

词 法 分 析

需要解析的关键词有(不区分大小写):

DATABASE	DATABASES	TABLE	TABLES	SHOW	CREATE	DESC
DDROP	USE	PRIMARY	KEY	NOT	NULL	INDEX
INSERT	INTO	VALUES	DELETE	FROM	WHERE	AND
UPDATE	SET	SELECT	IS	INT	VARCHAR	

IDENTIFIER: [A-Za-z][_0-9A-Za-z]*

VALUE_INT: [0-9]+

VALUE_STRING: '[^']*'

语 法 分 析

文法规则:

<program> := %empty
 | <program><stmt>

<stmt> := <sysStmt>;'
 | <dbStmt>;'
 | <tbStmt>;'
 | <idxStmt>;'

<sysStmt> := SHOW DATABASES

<dbStmt> := CREATE DATABASE <dbName>
 | DROP DATABASE <dbName>
 | USE <dbName>
 | SHOW TABLES

<tbStmt> := CREATE TABLE <tbName> '('<fieldList>')'
 | DROP TABLE <tbName>
 | DESC <tbName>
 | INSERT INTO <tbName> VALUES <valueLists>
 | DELETE FROM <tbName> WHERE <whereClause>
 | UPDATE <tbName> SET <setClause> WHERE <whereClause>
 | SELECT <selector> FROM <tableList> WHERE <whereClause>

<idxStmt> := CREATE INDEX <tbName> '('<colName>')'
 | DROP INDEX <tbName> '('<colName>')'

<fieldList> := <field>
 | <fieldList>','<field>

<field> := <colName> <type>
| <colName> <type> NOT NULL
| PRIMARY KEY '('<colName>')'

<type> := INT (<VALUE_INT>)
| VARCHAR (<VALUE_INT>)

<valueLists> := '('<valueList>')'
| <valueLists>',' '('<valueList>')'

<valueList> := <value>
| <valueList>','<value>

<value> := VALUE_INT
| VALUE_STRING
| NULL

<whereClause> := <col><op><expr>
| <col> IS [NOT] NULL
| <whereClause> AND <whereClause>

<col> := [<tbName>'.']<colName>

<op> := '=' | '<' | '<=' | '>=' | '<' | '>'

<expr> := <value>
| <col>

<setClause> := <colName>='<value>
| <setClause>','<colName>='<value>

<selector> := * | <col>[,<col>]*

<tableList> := <tbName>
| <tableList>,<tbName>

<dbName> := IDENTIFIER

<tbName> := IDENTIFIER

<colName> := IDENTIFIER