

Spool Generated For Class of Oracle By Satish K Yellanki

```
SQL> cl scr
```

```
SQL> SELECT ColumnName
 2 FROM TableName
 3 WHERE ColumnName = (
 4     SELECT ColumnName
 5     FROM TableName
 6     WHERE ColumnName = Value
 7     )
 8
```

```
SQL> SELECT ColumnName
 2 FROM TableName, (
 3     SELECT ColumnName
 4     FROM TableName
 5     WHERE ColumnName = Value
 6     )
 7* WHERE ColumnName = Value
 8
```

```
SQL> cl scr
```

```
SQL> SELECT ColumnName, (
 2     SELECT ColumnName
 3     FROM TableName
 4     WHERE ColumnName = Value
 5     )
 6 FROM TableName
 7
```

```
SQL> SELECT ColumnName, (
 2     SELECT ColumnName
 3     FROM TableName
 4     WHERE ColumnName = Value
 5     )
 6 FROM TableName, (
 7     SELECT ColumnName
 8     FROM TableName
 9     WHERE ColumnName = Value
10     )
11 WHERE ColumnName = (
12     SELECT ColumnName
13     FROM TableName
14     WHERE ColumnName = (
15         SELECT ColumnName
16         FROM TableName
17         WHERE ColumnName = Value
18     )
19     )
20
```

```
SQL> cl scr
```

```
SQL> COLUMN Empno FORMAT 9999
SQL> COLUMN MGR FORMAT 9999
SQL> COLUMN Deptno FORMAT 99
SQL> COLUMN Sal FORMAT 9999
SQL> COLUMN Comm FORMAT 9999
SQL> SELECT * FROM Emp;
```

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EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7839	KING	PRESIDENT		17-NOV-81	5000		10
7698	BLAKE	MANAGER	7839	01-MAY-81	2850		30
7782	CLARK	MANAGER	7839	09-JUN-81	2450		10
7566	JONES	MANAGER	7839	02-APR-81	2975		20
7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30
7900	JAMES	CLERK	7698	03-DEC-81	950		30
7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	30
7902	FORD	ANALYST	7566	03-DEC-81	3000		20
7369	SMITH	CLERK	7902	17-DEC-80	800		20

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7788	SCOTT	ANALYST	7566	09-DEC-82	3000		20
7876	ADAMS	CLERK	7788	12-JAN-83	1100		20
7934	MILLER	CLERK	7782	23-JAN-82	1300		10

14 rows selected.

```
SQL> (  
  2  SELECT *  
  3  FROM Emp  
  4  );
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7839	KING	PRESIDENT		17-NOV-81	5000		10
7698	BLAKE	MANAGER	7839	01-MAY-81	2850		30
7782	CLARK	MANAGER	7839	09-JUN-81	2450		10
7566	JONES	MANAGER	7839	02-APR-81	2975		20
7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30
7900	JAMES	CLERK	7698	03-DEC-81	950		30
7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	30
7902	FORD	ANALYST	7566	03-DEC-81	3000		20
7369	SMITH	CLERK	7902	17-DEC-80	800		20

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7788	SCOTT	ANALYST	7566	09-DEC-82	3000		20
7876	ADAMS	CLERK	7788	12-JAN-83	1100		20
7934	MILLER	CLERK	7782	23-JAN-82	1300		10

14 rows selected.

```
SQL> ED  
Wrote file afiedt.buf
```

```
  1  (  
  2  SELECT *  
  3  FROM Emp  
  4  ORDER BY Sal DESC
```

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```
5* )
SQL> /
ORDER BY Sal DESC
*
ERROR at line 4:
ORA-00907: missing right parenthesis
```

```
SQL> ED
Wrote file afiedt.buf
```

```
1 (
2  SELECT *
3  FROM Emp
4 )
5* ORDER BY Sal DESC
SQL> /
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7839	KING	PRESIDENT		17-NOV-81	5000		10
7902	FORD	ANALYST	7566	03-DEC-81	3000		20
7788	SCOTT	ANALYST	7566	09-DEC-82	3000		20
7566	JONES	MANAGER	7839	02-APR-81	2975		20
7698	BLAKE	MANAGER	7839	01-MAY-81	2850		30
7782	CLARK	MANAGER	7839	09-JUN-81	2450		10
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30
7934	MILLER	CLERK	7782	23-JAN-82	1300		10
7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30
7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	30

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7876	ADAMS	CLERK	7788	12-JAN-83	1100		20
7900	JAMES	CLERK	7698	03-DEC-81	950		30
7369	SMITH	CLERK	7902	17-DEC-80	800		20

14 rows selected.

