用户文档

程序运行

连接：connect，需要输入username和password。
断开连接：disconnect；

语句

- 创建数据库：

```
CREATE DATABASE name;
```

- 建表

```
CREATE TABLE tableName(attr1 type1, attr2 String(number), attr3 type3 NOT NULL, PRIMARY KEY(attr1));
```

类型有INT，LONG，FLOAT，DOUBLE，STRING，其中STRING需要指定长度，必须有PRIMARY KEY

- 使用数据库

```
USE databaseName;
```

- 插入

```
INSERT INTO tableName VALUES(value1, value2, value3);
INSERT INTO tableName(attr1, attr2) VALUES (value1, value2);
```

字符串需要用单引号包围。

- 选择

```
SELECT column1 FROM table1;
SELECT column1, column2 FROM table1, table2 WHERE attr1=value1;
SELECT table1.column1, table2.column2 FROM table1, table2 WHERE table1.attr1=table2.attr1;
```

- 删除

```
DELETE FROM table1;
DELETE FROM table1 WHERE attr1=value1;
```

- 修改

```
UPDATE tableName SET attr1=value1;
UPDATE tableName SET attr1=value1 WHERE attr2=value2;
```

- 展示表

```
SHOW TABLE tableName;
```

- 展示数据库

```
SHOW TABLES;
```

- 删除表

```
DROP TABLE tableName;
```

- 删除数据库

```
DROP DATABASE dabaseName;
```

事务

事务隔离级别为**read committed**，避免了脏读，但是不保证可重复读。
输入语句**begin transaction**开始事务，**commit**提交事务。database_name.log中会保存begin transaction、insert、delete、update、commit语句。
默认情况下，系统会把每条语句认为是一个事务，自动执行begin和commit。

```
ThssDB>begin transaction;
Begin transaction.
It costs 2 ms.
ThssDB>insert into tb values(1);
Insert OK.
It costs 1 ms.
ThssDB>insert into tb values(3);
Insert OK.
It costs 2 ms.
ThssDB>delete from tb where id = 1;
Delete 1 rows OK.
It costs 2 ms.
```

```
ThssDB>select * from tb;
[tb.id]
[2]
[3]
It costs 1 ms.
ThssDB>commit;
Commit transaction.
It costs 1 ms.
```

查看log文件：

```
insert into tb values(1)
insert into tb values(3)
delete from tb where id = 1
commit
```

WAL机制

重启数据库时，系统会自动读取log文件将log中的语句执行。并且，对于没有commit的事务，舍弃。最后对已经实现过的语句进行log重写。

```
Starting ThssDB Client
----------------------
ThssDB>connect;
Please input your username and password:
username:
password:
Successfully connect!
It costs 890 ms.
ThssDB>select * from tb;
[tb.id]
[2]
[3]
It costs 24 ms.
```