用户文档

查询模块

CREATE TABLE

- 功能演示

```
1  CREATE TABLE person (name String(256), ID Int not null, PRIMARY KEY(ID))
```

```
ThssDB>CREATE TABLE person (name String(256), ID Int not null, PRIMARY KEY(ID));
create table person successful
It costs 29 ms.
ThssDB>show table person;
table person
name(256)   STRING
id(128) INT PRIMARY KEY NOT NULL
```

DROP TABLE

- 功能演示

```
1  DROP TABLE person;
```

```
ThssDB>drop table person;
Drop table person.
It costs 5 ms.
ThssDB>show table person;
Exception: table "person" doesn't exist!
It costs 3 ms.
```

SHOW TABLE

- 功能演示：见CREATE TABLE

```
1  SHOW TABLE person;
```

INSERT

- 功能演示：

```
ThssDB>select ttt.id,ttt.name from ttt;
ttt.id, ttt.name
-------------------------------------------------------------
1, qqq
2, www
3, rrr
It costs 8 ms.
ThssDB>insert into ttt values(4,'eee')
insert successful
It costs 4 ms.
ThssDB>insert into ttt(id,name) values(5,'ttt')
insert successful
It costs 3 ms.
ThssDB>select ttt.id,ttt.name from ttt;
ttt.id, ttt.name
-------------------------------------------------------------
1, qqq
2, www
3, rrr
4, eee
5, ttt
It costs 3 ms.
```

DELETE

- 功能演示

```
ThssDB>select ttt.id,ttt.name from ttt;
ttt.id, ttt.name
----------------------------------------------------------------
1, qqq
2, www
3, rrr
4, eee
5, ttt
It costs 3 ms.
ThssDB>delete from ttt where id >=4
delete successfully
It costs 6 ms.
ThssDB>select ttt.id,ttt.name from ttt;
ttt.id, ttt.name
----------------------------------------------------------------
1, qqq
2, www
3, rrr
It costs 3 ms.
ThssDB>delete from ttt;
delete successfully
It costs 2 ms.
ThssDB>select ttt.id,ttt.name from ttt;
ttt.id, ttt.name
----------------------------------------------------------------
It costs 3 ms.
```

UPDATE

- 功能演示:

```
1  UPDATE  tableName  SET  attrName = attrValue  WHERE  attrName = attrValue
```

```
It costs 4 ms.
ThssDB>select student.name, instructor.name from student join instructor
student.name, instructor.name
------------------------------------------------------------
aaa, aa
aaa, bb
bbb, aa
bbb, bb
It costs 5 ms.
ThssDB>update student set name = 'hhh
Exception: illegal SQL statement! Error message: line 1:1 token recognition error at: ''hhh'
It costs 7 ms.
ThssDB>update student set name = 'hhh'
update successfully
It costs 6 ms.
ThssDB>select student.name, instructor.name from student join instructor
student.name, instructor.name
------------------------------------------------------------
hhh, aa
hhh, bb
hhh, aa
hhh, bb
It costs 3 ms.
ThssDB>
```

SELECT

- 功能演示:

```
1    SELECT tableName1.AttrName1, tableName1.AttrName2…, tableName2.AttrName1,
     tableName2.AttrName2,…  FROM  tableName1 [JOIN tableName2 [ON
     tableName1.attrName1 = tableName2.attrName2]] [ WHERE  attrName1 = attrValue
     ]
```

```
ThssDB>create table student(name string(25), ID int, primary key(ID));
create table student successful
It costs 6 ms.
ThssDB>create table instructor(name string(25), ID int, primary key(ID));
create table instructor successful
It costs 4 ms.
ThssDB>insert into student values('aaa', 1);
insert successful
It costs 12 ms.
ThssDB>insert into instructor values('aa', 1);
insert successful
It costs 4 ms.
ThssDB>insert into student values('bbb', 2);a
insert successful
It costs 5 ms.
ThssDB>insert into instructor values('bb', 2);
insert successful
It costs 4 ms.
ThssDB>select student.id, instructor.id from student join instructor
student.id, instructor.id
----------------------------------------------------------------
1, 1
1, 2
2, 1
2, 2
It costs 14 ms.
```

事务模块

READ COMMITTED

- 功能演示

```
1  create table bank(id int, name String(256) NOT NULL, balance int NOT
   NULL, PRIMARY KEY(id));
2  insert into bank values(1, 'Alice', 2000);
3  insert into bank values(2, 'Bob', 2000);
4  select bank.id, bank.name, bank.balance from bank;
```

```
ThssDB>select bank.id, bank.name, bank.balance from bank;
bank.id, bank.name, bank.balance
----------------------------------------------------------------
1, Alice, 2000
2, Bob, 2000
```

开两个客户端A, B:

客户端A:

```
1  begin transaction;
2  update bank set balance=1000 where name='Alice';
```

```
ThssDB>begin transaction;
start transaction
It costs 4 ms.
ThssDB(T)>update bank set balance=1000 where name='Alice';
update successfully
It costs 11 ms.
```

客户端B:

无法读取uncommitted data。

```
1 | select bank.id, bank.name, bank.balance from bank;
```

```
ThssDB>select bank.id, bank.name, bank.balance from bank;
Read uncommitted data!
It costs 513 ms.
```

客户端A commit

```
ThssDB(T)>commit;
commit transaction
It costs 3 ms.
```

客户端B 可以正确读取

```
Read uncommitted data!
It costs 513 ms.
ThssDB>select bank.id, bank.name, bank.balance from bank;
bank.id, bank.name, bank.balance
-----------------------------------------------------
1, Alice, 1000
2, Bob, 2000
It costs 7 ms.
ThssDB>
```

```
Read uncommitted data!
It costs 513 ms.
ThssDB>select bank.id, bank.name, bank.balance from bank;
bank.id, bank.name, bank.balance
-----------------------------------------------------
1, Alice, 1000
2, Bob, 2000
It costs 7 ms.
ThssDB>
```

read log

- 功能演示：

  假设数据库 `test` 的 `log` 文件如下：

  ```
  1    0@begin transaction
  2    0@insert into ttt values(4,'eee')
  3    0@update ttt set name='zzz' where id >=3
  4    0@commit
  5    1@begin transaction
  6    1@delete from ttt where id=1
  7    1@commit
  ```

  已写入磁盘的数据如下：

  ```
  Table ttt:  (id,INT,1,false,128)    (name,STRING,0,false,128)

  1, qqq
  2, www
  3, rrr
  ```

  启动后查询该表，发现 `log` 中记录的数据已恢复：

  ```
  ThssDB>select ttt.id,ttt.name from ttt
  ttt.id, ttt.name
  ------------------------------------------------------------
  2, www
  3, zzz
  4, zzz
  It costs 16 ms.
  ```