```
SQL> cl scr
```

```
SQL> SELECT Sal
2          FROM Emp
3          WHERE Empno = 7566;
```

```
SAL
-----
2975
```

```
SQL> SELECT Ename, Sal, Job
2  FROM Emp
3  WHERE Sal > 2975;
```

```
ENAME          SAL JOB
-----
```

Spool Generated For Class of Oracle By Satish K Yellanki

```
KING          5000 PRESIDENT
FORD          3000 ANALYST
SCOTT         3000 ANALYST
```

```
SQL> SELECT Ename, Sal, Job
  2  FROM Emp
  3  WHERE Sal > (SELECT Sal
  4                FROM Emp
  5                WHERE Empno = 7566);
```

```
ENAME          SAL JOB
-----
KING           5000 PRESIDENT
FORD           3000 ANALYST
SCOTT          3000 ANALYST
```

```
SQL> SET AUTOTRACE ON EXPLAIN
```

```
SQL> SELECT Sal
  2                FROM Emp
  3                WHERE Empno = 7566;
```

```
  SAL
-----
 2975
```

Execution Plan

```
-----
 0      SELECT STATEMENT Optimizer=ALL_ROWS (Cost=1 Card=1 Bytes=8)
 1      0      TABLE ACCESS (BY INDEX ROWID) OF 'EMP' (TABLE) (Cost=1 Card=1 Bytes=8)
          2      1      INDEX (UNIQUE SCAN) OF 'EMP_PRIMARY_KEY' (INDEX (UNIQUE)) (Cost=0 Card=1)
```

```
SQL> SELECT Ename, Sal, Job
  2  FROM Emp
  3  WHERE Sal > 2975;
```

```
ENAME          SAL JOB
-----
KING           5000 PRESIDENT
FORD           3000 ANALYST
SCOTT          3000 ANALYST
```

Execution Plan

```
-----
 0      SELECT STATEMENT Optimizer=ALL_ROWS (Cost=3 Card=7 Bytes=126)
          1      0      TABLE ACCESS (FULL) OF 'EMP' (TABLE) (Cost=3 Card=7 Bytes=126)
```

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```
SQL> SELECT Ename, Sal, Job
 2 FROM Emp
 3 WHERE Sal > (SELECT Sal
 4               FROM Emp
 5               WHERE Empno = 7566);
```

ENAME	SAL	JOB
KING	5000	PRESIDENT
FORD	3000	ANALYST
SCOTT	3000	ANALYST

Execution Plan

```
-----
 0      SELECT STATEMENT Optimizer=ALL_ROWS (Cost=4 Card=1 Bytes=18)
 1      0      TABLE ACCESS (FULL) OF 'EMP' (TABLE) (Cost=3 Card=1 Bytes=
          18)

 2      1      TABLE ACCESS (BY INDEX ROWID) OF 'EMP' (TABLE) (Cost=1 C
          ard=1 Bytes=8)

 3      2      INDEX (UNIQUE SCAN) OF 'EMP_PRIMARY_KEY' (INDEX (UNIQU
          E)) (Cost=0 Card=1)
```

```
SQL> cl scr
```

```
SQL> SELECT Job
 2           FROM Emp
 3           WHERE Ename = 'SMITH';
```

JOB

CLERK

Execution Plan

```
-----
 0      SELECT STATEMENT Optimizer=ALL_ROWS (Cost=3 Card=1 Bytes=14)
 1      0      TABLE ACCESS (FULL) OF 'EMP' (TABLE) (Cost=3 Card=1 Bytes=
          14)
```

```
SQL> SELECT Ename, Sal, Job
 2 FROM Emp
 3 WHERE Job = 'CLERK';
```

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ENAME	SAL	JOB
JAMES	950	CLERK
SMITH	800	CLERK
ADAMS	1100	CLERK
MILLER	1300	CLERK

Execution Plan

```
-----  
0      SELECT STATEMENT Optimizer=ALL_ROWS (Cost=3 Card=3 Bytes=54)  
1      0      TABLE ACCESS (FULL) OF 'EMP' (TABLE) (Cost=3 Card=3 Bytes=54)
```

```
SQL> SELECT Ename, Sal, Job  
2 FROM Emp  
3 WHERE Job = (SELECT Job  
4              FROM Emp  
5              WHERE Ename = 'SMITH')  
6 ORDER BY Sal;
```

ENAME	SAL	JOB
SMITH	800	CLERK
JAMES	950	CLERK
ADAMS	1100	CLERK
MILLER	1300	CLERK

Execution Plan

```
-----  
0      SELECT STATEMENT Optimizer=ALL_ROWS (Cost=7 Card=3 Bytes=54)  
1      0      SORT (ORDER BY) (Cost=7 Card=3 Bytes=54)  
2      1      TABLE ACCESS (FULL) OF 'EMP' (TABLE) (Cost=3 Card=3 Bytes=54)  
  
3      2      TABLE ACCESS (FULL) OF 'EMP' (TABLE) (Cost=3 Card=1 Bytes=14)
```

```
SQL> ED  
Wrote file afiedt.buf
```

```
1 SELECT Ename, Sal, Job  
2 FROM Emp  
3 WHERE Job = (SELECT Job  
4              FROM Emp  
5              WHERE Ename = 'SMITH' AND  
6              Ename <> 'SMITH'  
7              )  
8* ORDER BY Sal
```

