

MySQL

<http://cybertec.cheu.ac.kr>

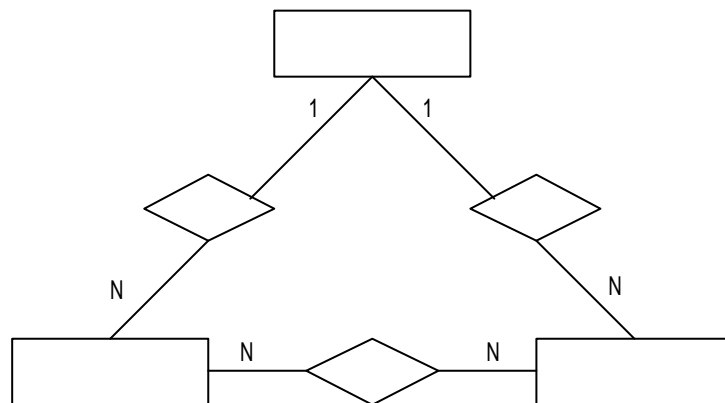
MySQL

MySQL PHP

MySQL

-
- MySQL
-
-
-

1.



1. - -

(entity) (prof), (student), (class)
 (relation) (lecture), (advise), (register)

1:1 , 1:N , N:N

1) (prof)

P001			0001
P002			0002
P003			0003
P004			0004
P005			0005
P006			0006

2) (student)

S001			123-4567
S002			234-5678
S003			345-6789
S004			456-7890
S005			567-8901
S006			678-9012

3) (course)

C001	TCP/IP	3	R001
C002	HTML	3	R002
C003	PHP	3	R003
C004	LINUX	2	R004
C005	MySQL	2	R005
C006	Java	2	R006

4) (lecture)

P001	C001
P001	C002
P001	C003
P002	C004

P002	C005
P002	C006

5) (advise)

P001	S001
P001	S002
P003	S003
P003	S004
P007	S005
P007	S006

6) (register)

S001	C001
S001	C002
S001	C003
S002	C001
S002	C002
S002	C003

MySQL SQL .

2. (CREATE DATABASE ..)

MySQL

MySQL root

root

가

```
/usr/local/mysql/bin$ mysql -u root mysql
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 5 to server version: 3.23.21-beta-debug
Type 'help' for help.
```

```
mysql> show databases;
```

```
+-----+
```

```
| Database |
```

```
+-----+
```

```
| mysql    |
```

```
| test     |
```

```
+-----+
```

```
2 rows in set (0.00 sec)
```

```
mysql> create database education;
```

```
Query OK, 1 row affected (0.00 sec)
```

```
mysql> show databases;
```

```
+-----+
```

```
| Database |
```

```
+-----+
```

```
| education |
```

```
| mysql     |
```

```
| test      |
```

```
+-----+
```

```
3 rows in set (0.00 sec)
```

```
mysql>
```

‘CREATE DATABASE

‘education’ . DB 가
 ‘CREATE DATABASE
 ‘SHOW DATABASES;’ MySQL DB

DB	SQL
mysql> CREATE DATABASE db_name	

DB SQL ,
 mysqladmin .

Linux	UNIX
/usr/local/mysql/bin\$ mysqladmin create db_name	
Windows	MySQL MS-DOS
C:\mysql\bin> mysqladmin create db_name	

DB SQL ‘DROP DATABASE db_name’

가 .

3. (CREATE TABLE ..)

, , , ,

()
 (INTEGER, FLOAT, DOUBLE,

DECIMAL), (DATE, TIME, TIMESTAMP),
 (CHAR, VARCHAR, BLOB, TEXT, ENUM, SET)
 MySQL

(CHAR) (INTEGER)

1) (prof)

()		
PCODE	CHAR(4)	
PNAME	CHAR(10)	
PDEPT	CHAR(12)	
PPHONE	CHAR(4)	

MySQL 가 'CREATE TABLE' SQL ,
SQL 가 , MySQL mysql
.
.
가 ,

◆ SQL

```

/*          (          : PROF.SQL) */
CREATE TABLE PROF (
    PCODE          CHAR(4) NOT NULL PRIMARY KEY,
    PNAME          CHAR(10),
    PDEPT          CHAR(12),
    PPHONE         CHAR(4)
);

```

‘PROF.SQL.’

