

Last login: Wed Mar 13 09:58:39 on ttys000
macbook@Kshitijs-MacBook-Air ~ % mysql -u root
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.3.0 Homebrew

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

mysql> show databases;

Database
assignments
impact
information_schema
mysql
performance_schema
sys
world

7 rows in set (0.05 sec)

mysql> use impact;

Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed

mysql> show tables;

Tables_in_impact
course
customer_1
dept
emp
emp14
emp15
emp_select
product_1
student
users

10 rows in set (0.00 sec)

mysql> select * from emp;

empno	ename	job	mgr	hiredate	sal	comm	deptno
7369	SMITH	CLERK	7902	1980-12-17	800.00	NULL	20
7499	ALLEN	SALESMAN	7698	1981-02-20	1600.00	300.00	30
7521	WARD	SALESMAN	7698	1981-02-22	1250.00	500.00	30
7566	JONES	MANAGER	7839	1981-04-02	2975.00	NULL	20
7654	MARTIN	SALESMAN	7698	1981-09-28	1250.00	1400.00	30
7698	BLAKE	MANAGER	7839	1981-05-01	2850.00	NULL	30
7782	CLARK	MANAGER	7839	1981-06-09	2450.00	NULL	10
7788	SCOTT	ANALYST	7566	1982-12-09	3000.00	NULL	20
7839	KING	PRESIDENT	NULL	1981-11-17	5000.00	NULL	10
7844	TURNER	SALESMAN	7698	1981-09-08	1500.00	0.00	30
7876	ADAMS	CLERK	7788	1983-01-12	1100.00	NULL	20
7900	JAMES	CLERK	7698	1981-12-03	950.00	NULL	30
7902	FORD	ANALYST	7566	1981-12-03	3000.00	NULL	20
7934	MILLER	CLERK	7782	1982-01-23	1300.00	NULL	10
1001	gopal	NULL	NULL	NULL	4000.00	NULL	NULL

15 rows in set (0.00 sec)

mysql> select * from dept;

deptno	dname	loc
10	ACCOUNTING	NEW YORK
20	RESEARCH	DALLAS
30	SALES	CHICAGO
40	OPERATIONS	BOSTON
50	testing	SA

5 rows in set (0.00 sec)

mysql> select e.empno,e.name,e.sal,d.dname,d.loc from dept d left outer join emp e on (d.deptno=e.deptno);
ERROR 1054 (42S22): Unknown column 'e.name' in 'field list'

mysql> select e.empno,e.ename,e.sal,d.dname,d.loc from dept d left outer join emp e on (d.deptno=e.deptno);

empno	ename	sal	dname	loc
7934	MILLER	1300.00	ACCOUNTING	NEW YORK
7839	KING	5000.00	ACCOUNTING	NEW YORK
7782	CLARK	2450.00	ACCOUNTING	NEW YORK
7902	FORD	3000.00	RESEARCH	DALLAS
7876	ADAMS	1100.00	RESEARCH	DALLAS
7788	SCOTT	3000.00	RESEARCH	DALLAS
7566	JONES	2975.00	RESEARCH	DALLAS
7369	SMITH	800.00	RESEARCH	DALLAS
7900	JAMES	950.00	SALES	CHICAGO
7844	TURNER	1500.00	SALES	CHICAGO
7698	BLAKE	2850.00	SALES	CHICAGO
7654	MARTIN	1250.00	SALES	CHICAGO
7521	WARD	1250.00	SALES	CHICAGO
7499	ALLEN	1600.00	SALES	CHICAGO
NULL	NULL	NULL	OPERATIONS	BOSTON
NULL	NULL	NULL	testing	SA

16 rows in set (0.01 sec)

mysql> select e.empno,e.ename,e.sal,d.dname,d.loc from dept d left join emp e on (d.deptno=e.deptno);

#outer keyword is optional

empno	ename	sal	dname	loc
7934	MILLER	1300.00	ACCOUNTING	NEW YORK
7839	KING	5000.00	ACCOUNTING	NEW YORK
7782	CLARK	2450.00	ACCOUNTING	NEW YORK
7902	FORD	3000.00	RESEARCH	DALLAS

7876	ADAMS	1100.00	RESEARCH	DALLAS
7788	SCOTT	3000.00	RESEARCH	DALLAS
7566	JONES	2975.00	RESEARCH	DALLAS
7369	SMITH	800.00	RESEARCH	DALLAS
7900	JAMES	950.00	SALES	CHICAGO
7844	TURNER	1500.00	SALES	CHICAGO
7698	BLAKE	2850.00	SALES	CHICAGO
7654	MARTIN	1250.00	SALES	CHICAGO
7521	WARD	1250.00	SALES	CHICAGO
7499	ALLEN	1600.00	SALES	CHICAGO
NULL	NULL	NULL	OPERATIONS	BOSTON
NULL	NULL	NULL	testing	SA

16 rows in set (0.00 sec)

```
mysql> select e.empno,e.ename,e.sal,d.dname,d.loc from dept d right join emp e on (d.deptno=e.deptno); #right join
```

empno	ename	sal	dname	loc
7369	SMITH	800.00	RESEARCH	DALLAS
7499	ALLEN	1600.00	SALES	CHICAGO
7521	WARD	1250.00	SALES	CHICAGO
7566	JONES	2975.00	RESEARCH	DALLAS
7654	MARTIN	1250.00	SALES	CHICAGO
7698	BLAKE	2850.00	SALES	CHICAGO
7782	CLARK	2450.00	ACCOUNTING	NEW YORK
7788	SCOTT	3000.00	RESEARCH	DALLAS
7839	KING	5000.00	ACCOUNTING	NEW YORK
7844	TURNER	1500.00	SALES	CHICAGO
7876	ADAMS	1100.00	RESEARCH	DALLAS
7900	JAMES	950.00	SALES	CHICAGO
7902	FORD	3000.00	RESEARCH	DALLAS
7934	MILLER	1300.00	ACCOUNTING	NEW YORK
1001	gopal	4000.00	NULL	NULL

15 rows in set (0.00 sec)

```
mysql> select e.empno,e.ename,e.sal,d.dname,d.loc from dept d full join emp e on (d.deptno=e.deptno); #full join -->ERROR(not work in mysql)
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 'full join emp e on (d.deptno=e.deptno)' #full join -->ERROR(not work in ' at line 1
```

```
mysql> select e.empno,e.ename,e.sal,d.dname,d.loc from dept d left join emp e on (d.deptno=e.deptno)
-> union # for full join we have to take union of left and right join
-> select e.empno,e.ename,e.sal,d.dname,d.loc from dept d right join emp e on (d.deptno=e.deptno);
```

empno	ename	sal	dname	loc
7934	MILLER	1300.00	ACCOUNTING	NEW YORK
7839	KING	5000.00	ACCOUNTING	NEW YORK
7782	CLARK	2450.00	ACCOUNTING	NEW YORK
7902	FORD	3000.00	RESEARCH	DALLAS
7876	ADAMS	1100.00	RESEARCH	DALLAS
7788	SCOTT	3000.00	RESEARCH	DALLAS
7566	JONES	2975.00	RESEARCH	DALLAS
7369	SMITH	800.00	RESEARCH	DALLAS
7900	JAMES	950.00	SALES	CHICAGO
7844	TURNER	1500.00	SALES	CHICAGO
7698	BLAKE	2850.00	SALES	CHICAGO
7654	MARTIN	1250.00	SALES	CHICAGO
7521	WARD	1250.00	SALES	CHICAGO
7499	ALLEN	1600.00	SALES	CHICAGO
NULL	NULL	NULL	OPERATIONS	BOSTON
NULL	NULL	NULL	testing	SA
1001	gopal	4000.00	NULL	NULL

