

I used MySQL 5.7 command line client.

1.

```
mysql> CREATE TABLE Emp (eid INT, ename VARCHAR(255), age INT, salary DOUBLE );
Query OK, 0 rows affected (1.18 sec)

mysql> CREATE TABLE Works (eid INT, did INT, pct_time INT);
Query OK, 0 rows affected (0.45 sec)

mysql> CREATE TABLE Dept (did INT, budget DOUBLE, managerid INT);
Query OK, 0 rows affected (0.37 sec)

mysql>
```

```
mysql> INSERT INTO Emp
-> (eid, ename, age, salary)
-> VALUES
-> (1, 'Joe', 33, 70000.0 ),
-> (2, 'Zhao', 33, 70000.0 ),
-> (3, 'Sid', 33, 70000.0 ),
-> (4, 'Gusto', 34, 70000.0 ),
-> (5, 'Andy', 33, 70000.0 ),
-> (6, 'Mary', 34, 70000.0 ),
-> (7, 'Mouse', 50, 890000.0 ),
-> (8, 'Kim', 55, 70000.0 ),
-> (9, 'Meck', 20, 70000.0 ),
-> (10, 'Mock', 30, 40000.0 ),
-> (11, 'Tom', 30, 20000.0 ),
-> (12, 'Toozzy', 40, 80000.0 ),
-> (13, 'Roro', 54, 90000.0 ),
-> (14, 'Rara', 34, 780000.0 ),
-> (15, 'Randy', 34, 40000.0 ),
-> (16, 'Marry', 45, 80000.0 ),
-> (17, 'Larry', 32, 35000 ),
-> (18, 'Jarry', 32, 40000.0 ),
-> (19, 'Herry', 30, 50000.0 ),
-> (20, 'Mary', 40, 50000.0 ),
-> (21, 'MooMoo', 50, 780000.0 ),
-> (22, 'Giles', 40, 210000.0 ),
-> (23, 'Deniz', 24, 1000000.0 ),
-> (24, 'Suresh', 22, 89000.0 ),
-> (25, 'Shiva', 22, 95000.0 ),
-> (26, 'Airy', 23, 77000.0 ),
-> (27, 'Kiroshi', 24, 10700.0 ),
-> (28, 'Krishna', 23, 11000.0 ),
-> (29, 'Kasi', 21, 92000.0 ),
-> (30, 'Raja', 25, 100000.0 ),
-> (31, 'Bill', 43, 60000.0 ),
-> (32, 'Bob', 24, 37000.0 ),
-> (33, 'Ang', 32, 60000.0 ),
-> (34, 'Dave', 32, 63000.0 ),
-> (35, 'Kenneth', 36, 65000.0 ),
-> (36, 'Henry', 32, 160000.0 ),
-> (37, 'May', 32, 660000.0 ),
-> (38, 'Balaji', 22, 90000.0 ),
-> (39, 'Shiva', 28, 10000.0 ),
-> (40, 'Meck', 25, 100000.0 ),
-> (41, 'Lee', 23, 50000.0 ),
-> (42, 'Brian', 33, 47000.0 ),
-> (43, 'Michael', 36, 80000.0 ),
-> (44, 'Lisa', 42, 69000.0 ),
-> (45, 'Steven', 31, 45000.0 ),
-> (46, 'Charles', 39, 660000.0 ),
-> (47, 'Justin', 52, 70000.0 ),
-> (48, 'Aron', 27, 40000.0 ),
-> (49, 'David', 20, 60000.0 ),
-> (50, 'William', 35, 90000.0 ),
-> (51, 'Bobbie', 23, 580000.0 ),
-> (52, 'Sonia', 33, 570000.0 ),
-> (53, 'Cindy', 45, 80000.0 ),
