

```
mysql> select * from emp;
```

```
+-----+-----+-----+-----+
| empid | ename  | deptno | salary |
+-----+-----+-----+-----+
| EMP1  | Amit   | 30     | 2356.09 |
| EMP3  | Suman  | 30     | 4356.09 |
| EMP4  | Raj    | 20     | 5000.00 |
| EMP12 | Tiwari | 30     | 11111.11 |
| EMP13 | rujjo  | 10     | 2323.00 |
| EMP14 | qokwqw | 10     | 999999.99 |
| EMP15 | DON    | 420    | 9211.89 |
+-----+-----+-----+-----+
```

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

```
mysql> select * from emp order by ename;
```

```
+-----+-----+-----+-----+
| empid | ename  | deptno | salary |
+-----+-----+-----+-----+
| EMP1  | Amit   | 30     | 2356.09 |
| EMP15 | DON    | 420    | 9211.89 |
| EMP14 | qokwqw | 10     | 999999.99 |
| EMP4  | Raj    | 20     | 5000.00 |
| EMP13 | rujjo  | 10     | 2323.00 |
| EMP3  | Suman  | 30     | 4356.09 |
| EMP12 | Tiwari | 30     | 11111.11 |
+-----+-----+-----+-----+
```

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

7 rows in set (0.03 sec)

```
mysql> select * from emp order by emid;
```

ERROR 1054 (42S22): Unknown column 'emid' in 'order clause'

```
mysql> select * from emp order by empid;
```

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

```
| empid | ename | deptno | salary |
```

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

```
| EMP1 | Amit | 30 | 2356.09 |
```

```
| EMP12 | Tiwari | 30 | 11111.11 |
```

```
| EMP13 | rujjo | 10 | 2323.00 |
```

```
| EMP14 | qokwqw | 10 | 999999.99 |
```

```
| EMP15 | DON | 420 | 9211.89 |
```

```
| EMP3 | Suman | 30 | 4356.09 |
```

```
| EMP4 | Raj | 20 | 5000.00 |
```

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

7 rows in set (0.00 sec)

```
mysql> select * from emp order by ename;
```

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

```
| empid | ename | deptno | salary |
```

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

```
| EMP1 | Amit | 30 | 2356.09 |
```

```
| EMP15 | DON | 420 | 9211.89 |
```

```
| EMP14 | qokwqw | 10 | 999999.99 |
| EMP4 | Raj | 20 | 5000.00 |
| EMP13 | rujjo | 10 | 2323.00 |
| EMP3 | Suman | 30 | 4356.09 |
| EMP12 | Tiwari | 30 | 11111.11 |
```

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

7 rows in set (0.00 sec)

```
mysql> select * from emp order by ename desc;
```

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

```
| empid | ename | deptno | salary |
+-----+-----+-----+-----+
| EMP12 | Tiwari | 30 | 11111.11 |
| EMP3 | Suman | 30 | 4356.09 |
| EMP13 | rujjo | 10 | 2323.00 |
| EMP4 | Raj | 20 | 5000.00 |
| EMP14 | qokwqw | 10 | 999999.99 |
| EMP15 | DON | 420 | 9211.89 |
| EMP1 | Amit | 30 | 2356.09 |
```

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

7 rows in set (0.00 sec)

```
mysql> select * from emp;
```

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

```
| empid | ename | deptno | salary |
```

```

+-----+-----+-----+-----+
| EMP1 | Amit | 30 | 2356.09 |
| EMP3 | Suman | 30 | 4356.09 |
| EMP4 | Raj | 20 | 5000.00 |
| EMP12 | Tiwari | 30 | 11111.11 |
| EMP13 | rujjo | 10 | 2323.00 |
| EMP14 | qokwqw | 10 | 999999.99 |
| EMP15 | DON | 420 | 9211.89 |
+-----+-----+-----+-----+

```

7 rows in set (0.00 sec)

```
mysql> select * from emp ename desc;
```

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'desc' at line 1

```
mysql> select * from emp order by salary desc;
```

```

+-----+-----+-----+-----+
| empid | ename | deptno | salary |
+-----+-----+-----+-----+
| EMP14 | qokwqw | 10 | 999999.99 |
| EMP12 | Tiwari | 30 | 11111.11 |
| EMP15 | DON | 420 | 9211.89 |
| EMP4 | Raj | 20 | 5000.00 |
| EMP3 | Suman | 30 | 4356.09 |
| EMP1 | Amit | 30 | 2356.09 |
| EMP13 | rujjo | 10 | 2323.00 |
+-----+-----+-----+-----+

```

7 rows in set (0.00 sec)

```
mysql> select * from emp order by salary desc limit 1,1;
```

```
+-----+-----+-----+-----+
| empid | ename  | deptno | salary |
+-----+-----+-----+-----+
| EMP12 | Tiwari | 30     | 11111.11 |
```

1 row in set (0.00 sec)

```
mysql> select * from emp order by salary limit 1,1;
```

```
+-----+-----+-----+-----+
| empid | ename  | deptno | salary |
+-----+-----+-----+-----+
| EMP1  | Amit   | 30     | 2356.09 |
```

1 row in set (0.03 sec)

```
mysql> select * from emp order by salary ;
```

```
+-----+-----+-----+-----+
| empid | ename  | deptno | salary |
+-----+-----+-----+-----+
| EMP13 | rujjo  | 10     | 2323.00 |
| EMP1  | Amit   | 30     | 2356.09 |
| EMP3  | Suman  | 30     | 4356.09 |
```

```
| EMP4 | Raj | 20 | 5000.00 |
| EMP15 | DON | 420 | 9211.89 |
| EMP12 | Tiwari | 30 | 11111.11 |
| EMP14 | qokwqw | 10 | 999999.99 |
```

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

7 rows in set (0.00 sec)

```
mysql> select max(salary) from emp;
```

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

```
| max(salary) |
```

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

```
| 999999.99 |
```

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

1 row in set (0.00 sec)

```
mysql> select ename,max(salary) from emp;
```

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

```
| ename | max(salary) |
```

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

```
| Amit | 999999.99 |
```

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

1 row in set (0.00 sec)

```
mysql> select ename,salary from emp where salary=max(salary);
```