SQL (comment) “/* ... */”
 . 2 CREATE TABLE ‘PROF’
 , ‘()’;

PCODE	4 byte	NULL	
(primary key)	PNAME	10 byte	, PDEPT 12
byte	, PPHONE	4 byte	

‘PROF.SQL’

mysql

‘USE’ SQL

‘education’

DB

‘SHOW

TABLES;’

, ‘SOURCE’

SQL

, ‘PROF.SQL’

‘SOURCE’

SQL

‘CREATE TABLE’

‘SHOW TABLES;’

가

‘DESCRIBE

‘SHOW COLUMNS

FROM

(PROF)

```
/usr/local/mysql/bin$ mysql -u root mysql
```

Welcome to the MySQL monitor. Commands end with ; or \g.

Your MySQL connection id is 5 to server version: 3.23.21-beta-debug

Type 'help' for help.

```
mysql> show databases;
```

```
+-----+
```

```
| Database |
```

```
+-----+
```

```
| education |
```

```

| mysql      |
| test       |
+-----+
3 rows in set (0.00 sec)

mysql> use education;
Database changed

mysql> show tables;
Empty set (0.00 sec)

mysql> source prof.sql;
Query OK, 0 rows affected (0.00 sec)

mysql> show tables;
+-----+
| Tables_in_education |
+-----+
| prof                 |
+-----+
1 row in set (0.00 sec)
mysql>

```

```

mysql> describe prof;
+-----+-----+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra | Privileges |
+-----+-----+-----+-----+-----+-----+-----+
| PCODE | char(4) |      | PRI |          |       | select,insert,update,references |
| PNAME | char(10)| YES  |     | NULL    |       | select,insert,update,references |
| PDEPT | char(12)| YES  |     | NULL    |       | select,insert,update,references |
| PPHONE | char(4) | YES  |     | NULL    |       | select,insert,update,references |
+-----+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql>

```

◆ SQL

mysql
SQL

, 'CREATE TABLE' SQL

```
mysql> use education;
Database changed
mysql> drop table prof;
Query OK, 0 rows affected (0.16 sec)

mysql> show tables;
Empty set (0.06 sec)

mysql> create table prof (
    -> pcode      char(4) not null primary key,
    -> pname      char(10),
    -> pdept      char(12),
    -> pphone     char(4)
    -> );
Query OK, 0 rows affected (0.17 sec)

mysql> show tables;
+-----+
| Tables_in_education |
+-----+
| prof                 |
+-----+
1 row in set (0.00 sec)

mysql>
```



가

가

가

.

가

,

,

,

,

,

,

,

가

.

, **ALTER TABLE**

.

,

(PROF) 50 byte

가

‘ALTER TABLE prof ADD address CHAR(50);’

,

PROF

ADVISOR

‘ALTER TABLE prof RENAME

advisor;’

.

,

(PPHONE)

15

byte

‘ALTER TABLE prof CHANGE pphone CHAR(15);’

.

‘ALTER TABLE prof DROP

pphone;’

.

, **DROP TABLE** prof;’

. ‘DROP

TABLE’

.

,

.

.