17 rows in set (0.00 sec)

```
mysql> select e.empno,e.ename,e.sal,d.dname,d.loc from dept d right join emp e on (d.deptno=e.deptno) union # for full join we have to take union of left and
right join select e.empno,e.ename,e.sal,d.dname,d.loc from dept d left join emp e on (d.deptno=e.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> # Write a query to get empno,ename,sal from emp deptno,dname,loc from dept by using selection criteria display the deptno 20 records
```

Query OK, 0 rows affected (0.00 sec)

```
mysql> select e.empno,e.ename,e.sal,d.deptno,d.dname,d.loc from dept d right join emp e on (d.deptno=e.deptno) where d.deptno=20;
```

empno	ename	sal	deptno	dname	loc
7369	SMITH	800.00	20	RESEARCH	DALLAS
7566	JONES	2975.00	20	RESEARCH	DALLAS
7788	SCOTT	3000.00	20	RESEARCH	DALLAS
7876	ADAMS	1100.00	20	RESEARCH	DALLAS
7902	FORD	3000.00	20	RESEARCH	DALLAS

5 rows in set (0.00 sec)

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

empno	ename	job	mgr	hiredate	sal	comm	deptno
7369	SMITH	CLERK	7902	1980-12-17	800.00	NULL	20
7499	ALLEN	SALESMAN	7698	1981-02-20	1600.00	300.00	30
7521	WARD	SALESMAN	7698	1981-02-22	1250.00	500.00	30
7566	JONES	MANAGER	7839	1981-04-02	2975.00	NULL	20
7654	MARTIN	SALESMAN	7698	1981-09-28	1250.00	1400.00	30
7698	BLAKE	MANAGER	7839	1981-05-01	2850.00	NULL	30
7782	CLARK	MANAGER	7839	1981-06-09	2450.00	NULL	10
7788	SCOTT	ANALYST	7566	1982-12-09	3000.00	NULL	20
7839	KING	PRESIDENT	NULL	1981-11-17	5000.00	NULL	10
7844	TURNER	SALESMAN	7698	1981-09-08	1500.00	0.00	30
7876	ADAMS	CLERK	7788	1983-01-12	1100.00	NULL	20
7900	JAMES	CLERK	7698	1981-12-03	950.00	NULL	30
7902	FORD	ANALYST	7566	1981-12-03	3000.00	NULL	20
7934	MILLER	CLERK	7782	1982-01-23	1300.00	NULL	10
1001	gopal	NULL	NULL	NULL	4000.00	NULL	NULL

15 rows in set (0.00 sec)

```
mysql> select e.ename,m.ename as manager from emp e join emp m on(e.mgr=m.empno);
```

ename	manager
FORD	JONES
SCOTT	JONES
JAMES	BLAKE
TURNER	BLAKE

MARTIN	BLAKE
WARD	BLAKE
ALLEN	BLAKE
MILLER	CLARK
ADAMS	SCOTT
CLARK	KING
BLAKE	KING
JONES	KING
SMITH	FORD

13 rows in set (0.00 sec)

```
mysql> CREATE TABLE SALGRADE (GRADE NUMBER,LOSAL NUMBER,HISAL NUMBER); INSERT INTO SALGRADE VALUES (1, 700, 1200); INSERT INTO SALGRADE VALUES (2, 1201, 1400);
INSERT INTO SALGRADE VALUES (3, 1401, 2000); INSERT INTO SALGRADE VALUES (4, 2001, 3000); INSERT INTO SALGRADE VALUES (5, 3001, 9999);
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 'NUMBE
R,LOSAL NUMBER,HISAL NUMBER)' at line 1
ERROR 1146 (42S02): Table 'impact.salgrade' doesn't exist
ERROR 1146 (42S02): Table 'impact.salgrade' doesn't exist
ERROR 1146 (42S02): Table 'impact.salgrade' doesn't exist
ERROR 1146 (42S02): Table 'impact.salgrade' doesn't exist
ERROR 1146 (42S02): Table 'impact.salgrade' doesn't exist
```

```
mysql>
mysql>
mysql> CREATE TABLE salgrade (
-> grade NUMBER,
-> losal NUMBER,
-> hisal NUMBER
-> );
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 'NUMBE
R,
losal NUMBER,
hisal NUMBER
)' at line 2
```

```
mysql> create table sal grade(grade int,losal int,hisal int);
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 'grade
(grade int,losal int,hisal int)' at line 1
mysql> create table salgrade(grade int,losal int,hisal int);
Query OK, 0 rows affected (0.03 sec)
```

```
mysql> insert into salgrade
-> values(1,700,1200),
-> (2,1201,1400),
-> (3,1401,2000),
-> (4,2001,3000),
-> (5,3001,9999),
->
-> ;
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 6
mysql> insert into salgrade values(1,700,1200), (2,1201,1400), (3,1401,2000), (4,2001,3000), (5,3001,9999);
Query OK, 5 rows affected (0.01 sec)
Records: 5 Duplicates: 0 Warnings: 0
```

```
mysql> select * from salgrade;
```

grade	losal	hisal
1	700	1200
2	1201	1400
3	1401	2000
4	2001	3000
5	3001	9999

5 rows in set (0.00 sec)

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

empno	ename	job	mgr	hiredate	sal	comm	deptno
7369	SMITH	CLERK	7902	1980-12-17	800.00	NULL	20
7499	ALLEN	SALESMAN	7698	1981-02-20	1600.00	300.00	30
7521	WARD	SALESMAN	7698	1981-02-22	1250.00	500.00	30
7566	JONES	MANAGER	7839	1981-04-02	2975.00	NULL	20
7654	MARTIN	SALESMAN	7698	1981-09-28	1250.00	1400.00	30
7698	BLAKE	MANAGER	7839	1981-05-01	2850.00	NULL	30
7782	CLARK	MANAGER	7839	1981-06-09	2450.00	NULL	10
7788	SCOTT	ANALYST	7566	1982-12-09	3000.00	NULL	20
7839	KING	PRESIDENT	NULL	1981-11-17	5000.00	NULL	10
7844	TURNER	SALESMAN	7698	1981-09-08	1500.00	0.00	30
7876	ADAMS	CLERK	7788	1983-01-12	1100.00	NULL	20
7900	JAMES	CLERK	7698	1981-12-03	950.00	NULL	30
7902	FORD	ANALYST	7566	1981-12-03	3000.00	NULL	20
7934	MILLER	CLERK	7782	1982-01-23	1300.00	NULL	10
1001	gopal	NULL	NULL	NULL	4000.00	NULL	NULL

15 rows in set (0.00 sec)

```
mysql> select e.empno,e.ename,e.sal,s.grade from emp e,salgrade s where e.sal between s.losal and s.hisal; #between operator
```

empno	ename	sal	grade
7369	SMITH	800.00	1
7499	ALLEN	1600.00	3
7521	WARD	1250.00	2
7566	JONES	2975.00	4
7654	MARTIN	1250.00	2
7698	BLAKE	2850.00	4
7782	CLARK	2450.00	4
7788	SCOTT	3000.00	4
7839	KING	5000.00	5
7844	TURNER	1500.00	3
7876	ADAMS	1100.00	1
7900	JAMES	950.00	1
7902	FORD	3000.00	4
7934	MILLER	1300.00	2
1001	gopal	4000.00	5

15 rows in set (0.00 sec)

```
mysql> select d.deptno,d.dname,d.loc,e.empno,e.sal from dept d,emp e ;
ERROR 1146 (42S02): Table 'impact.empe' doesn't exist
mysql> select d.deptno,d.dname,d.loc,e.empno,e.sal from dept d,emp e ;
```

deptno	dname	loc	empno	sal
50	testing	SA	7369	800.00
40	OPERATIONS	BOSTON	7369	800.00

