Experiment: 3

```
mysql> create table student(rollno int, name char(50), address char (60));
Query OK, 0 rows affected (0.14 sec)
mysql> desc student;
+----+
| Field | Type | Null | Key | Default | Extra |
+----+
| rollno | int | YES | NULL | |
name | char(50) | YES | NULL |
| address | char(60) | YES | NULL |
+----+
3 rows in set (0.04 \text{ sec})
mysql> insert into student(rollno,name,address)values (26,'shrushti','sangli');
Query OK, 1 row affected (0.01 sec)
mysql> select * from student;
+----+
| rollno | name | address |
+----+
  26 | shrushti | sangli |
+----+
1 row in set (0.00 \text{ sec})
mysql> insert into student(rollno,name,address)values (27,'shradha','pune');
Query OK, 1 row affected (0.01 sec)
mysql> select * from student;
+----+
| rollno | name | address |
+----+
  26 | shrushti | sangli |
```

```
| 27 | shradha | pune |
+----+
2 rows in set (0.00 \text{ sec})
mysql> insert into student(rollno,name,address)values (28,'sakshi','kolhapur');
Query OK, 1 row affected (0.00 sec)
mysql> select * from student;
+----+
| rollno | name | address |
+----+
  26 | shrushti | sangli |
  27 | shradha | pune |
  28 | sakshi | kolhapur |
+----+
3 rows in set (0.00 \text{ sec})
mysql> update student set name="madhura" where name='sakshi';
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0
mysql> select * from student;
+----+
| rollno | name | address |
+----+
  26 | shrushti | sangli |
  27 | shradha | pune
  28 | madhura | kolhapur |
+----+
```

mysql> alter table student add Age int;

Query OK, 0 rows affected (0.12 sec)

3 rows in set (0.00 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> desc student; +-----+

| Field | Type | Null | Key | Default | Extra |
+-----+
rollno	int	YES		NULL	
name	char(50)	YES		NULL	
address	char(60)	YES		NULL	
Age	int	YES		NULL	

+-----+

4 rows in set (0.01 sec)

mysql> update student set age=19 where name='madhura';

Query OK, 1 row affected (0.01 sec)

Rows matched: 1 Changed: 1 Warnings: 0

mysql> select * from student;

+-----+

| rollno | name | address | Age |

+----+

 $|\hspace{.1cm} 26 \hspace{.1cm}|\hspace{.1cm} shrushti \hspace{.1cm}|\hspace{.1cm} sangli \hspace{.1cm}|\hspace{.1cm} NULL \hspace{.1cm}|$

 \mid 27 | shradha | pune | NULL |

 $|\hspace{.1in} 28 \hspace{.1in}|\hspace{.1in} madhura\hspace{.1in} |\hspace{.1in} kolhapur\hspace{.1in} |\hspace{.1in} 19\hspace{.1in} |$

+----+

3 rows in set (0.00 sec)

mysql> update student set age=20 where name='shradha';

Query OK, 1 row affected (0.01 sec)

Rows matched: 1 Changed: 1 Warnings: 0

mysql> update student set age=14 where name='shrushti';

Query OK, 1 row affected (0.00 sec)

Rows matched: 1 Changed: 1 Warnings: 0

mysql> select * from student;

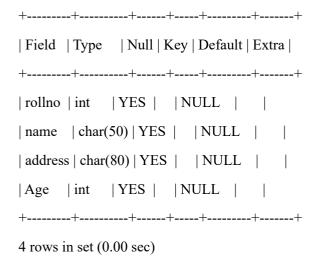
+----+

mysql> alter table student modify column address char(80);

Query OK, 3 rows affected (0.10 sec)

Records: 3 Duplicates: 0 Warnings: 0

mysql> desc student;



mysql> alter table student rename column name to firstname;

Query OK, 0 rows affected (0.03 sec)