2) _____ (student)

()		
SCODE	CHAR(4)	,
SNAME	CHAR(10)	
SDEPT	CHAR(12)	
SPHONE	CHAR(8)	

SQL

```
/*          (          : STUDENT.SQL) */
CREATE TABLE STUDENT (
    SCODE      CHAR(4) NOT NULL PRIMARY KEY,
    SNAME      CHAR(10),
    SDEPT      CHAR(12),
    SPHONE     CHAR(8)
);
```

STUDENT.SQL

```
mysql> use education;
Database changed
mysql> source student.sql
Query OK, 0 rows affected (0.61 sec)

mysql> show tables;
+-----+
| Tables_in_education |
+-----+
| prof                 |
| student              |
+-----+
2 rows in set (0.00 sec)
mysql>
```

3) _____ (course)

()		
CCODE	CHAR(4)	,
CNAME	CHAR(10)	
CTIME	INTEGER	
CROOM	CHAR(4)	

SQL

```
/*          ( :COURSE.SQL) */
CREATE TABLE COURSE (
    CCODE      CHAR(4) NOT NULL PRIMARY KEY,
    CNAME      CHAR(10),
    CTIME      INTEGER,
    CROOM      CHAR(8)
);
```

COURSE.SQL

```
mysql> use education;
Database changed
mysql> source course.sql;
Query OK, 0 rows affected (0.16 sec)
mysql> show tables;
+-----+
| Tables_in_education |
+-----+
| course               |
| prof                 |
| student              |
+-----+
3 rows in set (0.00 sec)
mysql>
```

4) _____ (lecture)

()		
LPCODE	CHAR(4)	,
LCCODE	CHAR(4)	,

SQL (

,) 'PRIMARY KEY (key_col, ..)'

```
/* ( :LECTURE.SQL) */  
CREATE TABLE LECTURE (  
    LPCODE CHAR(4) NOT NULL,  
    LCCODE CHAR(4) NOT NULL,  
    PRIMARY KEY (LPCODE, LCCODE)  
);
```

LECTURE.SQL

```
mysql> use education;  
Database changed  
mysql> source lecture.sql;  
Query OK, 0 rows affected (0.28 sec)  
mysql> show tables;  
+-----+  
| Tables_in_education |  
+-----+  
| course               |  
| lecture              |  
| prof                 |  
| student              |  
+-----+  
4 rows in set (0.00 sec)
```

5) _____ (advise)

()		
APCODE	CHAR(4)	,
ASCODE	CHAR(4)	,

SQL (,)

```
/* ( :ADVISE.SQL) */
CREATE TABLE ADVISE (
    APCODE      CHAR(4) NOT NULL,
    ASCODE      CHAR(4) NOT NULL,
    PRIMARY KEY (APCODE, ASCODE)
);
```

ADVISE.SQL

```
mysql> use education;
Database changed
mysql> source advise.sql;
Query OK, 0 rows affected (0.00 sec)
mysql> show tables;
+-----+
| Tables_in_education |
+-----+
| advise               |
| course               |
| lecture              |
| prof                 |
| student              |
+-----+
5 rows in set (0.00 sec)
```


6) _____ (register)

()		
RSCODE	CHAR(4)	,
RCCODE	CHAR(4)	,

SQL (,)

```
/* ( :REGISTER.SQL) */
CREATE TABLE REGISTER (
    RSCODE      CHAR(4) NOT NULL,
    RCCODE      CHAR(4) NOT NULL,
    PRIMARY KEY (RSCODE, RCCODE)
);
```

REGISTER.SQL

```
mysql> use education;
Database changed
mysql> source register.sql;
Query OK, 0 rows affected (0.06 sec)
mysql> show tables;
+-----+
| Tables_in_education |
+-----+
| advise               |
| course               |
| lecture              |
| prof                 |
| register              |
| student              |
+-----+
6 rows in set (0.00 sec)
```

4. (INSERT INTO ..)

CREATE TABLE
INSERT

INSERT

```
INSERT INTO tbl_name  
[(col_name, ..)]  
VALUES (value, ..);
```

```
mysql> insert into prof (pcode,pname,pdept,pphone)  
-> values ('P001',' ',' ','0001');
```

Query OK, 1 row affected (0.27 sec)

```
mysql> select * from prof;
```

```
+-----+-----+-----+-----+  
| pcode | pname | pdept | pphone |  
+-----+-----+-----+-----+  
| P001  |      |      | 0001   |  
+-----+-----+-----+-----+
```