30	SALES	CHICAGO	7369	800.00
20	RESEARCH	DALLAS	7369	800.00
10	ACCOUNTING	NEW YORK	7369	800.00
50	testing	SA	7499	1600.00
40	OPERATIONS	BOSTON	7499	1600.00
30	SALES	CHICAGO	7499	1600.00
20	RESEARCH	DALLAS	7499	1600.00
10	ACCOUNTING	NEW YORK	7499	1600.00
50	testing	SA	7521	1250.00
40	OPERATIONS	BOSTON	7521	1250.00
30	SALES	CHICAGO	7521	1250.00
20	RESEARCH	DALLAS	7521	1250.00
10	ACCOUNTING	NEW YORK	7521	1250.00
50	testing	SA	7566	2975.00
40	OPERATIONS	BOSTON	7566	2975.00
30	SALES	CHICAGO	7566	2975.00
20	RESEARCH	DALLAS	7566	2975.00
10	ACCOUNTING	NEW YORK	7566	2975.00
50	testing	SA	7654	1250.00
40	OPERATIONS	BOSTON	7654	1250.00
30	SALES	CHICAGO	7654	1250.00
20	RESEARCH	DALLAS	7654	1250.00
10	ACCOUNTING	NEW YORK	7654	1250.00
50	testing	SA	7698	2850.00
40	OPERATIONS	BOSTON	7698	2850.00
30	SALES	CHICAGO	7698	2850.00
20	RESEARCH	DALLAS	7698	2850.00
10	ACCOUNTING	NEW YORK	7698	2850.00
50	testing	SA	7782	2450.00
40	OPERATIONS	BOSTON	7782	2450.00
30	SALES	CHICAGO	7782	2450.00
20	RESEARCH	DALLAS	7782	2450.00
10	ACCOUNTING	NEW YORK	7782	2450.00
50	testing	SA	7788	3000.00
40	OPERATIONS	BOSTON	7788	3000.00
30	SALES	CHICAGO	7788	3000.00
20	RESEARCH	DALLAS	7788	3000.00
10	ACCOUNTING	NEW YORK	7788	3000.00
50	testing	SA	7839	5000.00
40	OPERATIONS	BOSTON	7839	5000.00
30	SALES	CHICAGO	7839	5000.00
20	RESEARCH	DALLAS	7839	5000.00
10	ACCOUNTING	NEW YORK	7839	5000.00
50	testing	SA	7844	1500.00
40	OPERATIONS	BOSTON	7844	1500.00
30	SALES	CHICAGO	7844	1500.00
20	RESEARCH	DALLAS	7844	1500.00
10	ACCOUNTING	NEW YORK	7844	1500.00
50	testing	SA	7876	1100.00
40	OPERATIONS	BOSTON	7876	1100.00
30	SALES	CHICAGO	7876	1100.00
20	RESEARCH	DALLAS	7876	1100.00
10	ACCOUNTING	NEW YORK	7876	1100.00
50	testing	SA	7900	950.00
40	OPERATIONS	BOSTON	7900	950.00
30	SALES	CHICAGO	7900	950.00
20	RESEARCH	DALLAS	7900	950.00
10	ACCOUNTING	NEW YORK	7900	950.00
50	testing	SA	7902	3000.00
40	OPERATIONS	BOSTON	7902	3000.00
30	SALES	CHICAGO	7902	3000.00
20	RESEARCH	DALLAS	7902	3000.00
10	ACCOUNTING	NEW YORK	7902	3000.00
50	testing	SA	7934	1300.00
40	OPERATIONS	BOSTON	7934	1300.00
30	SALES	CHICAGO	7934	1300.00
20	RESEARCH	DALLAS	7934	1300.00
10	ACCOUNTING	NEW YORK	7934	1300.00
50	testing	SA	1001	4000.00
40	OPERATIONS	BOSTON	1001	4000.00
30	SALES	CHICAGO	1001	4000.00
20	RESEARCH	DALLAS	1001	4000.00
10	ACCOUNTING	NEW YORK	1001	4000.00

75 rows in set (0.00 sec)

```
mysql> select e.empno,e.ename,d.name,d.loc from emp e natural join dept d;
ERROR 1054 (42S22): Unknown column 'd.name' in 'field list'
```

```
mysql> select e.empno,e.ename,d.dname,d.loc from emp e natural join dept d;
```

empno	ename	dname	loc
7369	SMITH	RESEARCH	DALLAS
7499	ALLEN	SALES	CHICAGO
7521	WARD	SALES	CHICAGO
7566	JONES	RESEARCH	DALLAS
7654	MARTIN	SALES	CHICAGO
7698	BLAKE	SALES	CHICAGO
7782	CLARK	ACCOUNTING	NEW YORK
7788	SCOTT	RESEARCH	DALLAS
7839	KING	ACCOUNTING	NEW YORK
7844	TURNER	SALES	CHICAGO
7876	ADAMS	RESEARCH	DALLAS
7900	JAMES	SALES	CHICAGO
7902	FORD	RESEARCH	DALLAS
7934	MILLER	ACCOUNTING	NEW YORK

14 rows in set (0.00 sec)

```
mysql> alter table dept rename column deptno to dno;
Query OK, 0 rows affected (0.02 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

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

dno	dname	loc
10	ACCOUNTING	NEW YORK
20	RESEARCH	DALLAS
30	SALES	CHICAGO
40	OPERATIONS	BOSTON
50	testing	SA

5 rows in set (0.00 sec)

```
mysql> select e.empno,e.ename,d.dname,d.loc from emp e natural join dept d;
```

empno	ename	dname	loc
7369	SMITH	testing	SA
7369	SMITH	OPERATIONS	BOSTON
7369	SMITH	SALES	CHICAGO
7369	SMITH	RESEARCH	DALLAS
7369	SMITH	ACCOUNTING	NEW YORK
7499	ALLEN	testing	SA
7499	ALLEN	OPERATIONS	BOSTON
7499	ALLEN	SALES	CHICAGO
7499	ALLEN	RESEARCH	DALLAS
7499	ALLEN	ACCOUNTING	NEW YORK
7521	WARD	testing	SA
7521	WARD	OPERATIONS	BOSTON
7521	WARD	SALES	CHICAGO
7521	WARD	RESEARCH	DALLAS
7521	WARD	ACCOUNTING	NEW YORK
7566	JONES	testing	SA
7566	JONES	OPERATIONS	BOSTON
7566	JONES	SALES	CHICAGO
7566	JONES	RESEARCH	DALLAS
7566	JONES	ACCOUNTING	NEW YORK
7654	MARTIN	testing	SA
7654	MARTIN	OPERATIONS	BOSTON
7654	MARTIN	SALES	CHICAGO
7654	MARTIN	RESEARCH	DALLAS
7654	MARTIN	ACCOUNTING	NEW YORK
7698	BLAKE	testing	SA
7698	BLAKE	OPERATIONS	BOSTON
7698	BLAKE	SALES	CHICAGO
7698	BLAKE	RESEARCH	DALLAS
7698	BLAKE	ACCOUNTING	NEW YORK
7782	CLARK	testing	SA
7782	CLARK	OPERATIONS	BOSTON
7782	CLARK	SALES	CHICAGO
7782	CLARK	RESEARCH	DALLAS
7782	CLARK	ACCOUNTING	NEW YORK
7788	SCOTT	testing	SA
7788	SCOTT	OPERATIONS	BOSTON
7788	SCOTT	SALES	CHICAGO
7788	SCOTT	RESEARCH	DALLAS
7788	SCOTT	ACCOUNTING	NEW YORK
7839	KING	testing	SA
7839	KING	OPERATIONS	BOSTON
7839	KING	SALES	CHICAGO
7839	KING	RESEARCH	DALLAS
7839	KING	ACCOUNTING	NEW YORK
7844	TURNER	testing	SA
7844	TURNER	OPERATIONS	BOSTON
7844	TURNER	SALES	CHICAGO
7844	TURNER	RESEARCH	DALLAS
7844	TURNER	ACCOUNTING	NEW YORK
7876	ADAMS	testing	SA
7876	ADAMS	OPERATIONS	BOSTON
7876	ADAMS	SALES	CHICAGO
7876	ADAMS	RESEARCH	DALLAS
7876	ADAMS	ACCOUNTING	NEW YORK
7900	JAMES	testing	SA
7900	JAMES	OPERATIONS	BOSTON
7900	JAMES	SALES	CHICAGO
7900	JAMES	RESEARCH	DALLAS
7900	JAMES	ACCOUNTING	NEW YORK
7902	FORD	testing	SA
7902	FORD	OPERATIONS	BOSTON
7902	FORD	SALES	CHICAGO
7902	FORD	RESEARCH	DALLAS
7902	FORD	ACCOUNTING	NEW YORK
7934	MILLER	testing	SA
7934	MILLER	OPERATIONS	BOSTON
7934	MILLER	SALES	CHICAGO
7934	MILLER	RESEARCH	DALLAS
7934	MILLER	ACCOUNTING	NEW YORK
1001	gopal	testing	SA
1001	gopal	OPERATIONS	BOSTON
1001	gopal	SALES	CHICAGO
1001	gopal	RESEARCH	DALLAS
1001	gopal	ACCOUNTING	NEW YORK

75 rows in set (0.00 sec)

