```
Last login: Wed Mar 2 10:45:03 on ttys000 ishita@Ishitas-MacBook-Pro ~ % mysql -u root -p Enter password:
Welcome to the MySQL monitor. Commands end with; or \g. Your MySQL connection id is 8
Server version: 8.0.28 MySQL Community Server - GPL
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```

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owners.

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

mysql> show databses;

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 'datab ses' at line 1

```
mysql> show databases;
```

mysal> use lab4;

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_lab4 |
+-----+
| boats |
| reserves |
| s |
| sailors |
```

```
4 rows in set (0.01 sec)
mysql> show s;
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 's' at
mysql> describe s;
+----+
| Field | Type | | Null | Key | Default | Extra |
+----+
     | varchar(10) | NO | PRI | NULL |
| sname | varchar(15) | YES | | NULL |
| rating | float | YES | | NULL
lage lint
              I YES I I NULL
                                 +----+
4 rows in set (0.01 sec)
mysql> describe sailors;
+----+
+----+
| sid | varchar(10) | NO | PRI | NULL |
| sname | varchar(15) | YES | | NULL
| rating | float | YES | | NULL | | age | int | YES | | NULL |
+----+
4 rows in set (0.01 sec)
mysql> select * from s;
Empty set (0.01 sec)
mysql> drop s;
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 's' at
line 1
mysal> drop table s;
Query OK, 0 rows affected (0.01 sec)
mysal> show s;
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 's' at
line 1
mysal> show databases;
+----+
l Database
l db
I information_schema |
```

l Lab1

```
I Lab2
I lab3
I Lab4
I mysql
| performance_schema |
+----+
9 rows in set (0.00 sec)
mysql> show tables;
+----+
| Tables_in_lab4 |
+----+
l boats
l reserves
| sailors |
+----+
3 rows in set (0.00 sec)
mysql> create database lab5;
Query OK, 1 row affected (0.01 sec)
mysql> use lab5;
Database changed
mysql> use lab4;
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_lab4 |
+----+
l boats
l reserves
| sailors |
+----+
3 rows in set (0.00 sec)
mysql> select * from boats;
+----+
| bid | bname | color |
+----+
| 101 | Titanic | White |
| 202 | Oasis
              l Red
| 303 | Liberty | Green |
| 404 | Santa Maria | Red
| 505 | Orion | Purple |
+----+
```

