Nested query

38. list all employees with sal>smith's sal

```
mysql> select * from emp where sal > (select sal from emp where ename='SMITH');
+-------+--------+----------+------+------------+---------+---------+--------+
| EMPNO | ENAME  | JOB      | MGR  | HIREDATE   | SAL     | COMM    | DEPTNO |
+-------+--------+----------+------+------------+---------+---------+--------+
|  7499 | ALLEN  | SALESMAN | 7698 | 1981-02-20 | 2140.00 |  300.00 |     30 |
|  7521 | WARD   | SALESMAN | 7698 | 1981-02-22 | 1937.50 |  500.00 |     30 |
|  7566 | JONES  | MANAGER  | 7839 | 1981-04-02 | 3421.25 |    NULL |     20 |
|  7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 2837.50 | 1400.00 |     30 |
|  7698 | BLAKE  | MANAGER  | 7839 | 1981-05-01 | 3277.50 |    NULL |     30 |
|  7788 | SCOTT  | ANALYST  | 7566 | 1982-12-09 | 3450.00 |    NULL |     20 |
|  7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1725.00 |    0.00 |     30 |
|  7876 | ADAMS  | CLERK    | 7788 | 1983-01-12 | 1265.00 |    NULL |     20 |
|  7900 | JAMES  | CLERK    | 7698 | 1981-12-03 | 1092.50 |    NULL |     30 |
|  7902 | FORD   | ANALYST  | 7566 | 1981-12-03 | 3450.00 |    NULL |     20 |
+-------+--------+----------+------+------------+---------+---------+--------+
```

39. list all employees who are working in smith's department

```
mysql> select * from emp where deptno = (select deptno from emp where ename='SMITH');
+-------+-------+----------+------+------------+---------+------+--------+
| EMPNO | ENAME | JOB      | MGR  | HIREDATE   | SAL     | COMM | DEPTNO |
+-------+-------+----------+------+------------+---------+------+--------+
|  7369 | SMITH | sr clerk | 7902 | 1980-12-17 |  920.00 | NULL |     20 |
|  7566 | JONES | MANAGER  | 7839 | 1981-04-02 | 3421.25 | NULL |     20 |
|  7788 | SCOTT | ANALYST  | 7566 | 1982-12-09 | 3450.00 | NULL |     20 |
|  7876 | ADAMS | CLERK    | 7788 | 1983-01-12 | 1265.00 | NULL |     20 |
|  7902 | FORD  | ANALYST  | 7566 | 1981-12-03 | 3450.00 | NULL |     20 |
+-------+-------+----------+------+------------+---------+------+--------+
```

40. list all employees with sal < rajan's sal and salary > revati's sal

```
mysql> select * from emp where sal>(select sal from emp where ename='smith') and sal<(select sal from emp where ename='jones');
+-------+--------+----------+------+------------+---------+---------+--------+
| EMPNO | ENAME  | JOB      | MGR  | HIREDATE   | SAL     | COMM    | DEPTNO |
+-------+--------+----------+------+------------+---------+---------+--------+
|  7499 | ALLEN  | SALESMAN | 7698 | 1981-02-20 | 2140.00 |  300.00 |     30 |
|  7521 | WARD   | SALESMAN | 7698 | 1981-02-22 | 1937.50 |  500.00 |     30 |
|  7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 2837.50 | 1400.00 |     30 |
|  7698 | BLAKE  | MANAGER  | 7839 | 1981-05-01 | 3277.50 |    NULL |     30 |
|  7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1725.00 |    0.00 |     30 |
|  7876 | ADAMS  | CLERK    | 7788 | 1983-01-12 | 1265.00 |    NULL |     20 |
|  7900 | JAMES  | CLERK    | 7698 | 1981-12-03 | 1092.50 |    NULL |     30 |
+-------+--------+----------+------+------------+---------+---------+--------+
7 rows in set (0.00 sec)
```

41. delete all employees working in alan's department

```
ERROR 1093 (HY000): You can't specify target table 'emp' for update in FROM clause
mysql> delete from emp where deptno=(select deptno from (select * from emp) e where ename='ALLEN' );
Query OK, 6 rows affected (0.07 sec)

mysql> select * from emp;
+-------+--------+-----------+------+------------+---------+------+--------+
| 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 |
|  7775 | athrava| design    | NULL | 2020-01-01 |   45.00 | NULL |   NULL |
|  7777 | revati | design    | NULL | 2020-01-01 |   45.00 | NULL |   NULL |
|  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 |
|  7902 | FORD   | ANALYST   | 7566 | 1981-12-03 | 3000.00 | NULL |     20 |
|  7934 | MILLER | CLERK     | 7782 | 1982-01-23 | 1300.00 | NULL |     10 |
+-------+--------+-----------+------+------------+---------+------+--------+
```