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SQL> /

no rows selected

Execution Plan

```
-----  
0      SELECT STATEMENT Optimizer=ALL_ROWS (Cost=7 Card=3 Bytes=54)  
1      0      SORT (ORDER BY) (Cost=7 Card=3 Bytes=54)  
2      1      TABLE ACCESS (FULL) OF 'EMP' (TABLE) (Cost=3 Card=3 Bytes=54)  
  
3      2      FILTER  
4      3      TABLE ACCESS (FULL) OF 'EMP' (TABLE) (Cost=3 Card=1 Bytes=14)
```

SQL> ED

Wrote file afiedt.buf

```
1  SELECT Ename, Sal, Job  
2  FROM Emp  
3  WHERE Job = (SELECT Job  
4                FROM Emp  
5                WHERE Ename = 'SMITH'  
6                ) AND  
7                Ename <> 'SMITH'  
8* ORDER BY Sal
```

SQL> /

ENAME	SAL	JOB
JAMES	950	CLERK
ADAMS	1100	CLERK
MILLER	1300	CLERK

Execution Plan

```
-----  
0      SELECT STATEMENT Optimizer=ALL_ROWS (Cost=7 Card=3 Bytes=54)  
1      0      SORT (ORDER BY) (Cost=7 Card=3 Bytes=54)  
2      1      TABLE ACCESS (FULL) OF 'EMP' (TABLE) (Cost=3 Card=3 Bytes=54)  
  
3      2      TABLE ACCESS (FULL) OF 'EMP' (TABLE) (Cost=3 Card=1 Bytes=14)
```

SQL> SPOOL OFF

SQL> cl scr

SQL> SELECT Hiredate

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```
2          FROM Emp
3          WHERE Ename = 'TURNER';
```

```
HIREDATE
-----
08-SEP-81
```

```
SQL> SELECT Empno, Ename, Hiredate, Sal
2 FROM Emp
3 WHERE Hiredate > (SELECT Hiredate
4                   FROM Emp
5                   WHERE Ename = 'TURNER')
6 ORDER BY Sal;
```

EMPNO	ENAME	HIREDATE	SAL
7900	JAMES	03-DEC-81	950
7876	ADAMS	12-JAN-83	1100
7654	MARTIN	28-SEP-81	1250
7934	MILLER	23-JAN-82	1300
7902	FORD	03-DEC-81	3000
7788	SCOTT	09-DEC-82	3000
7839	KING	17-NOV-81	5000

7 rows selected.

```
SQL> ED
Wrote file afiedt.buf
```

```
1 SELECT Empno, Ename, Hiredate, Sal
2 FROM Emp
3 WHERE Hiredate < (SELECT Hiredate
4                   FROM Emp
5                   WHERE Ename = 'TURNER')
6* ORDER BY Sal
SQL> /
```

EMPNO	ENAME	HIREDATE	SAL
7369	SMITH	17-DEC-80	800
7521	WARD	22-FEB-81	1250
7499	ALLEN	20-FEB-81	1600
7782	CLARK	09-JUN-81	2450
7698	BLAKE	01-MAY-81	2850
7566	JONES	02-APR-81	2975

6 rows selected.

```
SQL> cl scr
```

```
SQL> R
1 SELECT Empno, Ename, Hiredate, Sal
2 FROM Emp
3 WHERE Hiredate < (SELECT Hiredate
4                   FROM Emp
5                   WHERE Ename = 'TURNER')
```


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6* ORDER BY Sal

EMPNO	ENAME	HIREDATE	SAL
7369	SMITH	17-DEC-80	800
7521	WARD	22-FEB-81	1250
7499	ALLEN	20-FEB-81	1600
7782	CLARK	09-JUN-81	2450
7698	BLAKE	01-MAY-81	2850
7566	JONES	02-APR-81	2975

6 rows selected.

SQL> ED

Wrote file afiedt.buf

```
1 SELECT Empno, Ename, Hiredate, Sal
2 FROM Emp
3 WHERE Hiredate = (SELECT Hiredate
4     FROM Emp
5     WHERE Ename = 'FORD')
6* ORDER BY Sal
SQL> /
```

EMPNO	ENAME	HIREDATE	SAL
7900	JAMES	03-DEC-81	950
7902	FORD	03-DEC-81	3000

SQL> ED

Wrote file afiedt.buf

```
1 SELECT Empno, Ename, Hiredate, Sal
2 FROM Emp
3 WHERE Hiredate = (SELECT Hiredate
4     FROM Emp
5     WHERE Ename = 'FORD') AND
6     Ename <> 'FORD'
7* ORDER BY Sal
SQL> /
```

EMPNO	ENAME	HIREDATE	SAL
7900	JAMES	03-DEC-81	950

SQL> cl scr

```
SQL> SELECT Empno, Ename, Sal, Job
2 FROM Emp
3 WHERE Deptno = (SELECT Deptno
4     FROM Dept
5     WHERE Dname = 'SALES');
```

EMPNO	ENAME	SAL	JOB
7698	BLAKE	2850	MANAGER

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```
7654 MARTIN          1250 SALESMAN
7499 ALLEN           1600 SALESMAN
7844 TURNER          1500 SALESMAN
7900 JAMES            950  CLERK
7521 WARD             1250 SALESMAN
```

6 rows selected.