1 row in set (0.11 sec)

```
mysql>
```

SELECT

SELECT

가

SQL

insert

가

```
/*                : profdata.sql */
insert into prof (pcode,pname,pdept,pphone)
values ('P001','      ','      ','0001');
insert into prof (pcode,pname,pdept,pphone)
values ('P002','      ','      ','0002');
insert into prof (pcode,pname,pdept,pphone)
values ('P003','      ','      ','0003');
insert into prof (pcode,pname,pdept,pphone)
values ('P004','      ','      ','0004');
insert into prof (pcode,pname,pdept,pphone)
values ('P005','      ','      ','0005');
insert into prof (pcode,pname,pdept,pphone)
values ('P006','      ','      ','0006');
```

```
mysql> source profdata.sql
ERROR 1062: Duplicate entry 'P001' for key 1
Query OK, 1 row affected (0.06 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 1 row affected (0.00 sec)

Query OK, 1 row affected (0.00 sec)

mysql>
```

가

(pcode) 가
 . , 5 .

```
mysql> select * from prof;
```

pcode	pname	pdept	pphone
P001			0001
P002			0002
P003			0003
P004			0004
P005			0005
P006			0006

6 rows in set (0.06 sec)

가
 SQL .

5. (LOAD DATA INFILE)

, 가
 insert
 ? MySQL 'LOAD DATA INFILE'

1)

, student.txt . ' , '()
 가

‘,’

: student.txt

```
S001,      ,      ,123-4567
S002,      ,      ,234-5678
S003,      ,      ,345-6789
S004,      ,      ,456-7890
S005,      ,      ,567-8901
S006,      ,      ,678-9012
```

SQL

```
/*          : loadstudent.sql */
use education;
load data local infile "student.txt" into table student
fields terminated by ',';
```

(load)

```
mysql> source loadstudent.sql;
Query OK, 0 rows affected (0.00 sec)

Query OK, 6 rows affected (0.00 sec)
      : 6      : 0      : 0      : 0

mysql> select * from student;
+-----+-----+-----+-----+
| SCODE | SNAME | SDEPT | SPHONE |
+-----+-----+-----+-----+
| S001  |      |      | 123-4567 |
| S002  |      |      | 234-5678 |
| S003  |      |      | 345-6789 |
| S004  |      |      | 456-7890 |
| S005  |      |      | 567-8901 |
| S006  |      |      | 678-9012 |
+-----+-----+-----+-----+
6 rows in set (0.00 sec)
```

2)

'\t' ()

: course.txt

C001	TCP/IP	3	R001
C002	HTML	3	R002
C003	PHP	3	R003
C004	LINUX	2	R004
C005	MySQL	2	R005
C006	Java	2	R006

SQL

가 '\t'

```
/* : loadcourse.sql */
use education;
load data local infile "course.txt" into table course
fields terminated by '\t';
```

```
mysql> source loadcourse.sql
Query OK, 0 rows affected (0.00 sec)
Query OK, 6 rows affected (0.06 sec)
      : 6      : 0      : 0      : 6
mysql> select * from course;
+-----+-----+-----+-----+
| CCODE | CNAME | CTIME | CROOM |
+-----+-----+-----+-----+
| C001  | TCP/IP | 3     | R001  |
| C002  | HTML  | 3     | R002  |
| C003  | PHP   | 3     | R003  |
| C004  | LINUX | 2     | R004  |
| C005  | MySQL | 2     | R005  |
| C006  | Java  | 2     | R006  |
+-----+-----+-----+-----+
6 rows in set (0.06 sec)
```

3)

: lecture.txt

```
P001 C001
P001 C002
P001 C003
P002 C004
P002 C005
P002 C006
```

```
/* : loadlecture.sql */
use education;
load data local infile "lecture.txt" into table lecture
fields terminated by '\t';
```

```
mysql> source loadlecture.sql;
Query OK, 0 rows affected (0.00 sec)
Query OK, 6 rows affected (0.00 sec)
      : 6      : 0      : 0      : 6
mysql> select * from lecture;
+-----+-----+
| LPCODE | LCCODE |
+-----+-----+
| P001   | C001   |
| P001   | C002   |
| P001   | C003   |
| P002   | C004   |
| P002   | C005   |
| P002   | C006   |
+-----+-----+
6 rows in set (0.05 sec)
```