```
mysql> create table student_5
-> (id int,
-> first_name varchar(10),
-> last_name varchar(10));
Query OK, 0 rows affected (0.01 sec)
```

```
mysql> create table course_5
-> (id int,
-> name varchar(20),
-> teacher_id int);
Query OK, 0 rows affected (0.01 sec)
```

```
mysql> create table student_course
-> (student_id int,
-> course_id int);
Query OK, 0 rows affected (0.01 sec)
```

```
mysql> insert into student_5
-> values(1,"Shreya","Bain"),
-> (2,"Rianna","Foster"),
-> (3,"Yosef","Naylor");
Query OK, 3 rows affected (0.00 sec)
Records: 3 Duplicates: 0 Warnings: 0
```

```
mysql> insert into course_5
-> values(1,"Database design",1),
-> (2,"English literature",2),
-> 2,"English literature",2),
-> ;
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 '2,"English literature",2),' at line 4
mysql> insert into course_5 values(1,"Database design",1), (2,"English literature",2), (3,"Python Programming",1);
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> insert into course_5 values(1,"Database design",1), (2,"English literature",2), (3,"Python Programming",1);
Query OK, 3 rows affected (0.00 sec)
Records: 3 Duplicates: 0 Warnings: 0
```

```
mysql> insert into student_course
-> values(1,2)
-> (1,3),
-> (2,1),
-> (2,2),
-> (2,3),
-> (3,1);
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 '(1,3)
(2,1),
(2,2),
(2,3),
(3,1)' at line 3
mysql> insert into student_course values(1,2), (1,3), (2,1), (2,2), (2,3), (3,1);
Query OK, 6 rows affected (0.00 sec)
Records: 6 Duplicates: 0 Warnings: 0

mysql> select * from student_5;
+-----+-----+-----+
| id | first_name | last_name |
+-----+-----+-----+
| 1 | Shreya | Bain |
| 2 | Rianna | Foster |
| 3 | Yosef | Naylor |
+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> select * from course_5
-> ;
+-----+-----+-----+
| id | name | teacher_id |
+-----+-----+-----+
| 1 | Database design | 1 |
| 2 | English literature | 2 |
| 3 | Python Programming | 1 |
+-----+-----+-----+
3 rows in set (0.01 sec)

mysql> select* from student_course;
+-----+-----+-----+
| student_id | course_id |
+-----+-----+-----+
| 1 | 2 |
| 1 | 3 |
| 2 | 1 |
| 2 | 2 |
| 2 | 3 |
| 3 | 1 |
+-----+-----+-----+
6 rows in set (0.01 sec)

mysql> select s.first_name,s.last_name,c.name from student_5 s, course_5 c join student_course sc on (sc.student=s.id) and (sc.course_id=c.id);
ERROR 1054 (42S22): Unknown column 'sc.student' in 'on clause'
mysql> select s.first_name,s.last_name,c.name from student_5 s, course_5 c join student_course sc on (sc.student_id=s.id) and (sc.course_id=c.id);
ERROR 1054 (42S22): Unknown column 's.id' in 'on clause'
mysql> select s.first_name,s.last_name,c.name from student_5 s join course_5 c join student_course sc on (sc.student_id=s.id) and (sc.course_id=c.id);
+-----+-----+-----+
| first_name | last_name | name |
+-----+-----+-----+
| Yosef | Naylor | Database design |
| Rianna | Foster | Database design |
| Rianna | Foster | English literature |
| Shreya | Bain | English literature |
| Rianna | Foster | Python Programming |
| Shreya | Bain | Python Programming |
+-----+-----+-----+
6 rows in set (0.00 sec)

mysql> select * from emp;
+-----+-----+-----+-----+-----+-----+-----+-----+
| empno | ename | job | mgr | hiredate | sal | comm | deptno |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7369 | SMITH | CLERK | 7902 | 1980-12-17 | 800.00 | NULL | 20 |
| 7499 | ALLEN | SALESMAN | 7698 | 1981-02-20 | 1600.00 | 300.00 | 30 |
| 7521 | WARD | SALESMAN | 7698 | 1981-02-22 | 1250.00 | 500.00 | 30 |
| 7566 | JONES | MANAGER | 7839 | 1981-04-02 | 2975.00 | NULL | 20 |
| 7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 1250.00 | 1400.00 | 30 |
| 7698 | BLAKE | MANAGER | 7839 | 1981-05-01 | 2850.00 | NULL | 30 |
| 7782 | CLARK | MANAGER | 7839 | 1981-06-09 | 2450.00 | NULL | 10 |
| 7788 | SCOTT | ANALYST | 7566 | 1982-12-09 | 3000.00 | NULL | 20 |
| 7839 | KING | PRESIDENT | NULL | 1981-11-17 | 5000.00 | NULL | 10 |
| 7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1500.00 | 0.00 | 30 |
| 7876 | ADAMS | CLERK | 7788 | 1983-01-12 | 1100.00 | NULL | 20 |
| 7900 | JAMES | CLERK | 7698 | 1981-12-03 | 950.00 | NULL | 30 |
| 7902 | FORD | ANALYST | 7566 | 1981-12-03 | 3000.00 | NULL | 20 |
| 7934 | MILLER | CLERK | 7782 | 1982-01-23 | 1300.00 | NULL | 10 |
| 1001 | gopal | NULL | NULL | NULL | 4000.00 | NULL | NULL |
+-----+-----+-----+-----+-----+-----+-----+-----+
15 rows in set (0.00 sec)

mysql> select * from emp where sal>2000;
+-----+-----+-----+-----+-----+-----+-----+-----+
| empno | ename | job | mgr | hiredate | sal | comm | deptno |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7566 | JONES | MANAGER | 7839 | 1981-04-02 | 2975.00 | NULL | 20 |
| 7698 | BLAKE | MANAGER | 7839 | 1981-05-01 | 2850.00 | NULL | 30 |
| 7782 | CLARK | MANAGER | 7839 | 1981-06-09 | 2450.00 | NULL | 10 |
| 7788 | SCOTT | ANALYST | 7566 | 1982-12-09 | 3000.00 | NULL | 20 |
| 7839 | KING | PRESIDENT | NULL | 1981-11-17 | 5000.00 | NULL | 10 |
| 7902 | FORD | ANALYST | 7566 | 1981-12-03 | 3000.00 | NULL | 20 |
| 1001 | gopal | NULL | NULL | NULL | 4000.00 | NULL | NULL |
+-----+-----+-----+-----+-----+-----+-----+-----+
7 rows in set (0.01 sec)