ERROR 1111 (HY000): Invalid use of group function

```
mysql> select ename,salary from emp where salary=(select max(salary) from emp);
```

```
+-----+-----+
| ename | salary |
+-----+-----+
| qokwqw | 999999.99 |
```

```
+-----+-----+
1 row in set (0.04 sec)
```

```
mysql> select ename,salary from emp where salary=999999.99;
```

```
+-----+-----+
| ename | salary |
+-----+-----+
| qokwqw | 999999.99 |
```

```
+-----+-----+
1 row in set (0.00 sec)
```

```
mysql> desc emp;
```

```
+-----+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| empid | varchar(8) | YES  |     | NULL    |      |
| ename | char(20)   | YES  |     | NULL    |      |
| deptno | int(4)     | YES  |     | NULL    |      |
| salary | double(8,2) | YES  |     | NULL    |      |
+-----+-----+-----+-----+-----+-----+
```

4 rows in set (0.07 sec)

```
mysql> alter table emp add dob date;
```

Query OK, 7 rows affected (0.42 sec)

Records: 7 Duplicates: 0 Warnings: 0

```
mysql> desc emp;
```

Field	Type	Null	Key	Default	Extra
empid	varchar(8)	YES		NULL	
ename	char(20)	YES		NULL	
deptno	int(4)	YES		NULL	
salary	double(8,2)	YES		NULL	
dob	date	YES		NULL	

5 rows in set (0.01 sec)

```
mysql> select * from emp ;
```

empid	ename	deptno	salary	dob
EMP1	Amit	30	2356.09	NULL
EMP3	Suman	30	4356.09	NULL
EMP4	Raj	20	5000.00	NULL



```

| EMP12 | Tiwari | 30 | 11111.11 | NULL |
| EMP13 | rujjo | 10 | 2323.00 | NULL |
| EMP14 | qokqwq | 10 | 999999.99 | NULL |
| EMP15 | DON | 420 | 9211.89 | NULL |

```

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

7 rows in set (0.00 sec)

```
mysql> upadet emp set dob='1981-02-11' where emp='EMP1';
```

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'upadet emp set dob='1981-02-11' where emp='EMP1'' at line 1

```
mysql> update emp set dob='1981-02-11' where emp='EMP1';
```

ERROR 1054 (42S22): Unknown column 'emp' in 'where clause'

```
mysql> update emp set dob='1981-02-11' where empid='EMP1';
```

Query OK, 1 row affected (0.16 sec)

Rows matched: 1 Changed: 1 Warnings: 0

```
mysql> select * from emp ;
```

```

+-----+-----+-----+-----+-----+
| empid | ename | deptno | salary | dob      |
+-----+-----+-----+-----+
| EMP1  | Amit  | 30     | 2356.09 | 1981-02-11 |
| EMP3  | Suman | 30     | 4356.09 | NULL      |
| EMP4  | Raj   | 20     | 5000.00 | NULL      |
| EMP12 | Tiwari | 30     | 11111.11 | NULL      |
| EMP13 | rujjo | 10     | 2323.00 | NULL      |

```

```
| EMP14 | qokwqw | 10 | 999999.99 | NULL |
```

```
| EMP15 | DON | 420 | 9211.89 | NULL |
```

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

7 rows in set (0.00 sec)

```
mysql> alter table emp add desgn varchar(20) AFTER ename;
```

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'varchar(20) AFTER ename' at line 1

```
mysql> alter table emp add desgn varchar(20) AFTER ename;
```

Query OK, 7 rows affected (0.21 sec)

Records: 7 Duplicates: 0 Warnings: 0

```
mysql> select * from emp ;
```

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

```
| empid | ename | desgn | deptno | salary | dob |
```

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

```
| EMP1 | Amit | NULL | 30 | 2356.09 | 1981-02-11 |
```

```
| EMP3 | Suman | NULL | 30 | 4356.09 | NULL |
```

```
| EMP4 | Raj | NULL | 20 | 5000.00 | NULL |
```

```
| EMP12 | Tiwari | NULL | 30 | 11111.11 | NULL |
```

```
| EMP13 | rujjo | NULL | 10 | 2323.00 | NULL |
```

```
| EMP14 | qokwqw | NULL | 10 | 999999.99 | NULL |
```

```
| EMP15 | DON | NULL | 420 | 9211.89 | NULL |
```

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

7 rows in set (0.00 sec)

```
mysql> alter table emp drop desgn ;
```

```
Query OK, 7 rows affected (0.22 sec)
```

```
Records: 7 Duplicates: 0 Warnings: 0
```

```
mysql> select * from emp ;
```

```
+-----+-----+-----+-----+-----+
| empid | ename | deptno | salary | dob      |
+-----+-----+-----+-----+-----+
| EMP1  | Amit  | 30     | 2356.09 | 1981-02-11 |
| EMP3  | Suman | 30     | 4356.09 | NULL       |
| EMP4  | Raj   | 20     | 5000.00 | NULL       |
| EMP12 | Tiwari | 30     | 11111.11 | NULL       |
| EMP13 | rujjo | 10     | 2323.00 | NULL       |
| EMP14 | qokwqw | 10     | 999999.99 | NULL       |
| EMP15 | DON   | 420    | 9211.89 | NULL       |
+-----+-----+-----+-----+-----+
```

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

```
mysql> alter table emp change dob dateofbirth varchar(30);
```

```
Query OK, 7 rows affected (0.20 sec)
```

```
Records: 7 Duplicates: 0 Warnings: 0
```

```
mysql> desc emp;
```

```
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
```

```

+-----+-----+-----+-----+-----+
| empid  | varchar(8) | YES | | NULL | |
| ename  | char(20)   | YES | | NULL | |
| deptno | int(4)     | YES | | NULL | |
| salary | double(8,2) | YES | | NULL | |
| dateofbirth | varchar(30) | YES | | NULL | |
+-----+-----+-----+-----+

```

5 rows in set (0.01 sec)

```
mysql> create table dept (deptno int(3),dname char(30));
```

Query OK, 0 rows affected (0.16 sec)

```
mysql> insert into dept values(10,'Admin');
```

Query OK, 1 row affected (0.07 sec)

```
mysql> insert into dept values(20,'Manager');
```

Query OK, 1 row affected (0.08 sec)

```
mysql> insert into dept values(30,'Finance');
```

Query OK, 1 row affected (0.11 sec)

```
mysql> insert into dept values(40,'Development');
```

Query OK, 1 row affected (0.08 sec)

```
mysql> insert into dept values(50,'Human Resource');
```

Query OK, 1 row affected (0.07 sec)

```
mysql> select * from dept;
```

```
+-----+-----+
| deptno | dname      |
+-----+-----+
| 10 | Admin      |
| 20 | Manager    |
| 30 | Finance    |
| 40 | Development|
| 50 | Human Resource |
+-----+-----+
```