SQL> ED

Wrote file afiedt.buf

```
1  SELECT Empno, Ename, Sal, Job
2  FROM Emp, Dept
3  WHERE Emp.Deptno = Dept.Deptno AND
4*  Dept.Dname = 'SALES'
SQL> /
```

EMPNO	ENAME	SAL	JOB
7698	BLAKE	2850	MANAGER
7654	MARTIN	1250	SALESMAN
7499	ALLEN	1600	SALESMAN
7844	TURNER	1500	SALESMAN
7900	JAMES	950	CLERK
7521	WARD	1250	SALESMAN

6 rows selected.

SQL> SET AUTOTRACE ON EXPLAIN

```
SQL> SELECT Empno, Ename, Sal, Job
2  FROM Emp, Dept
3  WHERE Emp.Deptno = Dept.Deptno AND
4    Dept.Dname = 'SALES';
```

EMPNO	ENAME	SAL	JOB
7698	BLAKE	2850	MANAGER
7654	MARTIN	1250	SALESMAN
7499	ALLEN	1600	SALESMAN
7844	TURNER	1500	SALESMAN
7900	JAMES	950	CLERK
7521	WARD	1250	SALESMAN

6 rows selected.

Execution Plan

```
-----
0      SELECT STATEMENT Optimizer=ALL_ROWS (Cost=7 Card=5 Bytes=370
   )

1      0      HASH JOIN (Cost=7 Card=5 Bytes=370)
2      1      TABLE ACCESS (FULL) OF 'DEPT' (TABLE) (Cost=3 Card=1 Bytes=22)

3      1      TABLE ACCESS (FULL) OF 'EMP' (TABLE) (Cost=3 Card=14 Bytes=112)
```

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es=728)

```
SQL> SELECT Empno, Ename, Sal, Job
2 FROM Emp
3 WHERE Deptno = (SELECT Deptno
4                 FROM Dept
5                 WHERE Dname = 'SALES');
```

EMPNO	ENAME	SAL	JOB
7698	BLAKE	2850	MANAGER
7654	MARTIN	1250	SALESMAN
7499	ALLEN	1600	SALESMAN
7844	TURNER	1500	SALESMAN
7900	JAMES	950	CLERK
7521	WARD	1250	SALESMAN

6 rows selected.

Execution Plan

```
-----
0      SELECT STATEMENT Optimizer=ALL_ROWS (Cost=6 Card=1 Bytes=52)
1      0      TABLE ACCESS (FULL) OF 'EMP' (TABLE) (Cost=3 Card=1 Bytes=
52)
2      1      TABLE ACCESS (FULL) OF 'DEPT' (TABLE) (Cost=3 Card=1 Byt
es=22)
```

```
SQL> SELECT Empno, Ename, Sal, Comm, Sal + NVL( Comm, 0 ) TotSal
2 FROM Emp
3 WHERE Deptno = (SELECT Deptno
4                 FROM Dept
5                 WHERE Loc = 'DALLAS');
```

EMPNO	ENAME	SAL	COMM	TOTSAL
7566	JONES	2975		2975
7902	FORD	3000		3000
7369	SMITH	800		800
7788	SCOTT	3000		3000
7876	ADAMS	1100		1100

Execution Plan

```
-----
0      SELECT STATEMENT Optimizer=ALL_ROWS (Cost=6 Card=1 Bytes=59)
1      0      TABLE ACCESS (FULL) OF 'EMP' (TABLE) (Cost=3 Card=1 Bytes=
59)
```

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```
2      1      TABLE ACCESS (FULL) OF 'DEPT' (TABLE) (Cost=3 Card=1 Bytes=21)
```

```
SQL> cl scr
```

```
SQL> SET AUTOTRACE OFF EXPLAIN
```

```
SQL> cl scr
```

```
SQL> SELECT MAX(Sal) FROM Emp;
```

```
      MAX(SAL)
-----
           5000
```

```
SQL> SELECT Ename, MAX(Sal) FROM Emp;
```

```
SELECT Ename, MAX(Sal) FROM Emp
```

```
      *
```

```
ERROR at line 1:
```

```
ORA-00937: not a single-group group function
```

```
SQL> ED
```

```
Wrote file afiedt.buf
```

```
1  SELECT
2  Ename,
3  MAX(Sal)
4  FROM Emp
5* GROUP BY Ename
```

```
SQL> /
```

```
ENAME           MAX(SAL)
-----
ADAMS            1100
ALLEN            1600
BLAKE           2850
CLARK            2450
FORD             3000
JAMES            950
JONES           2975
KING            5000
MARTIN          1250
MILLER          1300
SCOTT           3000
```

```
ENAME           MAX(SAL)
-----
SMITH            800
TURNER          1500
WARD            1250
```

```
14 rows selected.
```

Spool Generated For Class of Oracle By Satish K Yellanki