-> (54, 'Kathy', 42, 69000.0 ),
-> (55, 'Thai', 31, 45000.0 ),
-> (56, 'Ding', 32, 760000.0 ),
-> (57, 'Yang', 52, 70000.0 ),
-> (58, 'Jack', 30, 40000.0 ),
-> (59, 'Wong', 40, 60000.0 ),
-> (60, 'Zhong', 35, 90000.0 );
Query OK, 60 rows affected (0.19 sec)
Records: 60 Duplicates: 0 Warnings: 0

mysql>
```

```

mysql> INSERT INTO Works
-> (eid, did, pct_time)
-> VALUES
-> (1, 1, 20),
-> (1, 2, 30),
-> (1, 6, 50),
-> (2, 0, 60),
-> (2, 7, 40),
-> (3, 0, 100),
-> (4, 5, 80),
-> (4, 9, 20),
-> (5, 0, 100),
-> (6, 1, 70),
-> (6, 2, 30),
-> (7, 0, 25),
-> (7, 6, 50),
-> (7, 10, 25),
-> (8, 0, 33),
-> (8, 3, 33),
-> (8, 8, 33),
-> (9, 0, 100),
-> (10, 1, 20),
-> (10, 2, 80),
-> (11, 1, 50),
-> (11, 5, 50),
-> (12, 0, 100),
-> (13, 2, 30),
-> (13, 7, 70),
-> (14, 0, 33),
-> (14, 3, 33),
-> (14, 10, 33),
-> (15, 4, 70),
-> (15, 5, 30),
-> (16, 0, 100),
-> (17, 0, 100),
-> (18, 3, 100),
-> (19, 2, 100),
-> (20, 0, 100),
-> (21, 0, 33),
-> (21, 1, 33),
-> (21, 2, 33),
-> (22, 3, 50),
-> (22, 5, 50),
-> (23, 4, 100),
-> (24, 0, 100),
-> (25, 0, 100),
-> (26, 0, 100),
-> (27, 3, 20),
-> (27, 9, 80),
-> (28, 0, 100),
-> (29, 0, 100),
-> (30, 1, 100),
-> (31, 4, 30),
-> (31, 6, 70),
-> (32, 3, 50),
-> (32, 10, 50),
-> (33, 10, 100),
-> (34, 0, 80),
-> (34, 6, 20),
-> (35, 3, 50),
-> (35, 10, 50),
-> (36, 0, 100),
-> (37, 0, 33),
-> (37, 5, 33),
-> (37, 7, 33),
-> (38, 8, 100),
-> (39, 2, 30),
-> (39, 9, 70),
-> (40, 0, 100),
-> (41, 0, 100),
-> (42, 0, 100),
-> (43, 3, 80),
-> (43, 7, 20),
-> (44, 0, 100),
-> (45, 0, 100),
-> (46, 1, 33),
-> (46, 4, 33),

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-> (42, 0, 100),
-> (43, 3, 80),
-> (43, 7, 20),
-> (44, 0, 100),
-> (45, 0, 100),
-> (46, 1, 33),
-> (46, 4, 33),
-> (46, 6, 33),
-> (47, 0, 100),
-> (48, 1, 100),
-> (49, 4, 50),
-> (49, 10, 50),
-> (50, 0, 100),
-> (51, 0, 30),
-> (51, 3, 50),
-> (51, 6, 20),
-> (52, 1, 20),
-> (52, 3, 20),
-> (52, 8, 60),
-> (53, 2, 30),
-> (53, 9, 70),
-> (54, 0, 100),
-> (55, 0, 100),
-> (56, 0, 50),
-> (56, 3, 40),
-> (56, 4, 10),
-> (57, 0, 100),
-> (58, 0, 60),
-> (58, 1, 20),
-> (58, 2, 20),
-> (59, 0, 50),
-> (59, 1, 50),
-> (60, 0, 100);