5 rows in set (0.00 sec)

```
mysql> select * from emp ;
```

```
+-----+-----+-----+-----+-----+
| empid | ename | deptno | salary | dateofbirth |
+-----+-----+-----+-----+-----+
| EMP1 | Amit | 30 | 2356.09 | 1981-02-11 |
| EMP3 | Suman | 30 | 4356.09 | NULL |
| EMP4 | Raj | 20 | 5000.00 | NULL |
| EMP12 | Tiwari | 30 | 11111.11 | NULL |
| EMP13 | rujjo | 10 | 2323.00 | NULL |
| EMP14 | qokwqw | 10 | 999999.99 | NULL |
| EMP15 | DON | 420 | 9211.89 | NULL |
```

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

7 rows in set (0.00 sec)

```
mysql> select ename,dname from emp nautral join dept;
```

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

```
| ename | dname |
```

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

```
| Amit | Admin |
```

```
| Amit | Manager |
```

```
| Amit | Finance |
```

```
| Amit | Development |
```

```
| Amit | Human Resource |
```

```
| Suman | Admin |
```

```
| Suman | Manager |
```

```
| Suman | Finance |
```

```
| Suman | Development |
```

```
| Suman | Human Resource |
```

```
| Raj | Admin |
```

```
| Raj | Manager |
```

```
| Raj | Finance |
```

```
| Raj | Development |
```

```
| Raj | Human Resource |
```

```
| Tiwari | Admin |
```

```
| Tiwari | Manager |
```

```
| Tiwari | Finance |
```

```

| Tiwari | Development |
| Tiwari | Human Resource |
| rujjo | Admin |
| rujjo | Manager |
| rujjo | Finance |
| rujjo | Development |
| rujjo | Human Resource |
| qokwqw | Admin |
| qokwqw | Manager |
| qokwqw | Finance |
| qokwqw | Development |
| qokwqw | Human Resource |
| DON | Admin |
| DON | Manager |
| DON | Finance |
| DON | Development |
| DON | Human Resource |

```

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

35 rows in set (0.00 sec)

```
mysql> desc emp;
```

```

+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| empid | varchar(8) | YES | | NULL | |

```

```

| ename   | char(20) | YES | | NULL | |
| deptno  | int(4)   | YES | | NULL | |
| salary  | double(8,2) | YES | | NULL | |
| dateofbirth | varchar(30) | YES | | NULL | |

```

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

5 rows in set (0.01 sec)

mysql> desc dept;

```

+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+
| deptno | int(3) | YES  |     | NULL    |      |
| dname  | char(30) | YES  |     | NULL    |      |

```

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

2 rows in set (0.01 sec)

mysql> select \* from dept;

```

+-----+-----+
| deptno | dname      |
+-----+-----+
| 10 | Admin      |
| 20 | Manager    |
| 30 | Finance    |
| 40 | Development |
| 50 | Human Resource |

```



```
+-----+-----+
5 rows in set (0.00 sec)
```

```
mysql> select * from emp;
```

```
+-----+-----+-----+-----+-----+
| empid | ename | deptno | salary | dateofbirth |
+-----+-----+-----+-----+-----+
| EMP1  | Amit  | 30     | 2356.09 | 1981-02-11  |
| EMP3  | Suman | 30     | 4356.09 | NULL        |
| EMP4  | Raj   | 20     | 5000.00 | NULL        |
| EMP12 | Tiwari | 30     | 11111.11 | NULL        |
| EMP13 | rujjo | 10     | 2323.00 | NULL        |
| EMP14 | qokwqw | 10     | 999999.99 | NULL        |
| EMP15 | DON   | 420    | 9211.89 | NULL        |
+-----+-----+-----+-----+-----+
```

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

```
mysql> select ename,dname from emp natural join dept;
```

```
+-----+-----+
| ename | dname |
+-----+-----+
| Amit  | Admin |
| Amit  | Manager |
| Amit  | Finance |
| Amit  | Development |
```

| Amit | Human Resource |

| Suman | Admin |

| Suman | Manager |

| Suman | Finance |

| Suman | Development |

| Suman | Human Resource |

| Raj | Admin |

| Raj | Manager |

| Raj | Finance |

| Raj | Development |

| Raj | Human Resource |

| Tiwari | Admin |

| Tiwari | Manager |

| Tiwari | Finance |

| Tiwari | Development |

| Tiwari | Human Resource |

| rujjo | Admin |

| rujjo | Manager |

| rujjo | Finance |

| rujjo | Development |

| rujjo | Human Resource |

| qokwqw | Admin |

| qokwqw | Manager |

| qokwqw | Finance |

| qokwqw | Development |

```
| qokwqw | Human Resource |
```

```
| DON | Admin |
```

```
| DON | Manager |
```

```
| DON | Finance |
```

```
| DON | Development |
```

```
| DON | Human Resource |
```

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

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

```
mysql> alter table emp change deptno deptno int(3);
```

```
Query OK, 0 rows affected (0.08 sec)
```

```
Records: 0 Duplicates: 0 Warnings: 0
```

```
mysql> select ename,dname from emp natural join dept;
```

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

```
| ename | dname |
```

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

```
| Amit | Admin |
```

```
| Amit | Manager |
```

```
| Amit | Finance |
```

```
| Amit | Development |
```

```
| Amit | Human Resource |
```

```
| Suman | Admin |
```

```
| Suman | Manager |
```

```
| Suman | Finance |
```

| Suman | Development |

| Suman | Human Resource |

| Raj | Admin |

| Raj | Manager |

| Raj | Finance |

| Raj | Development |

| Raj | Human Resource |

| Tiwari | Admin |

| Tiwari | Manager |

| Tiwari | Finance |

| Tiwari | Development |

| Tiwari | Human Resource |

| rujjo | Admin |

| rujjo | Manager |

| rujjo | Finance |

| rujjo | Development |

| rujjo | Human Resource |

| qokwqw | Admin |

| qokwqw | Manager |

| qokwqw | Finance |

| qokwqw | Development |

| qokwqw | Human Resource |

| DON | Admin |

| DON | Manager |

| DON | Finance |

```
| DON | Development |
```

```
| DON | Human Resource |
```

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

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

```
mysql> desc emp;
```

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

```
| Field | Type | Null | Key | Default | Extra |
```

