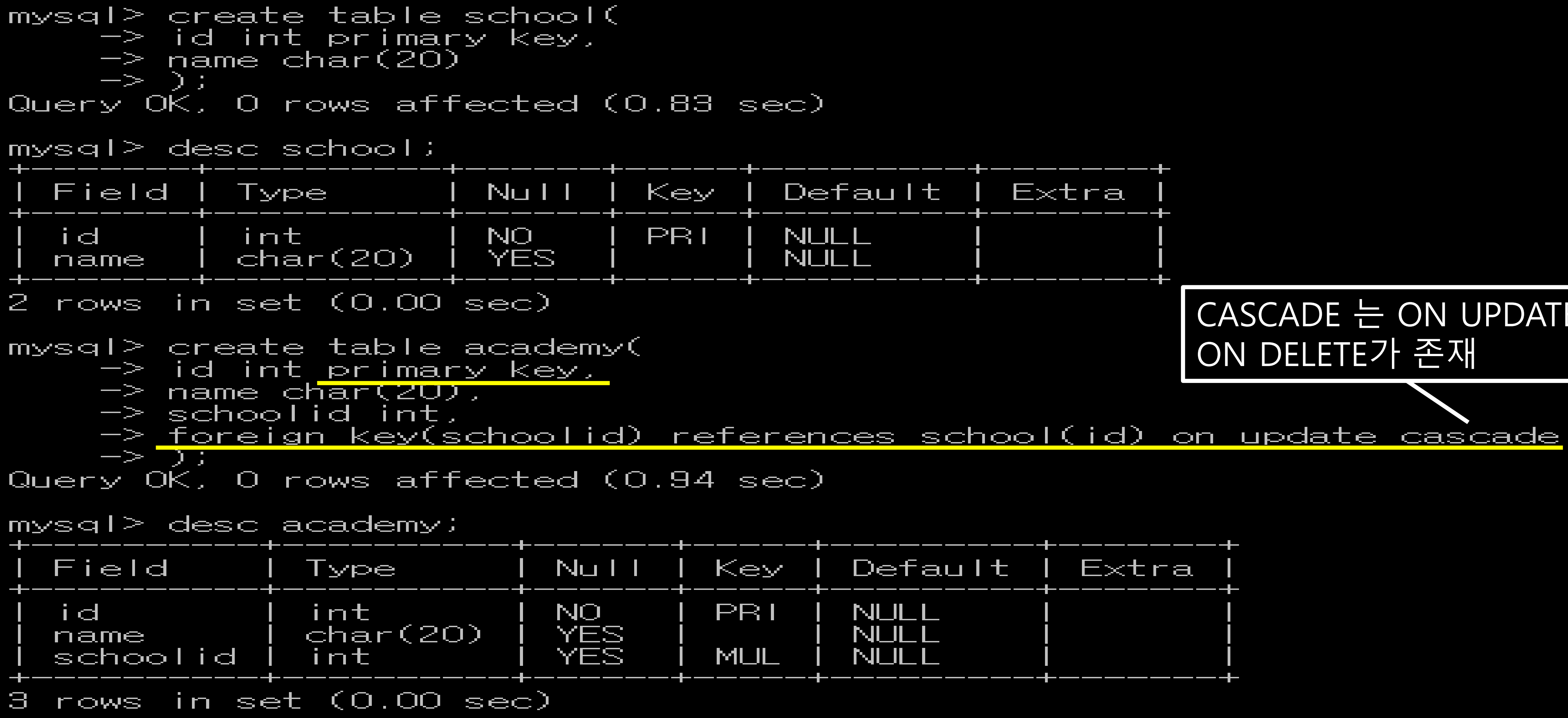
20200509 DB과제
기초 7

B반 신석환

#PRIMARY KEY 그리고 FOREIGN KEY

PRIMARY KEY : 다른 항목과 절대로 중복되어 나타날 수 없는 단일 값을 가지는 것

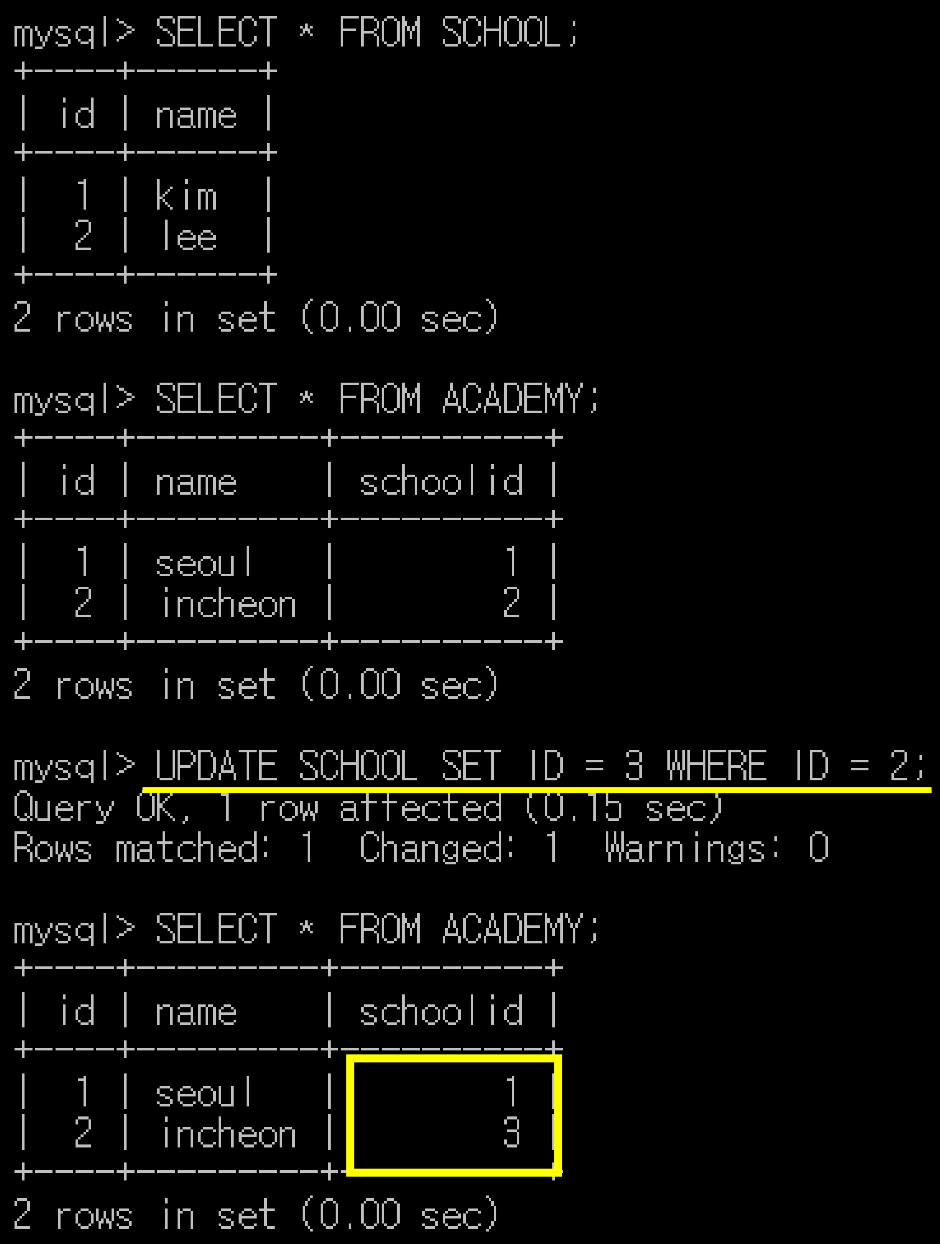
FOREIGN KEY : 테이블 내의 열 중 다른 테이블의 PRIMARY KEY를 참조하는 열을 만드는 명령어



```
mysql> create table school(
    -> id int primary key,
    -> name char(20)
    -> );
Query OK, 0 rows affected (0.83 sec)

mysql> desc school;
+-------+----------+------+-----+---------+-------+
| Field | Type     | Null | Key | Default | Extra |
+-------+----------+------+-----+---------+-------+
| id    | int      | NO   | PRI | NULL    |       |
| name  | char(20) | YES  |     | NULL    |       |
+-------+----------+------+-----+---------+-------+
2 rows in set (0.00 sec)

mysql> create table academy(
    -> id int primary key,
    -> name char(20),
    -> schoolid int,
    -> foreign key(schoolid) references school(id) on update cascade
    -> );
Query OK, 0 rows affected (0.94 sec)

mysql> desc academy;
+----------+----------+------+-----+---------+-------+
| Field    | Type     | Null | Key | Default | Extra |
+----------+----------+------+-----+---------+-------+
| id       | int      | NO   | PRI | NULL    |       |
| name     | char(20) | YES  |     | NULL    |       |
| schoolid | int      | YES  | MUL | NULL    |       |
+----------+----------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```

CASCADE 는 ON UPDATE,
ON DELETE가 존재

#UPDATE TN SET 바꿀 값 WHERE 조건;



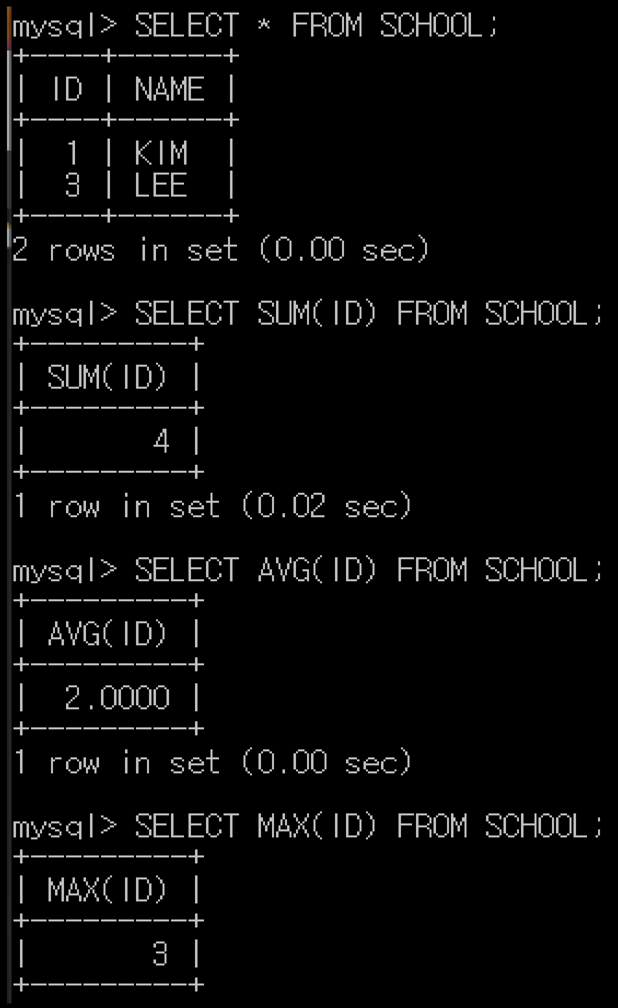
```
mysql> SELECT * FROM SCHOOL;
+----+------+
| id | name |
+----+------+
|  1 | kim  |
|  2 | lee  |
+----+------+
2 rows in set (0.00 sec)