```

Query OK, 100 rows affected (0.09 sec)  
Records: 100 Duplicates: 0 Warnings: 0

```

mysql> INSERT INTO Dept
-> (did, budget, managerid)
-> VALUES
-> (0, 1000000.0, 12),
-> (1, 750000.0, 1 ),
-> (2, 800000.0, 19),
-> (3, 6000000.0, 22),
-> (4, 7000000.0, 23),
-> (5, 5000000.0, 22),
-> (6, 2500000.0, 1 ),
-> (7, 3100000.0, 13 ),
-> (8, 2000000.0, 38 ),
-> (9, 3005000.0, 27 ),
-> (10, 4500000.0, 33 );

```

Query OK, 11 rows affected (0.14 sec)  
Records: 11 Duplicates: 0 Warnings: 0

mysql>

2.

```
mysql> SELECT e.ename, e.salary FROM Emp e WHERE (SELECT COUNT(*) FROM Works w W
HERE e.eid = w.eid AND w.did IN (0,2)) > 1;
+-----+-----+
| ename | salary |
+-----+-----+
| MooMoo | 780000 |
| Jack  | 400000 |
+-----+-----+
2 rows in set (0.00 sec)

mysql>
```

```
+-----+-----+
| 0 | 430000 |
+-----+-----+
1 row in set (0.00 sec)

mysql>
```

```
mysql> SELECT e.ename, e.salary FROM Emp e WHERE e.salary > (SELECT MAX(d.budget
) FROM Works w, Dept d WHERE e.eid = w.eid AND w.did = d.did);
Empty set (0.00 sec)

mysql>
```

```
mysql> SELECT e.ename FROM Emp e, (SELECT did, managerid, MAX(budget) FROM Dept)
AS maxbudget WHERE e.eid = maxbudget.managerid;
+-----+
| ename |
+-----+
| Toozy |
+-----+
1 row in set (0.00 sec)

mysql> SELECT r.ename, r.age, r.salary FROM (SELECT w.did, e.ename, e.age, e.sal
ary FROM Emp e, Works w WHERE e.eid = w.eid GROUP BY w.did) AS r;
+-----+-----+-----+
| ename | age | salary |
+-----+-----+-----+
| Zhuo  | 33  | 700000 |
| Joe   | 33  | 700000 |
| Joe   | 33  | 700000 |
| Kim   | 55  | 700000 |
| Randy | 34  | 400000 |
| Gusto | 34  | 700000 |
| Joe   | 33  | 700000 |
| Zhuo  | 33  | 700000 |
| Kim   | 55  | 700000 |
| Gusto | 34  | 700000 |
| Mouse | 50  | 890000 |
+-----+-----+-----+
11 rows in set (0.00 sec)

mysql>
```

```
mysql> SELECT * FROM Emp e WHERE e.salary > (SELECT MIN(e.salary) FROM Dept d,
Emp e WHERE d.managerid = e.eid);
```

eid	ename	age	salary
1	Joe	33	70000
2	Zhuo	33	70000
3	Sid	33	70000
4	Gusto	34	70000
5	Andy	33	70000
6	Mary	34	70000
7	Mouse	50	890000
8	Kim	55	70000
9	Meck	20	70000
10	Mock	30	40000
11	Tom	30	20000
12	Toozy	40	80000
13	Roro	54	90000
14	Rara	34	780000
15	Randy	34	40000
16	Marry	45	80000
17	Larry	32	35000
18	Jarry	32	40000
19	Herry	30	50000
20	Mary	40	50000
21	MooMoo	50	780000
22	Giles	40	210000
23	Deniz	24	1000000
24	Suresh	22	89000
25	Shiva	22	95000
26	Airy	23	77000
28	Krishna	23	11000
29	Kasi	21	92000
30	Raja	25	100000
31	Bill	43	60000
32	Bob	24	37000
33	Ang	32	60000
34	Dave	32	63000
35	Kenneth	36	65000
36	Henry	32	160000
37	May	32	660000
38	Balaji	22	90000
40	Meck	25	100000
41	Lee	23	50000
42	Brian	33	47000
43	Michael	36	80000
44	Lisa	42	69000
45	Steven	31	45000
46	Charles	39	660000
47	Justin	52	70000
48	Aron	27	40000
49	David	20	60000
50	William	35	90000
51	Bobbie	23	580000
52	Sonia	33	570000
53	Cindy	45	80000
54	Kathy	42	69000
55	Thai	31	45000
56	Ding	32	760000
57	Yang	52	70000
58	Jack	30	40000
59	Wong	40	60000
60	Zhong	35	90000

58 rows in set (0.01 sec)

```
mysql>
```