Records: 0 Duplicates: 0 Warnings: 0

mysql> desc student;

```
+----+
| Field | Type | Null | Key | Default | Extra |
+-----+
| rollno | int | YES | | NULL | |
| firstname | char(50) | YES | | NULL | |
| address | char(80) | YES | | NULL | |
| Age | int | YES | | NULL | |
```

```
+----+
4 rows in set (0.00 \text{ sec})
mysql> alter table student drop column age;
Query OK, 0 rows affected (0.11 sec)
Records: 0 Duplicates: 0 Warnings: 0
mysql> desc student;
+----+
| Field | Type | Null | Key | Default | Extra |
+----+
| rollno | int | YES | NULL |
| firstname | char(50) | YES | NULL |
| address | char(80) | YES | NULL |
+-----+
3 rows in set (0.00 \text{ sec})
mysql> select * from student;
+----+
| rollno | firstname | address |
+----+
 26 | shrushti | sangli |
  27 | shradha | pune |
  28 | madhura | kolhapur |
+----+
3 rows in set (0.00 \text{ sec})
```

Experiment: 4

mysql> create table department(deptno int,name varchar(50), address varchar(50));

Query OK, 0 rows affected (0.04 sec)

mysql> insert into department(deptno,name,address)values(1234,'computer science','kolhapur');

Query OK, 1 row affected (0.01 sec)

```
mysql> insert into department(deptno,name,address)values(3214,'physics','mumbai');
Query OK, 1 row affected (0.01 sec)
mysql> insert into department(deptno,name,address)values(1357,'electronics','pune');
Query OK, 1 row affected (0.01 sec)
mysql> insert into department(deptno,name,address)values(8765,'finance','sangli');
Query OK, 1 row affected (0.01 sec)
mysql> select * from department;
+----+
                address
| deptno | name
+-----+
| 1234 | computer science | kolhapur |
| 3214 | physics | mumbai |
| 1357 | electronics | pune |
| 8765 | finance | sangli |
+----+
4 rows in set (0.01 \text{ sec})
mysql> select deptno ,name from department;
+----+
| deptno | name
+----+
| 1234 | computer science |
| 3214 | physics
| 1357 | electronics |
| 8765 | finance
+----+
4 rows in set (0.00 \text{ sec})
mysql> insert into department(deptno,name,address)values(2143,'mathamatics','satara');
Query OK, 1 row affected (0.01 sec)
```

mysql> select * from department;

```
| deptno | name
                address
+----+
| 1234 | computer science | kolhapur |
| 3214 | physics
                | mumbai |
| 1357 | electronics | pune |
 8765 | finance
               sangli
| 2143 | mathamatics | satara |
+----+
5 rows in set (0.00 \text{ sec})
mysql> update department set deptno=7654 where deptno=1234;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0
mysql> select * from department;
+-----+
| deptno | name | address |
+----+
| 7654 | computer science | kolhapur |
 3214 | physics
             | mumbai |
 1357 | electronics | pune |
 8765 | finance
               sangli
 2143 | mathamatics | satara |
+----+
5 rows in set (0.00 \text{ sec})
mysql> delete from department where deptno=1357;
Query OK, 1 row affected (0.01 sec)
mysql> select * from department;
+----+
| deptno | name
            address
+----+
```

| 7654 | computer science | kolhapur |

```
| 3214 | physics | mumbai |
| 8765 | finance | sangli |
| 2143 | mathamatics | satara |
+-----+
4 rows in set (0.00 sec)
```

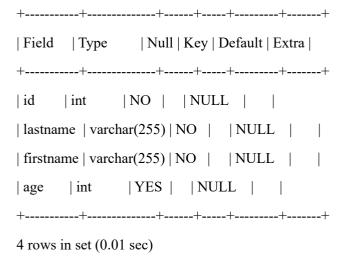
Experiment: 5

#notnull

mysql> create table persons(id int NOT NULL,lastname varchar(255)NOT NULL,firstname varchar(255)NOT NULL,age int);

Query OK, 0 rows affected (0.04 sec)

mysql> desc persons;

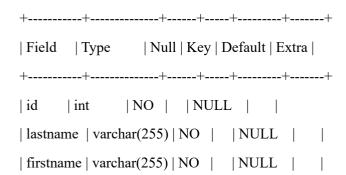


#unique

mysql> create table persons1(id int NOT NULL,lastname varchar(255)NOT NULL,firstname varchar(255)NOT NULL,age int);