mysql> select * from emp where sal in (2000,3000,4000);
+-----+-----+-----+-----+-----+-----+-----+-----+
| empno | ename | job | mgr | hiredate | sal | comm | deptno |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7788 | SCOTT | ANALYST | 7566 | 1982-12-09 | 3000.00 | NULL | 20 |
| 7902 | FORD | ANALYST | 7566 | 1981-12-03 | 3000.00 | NULL | 20 |
| 1001 | gopal | NULL | NULL | NULL | 4000.00 | NULL | NULL |
+-----+-----+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> select * from emp where sal<>=3000;
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 '<>=30
```

00' at line 1

mysql> select * from emp where sal<>3000;

empno	ename	job	mgr	hiredate	sal	comm	deptno
7369	SMITH	CLERK	7902	1980-12-17	800.00	NULL	20
7499	ALLEN	SALESMAN	7698	1981-02-20	1600.00	300.00	30
7521	WARD	SALESMAN	7698	1981-02-22	1250.00	500.00	30
7566	JONES	MANAGER	7839	1981-04-02	2975.00	NULL	20
7654	MARTIN	SALESMAN	7698	1981-09-28	1250.00	1400.00	30
7698	BLAKE	MANAGER	7839	1981-05-01	2850.00	NULL	30
7782	CLARK	MANAGER	7839	1981-06-09	2450.00	NULL	10
7839	KING	PRESIDENT	NULL	1981-11-17	5000.00	NULL	10
7844	TURNER	SALESMAN	7698	1981-09-08	1500.00	0.00	30
7876	ADAMS	CLERK	7788	1983-01-12	1100.00	NULL	20
7900	JAMES	CLERK	7698	1981-12-03	950.00	NULL	30
7934	MILLER	CLERK	7782	1982-01-23	1300.00	NULL	10
1001	gopal	NULL	NULL	NULL	4000.00	NULL	NULL

13 rows in set (0.01 sec)

mysql> select * from emp where sal!=3000;

empno	ename	job	mgr	hiredate	sal	comm	deptno
7369	SMITH	CLERK	7902	1980-12-17	800.00	NULL	20
7499	ALLEN	SALESMAN	7698	1981-02-20	1600.00	300.00	30
7521	WARD	SALESMAN	7698	1981-02-22	1250.00	500.00	30
7566	JONES	MANAGER	7839	1981-04-02	2975.00	NULL	20
7654	MARTIN	SALESMAN	7698	1981-09-28	1250.00	1400.00	30
7698	BLAKE	MANAGER	7839	1981-05-01	2850.00	NULL	30
7782	CLARK	MANAGER	7839	1981-06-09	2450.00	NULL	10
7839	KING	PRESIDENT	NULL	1981-11-17	5000.00	NULL	10
7844	TURNER	SALESMAN	7698	1981-09-08	1500.00	0.00	30
7876	ADAMS	CLERK	7788	1983-01-12	1100.00	NULL	20
7900	JAMES	CLERK	7698	1981-12-03	950.00	NULL	30
7934	MILLER	CLERK	7782	1982-01-23	1300.00	NULL	10
1001	gopal	NULL	NULL	NULL	4000.00	NULL	NULL

13 rows in set (0.00 sec)

mysql> select false and false
-> ;

false and false
0

1 row in set (0.00 sec)

mysql> select false and True;

false and True
0

1 row in set (0.00 sec)

mysql> select True and True;

True and True
1

1 row in set (0.00 sec)

mysql> select True and True or false;

True and True or false
1

1 row in set (0.00 sec)

mysql> select True and True and True or false and true;

True and True and True or false and true
1

1 row in set (0.00 sec)

mysql> select not 3=3;

not 3=3
0

1 row in set (0.01 sec)

mysql> select 3=3;

3=3
1

1 row in set (0.00 sec)

mysql> select * from emp where sal between 2000 and 3000;

empno	ename	job	mgr	hiredate	sal	comm	deptno
7566	JONES	MANAGER	7839	1981-04-02	2975.00	NULL	20
7698	BLAKE	MANAGER	7839	1981-05-01	2850.00	NULL	30
7782	CLARK	MANAGER	7839	1981-06-09	2450.00	NULL	10
7788	SCOTT	ANALYST	7566	1982-12-09	3000.00	NULL	20
7902	FORD	ANALYST	7566	1981-12-03	3000.00	NULL	20

5 rows in set (0.00 sec)

mysql> select ename from emp where ename like 's%';

ename
SMITH
SCOTT

2 rows in set (0.06 sec)

mysql> select * from emp order by 6;

empno	ename	job	mgr	hiredate	sal	comm	deptno
7369	SMITH	CLERK	7902	1980-12-17	800.00	NULL	20
7900	JAMES	CLERK	7698	1981-12-03	950.00	NULL	30
7876	ADAMS	CLERK	7788	1983-01-12	1100.00	NULL	20
7521	WARD	SALESMAN	7698	1981-02-22	1250.00	500.00	30
7654	MARTIN	SALESMAN	7698	1981-09-28	1250.00	1400.00	30
7934	MILLER	CLERK	7782	1982-01-23	1300.00	NULL	10
7844	TURNER	SALESMAN	7698	1981-09-08	1500.00	0.00	30
7499	ALLEN	SALESMAN	7698	1981-02-20	1600.00	300.00	30
7782	CLARK	MANAGER	7839	1981-06-09	2450.00	NULL	10
7698	BLAKE	MANAGER	7839	1981-05-01	2850.00	NULL	30
7566	JONES	MANAGER	7839	1981-04-02	2975.00	NULL	20
7788	SCOTT	ANALYST	7566	1982-12-09	3000.00	NULL	20
7902	FORD	ANALYST	7566	1981-12-03	3000.00	NULL	20
1001	gopal	NULL	NULL	NULL	4000.00	NULL	NULL
7839	KING	PRESIDENT	NULL	1981-11-17	5000.00	NULL	10

15 rows in set (0.04 sec)

mysql> select * from emp order by 6 desc;

empno	ename	job	mgr	hiredate	sal	comm	deptno
7839	KING	PRESIDENT	NULL	1981-11-17	5000.00	NULL	10
1001	gopal	NULL	NULL	NULL	4000.00	NULL	NULL
7788	SCOTT	ANALYST	7566	1982-12-09	3000.00	NULL	20
7902	FORD	ANALYST	7566	1981-12-03	3000.00	NULL	20
7566	JONES	MANAGER	7839	1981-04-02	2975.00	NULL	20
7698	BLAKE	MANAGER	7839	1981-05-01	2850.00	NULL	30
7782	CLARK	MANAGER	7839	1981-06-09	2450.00	NULL	10
7499	ALLEN	SALESMAN	7698	1981-02-20	1600.00	300.00	30
7844	TURNER	SALESMAN	7698	1981-09-08	1500.00	0.00	30
7934	MILLER	CLERK	7782	1982-01-23	1300.00	NULL	10
7521	WARD	SALESMAN	7698	1981-02-22	1250.00	500.00	30
7654	MARTIN	SALESMAN	7698	1981-09-28	1250.00	1400.00	30
7876	ADAMS	CLERK	7788	1983-01-12	1100.00	NULL	20
7900	JAMES	CLERK	7698	1981-12-03	950.00	NULL	30
7369	SMITH	CLERK	7902	1980-12-17	800.00	NULL	20

15 rows in set (0.01 sec)

mysql> select min(sal),max(sal),avg(sal),sum(sal) from emp;

min(sal)	max(sal)	avg(sal)	sum(sal)
800.00	5000.00	2201.666667	33025.00

1 row in set (0.01 sec)

mysql> select count(*) from emp;

count(*)
15

1 row in set (0.02 sec)

mysql> select count(sal) from emp;

count(sal)
15

1 row in set (0.00 sec)

mysql> select count(sal),count(comm) from emp;

count(sal)	count(comm)
15	4

1 row in set (0.01 sec)

mysql> select * from emp where comm is null;

empno	ename	job	mgr	hiredate	sal	comm	deptno
7369	SMITH	CLERK	7902	1980-12-17	800.00	NULL	20
7566	JONES	MANAGER	7839	1981-04-02	2975.00	NULL	20
7698	BLAKE	MANAGER	7839	1981-05-01	2850.00	NULL	30
7782	CLARK	MANAGER	7839	1981-06-09	2450.00	NULL	10
7788	SCOTT	ANALYST	7566	1982-12-09	3000.00	NULL	20
7839	KING	PRESIDENT	NULL	1981-11-17	5000.00	NULL	10
7876	ADAMS	CLERK	7788	1983-01-12	1100.00	NULL	20
7900	JAMES	CLERK	7698	1981-12-03	950.00	NULL	30
7902	FORD	ANALYST	7566	1981-12-03	3000.00	NULL	20
7934	MILLER	CLERK	7782	1982-01-23	1300.00	NULL	10
1001	gopal	NULL	NULL	NULL	4000.00	NULL	NULL

11 rows in set (0.01 sec)

mysql> select comm,ifnull(comm,0) from emp;

comm	ifnull(comm,0)
NULL	0.00
300.00	300.00
500.00	500.00
NULL	0.00
1400.00	1400.00
NULL	0.00
NULL	0.00
NULL	0.00
NULL	0.00
0.00	0.00
NULL	0.00
NULL	0.00
NULL	0.00
NULL	0.00
NULL	0.00

15 rows in set (0.04 sec)


