`mydb` SQL Support

December 25, 2015

1 Keywords

DATABASE	DATABASES	TABLE	TABLES	SHOW	CREATE
DROP	USE	CHECK	PRIMARY	KEY	UNIQUE
NOT	NULL	AUTO_INCREMENT	INSERT	INTO	VALUES
DELETE	FROM	WHERE	UPDATE	SET	SELECT
GROUP	BY	IS	IN	BETWEEN	LIKE
AND	OR	SUM	AVG	MAX	MIN
INT	SMALLINT	BIGINT	FLOAT	REAL	DOUBLE
VARCHAR	STRING	CHAR	BOOLEAN	DATETIME	DESC
FOREIGN	REFERENCES				

These keywords are **NOT** case-sensitive.

2 Syntax

⟨*program*⟩ ::= ⟨*stmt*⟩ [⟨*stmt*⟩]*

⟨*ident*⟩ ::= `[A-Za-z_][A-Za-z0-9_]*`

⟨*integer*⟩ ::= `[0-9]+`

⟨*real*⟩ ::= `[0-9]+.[0-9]+`

⟨*string*⟩ ::= `'.*'`

⟨*value*⟩ ::= ⟨*integer*⟩ | ⟨*real*⟩ | ⟨*string*⟩ | `NULL`

⟨*stmt*⟩ ::= ⟨*sysStmt*⟩ `;`
| ⟨*dbStmt*⟩ `;`
| ⟨*tbStmt*⟩ `;`

⟨*sysStmt*⟩ ::= `SHOW DATABASES`

⟨*dbStmt*⟩ ::= `CREATE DATABASE` ⟨*dbName*⟩
| `DROP DATABASE` ⟨*dbName*⟩
| `USE` ⟨*dbName*⟩
| `SHOW TABLES`

⟨*tbStmt*⟩ ::= `CREATE TABLE` ⟨*tbName*⟩ `(` ⟨*field*⟩ [`,` ⟨*field*⟩]* `)`
| `DROP TABLE` ⟨*tbName*⟩
| `DESC` ⟨*tbName*⟩ | `SHOW TABLE` ⟨*tbName*⟩
| `INSERT INTO` ⟨*tbName*⟩ [`(` ⟨*colName*⟩ [`,` ⟨*colName*⟩]* `)`] `VALUES (` ⟨*values*⟩ `)` [`,` `(` ⟨*values*⟩ `)`]*
| `DELETE FROM` ⟨*tbName*⟩ `WHERE` ⟨*boolExpr*⟩
| `UPDATE` ⟨*tbName*⟩ `SET` ⟨*colName*⟩ `=` ⟨*expr*⟩ [`,` ⟨*colName*⟩ `=` ⟨*expr*⟩]* `WHERE` ⟨*boolExpr*⟩
| `SELECT` ⟨*selectors*⟩ `FROM` ⟨*tbName*⟩ [`,` ⟨*tbName*⟩]* [`WHERE` ⟨*boolExpr*⟩] [`GROUP BY` ⟨*colName*⟩]

⟨*tbName*⟩ ::= ⟨*ident*⟩

⟨*colName*⟩ ::= ⟨*ident*⟩

⟨*field*⟩ ::= ⟨*colName*⟩ ⟨*type*⟩ [⟨*attr*⟩]*
| `CHECK (` ⟨*boolExpr*⟩ `)`
| `PRIMARY KEY (` ⟨*colName*⟩ `)`
| `FOREIGN KEY (` ⟨*colName*⟩ `) REFERENCES` ⟨*tbName*⟩ `(` ⟨*colName*⟩ `) )`

⟨*type*⟩ ::= `INT` [`(` ⟨*integer*⟩ `)`]
| `SMALLINT`
| `BIGINT`
| `FLOAT` | `REAL`
| `DOUBLE`
| `VARCHAR (` ⟨*integer*⟩ `)`
| `STRING`
| `CHAR`
| `BOOLEAN`
| `DATETIME`

⟨*attr*⟩ ::= `NOT NULL` | `UNIQUE` | `AUTO_INCREMENT`

⟨*values*⟩ ::= ⟨*value*⟩ [`,` ⟨*value*⟩]*

⟨*boolExpr*⟩ ::= ⟨*col*⟩ ⟨*boolOp*⟩ ⟨*expr*⟩
| ⟨*col*⟩ `IS` [`NOT`] `NULL`
| ⟨*col*⟩ [`NOT`] `IN (` ⟨*value*⟩ [`,` ⟨*value*⟩]* `)`
| ⟨*col*⟩ [`NOT`] `BETWEEN` ⟨*value*⟩ `AND` ⟨*value*⟩
| ⟨*col*⟩ [`NOT`] `LIKE` ⟨*string*⟩
| `(` ⟨*boolExpr*⟩ `)`

| ⟨*boolExpr*⟩ `AND` ⟨*boolExpr*⟩
| ⟨*boolExpr*⟩ `OR` ⟨*boolExpr*⟩

⟨*col*⟩ ::= [⟨*tbName*⟩ `.`] ⟨*colName*⟩

⟨*boolOp*⟩ ::= '`=`' | '`<>`' | '`<=`' | '`>=`' | '`<`' | '`>`'

⟨*expr*⟩ ::= ⟨*value*⟩
| ⟨*col*⟩
| ⟨*expr*⟩ ⟨*op*⟩ ⟨*expr*⟩
| `(` ⟨*expr*⟩ `)`

⟨*op*⟩ ::= '`+`' | '`-`' | '`*`' | '`/`' | '`%`'

⟨*selectors*⟩ ::= `*` | ⟨*selector*⟩ [`,` ⟨*selector*⟩]*

⟨*selector*⟩ ::= ⟨*col*⟩
| ⟨*func*⟩ `(` ⟨*col*⟩ `)`

⟨*func*⟩ ::= `SUM` | `AVG` | `MAX` | `MIN`

3 Priority

From lowest to highest:

left	`or`
left	`and`
left	`+ -`
left	`* / mod`