mysql> SELECT * FROM ACADEMY;
+----+---------+----------+
| id | name    | schoolid |
+----+---------+----------+
|  1 | seoul   |        1 |
|  2 | incheon |        2 |
+----+---------+----------+
2 rows in set (0.00 sec)

mysql> UPDATE SCHOOL SET ID = 3 WHERE ID = 2;
Query OK, 1 row affected (0.15 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> SELECT * FROM ACADEMY;
+----+---------+----------+
| id | name    | schoolid |
+----+---------+----------+
|  1 | seoul   |        1 |
|  2 | incheon |        3 |
+----+---------+----------+
2 rows in set (0.00 sec)
```

UPDATE 로 PRIMARY KEY 값을 바꿔주면

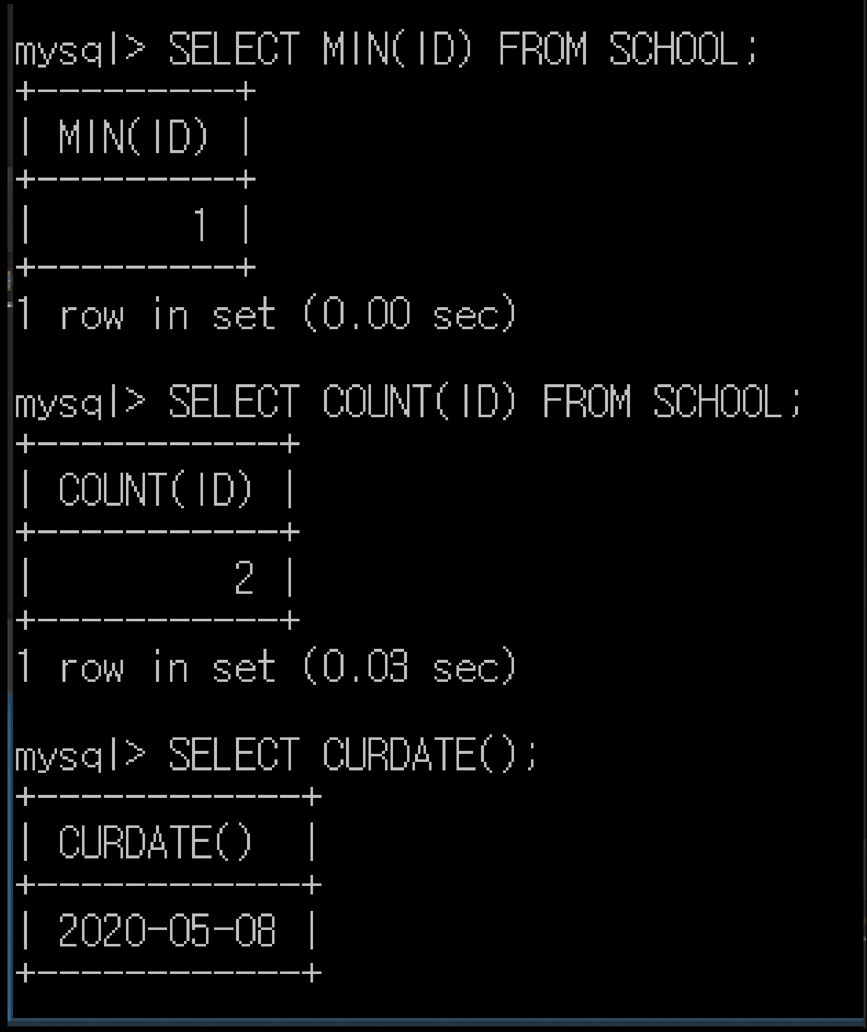
그것을 참조하는 FOREIGN KEY값도 같이 바뀐다.

#함수의 활용

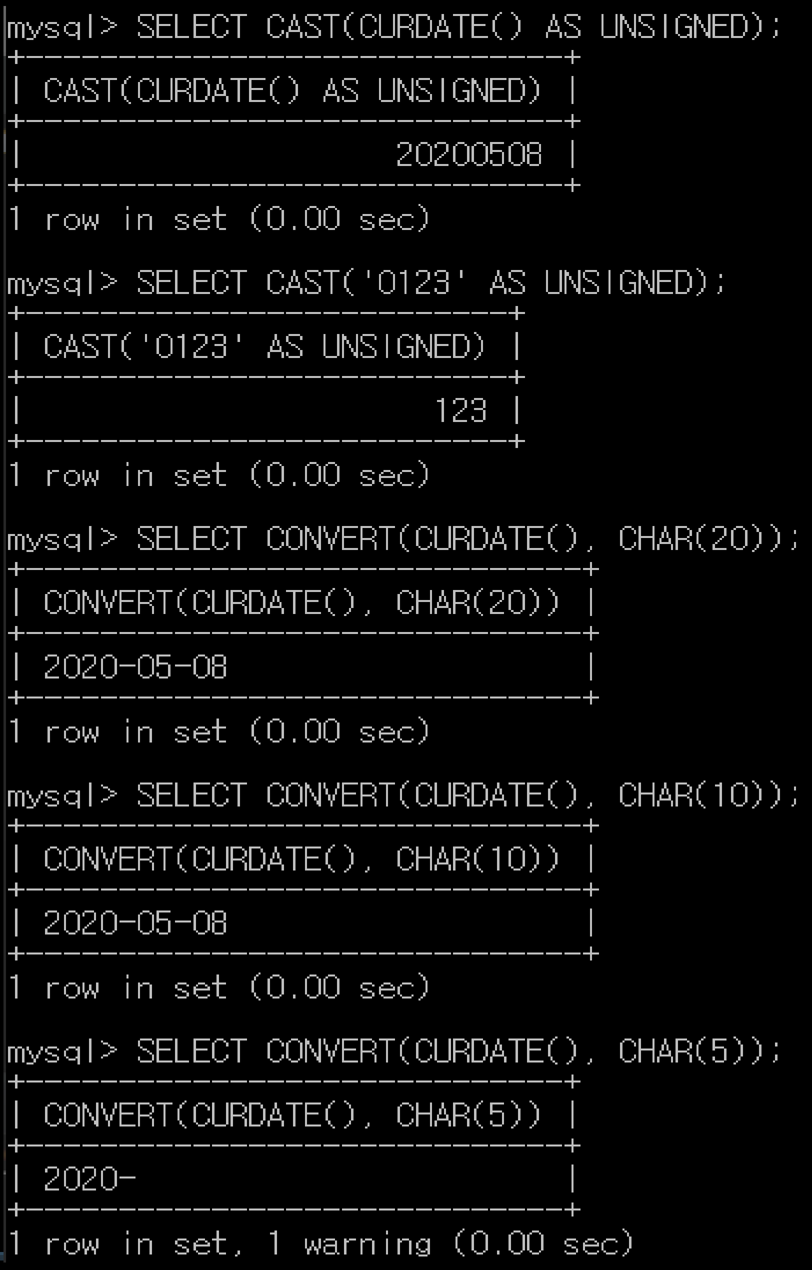
SUM, AVG, MAX, MIN, COUNT, CURDATE, CAST, CONVERT



```
mysql> SELECT * FROM SCHOOL;
+----+------+
| ID | NAME |
+----+------+
|  1 | KIM  |
|  3 | LEE  |
+----+------+
2 rows in set (0.00 sec)

mysql> SELECT SUM(ID) FROM SCHOOL;
+---------+
| SUM(ID) |
+---------+
|       4 |
+---------+
1 row in set (0.02 sec)

mysql> SELECT AVG(ID) FROM SCHOOL;
+---------+
| AVG(ID) |
+---------+
|  2.0000 |
+---------+
1 row in set (0.00 sec)

mysql> SELECT MAX(ID) FROM SCHOOL;
+---------+
| MAX(ID) |
+---------+
|       3 |
+---------+
```



```
mysql> SELECT MIN(ID) FROM SCHOOL;
+---------+
| MIN(ID) |
+---------+
|       1 |
+---------+
1 row in set (0.00 sec)

mysql> SELECT COUNT(ID) FROM SCHOOL;
+-----------+
| COUNT(ID) |
+-----------+
|         2 |
+-----------+
1 row in set (0.03 sec)

mysql> SELECT CURDATE();
+------------+
| CURDATE()  |
+------------+
| 2020-05-08 |
+------------+
```