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

```
| empid | varchar(8) | YES | | NULL | |
```

```
| ename | char(20) | YES | | NULL | |
```

```
| deptno | int(3) | YES | | NULL | |
```

```
| salary | double(8,2) | YES | | NULL | |
```

```
| dateofbirth | varchar(30) | YES | | NULL | |
```

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

```
5 rows in set (0.01 sec)
```

```
mysql> desc dept;
```

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

```
| Field | Type | Null | Key | Default | Extra |
```

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

```
| deptno | int(3) | YES | | NULL | |
```

```
| dname | char(30) | YES | | NULL | |
```

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

```
2 rows in set (0.01 sec)
```

```
mysql> select ename,dname from emp natural join dept ;
```

```
+-----+-----+  
| ename | dname |  
+-----+-----+  
| Amit  | Finance |  
| Suman | Finance |  
| Raj   | Manager |  
| Tiwari | Finance |  
| rujjo | Admin   |  
| qokwqw | Admin  |  
+-----+-----+
```

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

```
mysql> alter table emp change deptno deptno int(4);
```

```
Query OK, 0 rows affected (0.06 sec)
```

```
Records: 0 Duplicates: 0 Warnings: 0
```

```
mysql> select ename,dname from emp natural join dept ;
```

```
+-----+-----+  
| ename | dname |  
+-----+-----+  
| Amit  | Finance |  
| Suman | Finance |  
| Raj   | Manager |
```

```
| Tiwari | Finance |
| rujjo  | Admin   |
| qokwqw | Admin   |
```

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

6 rows in set (0.00 sec)

```
mysql> alter table emp change deptno deptno char(4);
```

Query OK, 7 rows affected (0.22 sec)

Records: 7 Duplicates: 0 Warnings: 0

```
mysql> select ename,dname from emp natural join dept ;
```

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

```
| ename | dname |
```

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

```
| Amit  | Finance |
```

```
| Suman | Finance |
```

```
| Raj   | Manager |
```

```
| Tiwari | Finance |
```

```
| rujjo | Admin   |
```

```
| qokwqw | Admin   |
```

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

6 rows in set (0.00 sec)

```
mysql> select * from emp;
```

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

```

| empid | ename | deptno | salary | dateofbirth |
+-----+-----+-----+-----+-----+
| EMP1 | Amit | 30 | 2356.09 | 1981-02-11 |
| EMP3 | Suman | 30 | 4356.09 | NULL |
| EMP4 | Raj | 20 | 5000.00 | NULL |
| EMP12 | Tiwari | 30 | 11111.11 | NULL |
| EMP13 | rujjo | 10 | 2323.00 | NULL |
| EMP14 | qokwqw | 10 | 999999.99 | NULL |
| EMP15 | DON | 420 | 9211.89 | NULL |
+-----+-----+-----+-----+
7 rows in set (0.00 sec)

```

```
mysql> select * from dept;
```

```

+-----+-----+
| deptno | dname |
+-----+-----+
| 10 | Admin |
| 20 | Manager |
| 30 | Finance |
| 40 | Development |
| 50 | Human Resource |
+-----+-----+
5 rows in set (0.00 sec)

```

```
mysql> select * from emp natural join dept ;
```



```

+-----+-----+-----+-----+-----+-----+
| deptno | empid | ename | salary | dateofbirth | dname |
+-----+-----+-----+-----+-----+
| 30 | EMP1 | Amit | 2356.09 | 1981-02-11 | Finance |
| 30 | EMP3 | Suman | 4356.09 | NULL | Finance |
| 20 | EMP4 | Raj | 5000.00 | NULL | Manager |
| 30 | EMP12 | Tiwari | 11111.11 | NULL | Finance |
| 10 | EMP13 | rujjo | 2323.00 | NULL | Admin |
| 10 | EMP14 | qokwqw | 999999.99 | NULL | Admin |
+-----+-----+-----+-----+-----+

```

6 rows in set (0.00 sec)

```
mysql> alter table emp change deptno deptn char(4);
```

Query OK, 7 rows affected (0.29 sec)

Records: 7 Duplicates: 0 Warnings: 0

```
mysql> select * from emp natural join dept ;
```

```

+-----+-----+-----+-----+-----+-----+-----+
| empid | ename | deptn | salary | dateofbirth | deptno | dname |
+-----+-----+-----+-----+-----+-----+
| EMP1 | Amit | 30 | 2356.09 | 1981-02-11 | 10 | Admin |
| EMP1 | Amit | 30 | 2356.09 | 1981-02-11 | 20 | Manager |
| EMP1 | Amit | 30 | 2356.09 | 1981-02-11 | 30 | Finance |
| EMP1 | Amit | 30 | 2356.09 | 1981-02-11 | 40 | Development |
| EMP1 | Amit | 30 | 2356.09 | 1981-02-11 | 50 | Human Resource |

```

EMP3	Suman	30	4356.09	NULL	10	Admin	
EMP3	Suman	30	4356.09	NULL	20	Manager	
EMP3	Suman	30	4356.09	NULL	30	Finance	
EMP3	Suman	30	4356.09	NULL	40	Development	
EMP3	Suman	30	4356.09	NULL	50	Human Resource	
EMP4	Raj	20	5000.00	NULL	10	Admin	
EMP4	Raj	20	5000.00	NULL	20	Manager	
EMP4	Raj	20	5000.00	NULL	30	Finance	
EMP4	Raj	20	5000.00	NULL	40	Development	
EMP4	Raj	20	5000.00	NULL	50	Human Resource	
EMP12	Tiwari	30	11111.11	NULL	10	Admin	
EMP12	Tiwari	30	11111.11	NULL	20	Manager	
EMP12	Tiwari	30	11111.11	NULL	30	Finance	
EMP12	Tiwari	30	11111.11	NULL	40	Development	
EMP12	Tiwari	30	11111.11	NULL	50	Human Resource	
EMP13	rujjo	10	2323.00	NULL	10	Admin	
EMP13	rujjo	10	2323.00	NULL	20	Manager	
EMP13	rujjo	10	2323.00	NULL	30	Finance	
EMP13	rujjo	10	2323.00	NULL	40	Development	
EMP13	rujjo	10	2323.00	NULL	50	Human Resource	
EMP14	qokwqw	10	999999.99	NULL	10	Admin	
EMP14	qokwqw	10	999999.99	NULL	20	Manager	
EMP14	qokwqw	10	999999.99	NULL	30	Finance	
EMP14	qokwqw	10	999999.99	NULL	40	Development	
EMP14	qokwqw	10	999999.99	NULL	50	Human Resource	