4)

: advise.txt

P001	S001
P001	S002
P003	S003
P003	S004
P007	S005
P007	S006

```
/* : loadadvise.sql */
use education;
load data local infile "advise.txt" into table advise
fields terminated by '\t';
```

```
mysql> source loadadvise.sql;
Query OK, 0 rows affected (0.00 sec)

Query OK, 6 rows affected (0.06 sec)
      : 6      : 0      : 0      : 5
```

```
mysql> select * from advise;
```

```
+-----+-----+
```

```
| APCODE | ASCODE |
```

```
+-----+-----+
```

```
| P001   | S001   |
```

```
| P001   | S002   |
```

```
| P003   | S003   |
```

```
| P003   | S004   |
```

```
| P007   | S005   |
```

```
| P007   | S006   |
```

```
+-----+-----+
```

```
6 rows in set (0.00 sec)
```


5)

: register.txt

```
S001 C001
S001 C002
S001 C003
S002 C001
S002 C002
S002 C003
```

```
/* : loadregister.sql */
use education;
load data local infile "register.txt" into table register
fields terminated by '\t';
```

```
mysql> source loadregister.sql;
Query OK, 0 rows affected (0.00 sec)

Query OK, 6 rows affected (0.00 sec)
      : 6      : 0      : 0      : 6
```

```
mysql> select * from register;
```

```
+-----+-----+
| RSCODE | RCCODE |
+-----+-----+
| S001   | C001   |
| S001   | C002   |
| S001   | C003   |
| S002   | C001   |
| S002   | C002   |
| S002   | C003   |
+-----+-----+
```

```
6 rows in set (0.00 sec)
```

6. (SELECT ..FROM ..WHERE ..)

SELECT . SELECT

```
SELECT [DISTINCT] select_expression
      FROM table_list
      WHERE where_definition
      ORDER BY col_name [ASC|DESC]
      GROUP BY col_name_list
      LIMIT [offset],rows
```

SELECT 가

- 1) SQL

```
mysql> select * from prof;
```

```
+-----+-----+-----+-----+
| PCODE | PNAME | PDEPT | PPHONE |
+-----+-----+-----+-----+
| P001  |      |      | 0001   |
| P002  |      |      | 0002   |
| P003  |      |      | 0003   |
| P004  |      |      | 0004   |
| P005  |      |      | 0005   |
| P006  |      |      | 0006   |
+-----+-----+-----+-----+
6 rows in set (0.39 sec)
```

- 2)

```
mysql> select * from prof order by pname;
```

PCODE	PNAME	PDEPT	PPHONE
P001			0001
P004			0004
P005			0005
P002			0002
P003			0003
P006			0006

6 rows in set (0.06 sec)

- 3)

```
mysql> select * from prof order by pdept, pname;
```

PCODE	PNAME	PDEPT	PPHONE
P004			0004
P003			0003
P005			0005
P006			0006
P001			0001
P002			0002

6 rows in set (0.05 sec)

- 4)

```
mysql> select * from prof where pdept = ' ';
```

PCODE	PNAME	PDEPT	PPHONE
P003			0003
P004			0004

2 rows in set (0.38 sec)

- 5)

```
mysql> select * from prof order by pname desc;
```

PCODE	PNAME	PDEPT	PPHONE
P006			0006
P003			0003
P002			0002
P005			0005
P004			0004
P001			0001

6 rows in set (0.00 sec)

- 6) MySQL

SQL

: ex-6.sql

```
select p.pname, p.pphone, c.croom
from   prof as p , course as c, lecture as l
where  c.cname = 'MySQL' and c.ccode = l.lccode
       and l.lpcode = p.pcode;
```

```

“FROM      AS      ”      SQL
      .      p      ,      c      ,      l
      c.cname      가      ,
l.lccode      가      .