```
mysql> SELECT CAST(CURDATE() AS UNSIGNED);
+-----------------------------+
| CAST(CURDATE() AS UNSIGNED) |
+-----------------------------+
|                    20200508 |
+-----------------------------+
1 row in set (0.00 sec)

mysql> SELECT CAST('0123' AS UNSIGNED);
+--------------------------+
| CAST('0123' AS UNSIGNED) |
+--------------------------+
|                      123 |
+--------------------------+
1 row in set (0.00 sec)

mysql> SELECT CONVERT(CURDATE(), CHAR(20));
+------------------------------+
| CONVERT(CURDATE(), CHAR(20)) |
+------------------------------+
| 2020-05-08                   |
+------------------------------+
1 row in set (0.00 sec)

mysql> SELECT CONVERT(CURDATE(), CHAR(10));
+------------------------------+
| CONVERT(CURDATE(), CHAR(10)) |
+------------------------------+
| 2020-05-08                   |
+------------------------------+
1 row in set (0.00 sec)

mysql> SELECT CONVERT(CURDATE(), CHAR(5));
+-----------------------------+
| CONVERT(CURDATE(), CHAR(5)) |
+-----------------------------+
| 2020-                       |
+-----------------------------+
1 row in set, 1 warning (0.00 sec)
```

[실습 #2]

- 실습 #1에서 활용한 Table #2를 계속 사용하기

  1. Table #2에 Price column을 추가함

  2. Table #2 레코드들에 Price가 비어있다면 추가함

  3. 아래 내용을 출력하기

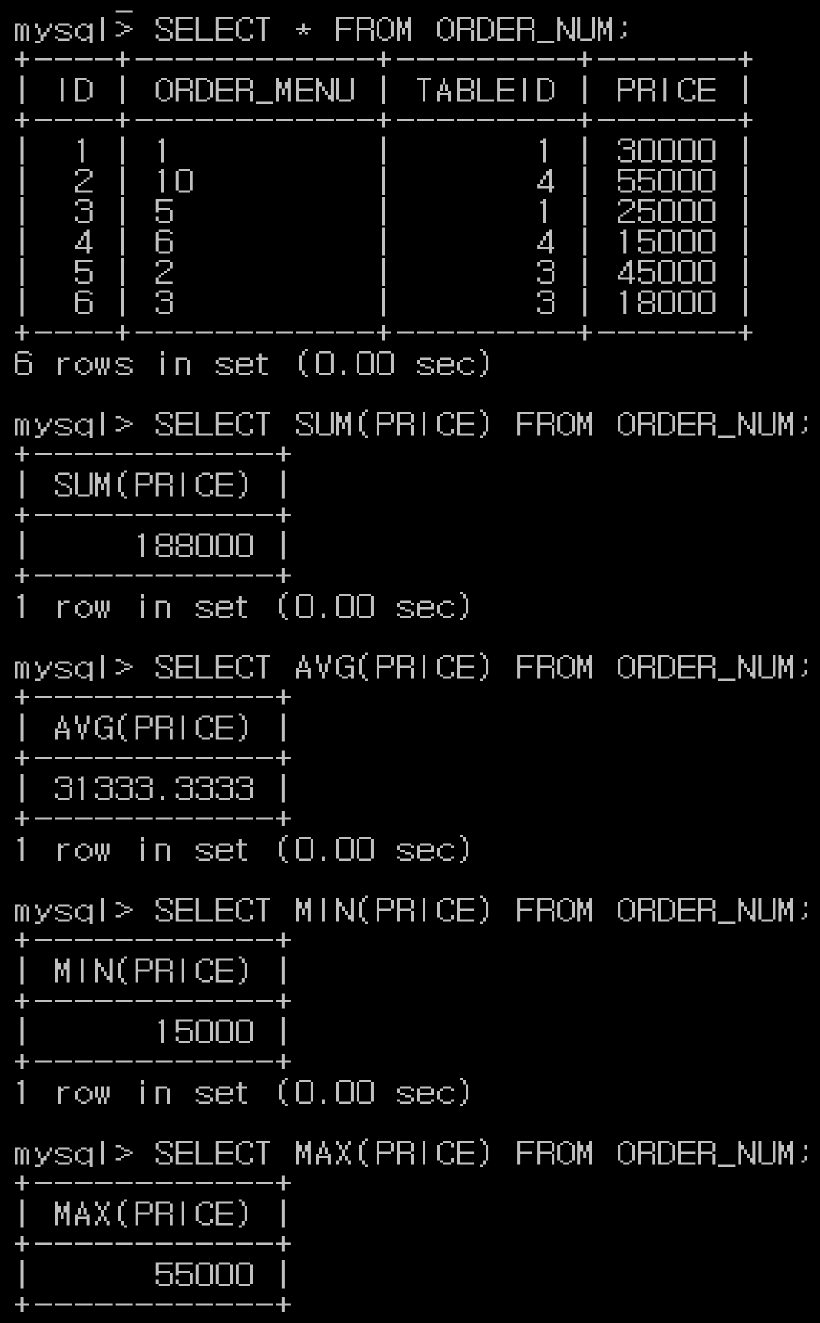
     1) 현재 상태에서 Table #2 전체 레코드 출력

     2) Table #2의 전체 레코드에 대한 Price 합계, 평균, 최소값, 최대값을 출력

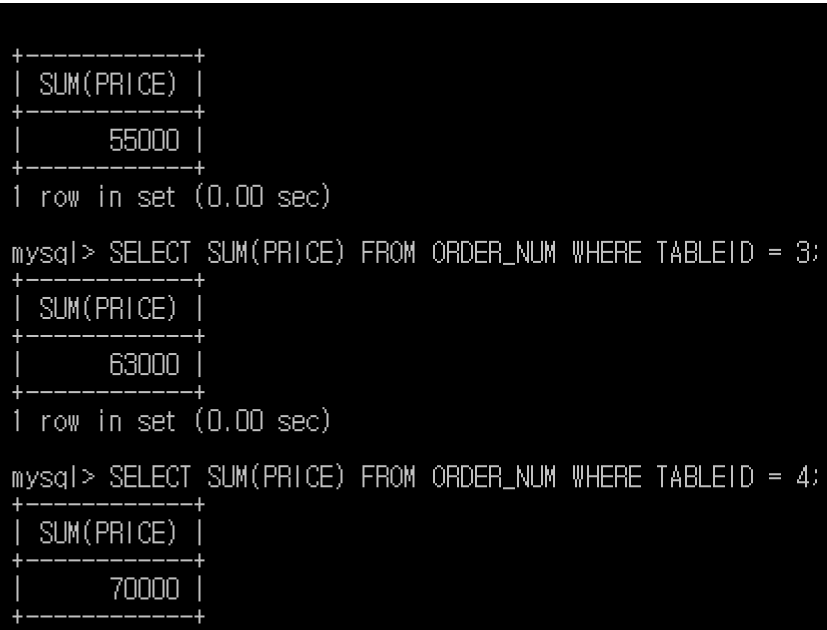
     3) Table #2에서 각 손님 테이블에 대한 Price 총합을 출력

        (예, 1번 테이블 17,000원, 2번 테이블 36,000원 등)

※ MySQL Command Line Client를 통해 절차별로 실습 후 캡처하기



```
mysql> SELECT * FROM ORDER_NUM;
+----+------------+---------+-------+
| ID | ORDER_MENU | TABLEID | PRICE |
+----+------------+---------+-------+
|  1 | 1          |       1 | 30000 |
|  2 | 10         |       4 | 55000 |
|  3 | 5          |       1 | 25000 |
|  4 | 6          |       4 | 15000 |
|  5 | 2          |       3 | 45000 |
|  6 | 3          |       3 | 18000 |
+----+------------+---------+-------+
6 rows in set (0.00 sec)

mysql> SELECT SUM(PRICE) FROM ORDER_NUM;
+------------+
| SUM(PRICE) |
+------------+
|     188000 |
+------------+
1 row in set (0.00 sec)

mysql> SELECT AVG(PRICE) FROM ORDER_NUM;
+------------+
| AVG(PRICE) |
+------------+
| 31333.3333 |
+------------+
1 row in set (0.00 sec)

mysql> SELECT MIN(PRICE) FROM ORDER_NUM;
+------------+
| MIN(PRICE) |
+------------+
|      15000 |
+------------+
1 row in set (0.00 sec)

mysql> SELECT MAX(PRICE) FROM ORDER_NUM;
+------------+
| MAX(PRICE) |
+------------+
|      55000 |
+------------+
```

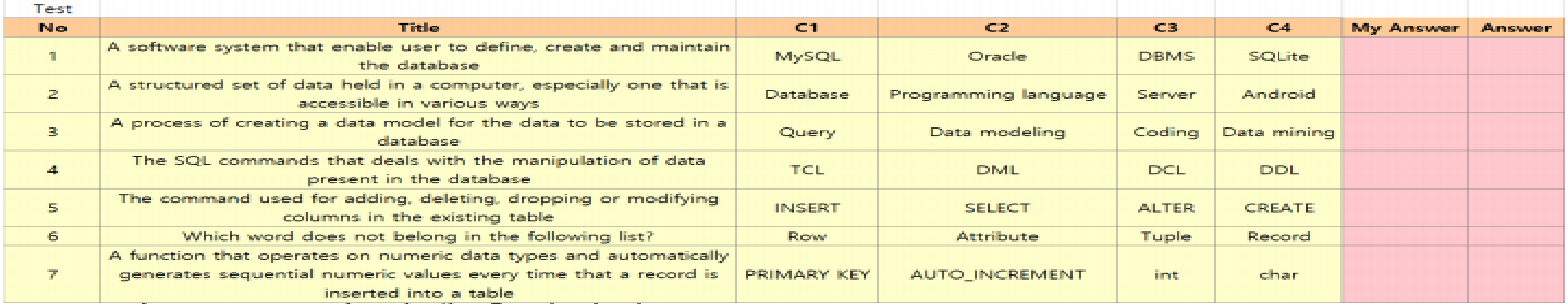


```
+------------+
| SUM(PRICE) |
+------------+
|      55000 |
+------------+
1 row in set (0.00 sec)

mysql> SELECT SUM(PRICE) FROM ORDER_NUM WHERE TABLEID = 3;
+------------+
| SUM(PRICE) |
+------------+
|      63000 |
+------------+
1 row in set (0.00 sec)

