```

	sid	sname	email	grade
1	002	kon	NULL	NULL

	sid	sname	email	grade
1	002	zty	NULL	NULL

✓ 查询已成功执行。
(local) (10.0 RTM)
KON\zty (51)
School
00:00:10
2 行

	sid	sname	email	grade
1	002	zty	NULL	NULL

	sid	sname	email	grade
1	002	zty	NULL	NULL

✓ 查询已成功执行。
(local) (10.0 RTM)
KON\zty (52)
School
00:00:18
2 行

(3)

```
-- 避免脏读
-- 查询1
set transaction isolation level repeatable read
begin tran
    update STUDENTS set sname='kon' where sid='002'
    waitfor delay '00:00:10'
    select * from STUDENTS where sid='002'
rollback tran
    select * from STUDENTS where sid='002'

-- 查询2
set transaction isolation level repeatable read
select * from STUDENTS where sid='002'
waitfor delay '00:00:10'
select * from STUDENTS where sid='002'
```

	sid	sname	email	grade
1	002	kon	NULL	NULL

	sid	sname	email	grade
1	002	zty	NULL	NULL

✓ 查询已成功执行。
(local) (10.0 RTM)
KON\zty (51)
School
00:00:10
2 行

	sid	sname	email	grade
1	002	zty	NULL	NULL

	sid	sname	email	grade
1	002	zty	NULL	NULL

✓ 查询已成功执行。 (local) (10.0 RTM) KON\zty (52) School 00:00:12 2 行

```
-- 避免不可重复读
-- 查询1
set transaction isolation level repeatable read
begin tran
select * from STUDENTS where sid='002'
waitfor delay '00:00:10'
select *from STUDENTS where sid='002'
rollback tran

-- 查询2
set transaction isolation level repeatable read
update STUDENTS set sname='kon' where sid='002'
```

	sid	sname	email	grade
1	002	zty	NULL	NULL

	sid	sname	email	grade
1	002	zty	NULL	NULL

✓ 查询已成功执行。 (local) (10.0 RTM) KON\zty (52) School 00:00:10 2 行

消息

(1 行受影响)

✓ 查询已成功执行。

(local) (10.0 RTM)

KON\zty (51)

School

00:00:07

0 行

```
-- 幻读
-- 查询1
set transaction isolation level repeatable read
begin tran
select * from STUDENTS where sid='002'
waitfor delay '00:00:10'
select *from STUDENTS where sid='002'
rollback tran

-- 查询2
set transaction isolation level repeatable read
delete STUDENTS where sid='002'
```

	sid	sname	email	grade
1	002	zty	NULL	NULL

	sid	sname	email	grade
1	002	zty	NULL	NULL

✓ 查询已成功执行。


(local) (10.0 RTM)

KON\zty (57)

School

00:00:10

2 行

 消息

(1 行受影响)

✓ 查询已成功执行。

(local) (10.0 RTM) | KON\zty (56) | School | 00:00:07 | 0 行

(4)

```
-- 查询1
set transaction isolation level serializable
begin tran
select * from STUDENTS where sid='003'
waitfor delay '00:00:10'
select *from STUDENTS where sid='003'
rollback tran

-- 查询2
set transaction isolation level serializable
insert into STUDENTS values('003','kon',null,null)
```

sid	sname	email	grade

sid	sname	email	grade

✓ 查询已成功执行。

(local) (10.0 RTM) | KON\zty (57) | School | 00:00:10 | 0 行

(1 行受影响)

✓ 查询已成功执行。

(local) (10.0 RTM)

KON\zty (56)

School

00:00:07

0 行