42. change salary of Alan to the salary of Miller.

```
mysql> ^C
mysql> update emp
    ->     set sal=( select sal from (select * from emp)e where ename= 'MILLER')
    ->     where sal=( select sal from(select * from emp)a where ename='Allen');
Query OK, 1 row affected (0.07 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from emp;
+-------+--------+----------+------+------------+---------+---------+--------+
| EMPNO | ENAME  | JOB      | MGR  | HIREDATE   | SAL     | COMM    | DEPTNO |
+-------+--------+----------+------+------------+---------+---------+--------+
|  7369 | SMITH  | sr clerk | 7902 | 1980-12-17 |  920.00 |    NULL |     20 |
|  7499 | ALLEN  | SALESMAN | 7698 | 1981-02-20 |  224.25 |  300.00 |     30 |
|  7521 | WARD   | SALESMAN | 7698 | 1981-02-22 | 1937.50 |  500.00 |     30 |
|  7566 | JONES  | MANAGER  | 7839 | 1981-04-02 | 3421.25 |    NULL |     20 |
|  7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 2837.50 | 1400.00 |     30 |
|  7698 | BLAKE  | MANAGER  | 7839 | 1981-05-01 | 3277.50 |    NULL |     30 |
|  7782 | CLARK  | manager  | 7777 | 1981-06-09 |  422.63 |    NULL |     10 |
|  7788 | SCOTT  | ANALYST  | 7566 | 1982-12-09 | 3450.00 |    NULL |     20 |
|  7839 | KING   | manager  | 7777 | 1981-11-17 |  862.50 |    NULL |     10 |
|  7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1725.00 |    0.00 |     30 |
|  7876 | ADAMS  | CLERK    | 7788 | 1983-01-12 | 1265.00 |    NULL |     20 |
|  7900 | JAMES  | CLERK    | 7698 | 1981-12-03 | 1092.50 |    NULL |     30 |
|  7902 | FORD   | ANALYST  | 7566 | 1981-12-03 | 3450.00 |    NULL |     20 |
|  7934 | MILLER | manager  | 7777 | 1982-01-23 |  224.25 |    NULL |     10 |
+-------+--------+----------+------+------------+---------+---------+--------+
14 rows in set (0.00 sec)
```

43. change salary of all emplees who working in Wall's (Ward)department to the salary of Miller.

```
mysql> update emp
    -> set  sal=(select sal from(select * from emp) e where ename='MILLER')
    -> where deptno=(select deptno from(select * from emp)e where ename='WARD');
Query OK, 6 rows affected (0.07 sec)
Rows matched: 6  Changed: 6  Warnings: 0

mysql> select * from emp where deptno=30;
+-------+--------+----------+------+------------+---------+---------+--------+
| EMPNO | ENAME  | JOB      | MGR  | HIREDATE   | SAL     | COMM    | DEPTNO |
+-------+--------+----------+------+------------+---------+---------+--------+
|  7499 | ALLEN  | SALESMAN | 7698 | 1981-02-20 | 1300.00 |  300.00 |     30 |
|  7521 | WARD   | SALESMAN | 7698 | 1981-02-22 | 1300.00 |  500.00 |     30 |
|  7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 1300.00 | 1400.00 |     30 |
|  7698 | BLAKE  | MANAGER  | 7839 | 1981-05-01 | 1300.00 |    NULL |     30 |
|  7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1300.00 |    0.00 |     30 |
|  7900 | JAMES  | CLERK    | 7698 | 1981-12-03 | 1300.00 |    NULL |     30 |
+-------+--------+----------+------+------------+---------+---------+--------+
6 rows in set (0.00 sec)
```

44. list all employees with salary > either Smith's salary or alan's sal (questin why we use aggeregate func max(sal))

```
ERROR 1242 (21000): Subquery returns more than 1 row
mysql> select * from emp where sal > (select max(sal) from emp where ename in ('allen','smith'));
+-------+--------+----------+------+------------+---------+---------+--------+
| EMPNO | ENAME  | JOB      | MGR  | HIREDATE   | SAL     | COMM    | DEPTNO |
+-------+--------+----------+------+------------+---------+---------+--------+
|  7521 | WARD   | SALESMAN | 7698 | 1981-02-22 | 1937.50 |  500.00 |     30 |
|  7566 | JONES  | MANAGER  | 7839 | 1981-04-02 | 3421.25 |    NULL |     20 |
|  7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 2837.50 | 1400.00 |     30 |
|  7698 | BLAKE  | MANAGER  | 7839 | 1981-05-01 | 3277.50 |    NULL |     30 |
|  7788 | SCOTT  | ANALYST  | 7566 | 1982-12-09 | 3450.00 |    NULL |     20 |
|  7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1725.00 |    0.00 |     30 |
|  7876 | ADAMS  | CLERK    | 7788 | 1983-01-12 | 1265.00 |    NULL |     20 |
|  7900 | JAMES  | CLERK    | 7698 | 1981-12-03 | 1092.50 |    NULL |     30 |
|  7902 | FORD   | ANALYST  | 7566 | 1981-12-03 | 3450.00 |    NULL |     20 |
+-------+--------+----------+------+------------+---------+---------+--------+
9 rows in set (0.00 sec)
```