mysql> SELECT SUM(PRICE) FROM ORDER_NUM WHERE TABLEID = 4;
+------------+
| SUM(PRICE) |
+------------+
|      70000 |
+------------+
```

[실습 #3]

- 아래와 같은 Table을 구성하기

1. 아래와 같이 레코드를 넣고, Answer Field에 본인이 생각하는 정답을 넣기

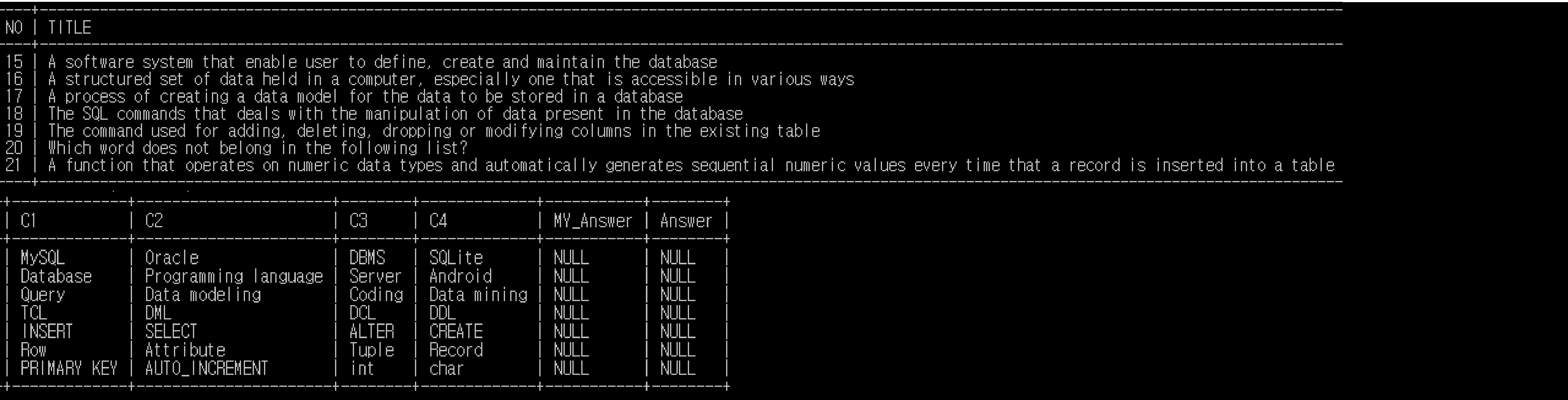


Test

No	Title	C1	C2	C3	C4	My Answer	Answer
1	A software system that enable user to define, create and maintain the database	MySQL	Oracle	DBMS	SQLite		
2	A structured set of data held in a computer, especially one that is accessible in various ways	Database	Programming language	Server	Android		
3	A process of creating a data model for the data to be stored in a database	Query	Data modeling	Coding	Data mining		
4	The SQL commands that deals with the manipulation of data present in the database	TCL	DML	DCL	DDL		
5	The command used for adding, deleting, dropping or modifying columns in the existing table	INSERT	SELECT	ALTER	CREATE		
6	Which word does not belong in the following list?	Row	Attribute	Tuple	Record		
7	A function that operates on numeric data types and automatically generates sequential numeric values every time that a record is inserted into a table	PRIMARY KEY	AUTO_INCREMENT	int	char		

2. No와 Answer만 전체 출력하기

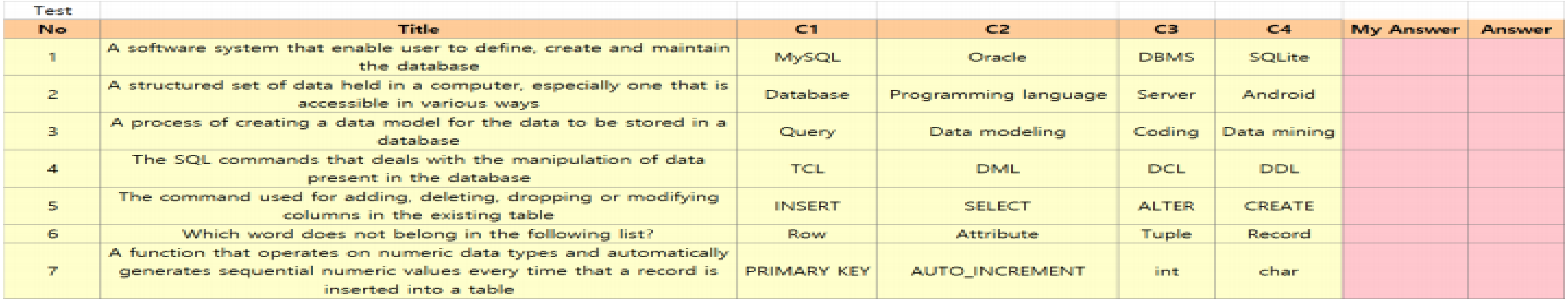
Hint) "Select * "이 아닌 "Select 칼럼명, 칼럼명"을 사용



```
----+-------------------------------------------------------------------------------------------------------------------------------------------
NO | TITLE
----+-------------------------------------------------------------------------------------------------------------------------------------------
15 | A software system that enable user to define, create and maintain the database
16 | A structured set of data held in a computer, especially one that is accessible in various ways
17 | A process of creating a data model for the data to be stored in a database
18 | The SQL commands that deals with the manipulation of data present in the database
19 | The command used for adding, deleting, dropping or modifying columns in the existing table
20 | Which word does not belong in the following list?
21 | A function that operates on numeric data types and automatically generates sequential numeric values every time that a record is inserted into a table
----+-------------------------------------------------------------------------------------------------------------------------------------------
+-------------+----------------------+--------+-------------+-----------+--------+
| C1          | C2                   | C3     | C4          | MY_Answer | Answer |
+-------------+----------------------+--------+-------------+-----------+--------+
| MySQL       | Oracle               | DBMS   | SQLite      | NULL      | NULL   |
| Database    | Programming language | Server | Android     | NULL      | NULL   |
| Query       | Data modeling        | Coding | Data mining | NULL      | NULL   |
| TCL         | DML                  | DCL    | DDL         | NULL      | NULL   |
| INSERT      | SELECT               | ALTER  | CREATE      | NULL      | NULL   |
| Row         | Attribute            | Tuple  | Record      | NULL      | NULL   |
| PRIMARY KEY | AUTO_INCREMENT       | int    | char        | NULL      | NULL   |
+-------------+----------------------+--------+-------------+-----------+--------+
```

[실습 #4]

- 실습 #3에서 활용한 Table을 계속 사용하기

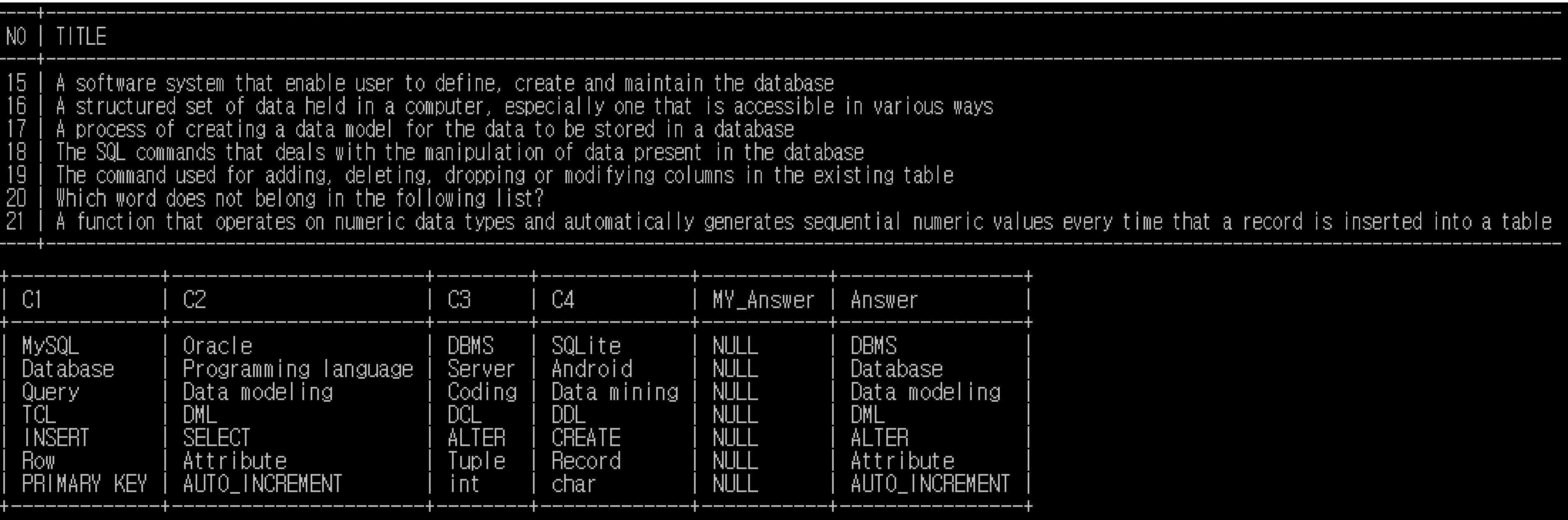


Test

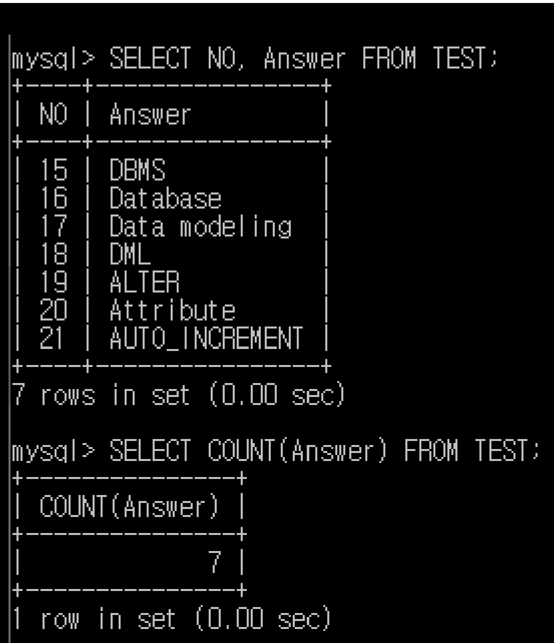
No	Title	C1	C2	C3	C4	My Answer	Answer
1	A software system that enable user to define, create and maintain the database	MySQL	Oracle	DBMS	SQLite		
2	A structured set of data held in a computer, especially one that is accessible in various ways	Database	Programming language	Server	Android		
3	A process of creating a data model for the data to be stored in a database	Query	Data modeling	Coding	Data mining		
4	The SQL commands that deals with the manipulation of data present in the database	TCL	DML	DCL	DDL		
5	The command used for adding, deleting, dropping or modifying columns in the existing table	INSERT	SELECT	ALTER	CREATE		
6	Which word does not belong in the following list?	Row	Attribute	Tuple	Record		
7	A function that operates on numeric data types and automatically generates sequential numeric values every time that a record is inserted into a table	PRIMARY KEY	AUTO_INCREMENT	int	char		

1. count() 함수를 활용하여 정답 개수 세기

2. 정답인 것들만 출력하기



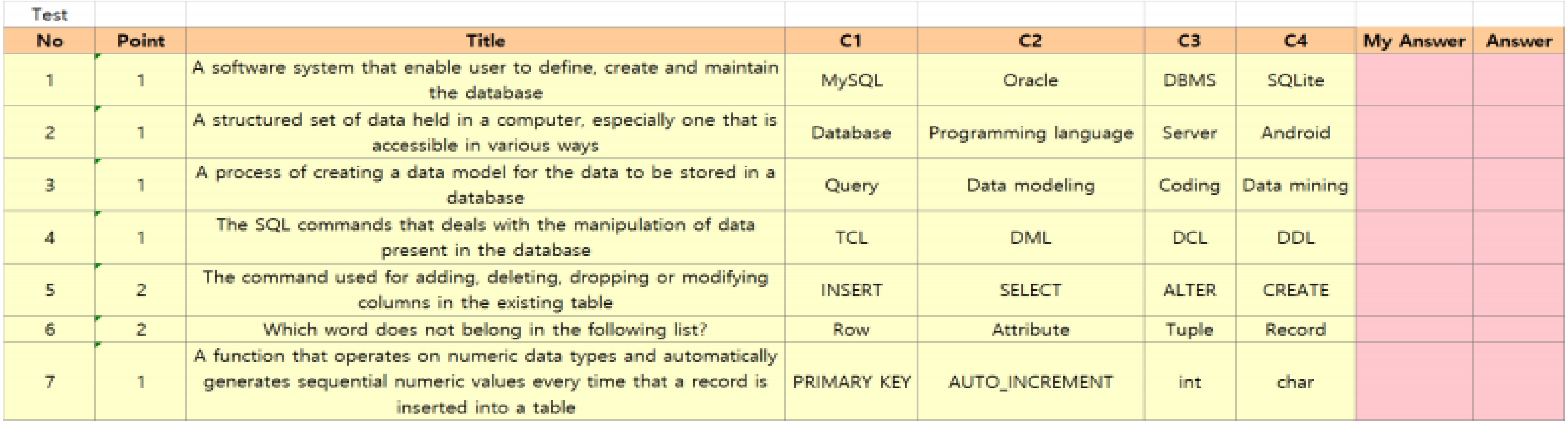
```
---+-------------------------------------------------------------------------------------------------------------------------------------------
NO | TITLE
---+-------------------------------------------------------------------------------------------------------------------------------------------
15 | A software system that enable user to define, create and maintain the database
16 | A structured set of data held in a computer, especially one that is accessible in various ways
17 | A process of creating a data model for the data to be stored in a database
18 | The SQL commands that deals with the manipulation of data present in the database
19 | The command used for adding, deleting, dropping or modifying columns in the existing table
20 | Which word does not belong in the following list?
21 | A function that operates on numeric data types and automatically generates sequential numeric values every time that a record is inserted into a table
---+-------------------------------------------------------------------------------------------------------------------------------------------