```

```

mysql> source ex-6.sql;
+-----+-----+-----+
| pname | pphone | croom |
+-----+-----+-----+
|      | 0002   | R005   |
+-----+-----+-----+
1 row in set (0.11 sec)

```

-7) ' ' ,

SQL ,

: ex-7.sql

```

select c.cname, c.ctime, c.croom
from   prof as p , course as c, lecture as l
where  p.pname = '      ' and p.pcode = l.lpcode
       and l.lccode = c.ccode;

```

```

mysql> source ex-7.sql;
+-----+-----+-----+
| cname | ctime | croom |
+-----+-----+-----+
| TCP/IP | 3     | R001   |
| HTML  | 3     | R002   |
| PHP   | 3     | R003   |
+-----+-----+-----+
3 rows in set (0.05 sec)

```

-8)

SQL

: ex-8.sql

```
select s.sname, s.sphone, c.cname, c.ctime, c.croom
from student as s , course as c, register as r
where s.scode = r.rscore and r.rccode = c.ccode
order by s.sname, c.cname;
```

mysql> source ex-8.sql;

sname	sphone	cname	ctime	croom
	123-4567	HTML	3	R002
	123-4567	PHP	3	R003
	123-4567	TCP/IP	3	R001
	234-5678	HTML	3	R002
	234-5678	PHP	3	R003
	234-5678	TCP/IP	3	R001

6 rows in set (0.00 sec)

-9)

(-8)

9

9

SQL

: ex-9.sql

```
select s.sname, s.sdept, s.sphone, sum(c.ctime)
from student as s , course as c, register as r
where s.scode = r.rscore and r.rccode = c.ccode
group by s.sname;
```

WHERE

GROUP BY

```
s.sname
SUM(c.ctime)          c.ctime
, SELECT
```

```
mysql> source ex-9.sql;
```

```
+-----+-----+-----+-----+
| sname | sdept | sphone | sum(c.ctime) |
+-----+-----+-----+-----+
|      |      | 123-4567 | 9 |
|      |      | 234-5678 | 9 |
+-----+-----+-----+-----+
2 rows in set (0.11 sec)
```

```
-10)
```

```
: ex-10.sql
```

```
select pdept, count(*)
from prof
group by pdept;
```

```
SQL          count(*)          GROUP BY          pdept
```

```
mysql> source ex-10.sql;
```

```
+-----+-----+
| pdept | count(*) |
+-----+-----+
|      | 2 |
|      | 2 |
|      | 2 |
+-----+-----+
3 rows in set (0.00 sec)
```

◆ LIMIT 100

가 ,
LIMIT .

-11) 가 2 , (-8)
SQL .

(-8) SQL LIMIT 2,2
.

: ex-11.sql

```
select s.sname, s.sphone, c.cname, c.ctime, c.croom
from student as s , course as c, register as r
where s.scode = r.rscode and r.rccode = c.ccode
order by s.sname, c.cname
limit 2, 2;
```

limit 2, 2 , (offset)
0
2 가 .
(rows) , 2 2
가 .

SQL .

mysql> source ex-11.sql;

```
+-----+-----+-----+-----+-----+
| sname | sphone | cname | ctime | croom |
+-----+-----+-----+-----+-----+
|      | 123-4567 | TCP/IP | 3 | R001 |
|      | 234-5678 | HTML | 3 | R002 |
+-----+-----+-----+-----+-----+
2 rows in set (0.05 sec)
```


, 가 1000 , 가 15 , 20
 , limit
 .
 = (1) *
 =
 , = (20 1) * 15 = 285, = 15
 LIMIT 285, 15 SELECT .

7. (UPDATE ..SET ..WHERE ..)