Query OK, 0 rows affected (0.04 sec)

mysql> desc persons1;



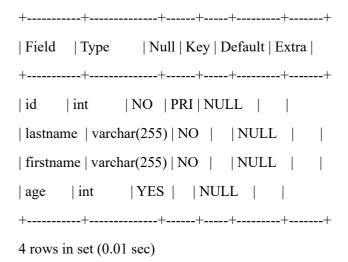
age	int	YES	NULL						
+	+	+	++		++	_			
4 rows in set (0.00 sec)									

#primarykey

mysql> create table persons2(id int NOT NULL primary key,lastname varchar(255)NOT NULL,firstname varchar(255)NOT NULL,age int);

Query OK, 0 rows affected (0.04 sec)

mysql> desc persons2;



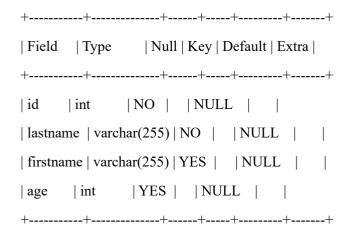
#check

mysql> create table persons3(id int NOT NULL,lastname varchar(255)NOT NULL,firstname varchar(255),age int check(age >= 18));

Query OK, 0 rows affected (0.04 sec)

mysql> desc persons3;

4 rows in set (0.01 sec)



#default

mysql> create table persons4(id int NOT NULL,lastname varchar(255)NOT NULL,firstname varchar(255),age int, city varchar(255) default 'sandnes');

Query OK, 0 rows affected (0.04 sec)

mysql> desc persons4;

Experiment:6

#on delete cascade

```
mysql> create table employes
-> (
```

-> empid int primary key,

-> name varchar(50));

Query OK, 0 rows affected (0.03 sec)

mysql> create table salarie(

- -> salaryid int primary key,
- -> empid int,
- -> salary decimal(10.2),
- -> foreign key(empid)references employes(empid)on delete cascade);

Query OK, 0 rows affected (0.06 sec)

mysql> insert into employes values (1,'john'),(2,'riya'),(3,'divya');

Query OK, 3 rows affected (0.01 sec)

Records: 3 Duplicates: 0 Warnings: 0

```
mysql> select * from employes;
+----+
empid | name |
+----+
| 1 | john |
| 2 | riya |
 3 | divya |
+----+
3 rows in set (0.00 \text{ sec})
mysql> insert into salarie values (11,1,40000),(12,2,45000),(13,3,50000);
Query OK, 3 rows affected (0.01 sec)
Records: 3 Duplicates: 0 Warnings: 0
mysql> select * from salarie;
+----+
| salaryid | empid | salary |
+----+
  11 | 1 | 40000 |
   12 | 2 | 45000 |
   13 | 3 | 50000 |
+----+
3 rows in set (0.00 \text{ sec})
mysql> delete from employes where empid=1;
Query OK, 1 row affected (0.01 sec)
mysql> select * from salarie;
+----+
| salaryid | empid | salary |
+----+
   12 | 2 | 45000 |
```

13 | 3 | 50000 |

+----+

+----+

| stdid | stdname | courseid |

#on delete set null mysql> create table course(-> courseid int primary key, -> coursename varchar(50)); Query OK, 0 rows affected (0.04 sec) mysql> create table stud(-> stdid int primary key, -> stdname varchar(50), -> courseid int, -> foreign key (courseid)references course(courseid) on delete set null); Query OK, 0 rows affected (0.05 sec) mysql> insert into course values(101, 'maths'),(102, 'physics'); Query OK, 2 rows affected (0.01 sec) Records: 2 Duplicates: 0 Warnings: 0 mysql> select * from course; +----+ | courseid | coursename | +----+ 101 | maths | 102 | physics | +----+ 2 rows in set (0.00 sec)mysql> insert into stud values (1,'alice',101),(2,'john',101),(3,'savi',101); Query OK, 3 rows affected (0.01 sec) Records: 3 Duplicates: 0 Warnings: 0 mysql> select * from stud;

```
+----+
 1 | alice | 101 |
  2 | john | 101 |
 3 | savi | 101 |
+----+
3 rows in set (0.00 \text{ sec})
mysql> delete from course where courseid=101;
Query OK, 1 row affected (0.01 sec)
mysql> select * from stud;
+----+
| stdid | stdname | courseid |
+----+
| 1 | alice | NULL |
  2 | john | NULL |
 3 | savi | NULL |
+----+
3 rows in set (0.00 \text{ sec})
Experiment: 7
mysql> create table marks(sub char(50), rollno int, marks int);
Query OK, 0 rows affected (0.04 sec)
mysql> desc marks;
+----+
| Field | Type | Null | Key | Default | Extra |
+----+
| sub | char(50) | YES | | NULL | |
| rollno | int | YES | NULL | |
marks | int | YES | NULL |
```