EMP15	DON	420	9211.89	NULL	10	Admin
EMP15	DON	420	9211.89	NULL	20	Manager
EMP15	DON	420	9211.89	NULL	30	Finance
EMP15	DON	420	9211.89	NULL	40	Development
EMP15	DON	420	9211.89	NULL	50	Human Resource

+-----+-----+-----+-----+-----+-----+

35 rows in set (0.00 sec)

mysql> select \* from emp natural join dept ;

empid	ename	deptn	salary	dateofbirth	deptno	dname
EMP1	Amit	30	2356.09	1981-02-11	10	Admin
EMP1	Amit	30	2356.09	1981-02-11	20	Manager
EMP1	Amit	30	2356.09	1981-02-11	30	Finance
EMP1	Amit	30	2356.09	1981-02-11	40	Development
EMP1	Amit	30	2356.09	1981-02-11	50	Human Resource
EMP3	Suman	30	4356.09	NULL	10	Admin
EMP3	Suman	30	4356.09	NULL	20	Manager
EMP3	Suman	30	4356.09	NULL	30	Finance
EMP3	Suman	30	4356.09	NULL	40	Development
EMP3	Suman	30	4356.09	NULL	50	Human Resource
EMP4	Raj	20	5000.00	NULL	10	Admin
EMP4	Raj	20	5000.00	NULL	20	Manager
EMP4	Raj	20	5000.00	NULL	30	Finance

EMP4	Raj	20	5000.00	NULL	40	Development
EMP4	Raj	20	5000.00	NULL	50	Human Resource
EMP12	Tiwari	30	11111.11	NULL	10	Admin
EMP12	Tiwari	30	11111.11	NULL	20	Manager
EMP12	Tiwari	30	11111.11	NULL	30	Finance
EMP12	Tiwari	30	11111.11	NULL	40	Development
EMP12	Tiwari	30	11111.11	NULL	50	Human Resource
EMP13	rujjo	10	2323.00	NULL	10	Admin
EMP13	rujjo	10	2323.00	NULL	20	Manager
EMP13	rujjo	10	2323.00	NULL	30	Finance
EMP13	rujjo	10	2323.00	NULL	40	Development
EMP13	rujjo	10	2323.00	NULL	50	Human Resource
EMP14	qokwqw	10	999999.99	NULL	10	Admin
EMP14	qokwqw	10	999999.99	NULL	20	Manager
EMP14	qokwqw	10	999999.99	NULL	30	Finance
EMP14	qokwqw	10	999999.99	NULL	40	Development
EMP14	qokwqw	10	999999.99	NULL	50	Human Resource
EMP15	DON	420	9211.89	NULL	10	Admin
EMP15	DON	420	9211.89	NULL	20	Manager
EMP15	DON	420	9211.89	NULL	30	Finance
EMP15	DON	420	9211.89	NULL	40	Development
EMP15	DON	420	9211.89	NULL	50	Human Resource

+-----+-----+-----+-----+-----+-----+-----+

35 rows in set (0.00 sec)

mysql>

EMP13	rujjo	10	2323.00	NULL	40	Development
EMP13	rujjo	10	2323.00	NULL	50	Human Resource
EMP14	qokwqw	10	999999.99	NULL	10	Admin
EMP14	qokwqw	10	999999.99	NULL	20	Manager
EMP14	qokwqw	10	999999.99	NULL	30	Finance
EMP14	qokwqw	10	999999.99	NULL	40	Development
EMP14	qokwqw	10	999999.99	NULL	50	Human Resource
EMP15	DON	420	9211.89	NULL	10	Admin
EMP15	DON	420	9211.89	NULL	20	Manager
EMP15	DON	420	9211.89	NULL	30	Finance
EMP15	DON	420	9211.89	NULL	40	Development
EMP15	DON	420	9211.89	NULL	50	Human Resource

+-----+-----+-----+-----+-----+-----+-----+

35 rows in set (0.00 sec)

mysql> alter table dept change depnno deptno

-> ;

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near "" at line 1

mysql> desc dept;

Field	Type	Null	Key	Default	Extra
deptno	int(3)	YES		NULL	
dname	char(30)	YES		NULL	

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

2 rows in set (0.01 sec)

```
mysql> desc emp;
```

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

```
| Field      | Type      | Null | Key | Default | Extra |
```

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

```
| empid     | varchar(8) | YES  |     | NULL    |      |
```

```
| ename     | char(20)   | YES  |     | NULL    |      |
```

```
| deptn     | char(4)    | YES  |     | NULL    |      |
```

```
| salary    | double(8,2) | YES  |     | NULL    |      |
```

```
| dateofbirth | varchar(30) | YES  |     | NULL    |      |
```

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

5 rows in set (0.01 sec)

```
mysql> alter table emp deptn deptno;
```

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'deptn deptno' at line 1

```
mysql> alter table emp change deptn deptno;
```

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near "" at line 1

```
mysql> alter table emp change deptn char(4) deptno int(4);
```

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'char(4) deptno int(4)' at line 1

```
mysql> alter table emp change deptn deptno int(4);
```

Query OK, 7 rows affected (0.28 sec)

Records: 7 Duplicates: 0 Warnings: 0

```
mysql> desc emp;
```

```
+-----+-----+-----+-----+-----+
| Field  | Type  | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| empid  | varchar(8) | YES |  | NULL |  |
| ename  | char(20) | YES |  | NULL |  |
| deptno | int(4) | YES |  | NULL |  |
| salary | double(8,2) | YES |  | NULL |  |
| dateofbirth | varchar(30) | YES |  | NULL |  |
+-----+-----+-----+-----+-----+
```

```
5 rows in set (0.01 sec)
```

```
mysql> select * from emp natural join dept;
```

```
+-----+-----+-----+-----+-----+-----+
| deptno | empid | ename | salary | dateofbirth | dname |
+-----+-----+-----+-----+-----+-----+
| 30 | EMP1 | Amit | 2356.09 | 1981-02-11 | Finance |
| 30 | EMP3 | Suman | 4356.09 | NULL | Finance |
| 20 | EMP4 | Raj | 5000.00 | NULL | Manager |
| 30 | EMP12 | Tiwari | 11111.11 | NULL | Finance |
| 10 | EMP13 | rujjo | 2323.00 | NULL | Admin |
| 10 | EMP14 | qokwqw | 999999.99 | NULL | Admin |
+-----+-----+-----+-----+-----+-----+
```