```
SQL> SELECT MAX(Sal) FROM Emp;
```

```
MAX(SAL)
-----
      5000
```

```
SQL> SELECT Ename, Sal, Deptno, Job
2 FROM Emp
3 WHERE Sal = 5000;
```

```
ENAME          SAL      DEPTNO JOB
-----
KING            5000         10 PRESIDENT
```

```
SQL> SELECT Ename, Job , Sal
2 FROM Emp
3 WHERE Sal = (SELECT MAX(Sal)
4             FROM Emp);
```

```
ENAME      JOB          SAL
-----
KING       PRESIDENT      5000
```

```
SQL> cl scr
```

```
SQL> SELECT Ename, Job, Sal
2 FROM Emp
3 WHERE Sal = (SELECT MIN(Sal)
4             FROM Emp);
```

```
ENAME      JOB          SAL
-----
SMITH      CLERK          800
```

```
SQL> SELECT Ename, Job, Sal
2 FROM Emp
3 WHERE Sal > (SELECT AVG(Sal)
4             FROM Emp);
```

```
ENAME      JOB          SAL
-----
KING       PRESIDENT      5000
BLAKE      MANAGER        2850
CLARK      MANAGER        2450
JONES      MANAGER        2975
FORD       ANALYST        3000
SCOTT      ANALYST        3000
```

```
6 rows selected.
```

```
SQL> ED
```

```
Wrote file afiedt.buf
```

```
1 SELECT Ename, Job, Sal
2 FROM Emp
3 WHERE Sal < (SELECT AVG(Sal)
```

Spool Generated For Class of Oracle By Satish K Yellanki

```
4*          FROM Emp)
SQL> /
```

ENAME	JOB	SAL
MARTIN	SALESMAN	1250
ALLEN	SALESMAN	1600
TURNER	SALESMAN	1500
JAMES	CLERK	950
WARD	SALESMAN	1250
SMITH	CLERK	800
ADAMS	CLERK	1100
MILLER	CLERK	1300

8 rows selected.

```
SQL> ED
Wrote file afiedt.buf
```

```
1 SELECT Ename, Job, Sal
2 FROM Emp
3 WHERE Sal = (SELECT AVG(Sal)
4*          FROM Emp)
SQL> /
```

no rows selected

```
SQL> ED
Wrote file afiedt.buf
```

```
1 SELECT Ename, Job, Sal
2 FROM Emp
3 WHERE Sal <> (SELECT AVG(Sal)
4*          FROM Emp)
SQL> /
```

ENAME	JOB	SAL
KING	PRESIDENT	5000
BLAKE	MANAGER	2850
CLARK	MANAGER	2450
JONES	MANAGER	2975
MARTIN	SALESMAN	1250
ALLEN	SALESMAN	1600
TURNER	SALESMAN	1500
JAMES	CLERK	950
WARD	SALESMAN	1250
FORD	ANALYST	3000
SMITH	CLERK	800

ENAME	JOB	SAL
SCOTT	ANALYST	3000
ADAMS	CLERK	1100
MILLER	CLERK	1300

Spool Generated For Class of Oracle By Satish K Yellanki

14 rows selected.

SQL> cl scr

```
SQL> SELECT Ename, Deptno, Sal, Job
 2  FROM Emp
 3  WHERE Sal = (
 4          SELECT MAX(Sal)
 5          FROM Emp
 6          WHERE Deptno = 10
 7          );
```

ENAME	DEPTNO	SAL	JOB
KING	10	5000	PRESIDENT

SQL> cl scr

```
SQL> SELECT
 2          MIN(Sal)
 3          FROM Emp
 4          WHERE Deptno = 20;
```

MIN(SAL)
800

```
SQL> SELECT Deptno, MIN(Sal)
 2  FROM Emp
 3  GROUP BY Deptno
 4  HAVING MIN(Sal) > (SELECT
 5          MIN(Sal)
 6          FROM Emp
 7          WHERE Deptno = 20);
```

DEPTNO	MIN(SAL)
10	1300
30	950

SQL> cl scr

```
SQL> SELECT AVG(Sal)
 2  FROM Emp
 3  GROUP BY Job;
```

AVG(SAL)
3000
1037.5
2758.33333
5000
1400

SQL> ED

Wrote file afiedt.buf

Spool Generated For Class of Oracle By Satish K Yellanki

```
1 SELECT MAX(AVG(Sal))
2 FROM Emp
3* GROUP BY Job
SQL> /
```

```
MAX(AVG(SAL))
-----
                5000
```

```
SQL> ED
Wrote file afiedt.buf
```

```
1 SELECT Job, MAX(AVG(Sal))
2 FROM Emp
3* GROUP BY Job
SQL> /
SELECT Job, MAX(AVG(Sal))
      *
ERROR at line 1:
ORA-00937: not a single-group group function
```

```
SQL> SELECT Job, AVG(Sal)
2 FROM Emp
3 GROUP BY Job
4 HAVING AVG(Sal) = (SELECT
5                   MIN(AVG(Sal))
6                   FROM Emp
7                   GROUP BY Job);
```