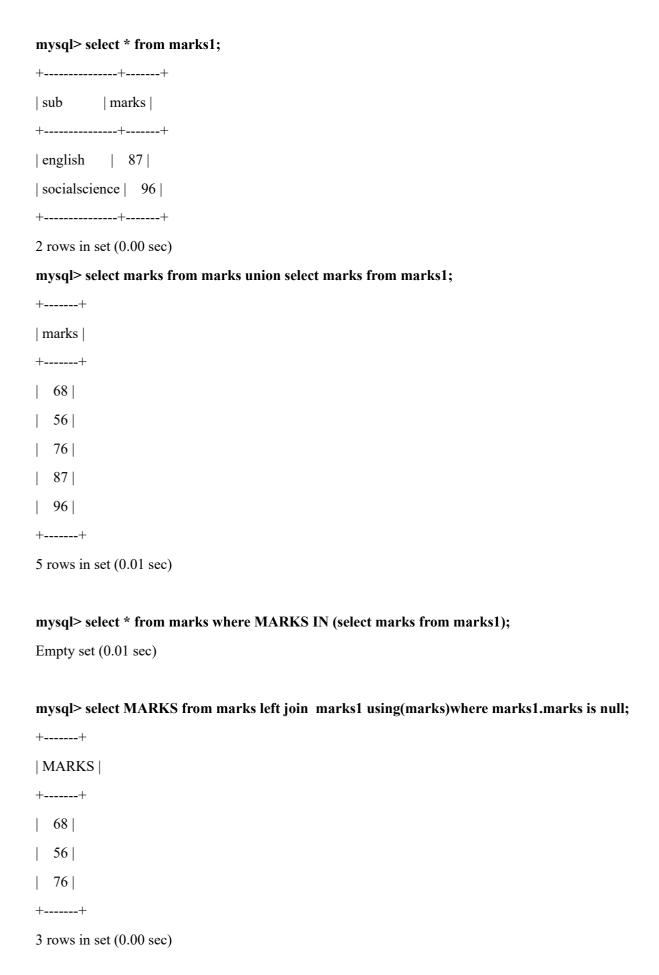
+----+

3 rows in set (0.01 sec)

```
mysql> insert into marks (sub,rollno,marks)values ('maths',2,68);
Query OK, 1 row affected (0.01 sec)
mysql> insert into marks (sub,rollno,marks)values ('science',21,56);
Query OK, 1 row affected (0.01 sec)
mysql> insert into marks (sub,rollno,marks) values ('chemistry',31,76);
Query OK, 1 row affected (0.01 sec)
mysql> select * from marks;
+----+
| sub | rollno | marks |
+----+
| maths | 2 | 68 |
| science | 21 | 56 |
| chemistry | 31 | 76 |
+----+
3 rows in set (0.00 \text{ sec})
mysql> create table marks1(sub char(50),marks int);
Query OK, 0 rows affected (0.04 sec)
mysql> desc marks1;
+----+
| Field | Type | Null | Key | Default | Extra |
+----+
sub | char(50) | YES | NULL |
marks | int | YES | NULL |
+----+
2 rows in set (0.01 \text{ sec})
mysql> insert into marks1 (sub,marks) values ('english',87);
Query OK, 1 row affected (0.01 sec)
```