+-------------+----------------------+--------+-------------+-----------+----------------+
| C1          | C2                   | C3     | C4          | MY_Answer | Answer         |
+-------------+----------------------+--------+-------------+-----------+----------------+
| MySQL       | Oracle               | DBMS   | SQLite      | NULL      | DBMS           |
| Database    | Programming language | Server | Android     | NULL      | Database       |
| Query       | Data modeling        | Coding | Data mining | NULL      | Data modeling  |
| TCL         | DML                  | DCL    | DDL         | NULL      | DML            |
| INSERT      | SELECT               | ALTER  | CREATE      | NULL      | ALTER          |
| Row         | Attribute            | Tuple  | Record      | NULL      | Attribute      |
| PRIMARY KEY | AUTO_INCREMENT       | int    | char        | NULL      | AUTO_INCREMENT |
+-------------+----------------------+--------+-------------+-----------+----------------+
```



```
mysql> SELECT NO, Answer FROM TEST;
+----+----------------+
| NO | Answer         |
+----+----------------+
| 15 | DBMS           |
| 16 | Database       |
| 17 | Data modeling  |
| 18 | DML            |
| 19 | ALTER          |
| 20 | Attribute      |
| 21 | AUTO_INCREMENT |
+----+----------------+
7 rows in set (0.00 sec)

mysql> SELECT COUNT(Answer) FROM TEST;
+---------------+
| COUNT(Answer) |
+---------------+
|             7 |
+---------------+
1 row in set (0.00 sec)
```

[실습 #4]

- 실습 #3에서 활용한 Table을 계속 사용하기



Test								
No	Point	Title	C1	C2	C3	C4	My Answer	Answer
1	1	A software system that enable user to define, create and maintain the database	MySQL	Oracle	DBMS	SQLite		
2	1	A structured set of data held in a computer, especially one that is accessible in various ways	Database	Programming language	Server	Android		
3	1	A process of creating a data model for the data to be stored in a database	Query	Data modeling	Coding	Data mining		
4	1	The SQL commands that deals with the manipulation of data present in the database	TCL	DML	DCL	DDL		
5	2	The command used for adding, deleting, dropping or modifying columns in the existing table	INSERT	SELECT	ALTER	CREATE		
6	2	Which word does not belong in the following list?	Row	Attribute	Tuple	Record		
7	1	A function that operates on numeric data types and automatically generates sequential numeric values every time that a record is inserted into a table	PRIMARY KEY	AUTO_INCREMENT	int	char		

1. 위와 같이 Point Field를 추가하고 각 레코드도 추가하기

2. Point들의 총합을 SUM() 함수를 이용해 출력하기

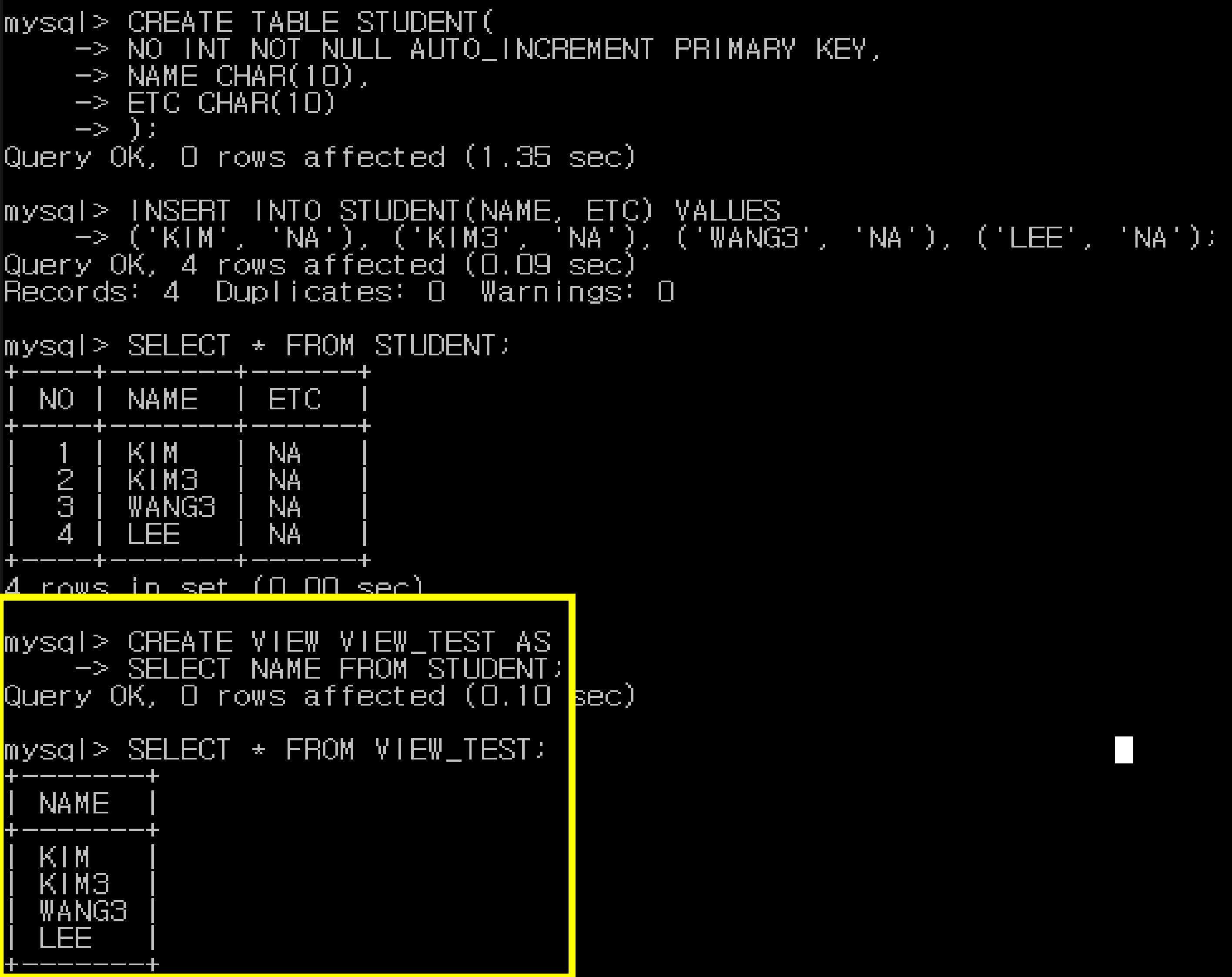
3. SUM() 함수를 이용하여 맞은 것들의 총합을 출력하기

4. SUM() 함수를 이용하여 맞은 것들 중 2점짜리 문제만 출력하기

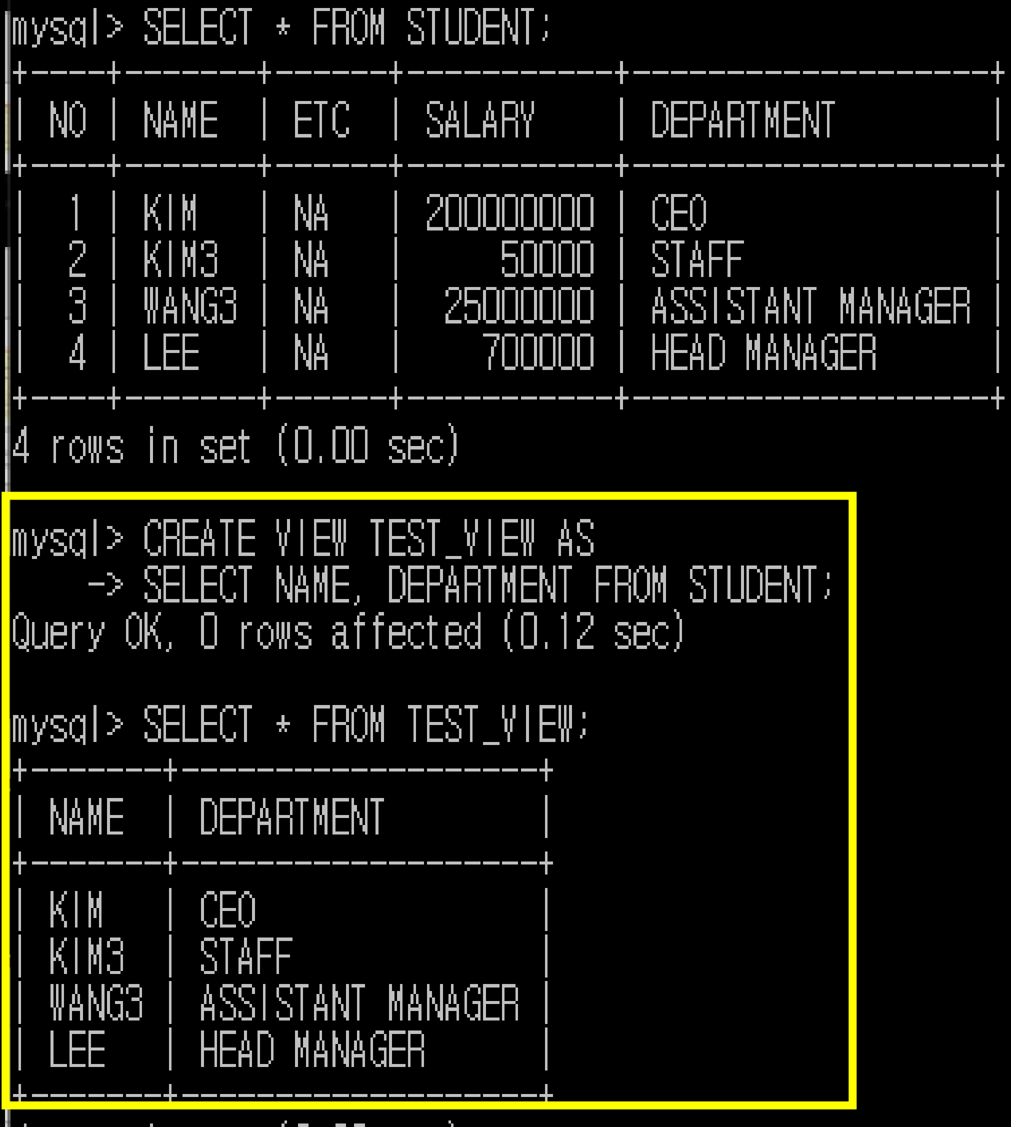
5. 틀린 문제만 출력하기

#VIEW

: 테이블 전체가 아닌 일부만 보여주는 가상의 테이블



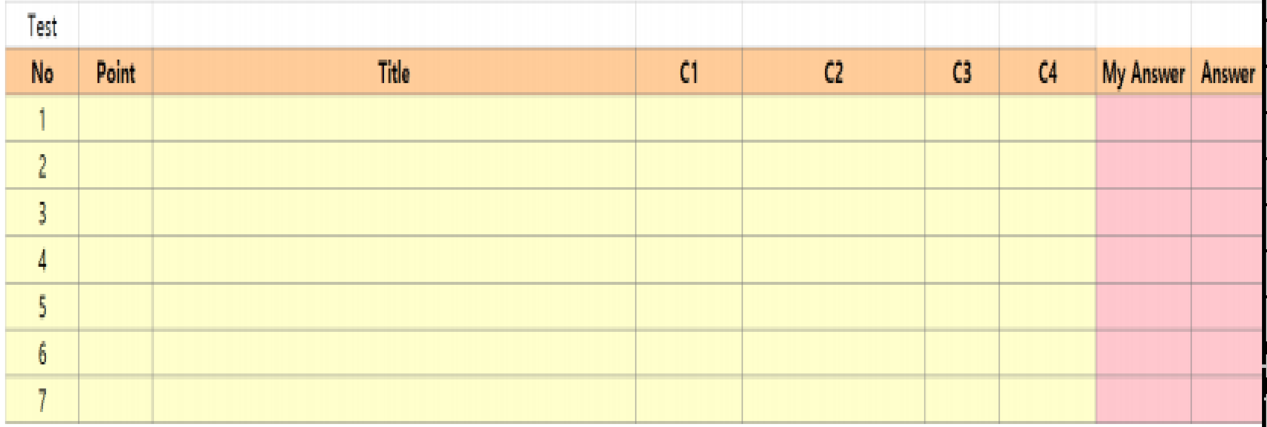
```
mysql> CREATE TABLE STUDENT(
    -> NO INT NOT NULL AUTO_INCREMENT PRIMARY KEY,
    -> NAME CHAR(10),
    -> ETC CHAR(10)
    -> );
Query OK, 0 rows affected (1.35 sec)