```
JOB          AVG(SAL)
-----
CLERK          1037.5
```

```
SQL> ED
Wrote file afiedt.buf
```

```
1 SELECT Job, AVG(Sal)
2 FROM Emp
3 GROUP BY Job
4 HAVING AVG(Sal) = (SELECT
5                   MAX(AVG(Sal))
6                   FROM Emp
7*                  GROUP BY Job)
SQL> /
```

```
JOB          AVG(SAL)
-----
PRESIDENT          5000
```

```
SQL> cl scr
```

```
SQL> COLUMN Empno FORMAT 9999
SQL> COLUMN MGR FORMAT 9999
SQL> COLUMN Sal FORMAT 9999
```


Spool Generated For Class of Oracle By Satish K Yellanki

```
SQL> COLUMN Comm FORMAT 9999
SQL> cl scr
```

```
SQL> SELECT * FROM Emp ORDER BY Sal DESC;
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7839	KING	PRESIDENT		17-NOV-81	5000		10
7902	FORD	ANALYST	7566	03-DEC-81	3000		20
7788	SCOTT	ANALYST	7566	09-DEC-82	3000		20
7566	JONES	MANAGER	7839	02-APR-81	2975		20
7698	BLAKE	MANAGER	7839	01-MAY-81	2850		30
7782	CLARK	MANAGER	7839	09-JUN-81	2450		10
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30
7934	MILLER	CLERK	7782	23-JAN-82	1300		10
7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30
7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	30

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7876	ADAMS	CLERK	7788	12-JAN-83	1100		20
7900	JAMES	CLERK	7698	03-DEC-81	950		30
7369	SMITH	CLERK	7902	17-DEC-80	800		20

14 rows selected.

```
SQL> SELECT *
  2 FROM Emp
  3 WHERE
  4 Sal BETWEEN
  5     (
  6     SELECT Sal
  7     FROM Emp
  8     WHERE Ename = 'MILLER'
  9     ) AND
 10     (
 11     SELECT Sal
 12     FROM Emp
 13     WHERE Ename = 'JONES'
 14     );
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7698	BLAKE	MANAGER	7839	01-MAY-81	2850		30
7782	CLARK	MANAGER	7839	09-JUN-81	2450		10
7566	JONES	MANAGER	7839	02-APR-81	2975		20
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30
7934	MILLER	CLERK	7782	23-JAN-82	1300		10

6 rows selected.

```
SQL> ED
Wrote file afiedt.buf
```

Spool Generated For Class of Oracle By Satish K Yellanki

```
1 SELECT *
2 FROM Emp
3 WHERE
4 Sal BETWEEN
5     (
6     SELECT Sal
7     FROM Emp
8     WHERE Ename = 'MILLER'
9     ) AND
10    (
11    SELECT Sal
12    FROM Emp
13    WHERE Ename = 'JONES'
14    ) AND
15* Ename NOT IN('MILLER', 'JONES')
SQL> /
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7698	BLAKE	MANAGER	7839	01-MAY-81	2850		30
7782	CLARK	MANAGER	7839	09-JUN-81	2450		10
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30

```
SQL> ED
Wrote file afiedt.buf
```

```
1 SELECT *
2 FROM Emp
3 WHERE
4 Sal >= (
5     SELECT Sal
6     FROM Emp
7     WHERE Ename = 'MILLER'
8     ) AND
9 Sal <= (
10    SELECT Sal
11    FROM Emp
12    WHERE Ename = 'JONES'
13    ) AND
14* Ename NOT IN('MILLER', 'JONES')
SQL> /
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7698	BLAKE	MANAGER	7839	01-MAY-81	2850		30
7782	CLARK	MANAGER	7839	09-JUN-81	2450		10
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30

```
SQL> ED
Wrote file afiedt.buf
```

```
1 SELECT *
2 FROM Emp
3 WHERE
```

Spool Generated For Class of Oracle By Satish K Yellanki

```
4 Sal >= (
5   SELECT Sal
6   FROM Emp
7   WHERE Ename = 'MILLER'
8   ) AND
9 Sal <= (
10  SELECT Sal
11  FROM Emp
12  WHERE Ename = 'JONES'
13  ) AND
14 Ename NOT IN('MILLER', 'JONES') AND
15 Deptno = (
16  SELECT Deptno
17  FROM Dept
18  WHERE Dname = 'SALES'
19* )
SQL> /
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7698	BLAKE	MANAGER	7839	01-MAY-81	2850		30
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30

```
SQL> ED
Wrote file afiedt.buf
```

```
1 SELECT *
2 FROM Emp
3 WHERE
4 Sal >= (
5   SELECT Sal
6   FROM Emp
7   WHERE Ename = 'MILLER'
8   ) AND
9 Sal <= (
10  SELECT Sal
11  FROM Emp
12  WHERE Ename = 'JONES'
13  ) AND
14 Ename NOT IN('MILLER', 'JONES') AND
15 Deptno = (
16  SELECT Deptno
17  FROM Dept
18  WHERE Dname = 'SALES'
19  ) AND
20 Job = (
21  SELECT Job
22  FROM Emp
23  WHERE Ename = 'ALLEN'
24* )
SQL> /
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30

Spool Generated For Class of Oracle By Satish K Yellanki

7844 TURNER SALESMAN 7698 08-SEP-81 1500 0 30

SQL> ED

Wrote file afiedt.buf