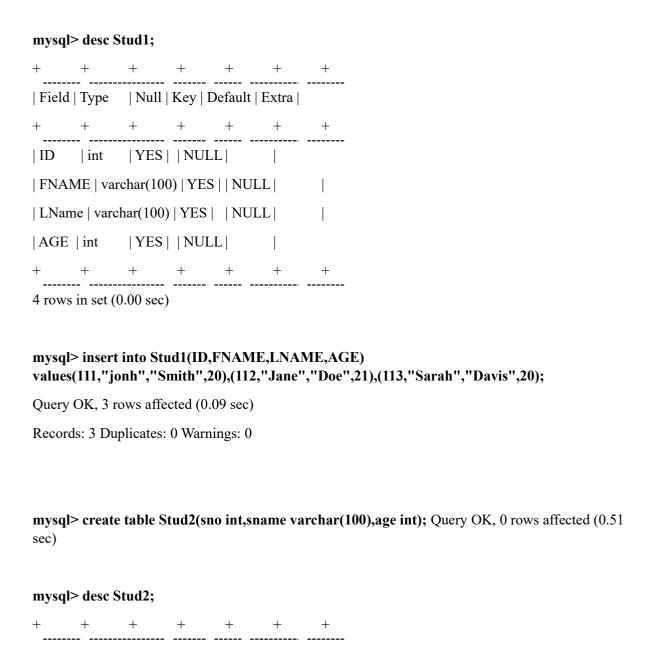
mysql> insert into marks1 (sub,marks) values ('socialscience',96);

Query OK, 1 row affected (0.01 sec)



Experiment:8

mysql> create table Stud1(ID int,FNAME varchar(100),LName varchar(100), AGE int); Query OK, 0 rows affected (0.28 sec)



mysql> insert into Stud2(sno,sname,age) values(11,"Robert",22),(12,"Jenna",20),(13,"Allan",21);

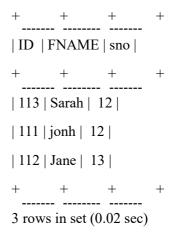
Query OK, 3 rows affected (0.08 sec) Records: 3 Duplicates: 0 Warnings: 0

mysql> select * from Stud1;

mysql> select * from Stud2;

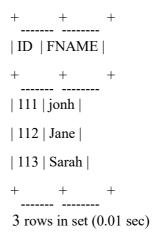
1. Inner Join

mysql> select Stud1.ID, Stud1.FNAME, Stud2.sno from Stud1 inner join Stud2 on Stud1.AGE=Stud2.Age;



2. Left Join

mysql> select Stud1.ID, Stud1.FNAME from Stud1 left join Stud2 on Stud1.AGE=Stud2.age;



3. Right Join

mysql> select Stud1.ID, Stud1.FNAME from Stud1 right join Stud2 on Stud1.AGE=Stud2.age;

```
| NULL | NULL |
| 113 | Sarah |
| 111 | jonh |
| 112 | Jane |
4 rows in set (0.00 \text{ sec})
4. Full Join
mysql> select Stud1.ID, Stud1.FNAME from Stud1 left join Stud2 on Stud1.AGE=Stud2.age
-> union
-> select Stud1.ID, Stud1.FNAME from Stud1 right join Stud2 on Stud1.AGE=Stud2.age;
| ID | FNAME |
+ _ _ + +
| 111 | jonh |
| 112 | Jane |
| 113 | Sarah |
| NULL | NULL |
+ + + +
4 rows in set (0.03 \text{ sec})
5. Cross Join
mysql> select Stud1.AGE, Stud1.FNAME from Stud1 cross join Stud2 where
Stud1.AGE=Stud2.age;
| AGE | FNAME |
+ + + +
| 20 | Sarah |
```

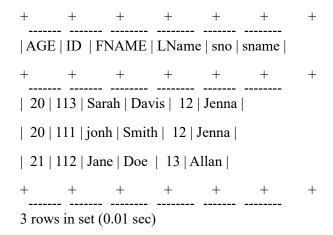
| 20 | jonh |

| 21 | Jane |

```
+____ + ___ + 3 rows in set (0.00 sec)
```

6. Natural Join

mysql> select * from Stud1 natural join Stud2;