```
mysql> select comm,ifnull(comm,1) from emp;
```

comm	ifnull(comm,1)
NULL	1.00
300.00	300.00
500.00	500.00
NULL	1.00
1400.00	1400.00
NULL	1.00
NULL	1.00
NULL	1.00
NULL	1.00
0.00	0.00
NULL	1.00
NULL	1.00
NULL	1.00
NULL	1.00
NULL	1.00

15 rows in set (0.00 sec)

```
mysql> select deptno,sum(sal) as salary from emp group by deptno;
```

deptno	salary
20	10875.00
30	9400.00
10	8750.00
NULL	4000.00

4 rows in set (0.01 sec)

```
mysql> select deptno,sum(sal),count(deptno) as salary from emp group by deptno;
```

deptno	sum(sal)	salary
20	10875.00	5
30	9400.00	6
10	8750.00	3
NULL	4000.00	0

4 rows in set (0.00 sec)

```
mysql> select deptno,sum(sal) as salary from emp group by deptno having sum(sal)>8750;
```

deptno	salary
20	10875.00
30	9400.00

2 rows in set (0.01 sec)

```
mysql> select deptno,sum(sal) as salary from emp group by deptno having salary>8750;
```

deptno	salary
20	10875.00
30	9400.00

2 rows in set (0.00 sec)

```
mysql> use assignments
```

Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed

```
mysql> show tables;
```

Tables_in_assignments
customer
orders
orderstatus
product

4 rows in set (0.01 sec)

```
mysql> DROP TABLE IF EXISTS emp;
```

Query OK, 0 rows affected, 1 warning (0.01 sec)

```
mysql>
```

```
mysql> CREATE TABLE emp (
-> empno decimal(4,0) NOT NULL,
-> ename varchar(10) default NULL,
-> job varchar(9) default NULL,
-> mgr decimal(4,0) default NULL,
-> hiredate date default NULL,
-> sal decimal(7,2) default NULL,
-> comm decimal(7,2) default NULL,
-> deptno decimal(2,0) default NULL
-> );
```

Query OK, 0 rows affected (0.05 sec)

```
mysql>
```

```
mysql> DROP TABLE IF EXISTS dept;
```

Query OK, 0 rows affected, 1 warning (0.00 sec)

```
mysql>
```

```
mysql> CREATE TABLE dept (
-> deptno decimal(2,0) default NULL,
-> dname varchar(14) default NULL,
-> loc varchar(13) default NULL
-> );
```

Query OK, 0 rows affected (0.01 sec)

```
mysql>
```

```
mysql> INSERT INTO emp VALUES ('7369','SMITH','CLERK','7902','1980-12-17','800.00',NULL,'20');
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO emp VALUES ('7499','ALLEN','SALESMAN','7698','1981-02-20','1600.00','300.00','30');
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO emp VALUES ('7521','WARD','SALESMAN','7698','1981-02-22','1250.00','500.00','30');
Query OK, 1 row affected (0.00 sec)
```

```

mysql> INSERT INTO emp VALUES ('7566','JONES','MANAGER','7839','1981-04-02','2975.00',NULL,'20');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO emp VALUES ('7654','MARTIN','SALESMAN','7698','1981-09-28','1250.00','1400.00','30');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO emp VALUES ('7698','BLAKE','MANAGER','7839','1981-05-01','2850.00',NULL,'30');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO emp VALUES ('7782','CLARK','MANAGER','7839','1981-06-09','2450.00',NULL,'10');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO emp VALUES ('7788','SCOTT','ANALYST','7566','1982-12-09','3000.00',NULL,'20');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO emp VALUES ('7839','KING','PRESIDENT',NULL,'1981-11-17','5000.00',NULL,'10');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO emp VALUES ('7844','TURNER','SALESMAN','7698','1981-09-08','1500.00','0.00','30');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO emp VALUES ('7876','ADAMS','CLERK','7788','1983-01-12','1100.00',NULL,'20');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO emp VALUES ('7900','JAMES','CLERK','7698','1981-12-03','950.00',NULL,'30');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO emp VALUES ('7902','FORD','ANALYST','7566','1981-12-03','3000.00',NULL,'20');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO emp VALUES ('7934','MILLER','CLERK','7782','1982-01-23','1300.00',NULL,'10');
Query OK, 1 row affected (0.00 sec)

mysql>
mysql> INSERT INTO dept VALUES ('10','ACCOUNTING','NEW YORK');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO dept VALUES ('20','RESEARCH','DALLAS');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO dept VALUES ('30','SALES','CHICAGO');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO dept VALUES ('40','OPERATIONS','BOSTON');
Query OK, 1 row affected (0.00 sec)

mysql> show tables;
+-----+
| Tables_in_assignments |
+-----+
| customer               |
| dept                   |
| emp                    |
| orders                 |
| orderstatus            |
| product                |
+-----+
6 rows in set (0.00 sec)

mysql> /* ASSIGNMENT */;
Query OK, 0 rows affected (0.00 sec)

mysql> select *from emp;
+-----+-----+-----+-----+-----+-----+-----+-----+
| empno | ename | job   | mgr | hiredate | sal   | comm  | deptno |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7369 | SMITH | CLERK | 7902 | 1980-12-17 | 800.00 | NULL | 20 |
| 7499 | ALLEN | SALESMAN | 7698 | 1981-02-20 | 1600.00 | 300.00 | 30 |
| 7521 | WARD | SALESMAN | 7698 | 1981-02-22 | 1250.00 | 500.00 | 30 |
| 7566 | JONES | MANAGER | 7839 | 1981-04-02 | 2975.00 | NULL | 20 |
| 7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 1250.00 | 1400.00 | 30 |
| 7698 | BLAKE | MANAGER | 7839 | 1981-05-01 | 2850.00 | NULL | 30 |
| 7782 | CLARK | MANAGER | 7839 | 1981-06-09 | 2450.00 | NULL | 10 |
| 7788 | SCOTT | ANALYST | 7566 | 1982-12-09 | 3000.00 | NULL | 20 |
| 7839 | KING | PRESIDENT | NULL | 1981-11-17 | 5000.00 | NULL | 10 |
| 7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1500.00 | 0.00 | 30 |
| 7876 | ADAMS | CLERK | 7788 | 1983-01-12 | 1100.00 | NULL | 20 |
| 7900 | JAMES | CLERK | 7698 | 1981-12-03 | 950.00 | NULL | 30 |
| 7902 | FORD | ANALYST | 7566 | 1981-12-03 | 3000.00 | NULL | 20 |
| 7934 | MILLER | CLERK | 7782 | 1982-01-23 | 1300.00 | NULL | 10 |
+-----+-----+-----+-----+-----+-----+-----+-----+
14 rows in set (0.00 sec)