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

```
mysql> desc emp;
```

```
+-----+-----+-----+-----+-----+
| Field  | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| empid  | varchar(8) | YES |    | NULL    |      |
| ename  | char(20)  | YES |    | NULL    |      |
| deptno | int(4)    | YES |    | NULL    |      |
| salary | double(8,2) | YES |    | NULL    |      |
| dateofbirth | varchar(30) | YES |    | NULL    |      |
+-----+-----+-----+-----+-----+
```

```
5 rows in set (0.01 sec)
```

```
mysql> desc dept;
```

```
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| deptno | int(3) | YES |    | NULL    |      |
| dname  | char(30) | YES |    | NULL    |      |
+-----+-----+-----+-----+-----+
```

```
2 rows in set (0.01 sec)
```

```
mysql> select * from emp join dept usnig(deptno);
```

```
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near '(deptno)' at line 1
```

```
mysql> select * from emp join dept using(deptno);
```



```

+-----+-----+-----+-----+-----+-----+
| deptno | empid | ename | salary | dateofbirth | dname |
+-----+-----+-----+-----+-----+
| 30 | EMP1 | Amit | 2356.09 | 1981-02-11 | Finance |
| 30 | EMP3 | Suman | 4356.09 | NULL | Finance |
| 20 | EMP4 | Raj | 5000.00 | NULL | Manager |
| 30 | EMP12 | Tiwari | 11111.11 | NULL | Finance |
| 10 | EMP13 | rujjo | 2323.00 | NULL | Admin |
| 10 | EMP14 | qokwqw | 999999.99 | NULL | Admin |
+-----+-----+-----+-----+-----+

```

6 rows in set (0.04 sec)

```
mysql> alter table emp change deptno deptn int(4);
```

Query OK, 7 rows affected (0.24 sec)

Records: 7 Duplicates: 0 Warnings: 0

```
mysql> select * from emp join dept usnig(deptno);
```

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near '(deptno)' at line 1

```
mysql> select * from emp join dept on(deptn=deptno);
```

```

+-----+-----+-----+-----+-----+-----+
| empid | ename | deptn | salary | dateofbirth | deptno | dname |
+-----+-----+-----+-----+-----+
| EMP1 | Amit | 30 | 2356.09 | 1981-02-11 | 30 | Finance |
| EMP3 | Suman | 30 | 4356.09 | NULL | 30 | Finance |
| EMP4 | Raj | 20 | 5000.00 | NULL | 20 | Manager |

```

```
| EMP12 | Tiwari | 30 | 11111.11 | NULL | 30 | Finance |
| EMP13 | rujjo | 10 | 2323.00 | NULL | 10 | Admin |
| EMP14 | qokwqw | 10 | 999999.99 | NULL | 10 | Admin |
```

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

6 rows in set (0.00 sec)

mysql>

Enter password:

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

Your MySQL connection id is 653

Server version: 5.5.16-log MySQL Community Server (GPL)

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use ourdb;

Database changed

mysql> select \* from emp;

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

```
| empid | ename | deptn | salary | dateofbirth |
```

```

+-----+-----+-----+-----+-----+
| EMP1 | Amit | 30 | 2356.09 | 1981-02-11 |
| EMP3 | Suman | 30 | 4356.09 | NULL |
| EMP4 | Raj | 20 | 5000.00 | NULL |
| EMP12 | Tiwari | 30 | 11111.11 | NULL |
| EMP13 | rujjo | 10 | 2323.00 | NULL |
| EMP14 | qokwqw | 10 | 999999.99 | NULL |
| EMP15 | DON | 420 | 9211.89 | NULL |
+-----+-----+-----+-----+

```

7 rows in set (0.05 sec)

```
mysql> select * from dept;
```

```

+-----+-----+
| deptno | dname |
+-----+-----+
| 10 | Admin |
| 20 | Manager |
| 30 | Finance |
| 40 | Development |
| 50 | Human Resource |
+-----+-----+

```

5 rows in set (0.03 sec)

```
mysql> select ename,dname from emp join dept on(deptno=deptn);
```

```

+-----+-----+

```

```
| ename | dname |
+-----+-----+
| Amit  | Finance |
| Suman | Finance |
| Raj   | Manager |
| Tiwari | Finance |
| rujjo | Admin   |
| qokwqw | Admin  |
+-----+-----+
6 rows in set (0.00 sec)
```

```
mysql> select ename,dname from emp LEFT outer join dept on(deptno=deptn);
```

```
+-----+-----+
| ename | dname |
+-----+-----+
| Amit  | Finance |
| Suman | Finance |
| Raj   | Manager |
| Tiwari | Finance |
| rujjo | Admin   |
| qokwqw | Admin  |
| DON   | NULL   |
+-----+-----+
7 rows in set (0.00 sec)
```

```
mysql> select ename,dname from emp right outer join dept on(deptno=deptn);
```

```
+-----+-----+
| ename | dname   |
+-----+-----+
| rujjo | Admin   |
| qokwqw | Admin   |
| Raj   | Manager |
| Amit  | Finance |
| Suman | Finance |
| Tiwari | Finance |
| NULL  | Development |
| NULL  | Human Resource |
+-----+-----+
```

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

```
mysql> select ename,dname from emp full outer join dept on(deptno=deptn);
```

```
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'outer join dept on(deptno=deptn)' at line 1
```

```
mysql> select ename,dname from emp, dept where deptno=deptn;
```

```
+-----+-----+
| ename | dname   |
+-----+-----+
| Amit  | Finance |
| Suman | Finance |
| Raj   | Manager |
| Tiwari | Finance |
```

```
| rujjo | Admin |
```

```
| qokwqw | Admin |
```

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

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

```
mysql> alter table emp change deptn deptno int(3);
```

```
Query OK, 7 rows affected (0.54 sec)
```

```
Records: 7 Duplicates: 0 Warnings: 0
```

```
mysql> select * from emp;
```

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

```
| empid | ename | deptno | salary | dateofbirth |
```

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

```
| EMP1 | Amit | 30 | 2356.09 | 1981-02-11 |
```

```
| EMP3 | Suman | 30 | 4356.09 | NULL |
```

```
| EMP4 | Raj | 20 | 5000.00 | NULL |
```

```
| EMP12 | Tiwari | 30 | 11111.11 | NULL |
```

```
| EMP13 | rujjo | 10 | 2323.00 | NULL |
```

```
| EMP14 | qokwqw | 10 | 999999.99 | NULL |
```

```
| EMP15 | DON | 420 | 9211.89 | NULL |
```