7. Self Join

mysql> select a.ID,B.FNAME as ELDER, a. FNAME as SMALLER,a.AGE as LOWER from Stud1 a, Stud1 b where a.AGE>b.AGE;

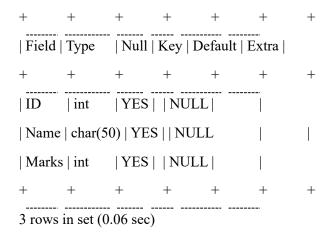
+	+	+	+	+						
ID ELDER SMALLER LOWER										
+	+	+	+	+						
112 j	onh Ja	ne		21						
112 8	Sarah J	ane	1	21						
+	+	+	+	+						
2 rows in set (0.01 sec)										

Experiment: 9

mysql> create table Student10(ID int,Name char(50),Marks int);

Query OK, 0 rows affected (0.55 sec)

mysql> desc Student10;



mysql> insert into Student10(ID,Name,Marks)values(25,'Daisy',78);

Query OK, 1 row affected (0.07 sec)

mysql> insert into Student10(ID,Name,Marks)values(56,'John',42); Query OK, 1 row affected (0.04 sec)

mysql> insert into Student10(ID,Name,Marks)values(87,'Jenny',80); Query OK, 1 row affected (0.05 sec)

mysql> insert into Student10(ID,Name,Marks)values(45,'Davil',64); Query OK, 1 row affected (0.05 sec)

mysql> insert into Student10(ID,Name,Marks)values(88,'Johnson',90); Query OK, 1 row affected (0.03 sec)

mysql> insert into Student10(ID,Name,Marks)values(8,'Robert',79); Query OK, 1 row affected (0.04 sec)

mysql> select * from Student10;

```
+----+
| ID | Name | Marks |

+----+
| 25 | Daisy | 78 |
| 56 | John | 42 |
| 87 | Jenny | 80 |
| 45 | Davil | 64 |
| 88 | Johnson | 90 |
| 8 | Robert | 79 |
```

+ + + + +

6 rows in set (0.01 sec)

mysql> select MIN(Marks)from Student10;

```
+ + +
......| MIN(Marks) |
+ + +
......| 42 |
+ +
1 row in set (0.02 sec)
```

mysql> select MAX(Marks)from Student10;

```
+ + +
| MAX(Marks) |
+ + +
| 90 |
+ + +
| 1 row in set (0.00 sec)
```

mysql> select AVG(Marks)from Student10;

mysql> select COUNT(Marks)from Student10;

```
+ + + | COUNT(Marks) | + + | | 6 | | + + | | 1 row in set (0.00 sec)
```

mysql> select SUM(Marks)from Student10;

```
+ + + | SUM(Marks) | + + + | 433 | + + + | 1 row in set (0.00 sec)
```

Experiment: 10

mysql> select char_length('Johnson');

mysql> select ASCII('Johnson');

mysql> select concat('Johnson');

```
mysql> select concat('Johnson') as fullname;
| fullname |
| Johnson |
1 row in set (0.00 sec)
mysql> select upper('hello');
+ +
| upper('hello') |
+ +
| HELLO |
+ +
1 row in set (0.01 sec)
mysql> select lower('HELLO');
+ +
| lower('HELLO') |
| hello |
+ +
1 row in set (0.00 sec)
mysql> select reverse('HELLO');
| reverse('HELLO') |
```

OLLEH |

```
+____+
1 row in set (0.00 sec)
mysql> select lcase('We ALl are CSE Students');
| lcase('We ALl are CSE Students') |
| we all are cse students |
1 row in set (0.00 \text{ sec})
mysql> select ucase('We ALl are CSE Students');
        _____
| ucase('We ALl are CSE Students') |
| WE ALL ARE CSE STUDENTS
1 row in set (0.00 sec)
mysql> select repeat('HELLO', 2);
+ +
| repeat('HELLO', 2) |
+ +
HELLOHELLO
```

1 row in set (0.00 sec)