mysql> select *from dept;
+-----+-----+-----+
| deptno | dname | loc |
+-----+-----+-----+
| 10 | ACCOUNTING | NEW YORK |
| 20 | RESEARCH | DALLAS |
| 30 | SALES | CHICAGO |
| 40 | OPERATIONS | BOSTON |
+-----+-----+-----+
4 rows in set (0.00 sec)

mysql> select e.ename,d.dname from emp e join dept d on(e.deptno=d.deptno);
+-----+-----+
| ename | dname |
+-----+-----+
| SMITH | RESEARCH |
| ALLEN | SALES |
| WARD | SALES |
| JONES | RESEARCH |
| MARTIN | SALES |
| BLAKE | SALES |
| CLARK | ACCOUNTING |
| SCOTT | RESEARCH |
| KING | ACCOUNTING |
| TURNER | SALES |
| ADAMS | RESEARCH |
| JAMES | SALES |
| FORD | RESEARCH |
| MILLER | ACCOUNTING |
+-----+-----+
14 rows in set (0.00 sec)

mysql> select d.dname,e.name from emp e right join dept d on(e.deptno=d.deptno);
ERROR 1054 (42S22): Unknown column 'e.name' in 'field list'

```

```
mysql> select d.dname,e.ename from emp e right join dept d on(e.deptno=d.deptno);
```

dname	ename
ACCOUNTING	MILLER
ACCOUNTING	KING
ACCOUNTING	CLARK
RESEARCH	FORD
RESEARCH	ADAMS
RESEARCH	SCOTT
RESEARCH	JONES
RESEARCH	SMITH
SALES	JAMES
SALES	TURNER
SALES	BLAKE
SALES	MARTIN
SALES	WARD
SALES	ALLEN
OPERATIONS	NULL

15 rows in set (0.01 sec)

```
mysql> by deptno having sum(sal)>8750;
```

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 'by deptno having sum(sal)>8750' at line 1

```
mysql> +-----+-----+
-> ;
```

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> select ascii('a');
```

ascii('a')
97

1 row in set (0.03 sec)

```
mysql> select ascii(name) from emp;
```

ERROR 1054 (42S22): Unknown column 'name' in 'field list'

```
mysql> select ascii(ename) from emp;
```

ascii(ename)
83
65
87
74
77
66
67
83
75
84
65
74
70
77

14 rows in set (0.02 sec)

```
mysql> select char_length('welcome');
```

char_length('welcome')
7

1 row in set (0.00 sec)

```
mysql> select char_length(ename) from emp;
```

char_length(ename)
5
5
4
5
6
5
5
5
4
6
5
5
4
6

14 rows in set (0.00 sec)

```
mysql> select ename,char_length(ename) from emp;
```

ename	char_length(ename)
SMITH	5
ALLEN	5
WARD	4
JONES	5
MARTIN	6
BLAKE	5
CLARK	5
SCOTT	5
KING	4
TURNER	6
ADAMS	5
JAMES	5
FORD	4
MILLER	6

14 rows in set (0.00 sec)

```
mysql> select concat('hello','h1','welcome')as concat
```

```
-> ;
```

concat
helloh1welcome

1 row in set (0.00 sec)

```
mysql> select concat('hello',ename) from emp;
```

concat('hello',ename)
helloSMITH
helloALLEN
helloWARD
helloJONES
helloMARTIN
helloBLAKE
helloCLARK
helloSCOTT
helloKING
helloTURNER
helloADAMS
helloJAMES
helloFORD
helloMILLER

14 rows in set (0.00 sec)

```
mysql> delimiter //
```

```
mysql> select concat('hello ',ename) from emp;
```

--> //

concat('hello ',ename)
hello SMITH
hello ALLEN
hello WARD
hello JONES
hello MARTIN
hello BLAKE
hello CLARK
hello SCOTT
hello KING
hello TURNER
hello ADAMS
hello JAMES
hello FORD
hello MILLER

14 rows in set (0.01 sec)

```
mysql> delimiter ;
```

```
mysql> select concat_ws('$','hello',ename) from emp;
```

concat_ws('\$','hello',ename)
hello\$SMITH
hello\$ALLEN
hello\$WARD
hello\$JONES
hello\$MARTIN
hello\$BLAKE
hello\$CLARK
hello\$SCOTT
hello\$KING
hello\$TURNER
hello\$ADAMS
hello\$JAMES
hello\$FORD
hello\$MILLER

14 rows in set (0.00 sec)

```
mysql> select ename,insert(ename,3,3,'hi') from emp;
```

ename	insert(ename,3,3,'hi')
SMITH	SMhi
ALLEN	ALhi
WARD	WAhi
JONES	JOhi
MARTIN	MAhiN
BLAKE	BLhi
CLARK	CLhi
SCOTT	SChi
KING	KIhi
TURNER	TUhiR
ADAMS	ADhi
JAMES	JAhi
FORD	FOhi
MILLER	MIhiR

14 rows in set (0.00 sec)

```
mysql> select insert('welcome',3,3,'aaa');
```

insert('welcome',3,3,'aaa')
weaaaame

1 row in set (0.00 sec)

```
mysql> select instr('foobar','oo');
```

instr('foobar','oo')
2

1 row in set (0.01 sec)

```
mysql> select lcase('HELLO');
```

lcase('HELLO')
hello

1 row in set (0.00 sec)

```
mysql> select lower('HELLO');
```

lower('HELLO')
hello

```

| hello          |
+-----+
1 row in set (0.00 sec)

mysql> select ucase('HeLLo');
+-----+
| ucase('HeLLo') |
+-----+
| HELLO          |
+-----+
1 row in set (0.01 sec)

mysql> select upper('HeLlO');
+-----+
| upper('HeLlO') |
+-----+
| HELLO          |
+-----+
1 row in set (0.00 sec)

mysql> select left('hello',3);
+-----+
| left('hello',3) |
+-----+
| hel            |
+-----+
1 row in set (0.00 sec)

mysql> select right('hello',3);
+-----+
| right('hello',3) |
+-----+
| llo            |
+-----+
1 row in set (0.00 sec)

mysql> select left(ename,3) from emp;
+-----+
| left(ename,3)   |
+-----+
| SMI             |
| ALL             |
| WAR             |
| JON             |
| MAR             |
| BLA             |
| CLA             |
| SCO             |
| KIN             |
| TUR             |
| ADA             |
| JAM             |
| FOR             |
| MIL             |
+-----+
14 rows in set (0.01 sec)

mysql> select right(ename,2) from emp;
+-----+
| right(ename,2)  |
+-----+
| TH              |
| EN              |
| RD              |
| ES              |
| IN              |
| KE              |
| RK              |
| TT              |
| NG              |
| ER              |
| MS              |
| ES              |
| RD              |
| ER              |
+-----+
14 rows in set (0.00 sec)

mysql> select length('welcome');
+-----+
| length('welcome') |
+-----+
| 7                 |
+-----+
1 row in set (0.01 sec)

mysql> select trim('  hello  ');
+-----+
| trim('  hello  ') |
+-----+
| hello             |
+-----+
1 row in set (0.00 sec)

mysql> select ltrim('  hello');
+-----+
| ltrim('  hello')  |
+-----+
| hello             |
+-----+
1 row in set (0.00 sec)

mysql> select quote('welcome$hello');
+-----+
| quote('welcome$hello') |
+-----+
| 'welcome$hello'        |
+-----+
1 row in set (0.00 sec)

mysql> select quote('welcome\nhello');
+-----+
| quote('welcome\nhello') |
+-----+
| 'welcome\nhello'        |
+-----+