mysql> INSERT INTO STUDENT(NAME, ETC) VALUES
    -> ('KIM', 'NA'), ('KIM3', 'NA'), ('WANG3', 'NA'), ('LEE', 'NA');
Query OK, 4 rows affected (0.09 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM STUDENT;
+----+-------+------+
| NO | NAME  | ETC  |
+----+-------+------+
|  1 | KIM   | NA   |
|  2 | KIM3  | NA   |
|  3 | WANG3 | NA   |
|  4 | LEE   | NA   |
+----+-------+------+
4 rows in set (0.00 sec)

mysql> CREATE VIEW VIEW_TEST AS
    -> SELECT NAME FROM STUDENT;
Query OK, 0 rows affected (0.10 sec)

mysql> SELECT * FROM VIEW_TEST;
+-------+
| NAME  |
+-------+
| KIM   |
| KIM3  |
| WANG3 |
| LEE   |
+-------+
```



```
mysql> SELECT * FROM STUDENT;
+----+-------+-----+-----------+-------------------+
| NO | NAME  | ETC | SALARY    | DEPARTMENT        |
+----+-------+-----+-----------+-------------------+
|  1 | KIM   | NA  | 200000000 | CEO               |
|  2 | KIM3  | NA  |     50000 | STAFF             |
|  3 | WANG3 | NA  |  25000000 | ASSISTANT MANAGER |
|  4 | LEE   | NA  |    700000 | HEAD MANAGER      |
+----+-------+-----+-----------+-------------------+
4 rows in set (0.00 sec)

mysql> CREATE VIEW TEST_VIEW AS
    -> SELECT NAME, DEPARTMENT FROM STUDENT;
Query OK, 0 rows affected (0.12 sec)

mysql> SELECT * FROM TEST_VIEW;
+-------+-------------------+
| NAME  | DEPARTMENT        |
+-------+-------------------+
| KIM   | CEO               |
| KIM3  | STAFF             |
| WANG3 | ASSISTANT MANAGER |
| LEE   | HEAD MANAGER      |
+-------+-------------------+
```

[복습]

- 앞에서 실습한 것과 같이 자유롭게 문제 10문항의 레코드가 있는 Table 만들기

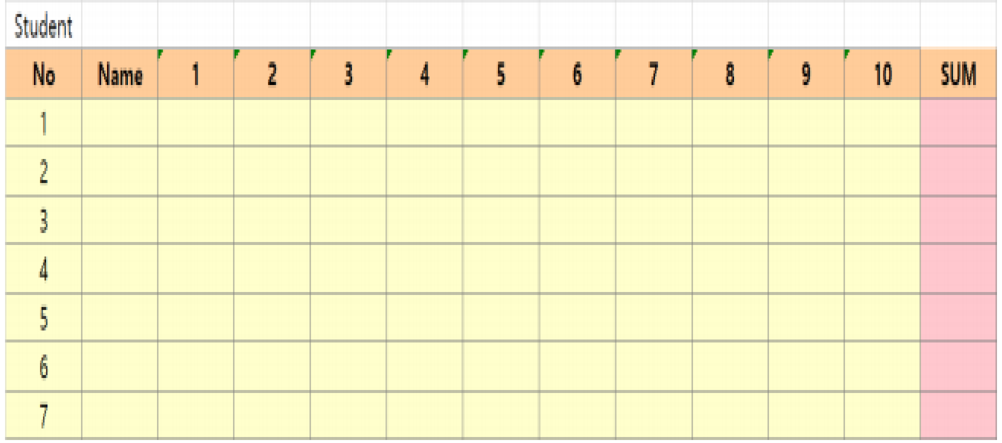


Test

No	Point	Title	C1	C2	C3	C4	My Answer	Answer
1								
2								
3								
4								
5								
6								
7								

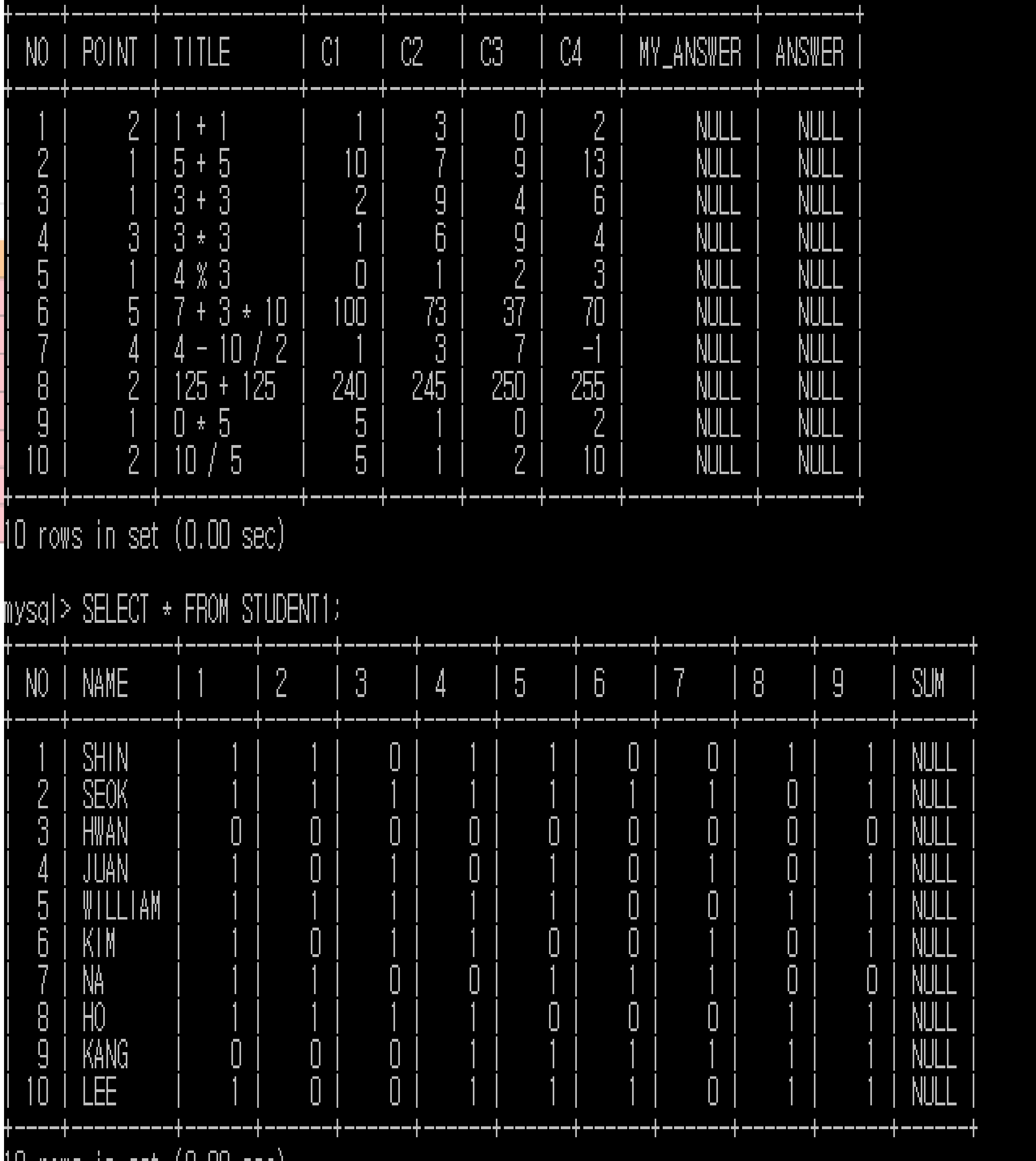
1. 추가로 아래와 같이 10문항에 대한 학생 10명의 정답(true), 오답(false)

   레코드가 있는 Table 만들기



Student

No	Name	1	2	3	4	5	6	7	8	9	10	SUM
1												
2												
3												
4												
5												
6												
7												