mysql> select \* from reserves; +-----+

```
I sid | bid | day
+----+
| 1975399 | 101 | 1980-05-11 |
| 1980297 | 303 | 1999-9-9
| 1989001 | 202 | 2009-02-28 |
| 1989001 | 404 | 2002-08-25 |
| 1995293 | 404 | 1996-12-31 |
| 2001003 | 101 | 2005-11-11 |
+----+
6 rows in set (0.00 sec)
mysql> select bname from boats where bid in (select bid from reserves where sid
in (select sid from sailors where sname="Bob"));
+----+
l bname
+----+
l Oasis
| Santa Maria |
+----+
2 rows in set (0.00 sec)
mysql> select 8 from reserves;
+---+
181
+---+
181
181
181
181
181
181
+---+
6 rows in set (0.00 sec)
mysql> select * from reserves;
+----+
I sid | bid | day
+----+
| 1975399 | 101 | 1980-05-11 |
| 1980297 | 303 | 1999-9-9
| 1989001 | 202 | 2009-02-28 |
| 1989001 | 404 | 2002-08-25 |
| 1995293 | 404 | 1996-12-31 |
| 2001003 | 101 | 2005-11-11 |
+----+
6 rows in set (0.00 sec)
mysql> select * from boats;
+----+
```

```
| bid | bname | color |
+----+
| 101 | Titanic
            ∣ White ∣
| 202 | Oasis
             l Red
| 303 | Liberty
           l Green
| 404 | Santa Maria | Red
| 505 | Orion | Purple |
+----+
5 rows in set (0.01 sec)
mysql> select * from boats;
+----+
| bid | bname | color |
+----+
| 101 | Titanic | White |
| 202 | Oasis
             l Red
| 303 | Liberty | Green
| 404 | Santa Maria | Red
| 505 | Orion | Purple |
+----+
5 rows in set (0.00 sec)
mysql> select * from sailors;
+----+
I sid | I sname | rating | age |
+----+
| 1980297 | Tim
            8.5 l
                     45 l
           | 9 |
| 8.5 |
l 1986929 | Tom
                    40 l
l 1989001 l Bob
                     40 l
| 1995293 | Rob
            7.5 l
                     36 I
| 2001003 | Sam | 9 | 35 |
+----+
6 rows in set (0.00 sec)
mysql> select * from boats;
+----+
| bid | bname | color |
+----+
| 101 | Titanic
            | White |
| 202 | Oasis
             l Red
| 303 | Liberty | Green |
| 404 | Santa Maria | Red
| 505 | Orion | Purple |
+----+
5 rows in set (0.00 sec)
mysql> select * from reserves;
+----+
```

```
| bid | day
l sid
+----+
| 1975399 | 101 | 1980-05-11 |
| 1980297 | 303 | 1999-9-9
| 1989001 | 202 | 2009-02-28 |
| 1989001 | 404 | 2002-08-25 |
| 1995293 | 404 | 1996-12-31 |
| 2001003 | 101 | 2005-11-11 |
+----+
6 rows in set (0.00 sec)
mysql> select names, age from sailors where sid in (select sid from reserves whe
re bid in (select bid from boats where color="Red")) order by age;
ERROR 1054 (42S22): Unknown column 'names' in 'field list'
mysal> select sname, age from sailors where sid in (select sid from reserves whe
re bid in (select bid from boats where color="Red")) order by age;
+----+
I sname I age I
+----+
l Rob l
           36 I
           40 l
l Bob
     +----+
2 rows in set (0.00 sec)
mysql> select names from sailors where sid in (select sid from reserves));
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 names from sailors where sid in (select sid from reserves);
ERROR 1054 (42S22): Unknown column 'names' in 'field list'
mysal> select sname from sailors where sid in (select sid from reserves);
+----+
I sname I
+----+
l Lan
I Tim
l Bob
l Rob
I Sam
+----+
5 rows in set (0.00 sec)
mysql> select sid from sailors where sid in (select sid from reserves where bid
in (select bid from boats where color in ("Red", "Green")));
+----+
l sid
+----+
| 1980297 |
| 1989001 |
```

```
I 1995293 I
+----+
3 rows in set (0.01 \text{ sec})
mysql> select sid from reserves where bid in (select bid from boats where color
in ("Red", "Green"));
+----+
l sid
+----+
| 1980297 |
| 1989001 |
| 1989001 |
| 1995293 |
+----+
4 rows in set (0.00 sec)
mysql> select sid No repeatfrom reserves where bid in (select bid from boats whe
re color in ("Red", "Green"));
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 'repea
tfrom reserves where bid in (select bid from boats where color in ("Red", "G' at
line 1
mysql> select distinct sid from reserves where bid in (select bid from boats whe
re color in ("Red", "Green"));
+----+
l sid
+----+
| 1980297 |
| 1989001 |
| 1995293 |
+----+
3 rows in set (0.00 \text{ sec})
mysql> select name,min(age) from sailors;
ERROR 1054 (42S22): Unknown column 'name' in 'field list'
mysql> select sname,min(age) from sailors;
ERROR 1140 (42000): In aggregated query without GROUP BY, expression #1 of SELEC
T list contains nonaggregated column 'lab4.sailors.sname'; this is incompatible
with sql_mode=only_full_group_by
mysal> select min(age) from sailors;
+----+
I min(age) I
+----+
       35 I
+----+
1 row in set (0.00 sec)
mysql> select sname from sailors where age = (select min(age) from sailors);
+----+
```

```
+----+
l Sam l
+----+
1 row in set (0.00 sec)
mysql> select sname, age from sailors where age = (select min(age) from sailors);
+----+
I sname I age I
+----+
| Sam | 35 |
+----+
1 row in set (0.00 sec)
mysql> select count(*) from sailors where sname in (select sname from sailors);
+----+
l count(*) |
+----+
       6 I
+----+
1 row in set (0.00 sec)
mysql> insert into sailors values("10101093", "Bob", "11-11-11");
ERROR 1136 (21S01): Column count doesn't match value count at row 1
mysql> insert into sailors values("10101093", "Bob", 1, 11);
Query OK, 1 row affected (0.00 sec)
mysql> select * from sailors;
+----+
I sid | I sname | rating | age |
+----+
| 10101093 | Bob |
                     1 l
                          11 l
| 1975399 | Lan
                    10 l
                         50 I
| 1980297 | Tim
                    8.5 l
                         45 l
              l 1986929 | Tom
                    9 |
              40 l
| 1989001 | Bob
              8.5 I 40 I
l 1995293 | Rob
                    7.5 l
                          36 I
l 2001003 | Sam |
                  9 | 35 |
+----+
7 rows in set (0.00 sec)
mysql> select count(*) from sailors where sname in (select sname from sailors);
+----+
l count(*) |
+----+
       7 I
+----+
1 row in set (0.00 sec)
```