```
1  SELECT *
2  FROM Emp
3  WHERE
4  Sal >= (
5  SELECT Sal
6  FROM Emp
7  WHERE Ename = 'MILLER'
8  ) AND
9  Sal <= (
10 SELECT Sal
11 FROM Emp
12 WHERE Ename = 'JONES'
13 ) AND
14 Ename NOT IN('MILLER', 'JONES') AND
15 Deptno = (
16 SELECT Deptno
17 FROM Dept
18 WHERE Dname = 'SALES'
19 ) AND
20 Job = (
21 SELECT Job
22 FROM Emp
23 WHERE Ename = 'ALLEN'
24 ) AND
25* Ename <> 'ALLEN'
SQL> /
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30

SQL> cl scr

SQL> SELECT * FROM Emp;

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7839	KING	PRESIDENT		17-NOV-81	5000		10
7698	BLAKE	MANAGER	7839	01-MAY-81	2850		30
7782	CLARK	MANAGER	7839	09-JUN-81	2450		10
7566	JONES	MANAGER	7839	02-APR-81	2975		20
7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30
7900	JAMES	CLERK	7698	03-DEC-81	950		30
7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	30
7902	FORD	ANALYST	7566	03-DEC-81	3000		20
7369	SMITH	CLERK	7902	17-DEC-80	800		20

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
-------	-------	-----	-----	----------	-----	------	--------

Spool Generated For Class of Oracle By Satish K Yellanki

```
7788 SCOTT      ANALYST      7566 09-DEC-82  3000          20
7876 ADAMS      CLERK        7788 12-JAN-83   1100          20
7934 MILLER     CLERK        7782 23-JAN-82   1300          10
```

14 rows selected.

```
SQL> SELECT *
      2 FROM Emp
      3 WHERE Sal IN
      4     (
      5         SELECT Sal
      6         FROM Emp
      7         WHERE Ename = 'WARD'
      8     ,
      9         SELECT Sal
     10         FROM Emp
     11         WHERE Ename = 'FORD'
     12     );
      *
```

ERROR at line 8:
ORA-00907: missing right parenthesis

```
SQL> ED
Wrote file afiedt.buf
```

```
 1 SELECT *
 2 FROM Emp
 3 WHERE Sal IN
 4     (
 5         (
 6         SELECT Sal
 7         FROM Emp
 8         WHERE Ename = 'WARD'
 9         ),
10     (
11     SELECT Sal
12     FROM Emp
13     WHERE Ename = 'FORD'
14     )
15*    )
```

```
SQL> /
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30
7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	30
7902	FORD	ANALYST	7566	03-DEC-81	3000		20
7788	SCOTT	ANALYST	7566	09-DEC-82	3000		20

```
SQL> cl scr
```

```
SQL> Select MIN(Sal)
      2 FROM Emp
      3 GROUP BY Deptno;
```

Spool Generated For Class of Oracle By Satish K Yellanki

```
MIN(SAL)
-----
      1300
       800
       950
```

SQL> cl scr

```
SQL> SELECT Ename, Sal, Deptno
 2 FROM Emp
 3 WHERE Sal IN(Select MIN(Sal)
 4                FROM Emp
 5                GROUP BY Deptno);
```

ENAME	SAL	DEPTNO
MILLER	1300	10
SMITH	800	20
JAMES	950	30

```
SQL> INSERT INTO Emp(Empno, Ename, Deptno, Sal)
 2 VALUES(1234, 'SAMPLE01', 20, 1300);
```

1 row created.

```
SQL> INSERT INTO Emp(Empno, Ename, Deptno, Sal)
 2 VALUES(1235, 'SAMPLE02', 20, 950);
```

1 row created.

```
SQL> INSERT INTO Emp(Empno, Ename, Deptno, Sal)
 2 VALUES(1236, 'SAMPLE03', 30, 1300);
```

1 row created.

```
SQL> SELECT Ename, Sal, Deptno
 2 FROM Emp
 3 WHERE Sal IN(Select MIN(Sal)
 4                FROM Emp
 5                GROUP BY Deptno);
```

ENAME	SAL	DEPTNO
SAMPLE03	1300	30
SAMPLE01	1300	20
MILLER	1300	10
SMITH	800	20
SAMPLE02	950	20
JAMES	950	30

6 rows selected.

SQL> ED

Wrote file afiedt.buf

Spool Generated For Class of Oracle By Satish K Yellanki

```
1 SELECT Ename, Sal, Deptno
2 FROM Emp
3 WHERE Sal IN(Select MAX(Sal)
4               FROM Emp
5*              GROUP BY Deptno)
SQL> /
```

ENAME	SAL	DEPTNO
KING	5000	10
SCOTT	3000	20
FORD	3000	20
BLAKE	2850	30

```
SQL> ED
Wrote file afiedt.buf
```

```
1 SELECT Ename, Sal, Deptno
2 FROM Emp
3 WHERE Sal IN(Select MAX(Sal)
4               FROM Emp
5*              GROUP BY Job)
SQL> /
```

ENAME	SAL	DEPTNO
SCOTT	3000	20
FORD	3000	20
SAMPLE03	1300	30
SAMPLE01	1300	20
MILLER	1300	10
JONES	2975	20
KING	5000	10
ALLEN	1600	30

8 rows selected.