UPDATE

```
UPDATE      tbl_name
      SET    col_name1 = expr1, col_name2 = expr2, ...
      [WHERE      where_definition] [LIMIT rows];
```

UPDATE

가

- 12)

```
mysql> select * from prof;
```

PCODE	PNAME	PDEPT	PPHONE
P001			0001
P002			0002
P003			0003
P004			0004
P005			0005
P006			0006

6 rows in set (0.17 sec)

update

```
mysql> update prof set pname = ' ' where pname = ' ';
```

Query OK, 1 row affected (0.44 sec)

Rows : 1 : 1 : 0

```
mysql> select * from prof;
```

PCODE	PNAME	PDEPT	PPHONE
P001			0001
P002			0002
P003			0003
P004			0004
P005			0005
P006			0006

6 rows in set (0.05 sec)

-13)

가 'P007'

'P005'

```
mysql> select * from advise;
```

APCODE	ASCODE
P001	S001
P001	S002
P003	S003
P003	S004
P007	S005
P007	S006

6 rows in set (0.11 sec)

SQL

```
mysql> update advise set apcode = 'P005' where apcode = 'P007';
```

Query OK, 2 rows affected (0.11 sec)

Rows : 2 : 2 : 0

```
mysql> select * from advise;
```

APCODE	ASCODE
P001	S001
P001	S002
P003	S003
P003	S004
P005	S005
P005	S006

6 rows in set (0.00 sec)

-14) 가 2
Lab1 .

가 ,

가 2

```
mysql> select * from course;
```

CCODE	CNAME	CTIME	CROOM
C001	TCP/IP	3	R001
C002	HTML	3	R002
C003	PHP	3	R003
C004	LINUX	2	R004
C005	MySQL	2	R005
C006	Java	2	R006

6 rows in set (0.22 sec)

```

UPDATE
"ctime = ctime + 1"
ctime
SET
1

```

```
mysql> update course set ctime = ctime + 1, croom = 'Lab1' where ctime = 2;
```

Query OK, 3 rows affected (0.33 sec)

Rows : 3 : 3 : 0

3

```
mysql> select * from course;
```

CCODE	CNAME	CTIME	CROOM
C001	TCP/IP	3	R001
C002	HTML	3	R002
C003	PHP	3	R003
C004	LINUX	3	Lab1
C005	MySQL	3	Lab1
C006	Java	3	Lab1

6 rows in set (0.00 sec)

8. (DELETE FROM ..WHERE ..)

DELETE

. DELETE

```
DELETE FROM tbl_name
[WHERE where_definition] [LIMIT rows]
```

: DELETE

WHERE

가

- 15)

가 2

```
mysql> select * from student;
```

SCODE	SNAME	SDEPT	SPHONE
S001			123-4567
S002			234-5678
S003			345-6789
S004			456-7890
S005			567-8901
S006			678-9012

6 rows in set (0.61 sec)

SQL

```
mysql> delete from student where sdept = ' ';
```

Query OK, 2 rows affected (0.05 sec)

```
mysql> select * from student;
```

SCODE	SNAME	SDEPT	SPHONE
S001			123-4567
S002			234-5678
S005			567-8901
S006			678-9012

```
4 rows in set (0.00 sec)
```

1. `mysql`
`/usr/local/mysql/bin$ mysql [-u username] [-p] [open_db_name]`
2.
`mysql> exit;`
3.
`mysql> create database db_name;`
4.
`mysql> use db_name;`
5.
`mysql> create table tbl_name (field_definition, ...);`
6.
`mysql> insert into tbl_name (column_list) values (value_list);`
`mysql> select * from tbl_name;`
`mysql> update tbl_name set col1 = value1, ...;`
`mysql> delete from tbl_name where condition;`
7.
`mysql> load data local infile file_name into table tbl_name;`
8.
`mysql> alter table tbl_name [add|change|drop|rename] ...;`
9. `SQL`
`mysql> source sql_file;`
10.
`mysql> drop table tbl_name;`

11. /

```
mysql> show databases;
```

```
mysql> show tables;
```

12.

```
mysql> describe tbl_name;
```

13.

```
mysql> drop database db_name;
```