```

1 row in set (0.00 sec)

```
mysql> select replace('welcome','el','hi');
```

replace('welcome','el','hi')
whicome

1 row in set (0.01 sec)

```
mysql> select ename,replace(ename,'S','A') from emp;
```

ename	replace(ename,'S','A')
SMITH	AMITH
ALLEN	ALLEN
WARD	WARD
JONES	JONEA
MARTIN	MARTIN
BLAKE	BLAKE
CLARK	CLARK
SCOTT	ACOTT
KING	KING
TURNER	TURNER
ADAMS	ADAMA
JAMES	JAMEA
FORD	FORD
MILLER	MILLER

14 rows in set (0.02 sec)

```
mysql> select reverse('hello');
```

reverse('hello')
olleh

1 row in set (0.00 sec)

```
mysql> select ename,reverse(ename) from emp
-> ;
```

ename	reverse(ename)
SMITH	HTIMS
ALLEN	NELLA
WARD	DRAW
JONES	SENOJ
MARTIN	NITRAM
BLAKE	EKALB
CLARK	KRALC
SCOTT	TTOCS
KING	GNIK
TURNER	RENROT
ADAMS	SMADA
JAMES	SEMAJ
FORD	DROF
MILLER	RELLIM

14 rows in set (0.00 sec)

```
mysql> select substr('hello',2);
```

substr('hello',2)
ello

1 row in set (0.00 sec)

```
mysql> select substring('hello',2,2);
```

substring('hello',2,2)
el

1 row in set (0.00 sec)

```
mysql> select substring('welcome',-4,3);
```

substring('welcome',-4,3)
cum

1 row in set (0.00 sec)

```
mysql>
```

```
mysql>
```

```
mysql> select ename from emp where ename like '%s';
```

ename
JONES
ADAMS
JAMES

3 rows in set (0.01 sec)

```
mysql> select ename from emp where ename like('%s');
```

ename
JONES
ADAMS
JAMES

3 rows in set (0.00 sec)

```
mysql> select ename from emp where ename like('%s');
```

ename
JONES
ADAMS
JAMES

3 rows in set (0.00 sec)

```
mysql> select ename from emp where ename not like('%s%');
+-----+
| ename |
+-----+
| ALLEN |
| WARD  |
| MARTIN |
| BLAKE |
| CLARK |
| KING  |
| TURNER |
| FORD  |
| MILLER |
+-----+
9 rows in set (0.00 sec)

mysql> select ename from emp where ename like('_s%');
Empty set (0.00 sec)

mysql> select ename from emp where ename like('_a%');
+-----+
| ename |
+-----+
| WARD  |
| MARTIN |
| JAMES |
+-----+
3 rows in set (0.00 sec)

mysql> select *from emp;
+-----+-----+-----+-----+-----+-----+-----+-----+
| empno | ename | job      | mgr | hiredate | sal      | comm      | deptno |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7369 | SMITH | CLERK    | 7902 | 1980-12-17 | 800.00 | NULL      | 20 |
| 7499 | ALLEN | SALESMAN | 7698 | 1981-02-20 | 1600.00 | 300.00    | 30 |
| 7521 | WARD  | SALESMAN | 7698 | 1981-02-22 | 1250.00 | 500.00    | 30 |
| 7566 | JONES | MANAGER  | 7839 | 1981-04-02 | 2975.00 | NULL      | 20 |
| 7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 1250.00 | 1400.00   | 30 |
| 7698 | BLAKE | MANAGER  | 7839 | 1981-05-01 | 2850.00 | NULL      | 30 |
| 7782 | CLARK | MANAGER  | 7839 | 1981-06-09 | 2450.00 | NULL      | 10 |
| 7788 | SCOTT | ANALYST  | 7566 | 1982-12-09 | 3000.00 | NULL      | 20 |
| 7839 | KING  | PRESIDENT | NULL | 1981-11-17 | 5000.00 | NULL      | 10 |
| 7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1500.00 | 0.00      | 30 |
| 7876 | ADAMS | CLERK    | 7788 | 1983-01-12 | 1100.00 | NULL      | 20 |
| 7900 | JAMES | CLERK    | 7698 | 1981-12-03 | 950.00  | NULL      | 30 |
| 7902 | FORD  | ANALYST  | 7566 | 1981-12-03 | 3000.00 | NULL      | 20 |
| 7934 | MILLER | CLERK    | 7782 | 1982-01-23 | 1300.00 | NULL      | 10 |
+-----+-----+-----+-----+-----+-----+-----+-----+
14 rows in set (0.00 sec)

mysql> select * from emp substring(hiredate,5,2);
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 'substring(hiredate,5,2)' at line 1
mysql> select * from emp where substring(hiredate,5,2)=01;
Empty set (0.00 sec)

mysql> select * from emp where substring(hiredate,5,2)='01';
Empty set (0.01 sec)

mysql> select * from emp where substring(hiredate,6,2)=01;
+-----+-----+-----+-----+-----+-----+-----+-----+
| empno | ename | job      | mgr | hiredate | sal      | comm      | deptno |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7876 | ADAMS | CLERK    | 7788 | 1983-01-12 | 1100.00 | NULL      | 20 |
| 7934 | MILLER | CLERK    | 7782 | 1982-01-23 | 1300.00 | NULL      | 10 |
+-----+-----+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> select * from emp where substring(hiredate,1,4)=1981;
+-----+-----+-----+-----+-----+-----+-----+-----+
| empno | ename | job      | mgr | hiredate | sal      | comm      | deptno |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7499 | ALLEN | SALESMAN | 7698 | 1981-02-20 | 1600.00 | 300.00    | 30 |
| 7521 | WARD  | SALESMAN | 7698 | 1981-02-22 | 1250.00 | 500.00    | 30 |
| 7566 | JONES | MANAGER  | 7839 | 1981-04-02 | 2975.00 | NULL      | 20 |
| 7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 1250.00 | 1400.00   | 30 |
| 7698 | BLAKE | MANAGER  | 7839 | 1981-05-01 | 2850.00 | NULL      | 30 |
| 7782 | CLARK | MANAGER  | 7839 | 1981-06-09 | 2450.00 | NULL      | 10 |
| 7839 | KING  | PRESIDENT | NULL | 1981-11-17 | 5000.00 | NULL      | 10 |
| 7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1500.00 | 0.00      | 30 |
| 7900 | JAMES | CLERK    | 7698 | 1981-12-03 | 950.00  | NULL      | 30 |
| 7902 | FORD  | ANALYST  | 7566 | 1981-12-03 | 3000.00 | NULL      | 20 |
+-----+-----+-----+-----+-----+-----+-----+-----+
10 rows in set (0.00 sec)

mysql> select * from emp where substring(hiredate,9,2) between 1 and 9;
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 'to 9' at line 1
mysql> select * from emp where substring(hiredate,9,2) between 1 and 9;
+-----+-----+-----+-----+-----+-----+-----+-----+
| empno | ename | job      | mgr | hiredate | sal      | comm      | deptno |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7566 | JONES | MANAGER  | 7839 | 1981-04-02 | 2975.00 | NULL      | 20 |
| 7698 | BLAKE | MANAGER  | 7839 | 1981-05-01 | 2850.00 | NULL      | 30 |
| 7782 | CLARK | MANAGER  | 7839 | 1981-06-09 | 2450.00 | NULL      | 10 |
| 7788 | SCOTT | ANALYST  | 7566 | 1982-12-09 | 3000.00 | NULL      | 20 |
| 7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1500.00 | 0.00      | 30 |
| 7900 | JAMES | CLERK    | 7698 | 1981-12-03 | 950.00  | NULL      | 30 |
| 7902 | FORD  | ANALYST  | 7566 | 1981-12-03 | 3000.00 | NULL      | 20 |
+-----+-----+-----+-----+-----+-----+-----+-----+
7 rows in set (0.01 sec)

mysql> select * from emp where sal>9999;
-> ;
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> select * from emp where sal>9999;
Empty set (0.00 sec)

mysql>
```