45. list all employees who earn more than average sal of dept 10

```
    ');
ERROR 1093 (HY000): You can't specify target table 'emp' for update in FROM clause
mysql> select * from emp where sal > (select avg(sal) from emp where deptno=10);
+-------+--------+----------+------+------------+---------+---------+--------+
| EMPNO | ENAME  | JOB      | MGR  | HIREDATE   | SAL     | COMM    | DEPTNO |
+-------+--------+----------+------+------------+---------+---------+--------+
|  7369 | SMITH  | sr clerk | 7902 | 1980-12-17 |  920.00 |    NULL |     20 |
|  7521 | WARD   | SALESMAN | 7698 | 1981-02-22 | 1937.50 |  500.00 |     30 |
|  7566 | JONES  | MANAGER  | 7839 | 1981-04-02 | 3421.25 |    NULL |     20 |
|  7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 2837.50 | 1400.00 |     30 |
|  7788 | SCOTT  | ANALYST  | 7566 | 1982-12-09 | 3450.00 |    NULL |     20 |
|  7839 | KING   | manager  | 7777 | 1981-11-17 |  862.50 |    NULL |     10 |
|  7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1725.00 |    0.00 |     30 |
|  7876 | ADAMS  | CLERK    | 7788 | 1983-01-12 | 1265.00 |    NULL |     20 |
|  7900 | JAMES  | CLERK    | 7698 | 1981-12-03 | 1092.50 |    NULL |     30 |
|  7902 | FORD   | ANALYST  | 7566 | 1981-12-03 | 3450.00 |    NULL |     20 |
+-------+--------+----------+------+------------+---------+---------+--------+
10 rows in set (0.00 sec)
```

46. list all employees who earn more than average sal of Alan's department

```
mysql> select * from emp where sal > (select avg(sal) from emp where deptno=(select deptno from emp where ename='allen'));
+-------+--------+----------+------+------------+---------+---------+--------+
| EMPNO | ENAME  | JOB      | MGR  | HIREDATE   | SAL     | COMM    | DEPTNO |
+-------+--------+----------+------+------------+---------+---------+--------+
|  7521 | WARD   | SALESMAN | 7698 | 1981-02-22 | 1937.50 |  500.00 |     30 |
|  7566 | JONES  | MANAGER  | 7839 | 1981-04-02 | 3421.25 |    NULL |     20 |
|  7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 2837.50 | 1400.00 |     30 |
|  7788 | SCOTT  | ANALYST  | 7566 | 1982-12-09 | 3450.00 |    NULL |     20 |
|  7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1725.00 |    0.00 |     30 |
|  7902 | FORD   | ANALYST  | 7566 | 1981-12-03 | 3450.00 |    NULL |     20 |
+-------+--------+----------+------+------------+---------+---------+--------+
6 rows in set (0.00 sec)
```

47. list all employees who are working in purchase (research)department

```
mysql> select * from emp where deptno=(select deptno from dept where dname='RESEARCH');
+-------+-------+----------+------+------------+---------+------+--------+
| EMPNO | ENAME | JOB      | MGR  | HIREDATE   | SAL     | COMM | DEPTNO |
+-------+-------+----------+------+------------+---------+------+--------+
|  7369 | SMITH | sr clerk | 7902 | 1980-12-17 |  920.00 | NULL |     20 |
|  7566 | JONES | MANAGER  | 7839 | 1981-04-02 | 3421.25 | NULL |     20 |
|  7788 | SCOTT | ANALYST  | 7566 | 1982-12-09 | 3450.00 | NULL |     20 |
|  7876 | ADAMS | CLERK    | 7788 | 1983-01-12 | 1265.00 | NULL |     20 |
|  7902 | FORD  | ANALYST  | 7566 | 1981-12-03 | 3450.00 | NULL |     20 |
+-------+-------+----------+------+------------+---------+------+--------+
5 rows in set (0.00 sec)
```