I sname I

```
ailors);
+----+
l count(*) |
+----+
     7 I
+----+
1 row in set (0.01 sec)
mysql> select distinct sname from sailors;
+----+
l sname l
+----+
l Bob
l Lan
l Tim
I Tom
l Rob
I Sam
+----+
6 rows in set (0.00 sec)
mysql> select count(sname) from sailors where sname in (select distinct sname fr
om sailors);
+----+
l count(sname) |
+----+
           7 I
+----+
1 row in set (0.01 sec)
mysql> select sname, count(sname) from sailors;
ERROR 1140 (42000): In aggregated query without GROUP BY, expression #1 of SELEC
T list contains nonaggregated column 'lab4.sailors.sname'; this is incompatible
with sql_mode=only_full_group_by
mysql> select sname, count(sname) from sailors group by sname;
+----+
| sname | count(sname) |
+----+
     - 1
l Bob
l Lan
     1 |
| Tim
     1 |
                  1 |
l Tom
I Rob
                 1 |
l Sam
     1 I
+----+
6 rows in set (0.01 sec)
```

mysql> select count(distinct sname) from sailors;

mysql> select count(\*) from sailors where sname in (select distinct sname from s

```
+----+
l count(distinct sname) |
+----+
+----+
1 row in set (0.00 sec)
mysql> delete from sailors where age=11;
Query OK, 1 row affected (0.01 sec)
mysql> select * from sailors;
+----+
I sid | I sname | rating | age |
+----+
| 1975399 | Lan |
                 10 l 50 l
                   8.5 l
                        45 l
| 1980297 | Tim |
| 1986929 | Tom | 9 | 40 |
| 1989001 | Bob | 8.5 | 40 |
                  7.5 l
| 1995293 | Rob |
                          36 I
| 2001003 | Sam | 9 | 35 |
+----+
6 rows in set (0.00 sec)
mysql> select avg(age), rating from sailors where rating in (select rating from s
ailors);
ERROR 1140 (42000): In aggregated query without GROUP BY, expression #2 of SELEC
T list contains nonaggregated column 'lab4.sailors.rating'; this is incompatible
with sql_mode=only_full_group_by
mysql> select avg(age), rating from sailors group by rating;
+----+
l avg(age) | rating |
+----+
l 50.0000 l
             10 l
 42.5000 l
             8.5 I
l 37.5000 l
             9 |
1 36.0000 l 7.5 l
+----+
4 rows in set (0.00 sec)
mysql> select sname, age from sailors where age<= (select age from sailors);
ERROR 1242 (21000): Subquery returns more than 1 row
mysql> select sname, age from sailors where age<=all (select age from sailors);
+----+
I sname I age I
+----+
| Sam | 35 |
+----+
1 row in set (0.01 sec)
```

```
mysql> select avg(age) from sailors where rating in (select rating from sailors
where count(rating)>=2);
ERROR 1111 (HY000): Invalid use of group function
mysql> select count(rating) from sailors;
+----+
l count(rating) |
+----+
            6 I
+----+
1 row in set (0.00 sec)
mysql> select avg(age), rating from sailors (select rating from sailors having co
unt(rating)>=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 '(sele
ct rating from sailors having count(rating)>=2)' at line 1
mysql> select avg(age), rating from sailors (select rating from sailors having co
unt(*)>=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 '(sele
ct rating from sailors having count(*)>=2)' at line 1
mysql> select rating from sailors having count(*)>1;
ERROR 1140 (42000): In aggregated query without GROUP BY, expression #1 of SELEC
T list contains nonaggregated column 'lab4.sailors.rating'; this is incompatible
with sql_mode=only_full_group_by
mysql> select avg(age), rating from sailors (select rating from sailors having co
unt(*)>=2) group by rating;
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 '(sele
ct rating from sailors having count(*)>=2) group by rating' at line 1
mysql> select rating from sailors having count(*)>1 group by rating;
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 'group
by rating' at line 1
mysql> select rating from sailors;
+----+
I rating I
+----+
Т
    10 l
    8.5 I
     9 I
Т
Τ
    8.5 I
    7.5 l
    9 1
+----+
6 rows in set (0.00 sec)
```

mysql> select count(distinct rating) from sailors;

+------

```
+----+
+----+
1 row in set (0.01 sec)
mysql> select rating, count(distinct rating) from sailors group by rating;
+----+
| rating | count(distinct rating) |
   7.5 l
1
Τ
   8.5 l
                         1 |
    9 |
                         1 |
                        1 I
   10 l
+----+
4 rows in set (0.00 sec)
mysql> select rating, count(rating) from sailors group by rating;
+----+
| rating | count(rating) |
+----+
   10 l
  8.5 l
Т
                 2 |
   9 I
                 2 |
   7.5 l
+----+
4 rows in set (0.00 sec)
mysql> select rating from sailors having count(rating)>1;
ERROR 1140 (42000): In aggregated query without GROUP BY, expression #1 of SELEC
T list contains nonaggregated column 'lab4.sailors.rating'; this is incompatible
with sql_mode=only_full_group_by
mysql> select rating from sailors group by rating having count(rating)>1;
+----+
I rating I
+----+
   8.5 |
   9 I
+----+
2 rows in set (0.01 sec)
mysql> select rating, count(rating) from sailors group by rating having count(rat
ing)>1;
+----+
| rating | count(rating) |
+----+
  8.5 l
                 2 |
   9 |
+----+
```