```
+----+-------+------------+------+------+------+------+-----------+--------+
| NO | POINT | TITLE      | C1   | C2   | C3   | C4   | MY_ANSWER | ANSWER |
+----+-------+------------+------+------+------+------+-----------+--------+
|  1 |     2 | 1 + 1      |    1 |    3 |    0 |    2 |      NULL |   NULL |
|  2 |     1 | 5 + 5      |   10 |    7 |    9 |   13 |      NULL |   NULL |
|  3 |     1 | 3 + 3      |    2 |    9 |    4 |    6 |      NULL |   NULL |
|  4 |     3 | 3 * 3      |    1 |    6 |    9 |    4 |      NULL |   NULL |
|  5 |     1 | 4 % 3      |    0 |    1 |    2 |    3 |      NULL |   NULL |
|  6 |     5 | 7 + 3 * 10 |  100 |   73 |   37 |   70 |      NULL |   NULL |
|  7 |     4 | 4 - 10 / 2 |    1 |    3 |    7 |   -1 |      NULL |   NULL |
|  8 |     2 | 125 + 125  |  240 |  245 |  250 |  255 |      NULL |   NULL |
|  9 |     1 | 0 * 5      |    5 |    1 |    0 |    2 |      NULL |   NULL |
| 10 |     2 | 10 / 5     |    5 |    1 |    2 |   10 |      NULL |   NULL |
+----+-------+------------+------+------+------+------+-----------+--------+
10 rows in set (0.00 sec)

mysql> SELECT * FROM STUDENT1;
+----+---------+------+------+------+------+------+------+------+------+------+------+
| NO | NAME    | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | SUM  |
+----+---------+------+------+------+------+------+------+------+------+------+------+
|  1 | SHIN    |    1 |    1 |    0 |    1 |    1 |    0 |    0 |    1 |    1 | NULL |
|  2 | SEOK    |    1 |    1 |    1 |    1 |    1 |    1 |    1 |    0 |    1 | NULL |
|  3 | HWAN    |    0 |    0 |    0 |    0 |    0 |    0 |    0 |    0 |    0 | NULL |
|  4 | JUAN    |    1 |    0 |    1 |    0 |    1 |    0 |    1 |    0 |    1 | NULL |
|  5 | WILLIAM |    1 |    1 |    1 |    1 |    1 |    0 |    0 |    1 |    1 | NULL |
|  6 | KIM     |    1 |    0 |    1 |    1 |    0 |    0 |    1 |    0 |    1 | NULL |
|  7 | NA      |    1 |    1 |    0 |    0 |    1 |    1 |    1 |    0 |    0 | NULL |
|  8 | HO      |    1 |    1 |    1 |    1 |    0 |    0 |    0 |    1 |    1 | NULL |
|  9 | KANG    |    0 |    0 |    0 |    1 |    1 |    1 |    1 |    1 |    1 | NULL |
| 10 | LEE     |    1 |    0 |    0 |    1 |    1 |    1 |    0 |    1 |    1 | NULL |
+----+---------+------+------+------+------+------+------+------+------+------+------+
10 rows in set (0.00 sec)
```

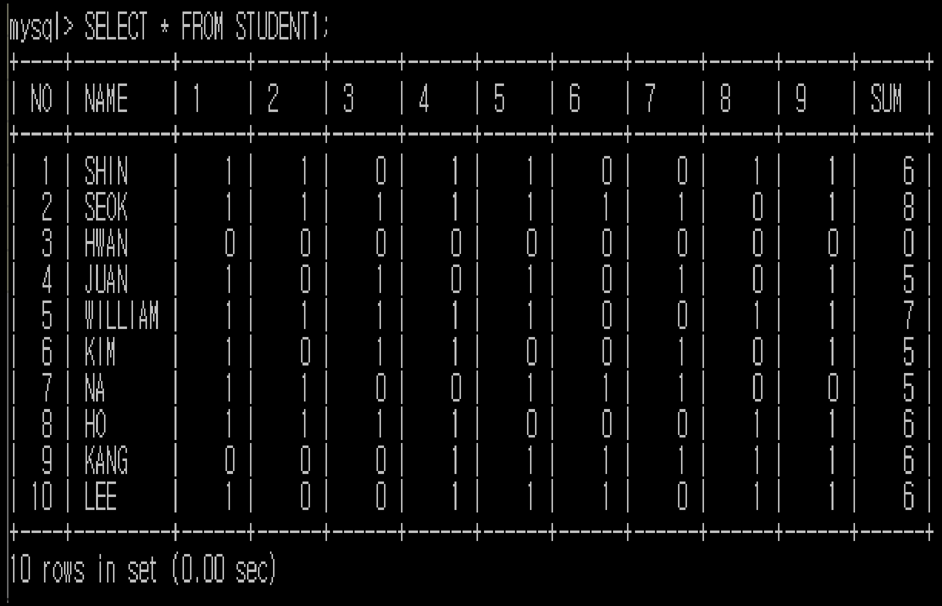
[복습] (계속)

2. 아래 내용 출력하기

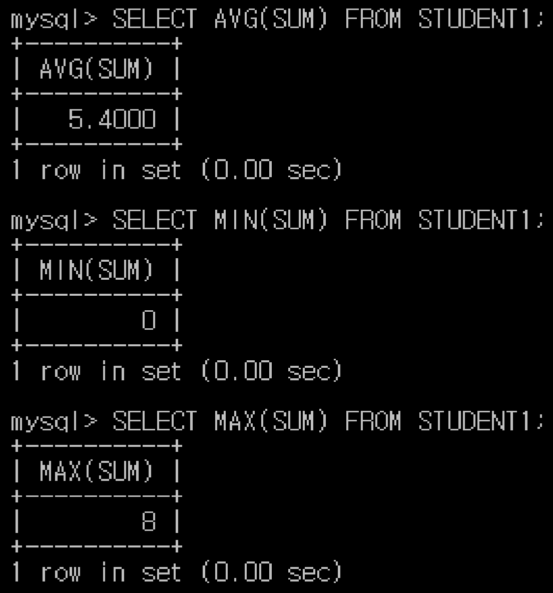
1) 학생들의 평균 점수

2) 최저점, 최고점 학생

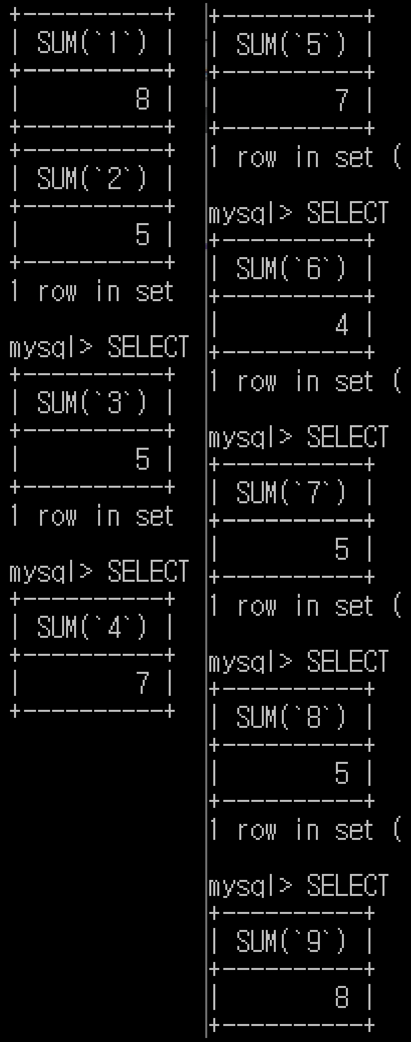
3) 각 문항별 정답자 수



```
mysql> SELECT * FROM STUDENT1;
+----+---------+------+------+------+------+------+------+------+------+------+------+
| NO | NAME    | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | SUM  |
+----+---------+------+------+------+------+------+------+------+------+------+------+
|  1 | SHIN    |    1 |    1 |    0 |    1 |    1 |    0 |    0 |    1 |    1 |    6 |
|  2 | SEOK    |    1 |    1 |    1 |    1 |    1 |    1 |    1 |    0 |    1 |    8 |
|  3 | HWAN    |    0 |    0 |    0 |    0 |    0 |    0 |    0 |    0 |    0 |    0 |
|  4 | JUAN    |    1 |    0 |    1 |    0 |    1 |    0 |    1 |    0 |    1 |    5 |
|  5 | WILLIAM |    1 |    1 |    1 |    1 |    1 |    0 |    0 |    1 |    1 |    7 |
|  6 | KIM     |    1 |    0 |    1 |    1 |    0 |    0 |    1 |    0 |    1 |    5 |
|  7 | NA      |    1 |    1 |    0 |    0 |    1 |    1 |    1 |    0 |    0 |    5 |
|  8 | HO      |    1 |    1 |    1 |    1 |    0 |    0 |    0 |    1 |    1 |    6 |
|  9 | KANG    |    0 |    0 |    0 |    1 |    1 |    1 |    1 |    1 |    1 |    6 |
| 10 | LEE     |    1 |    0 |    0 |    1 |    1 |    1 |    0 |    1 |    1 |    6 |
+----+---------+------+------+------+------+------+------+------+------+------+------+
10 rows in set (0.00 sec)
```