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

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

```
mysql> select * from deptno;
```

```
ERROR 1146 (42S02): Table 'ourdb.deptno' doesn't exist
```

```
mysql> select * from dept;
```

```
+-----+-----+
| deptno | dname      |
+-----+-----+
| 10 | Admin      |
| 20 | Manager    |
| 30 | Finance    |
| 40 | Development|
| 50 | Human Resource |
+-----+-----+
```

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

```
mysql> select ename,dname from emp, dept where deptno=deptno;
```

```
ERROR 1052 (23000): Column 'deptno' in where clause is ambiguous
```

```
mysql> select ename,dname from emp, dept where emp.deptno=dept.deptno;
```

```
+-----+-----+
| ename | dname      |
+-----+-----+
| Amit  | Finance    |
| Suman | Finance    |
| Raj   | Manager    |
| Tiwari | Finance    |
| rujjo | Admin      |
| qokwqw | Admin      |
+-----+-----+
```

6 rows in set (0.00 sec)

```
mysql> select ename,dname from emp e, dept d where e.deptno=d.deptno;
```

```
+-----+-----+
| ename | dname |
+-----+-----+
| Amit  | Finance |
| Suman | Finance |
| Raj   | Manager |
| Tiwari | Finance |
| rujjo | Admin   |
| qokwqw | Admin  |
+-----+-----+
```

6 rows in set (0.00 sec)

```
mysql> select ename,dname,deptno from emp e, dept d where e.deptno=d.deptno;
```

ERROR 1052 (23000): Column 'deptno' in field list is ambiguous

```
mysql> select ename,dname,e.deptno from emp e, dept d where e.deptno=d.deptno;
```

```
+-----+-----+-----+
| ename | dname | deptno |
+-----+-----+-----+
| Amit  | Finance | 30 |
| Suman | Finance | 30 |
| Raj   | Manager | 20 |
| Tiwari | Finance | 30 |
```



```
| rujjo | Admin | 10 |
| qokwqw | Admin | 10 |
```

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

6 rows in set (0.00 sec)

```
mysql> select ename 'Employee Name',dname,e.deptno from emp e, dept d where e.deptno=d.deptno;
```

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

```
| Employee Name | dname | deptno |
```

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

```
| Amit | Finance | 30 |
```

```
| Suman | Finance | 30 |
```

```
| Raj | Manager | 20 |
```

```
| Tiwari | Finance | 30 |
```

```
| rujjo | Admin | 10 |
```

```
| qokwqw | Admin | 10 |
```

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

6 rows in set (0.00 sec)

```
mysql> select ename 'Employee Name',dname 'Department Name',e.deptno from emp e, dept d where e.deptno=d.deptno;
```

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

```
| Employee Name | Department Name | deptno |
```

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

```
| Amit | Finance | 30 |
```

```
| Suman | Finance | 30 |
```

```
| Raj | Manager | 20 |
```

```
| Tiwari | Finance | 30 |
| rujjo | Admin | 10 |
| qokqw | Admin | 10 |
```

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

6 rows in set (0.00 sec)

```
mysql> create table jobgrade (grade char(3),minsal double(9,2),maxsal double(9,2));
```

Query OK, 0 rows affected (0.12 sec)

```
mysql> insert into jobgrade
```

```
values('A',0.00,5000.00),('B',5001.00,10000.00),('C',10001.00,15000.00),('D',15001.00,20000.00);
```

Query OK, 4 rows affected (0.13 sec)

Records: 4 Duplicates: 0 Warnings: 0

```
mysql> select * from jobgrade;
```

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

```
| grade | minsal | maxsal |
```

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

```
| A | 0.00 | 5000.00 |
```

```
| B | 5001.00 | 10000.00 |
```

```
| C | 10001.00 | 15000.00 |
```

```
| D | 15001.00 | 20000.00 |
```

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

4 rows in set (0.00 sec)

```
mysql> select e.ename,e.salary,g.grade from jobgrade g,emp e
```

-> where e.salary<=g.maxsal AND e.salary >= g.minsal;

```
+-----+-----+-----+
| ename | salary | grade |
+-----+-----+-----+
| Amit  | 2356.09 | A    |
| Suman | 4356.09 | A    |
| Raj   | 5000.00 | A    |
| Tiwari | 11111.11 | C   |
| rujjo | 2323.00 | A    |
| DON   | 9211.89 | B    |
+-----+-----+-----+
6 rows in set (0.00 sec)
```

mysql> select ename,salary,grade from jobgrade g,emp e

-> where e.salary<=g.maxsal AND e.salary >= g.minsal;

```
+-----+-----+-----+
| ename | salary | grade |
+-----+-----+-----+
| Amit  | 2356.09 | A    |
| Suman | 4356.09 | A    |
| Raj   | 5000.00 | A    |
| Tiwari | 11111.11 | C   |
| rujjo | 2323.00 | A    |
| DON   | 9211.89 | B    |
+-----+-----+-----+
```

6 rows in set (0.00 sec)

mysql> desc emp;

Field	Type	Null	Key	Default	Extra
empid	varchar(8)	YES		NULL	
ename	char(20)	YES		NULL	
deptno	int(3)	YES		NULL	
salary	double(8,2)	YES		NULL	
dateofbirth	varchar(30)	YES		NULL	

5 rows in set (0.07 sec)

mysql>

mysql> alter table emp add mgr varchar(6);

Query OK, 7 rows affected (0.23 sec)

Records: 7 Duplicates: 0 Warnings: 0

mysql> select \* from emp;

empid	ename	deptno	salary	dateofbirth	mgr
EMP1	Amit	30	2356.09	1981-02-11	NULL
EMP3	Suman	30	4356.09	NULL	NULL

```
| EMP4 | Raj | 20 | 5000.00 | NULL | NULL |
| EMP12 | Tiwari | 30 | 11111.11 | NULL | NULL |
| EMP13 | rujjo | 10 | 2323.00 | NULL | NULL |
| EMP14 | qokwqw | 10 | 999999.99 | NULL | NULL |
| EMP15 | DON | 420 | 9211.89 | NULL | NULL |
+-----+-----+-----+-----+-----+-----+
```

7 rows in set (0.00 sec)

```
mysql> update emp set mgr='EMP1' where empid='EMP3';
```

Query OK, 1 row affected (0.12 sec)

Rows matched: 1 Changed: 1 Warnings: 0

```
mysql> update emp set mgr='EMP3' where empid='EMP4';
```

Query OK, 1 row affected (0.10 sec)