l count(distinct rating) |

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

mysql> select avg(age) from sailors where rating in (select rating from sailors group by rating having count(rating)>1);

```
+----+
I avg(age) I
+----+
I 40.0000 I
+----+
1 row in set (0.00 sec)
```

mysql> select ava(age), rating from sailors where rating in (select rating from s ailors group by rating having count(rating)>1) group by rating;

```
+----+
| avg(age) | rating |
+----+
l 42.5000 l
          8.5 l
l 37.5000 l
           9 1
+----+
2 rows in set (0.00 sec)
```

mysql> select avg(age), rating from sailors where rating in (select rating from s ailors group by rating having count(rating)>=2) group by rating;

```
+----+
l avg(age) | rating |
+----+
| 42.5000 | 8.5 |
 37.5000 l
         9 1
+----+
```

2 rows in set (0.01 sec)

mysql> select avg(age), rating from sailors group by rating having count(rating)> 2;

Empty set (0.00 sec)

mysql> select avg(age), rating from sailors group by rating having count(\*)>2; Empty set (0.00 sec)

mysql> select rating from sailors group by rating having count(\*)>2; Empty set (0.01 sec)

mysql> select \* from sailors;

|    | '       |   |     |   |        |   | ,  |   |
|----|---------|---|-----|---|--------|---|----|---|
|    | <br>sid | - |     |   | rating | - |    | - |
| +- |         |   |     |   |        |   | •  |   |
|    | 1975399 |   | Lan |   | 10     |   | 50 |   |
| 1  | 1980297 | I | Tim | I | 8.5    |   | 45 |   |
|    | 1986929 | 1 | Tom |   | 9      |   | 40 |   |
| 1  | 1989001 | I | Bob | I | 8.5    |   | 40 |   |

```
| 1995293 | Rob | 7.5 |
                36 I
l 2001003 | Sam |
           9 I
                35 I
+----+
6 rows in set (0.00 sec)
mysql> select avg(age), rating from sailors group by rating having count(*)>=2;
+----+
| avg(age) | rating |
+----+
l 42.5000 l
        8.5 I
l 37.5000 l
        9 |
+----+
2 rows in set (0.01 sec)
mysql> select avg(age), rating, count(rating) from sailors group by rating having
count(*)>=2;
+----+
l avg(age) | rating | count(rating) |
+----+
| 42.5000 | 8.5 |
                  2 |
| 37.5000 | 9 |
                  2 |
+----+
2 rows in set (0.00 sec)
mysql> describe sailors;
+----+
+----+
    | varchar(10) | NO | PRI | NULL
| sname | varchar(15) | YES |
                  l NULL
| rating | float | YES |
                  l NULL
lage lint
          I YES I I NULL
                        +----+
4 rows in set (0.00 sec)
mysal> describe boats;
+----+
+----+
| bid | varchar(10) | NO | PRI | NULL |
| bname | varchar(15) | YES | | NULL
                       -
| color | varchar(10) | YES | | NULL
+----+
3 rows in set (0.00 sec)
mysql> describe reserves;
+----+
+----+
```

```
| sid | varchar(10) | NO | PRI | NULL |
                                           1
| bid | varchar(10) | NO | PRI | NULL
                                           | day | varchar(10) | NO | | NULL
                                           Т
+----+
3 rows in set (0.00 sec)
mysql> select * from sailors;
+----+
| sid | sname | rating | age |
+----+
| 1975399 | Lan |
                  10 l 50 l
| 1980297 | Tim | 8.5 |
| 1986929 | Tom | 9 |
| 1989001 | Bob | 8.5 |
| 1995293 | Rob | 7.5 |
                         45 I
                        40 l
                       40 l
| 2001003 | Sam | 9 |
                         35 I
+----+
6 rows in set (0.00 sec)
mysql> select * from boats;
+----+
| bid | bname | color |
+----+
| 101 | Titanic | White | | 202 | Oasis | Red | |
| 303 | Liberty | Green |
| 404 | Santa Maria | Red
| 505 | Orion | Purple |
+----+
5 rows in set (0.00 sec)
mysql> select * from reserves;
+----+
I sid | bid | day | |
+----+
| 1975399 | 101 | 1980-05-11 |
| 1980297 | 303 | 1999-9-9
| 1989001 | 202 | 2009-02-28 |
| 1989001 | 404 | 2002-08-25 |
| 1995293 | 404 | 1996-12-31 |
| 2001003 | 101 | 2005-11-11 |
+----+
6 rows in set (0.00 sec)
mysql> exit;
Bye
ishita@Ishitas-MacBook-Pro ~ % exit;
Saving session...
```