```
mysql> SELECT AVG(SUM) FROM STUDENT1;
+----------+
| AVG(SUM) |
+----------+
|   5.4000 |
+----------+
1 row in set (0.00 sec)

mysql> SELECT MIN(SUM) FROM STUDENT1;
+----------+
| MIN(SUM) |
+----------+
|        0 |
+----------+
1 row in set (0.00 sec)

mysql> SELECT MAX(SUM) FROM STUDENT1;
+----------+
| MAX(SUM) |
+----------+
|        8 |
+----------+
1 row in set (0.00 sec)
```

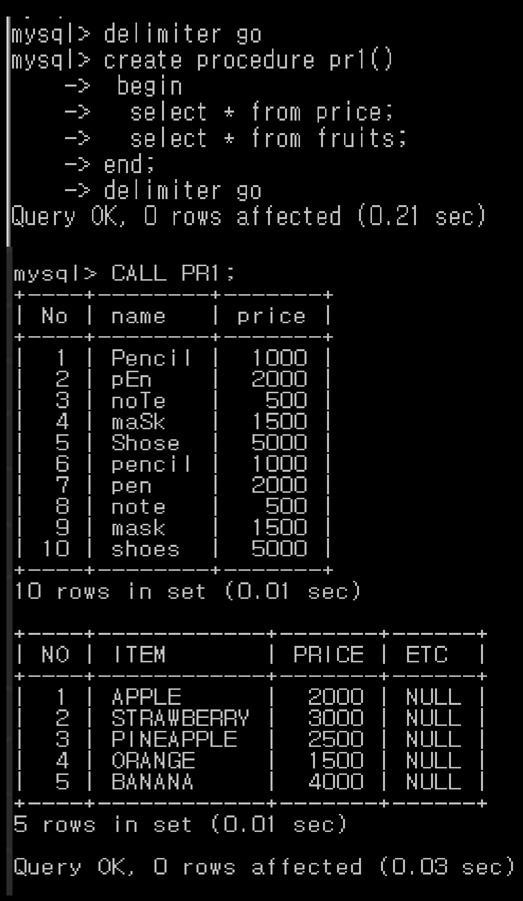


```
+----------+
| SUM(`1`) |
+----------+
|        8 |
+----------+
+----------+
| SUM(`2`) |
+----------+
|        5 |
+----------+
1 row in set

mysql> SELECT
+----------+
| SUM(`3`) |
+----------+
|        5 |
+----------+
1 row in set

mysql> SELECT
+----------+
| SUM(`4`) |
+----------+
|        7 |
+----------+
```

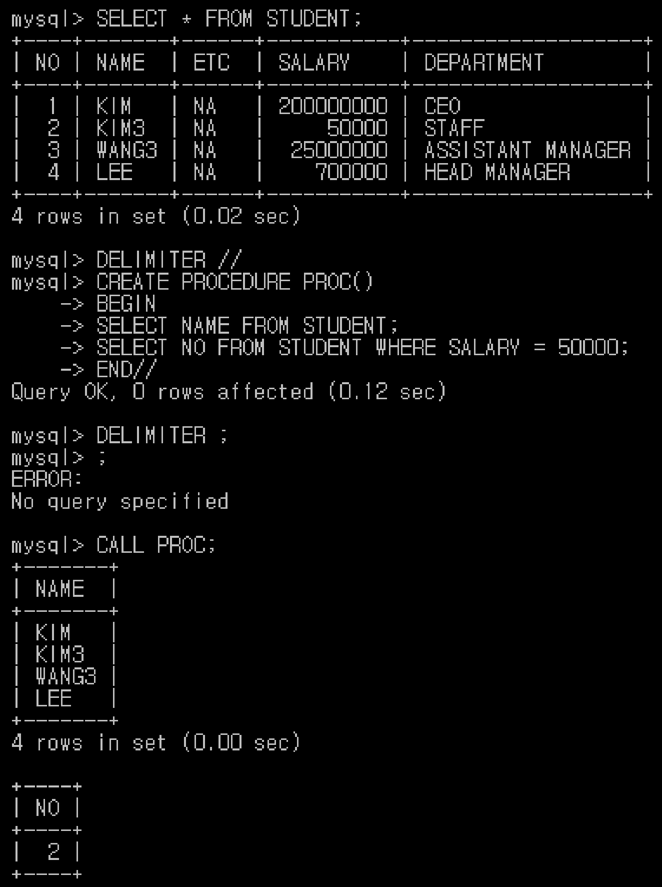
```
+----------+
| SUM(`5`) |
+----------+
|        7 |
+----------+
1 row in set (

mysql> SELECT
+----------+
| SUM(`6`) |
+----------+
|        4 |
+----------+
1 row in set (

mysql> SELECT
+----------+
| SUM(`7`) |
+----------+
|        5 |
+----------+
1 row in set (

mysql> SELECT
+----------+
| SUM(`8`) |
+----------+
|        5 |
+----------+
1 row in set (

mysql> SELECT
+----------+
| SUM(`9`) |
+----------+
|        8 |
+----------+
```

Stored Procedure : MYSQL에서 제공해주는 프로그래밍 기능. 즉 SQL을 하나로 묶어서 편리하게 사용하는 기능

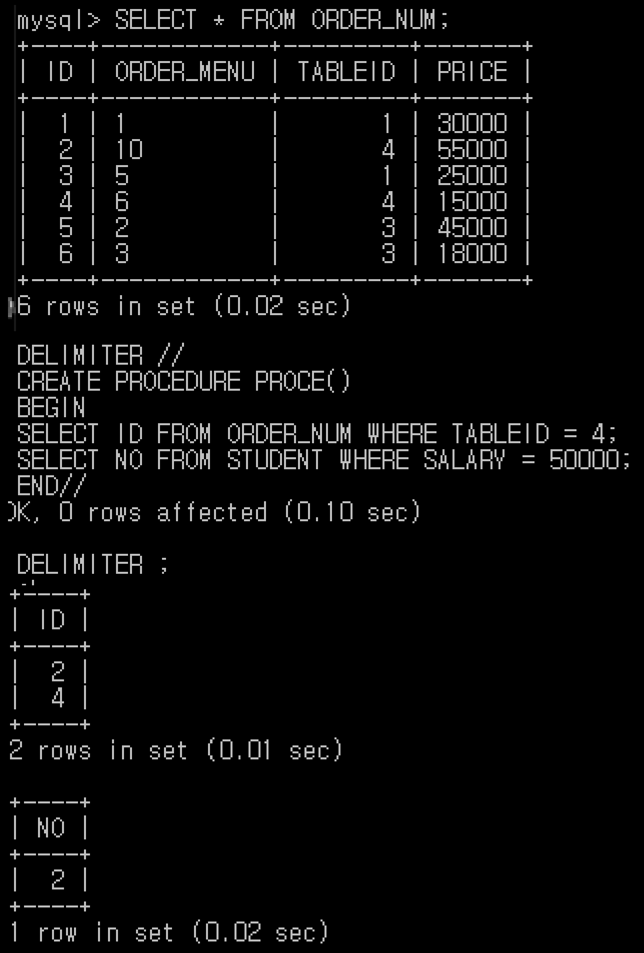
PROCEDURE



```
mysql> delimiter go
mysql> create procedure pr1()
    ->  begin
    ->   select * from price;
    ->   select * from fruits;
    -> end;
    -> delimiter go
Query OK, 0 rows affected (0.21 sec)

mysql> CALL PR1;
+----+---------+-------+
| No | name    | price |
+----+---------+-------+
|  1 | Pencil  |  1000 |
|  2 | pEn     |  2000 |
|  3 | noTe    |   500 |
|  4 | maSk    |  1500 |
|  5 | Shose   |  5000 |
|  6 | pencil  |  1000 |
|  7 | pen     |  2000 |
|  8 | note    |   500 |
|  9 | mask    |  1500 |
| 10 | shoes   |  5000 |
+----+---------+-------+
10 rows in set (0.01 sec)

+----+------------+-------+------+
| NO | ITEM       | PRICE | ETC  |
+----+------------+-------+------+
|  1 | APPLE      |  2000 | NULL |
|  2 | STRAWBERRY |  3000 | NULL |
|  3 | PINEAPPLE  |  2500 | NULL |
|  4 | ORANGE     |  1500 | NULL |
|  5 | BANANA     |  4000 | NULL |
+----+------------+-------+------+
5 rows in set (0.01 sec)

Query OK, 0 rows affected (0.03 sec)
```



```
mysql> SELECT * FROM STUDENT;
+----+-------+-----+-----------+-------------------+
| NO | NAME  | ETC | SALARY    | DEPARTMENT        |
+----+-------+-----+-----------+-------------------+
|  1 | KIM   | NA  | 200000000 | CEO               |
|  2 | KIM3  | NA  |     50000 | STAFF             |
|  3 | WANG3 | NA  |  25000000 | ASSISTANT MANAGER |
|  4 | LEE   | NA  |    700000 | HEAD MANAGER      |
+----+-------+-----+-----------+-------------------+
4 rows in set (0.02 sec)

mysql> DELIMITER //
mysql> CREATE PROCEDURE PROC()
    -> BEGIN
    -> SELECT NAME FROM STUDENT;
    -> SELECT NO FROM STUDENT WHERE SALARY = 50000;
    -> END//
Query OK, 0 rows affected (0.12 sec)

mysql> DELIMITER ;
mysql> ;
ERROR:
No query specified

mysql> CALL PROC;
+-------+
| NAME  |
+-------+
| KIM   |
| KIM3  |
| WANG3 |
| LEE   |
+-------+
4 rows in set (0.00 sec)

+----+
| NO |
+----+
|  2 |
+----+
```



```
mysql> SELECT * FROM ORDER_NUM;
+----+------------+---------+-------+
| ID | ORDER_MENU | TABLEID | PRICE |
+----+------------+---------+-------+
|  1 | 1          |       1 | 30000 |
|  2 | 10         |       4 | 55000 |
|  3 | 5          |       1 | 25000 |
|  4 | 6          |       4 | 15000 |
|  5 | 2          |       3 | 45000 |
|  6 | 3          |       3 | 18000 |
+----+------------+---------+-------+
6 rows in set (0.02 sec)

 DELIMITER //
 CREATE PROCEDURE PROCE()
 BEGIN
 SELECT ID FROM ORDER_NUM WHERE TABLEID = 4;
 SELECT NO FROM STUDENT WHERE SALARY = 50000;
 END//
)K, 0 rows affected (0.10 sec)

 DELIMITER ;
+----+
| ID |
+----+
|  2 |
|  4 |
+----+
2 rows in set (0.01 sec)

+----+
| NO |
+----+
|  2 |
+----+
1 row in set (0.02 sec)
```