Rows matched: 1 Changed: 1 Warnings: 0

```
mysql> update emp set mgr='EMP3' where empid='EMP12';
```

Query OK, 1 row affected (0.10 sec)

Rows matched: 1 Changed: 1 Warnings: 0

```
mysql> update emp set mgr='EMP4' where empid='EMP13';
```

Query OK, 1 row affected (0.06 sec)

Rows matched: 1 Changed: 1 Warnings: 0

```
mysql> update emp set mgr='EMP14' where empid='EMP15';
```

Query OK, 1 row affected (0.07 sec)

Rows matched: 1 Changed: 1 Warnings: 0

```
mysql> select * from emp;
```

```
+-----+-----+-----+-----+-----+-----+
| empid | ename  | deptno | salary | dateofbirth | mgr  |
+-----+-----+-----+-----+-----+-----+
| EMP1  | Amit   | 30     | 2356.09 | 1981-02-11  | NULL |
| EMP3  | Suman  | 30     | 4356.09 | NULL        | EMP1  |
| EMP4  | Raj    | 20     | 5000.00 | NULL        | EMP3  |
| EMP12 | Tiwari | 30     | 11111.11 | NULL        | EMP3  |
| EMP13 | rujjo  | 10     | 2323.00 | NULL        | EMP4  |
| EMP14 | qokwqw | 10     | 999999.99 | NULL        | NULL  |
| EMP15 | DON    | 420    | 9211.89 | NULL        | EMP14 |
+-----+-----+-----+-----+-----+-----+
```

7 rows in set (0.00 sec)

```
mysql> select w.ename,m.ename from emp w,emp m where w.mgr=m.empid;
```

```
+-----+-----+
| ename | ename |
+-----+-----+
| Suman | Amit   |
| Raj   | Suman  |
| Tiwari | Suman |
| rujjo | Raj    |
```

```
| DON | qokwqw |
```

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

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

```
mysql> select w.ename 'Worker',m.ename 'Manager' from emp w,emp m where w.mgr=m.empid;
```

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

```
| Worker | Manager |
```

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

```
| Suman | Amit |
```

```
| Raj | Suman |
```

```
| Tiwari | Suman |
```

```
| rujjo | Raj |
```

```
| DON | qokwqw |
```

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

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

## PRIMARY KEY AND FOREIGNKEY

```
mysql> create table country (cid int(3) PRIMARY KEY ,cname char(20))ENGINE=INNODB;
```

```
Query OK, 0 rows affected (0.13 sec)
```

```
mysql> insert into country value(1,'India');
```

```
Query OK, 1 row affected (0.09 sec)
```

```
mysql> insert into country value(1,'Pakistaan');
```

```
ERROR 1062 (23000): Duplicate entry '1' for key 'PRIMARY'
```

```
mysql> insert into country value(2,'Pakistaan');
```

Query OK, 1 row affected (0.07 sec)

```
mysql> insert into country value(NULL,'Sri Lanka');
```

ERROR 1048 (23000): Column 'cid' cannot be null

```
mysql> insert into country value(3,'Sri Lanka');
```

Query OK, 1 row affected (0.06 sec)

```
mysql> create table state (sid int(3) PRIMARY KEY,c_id int(3),sname char(30),
```

```
-> FOREIGN KEY(c_id) REFERENCES country(cid)
```

```
-> ON DELETE CASCADE ON UPDATE CASCADE)ENGINE=INNODB;
```

Query OK, 0 rows affected (0.24 sec)

```
mysql> select * from country;
```

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

```
| cid | cname |
```

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

```
| 1 | India |
```

```
| 2 | Pakistaan |
```

```
| 3 | Sri Lanka |
```

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

3 rows in set (0.00 sec)

```
mysql> insert into state value(1,4,'U.P.');
```

ERROR 1452 (23000): Cannot add or update a child row: a foreign key constraint fails (`ourdb`.`state`, CONSTRAINT `state\_ibfk\_1` FOREIGN KEY (`c\_id`) REFERENCES `country` (`cid`) ON DELETE CASCADE ON UPDATE CASCADE)



```
mysql> insert into state value(1,NULL,'U.P.');
```

```
Query OK, 1 row affected (0.08 sec)
```

```
mysql> insert into state value(2,1,'M.P.');
```

```
Query OK, 1 row affected (0.07 sec)
```

```
mysql> insert into state value(3,2,'Lahore');
```

```
Query OK, 1 row affected (0.07 sec)
```

```
mysql> select * from state;
```

```
+-----+-----+-----+
| sid | c_id | sname |
+-----+-----+-----+
|  1 | NULL | U.P.  |
|  2 |  1  | M.P.  |
|  3 |  2  | Lahore |
+-----+-----+-----+
```

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

```
mysql> select * from country;
```

```
+-----+-----+
| cid | cname  |
+-----+-----+
|  1  | India  |
|  2  | Pakistaan |
```

```
| 3 | Sri Lanka |
```

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

3 rows in set (0.00 sec)

```
mysql> update country set cid=5 where cid=1;
```

Query OK, 1 row affected (0.08 sec)

Rows matched: 1 Changed: 1 Warnings: 0

```
mysql> select * from country;
```

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

```
| cid | cname |
```

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

```
| 2 | Pakistaan |
```

```
| 3 | Sri Lanka |
```

```
| 5 | India |
```

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

3 rows in set (0.00 sec)

```
mysql> select * from state;
```

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

```
| sid | c_id | sname |
```

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

```
| 1 | NULL | U.P. |
```

```
| 2 | 5 | M.P. |
```

```
| 3 | 2 | Lahore |
```

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

3 rows in set (0.00 sec)

```
mysql> delete from country where cid=2;
```

Query OK, 1 row affected (0.08 sec)

```
mysql> select * from country;
```

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

```
| cid | cname  |
```

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

```
| 3 | Sri Lanka |
```

```
| 5 | India  |
```

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

2 rows in set (0.00 sec)

```
mysql> select * from state;
```

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

```
| sid | c_id | sname |
```

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

```
| 1 | NULL | U.P. |
```

```
| 2 | 5 | M.P. |
```

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

2 rows in set (0.00 sec)

```
mysql> create table a(id int(1) PRIMARY KEY);
```

Query OK, 0 rows affected (0.12 sec)

```
mysql> create table b(bid int(1) PRIMARY KEY,id int(1) REFERENCES a(id));
```

Query OK, 0 rows affected (0.18 sec)

```
mysql> insert into b value(1,2);
```

Query OK, 1 row affected (0.08 sec)

```
mysql>
```