```
SQL> ED
Wrote file afiedt.buf
```

```
1 SELECT Ename, Sal, Deptno
2 FROM Emp
3 WHERE Sal IN(Select MIN(Sal)
4               FROM Emp
5*              GROUP BY Job)
SQL> /
```

ENAME	SAL	DEPTNO
SCOTT	3000	20
FORD	3000	20
SMITH	800	20
CLARK	2450	10
KING	5000	10
WARD	1250	30
MARTIN	1250	30

Spool Generated For Class of Oracle By Satish K Yellanki

```
SAMPLE02      950      20
JAMES         950      30
```

9 rows selected.

SQL> ED

Wrote file afiedt.buf

```
 1 SELECT Ename, Sal, Deptno
 2 FROM Emp
 3 WHERE Sal IN(Select AVG(Sal)
 4                FROM Emp
 5*              GROUP BY Job)
SQL> /
```

```
ENAME      SAL      DEPTNO
-----
SCOTT      3000      20
FORD       3000      20
KING       5000      10
```

SQL> SPOOL OFF

SQL> cl scr

SQL> SELECT HireDate

```
 2
 3
                                     FROM Emp
                                     WHERE Deptno = 20;
```

HIREDATE

```
-----
02-APR-81
03-DEC-81
17-DEC-80
09-DEC-82
12-JAN-83
```

SQL> SELECT Sal

```
 2
 3
                                     FROM Emp
 4                                     WHERE HireDate IN(SELECT HireDate
 5                                     FROM Emp
                                     WHERE Deptno = 20);
```

```
      SAL
-----
      2975
      3000
      950
      800
      3000
      1100
```

6 rows selected.

SQL> SELECT Empno, Ename, Job, Sal, Deptno, HireDate

```
 2 FROM Emp
 3 WHERE Sal IN(SELECT Sal
```


Spool Generated For Class of Oracle By Satish K Yellanki

```
4          FROM Emp
5          WHERE HireDate IN(SELECT HireDate
6                                FROM Emp
7                                WHERE Deptno = 20)
8      );
```

EMPNO	ENAME	JOB	SAL	DEPTNO	HIREDATE
7566	JONES	MANAGER	2975	20	02-APR-81
7900	JAMES	CLERK	950	30	03-DEC-81
7902	FORD	ANALYST	3000	20	03-DEC-81
7369	SMITH	CLERK	800	20	17-DEC-80
7788	SCOTT	ANALYST	3000	20	09-DEC-82
7876	ADAMS	CLERK	1100	20	12-JAN-83

6 rows selected.

```
SQL> ED
Wrote file afiedt.buf
```

```
1  SELECT Empno, Ename, Job, Sal, Deptno, HireDate
2  FROM Emp
3  WHERE Sal IN(
4  SELECT Sal
5  FROM Emp
6  WHERE HireDate IN(
7      SELECT HireDate
8      FROM Emp
9      WHERE Deptno = (
10         SELECT Deptno
11         FROM Dept
12         WHERE Dname = 'RESEARCH'
13         )
14     )
15* )
SQL> /
```

EMPNO	ENAME	JOB	SAL	DEPTNO	HIREDATE
7566	JONES	MANAGER	2975	20	02-APR-81
7900	JAMES	CLERK	950	30	03-DEC-81
7902	FORD	ANALYST	3000	20	03-DEC-81
7369	SMITH	CLERK	800	20	17-DEC-80
7788	SCOTT	ANALYST	3000	20	09-DEC-82
7876	ADAMS	CLERK	1100	20	12-JAN-83

6 rows selected.

```
SQL> cl scr
```

```
SQL> COLUMN Empno FORMAT 9999
SQL> COLUMN Sal FORMAT 9999
SQL> COLUMN Comm FORMAT 9999
SQL> COLUMN MGR FORMAT 9999
SQL> cl scr
```

Spool Generated For Class of Oracle By Satish K Yellanki

```
SQL> SELECT *
  2 FROM Emp
  3 WHERE Sal >ANY(1100, 2750, 950);
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7839	KING	PRESIDENT		17-NOV-81	5000		10
7698	BLAKE	MANAGER	7839	01-MAY-81	2850		30
7782	CLARK	MANAGER	7839	09-JUN-81	2450		10
7566	JONES	MANAGER	7839	02-APR-81	2975		20
7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30
7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	30
7902	FORD	ANALYST	7566	03-DEC-81	3000		20
7788	SCOTT	ANALYST	7566	09-DEC-82	3000		20
7876	ADAMS	CLERK	7788	12-JAN-83	1100		20

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7934	MILLER	CLERK	7782	23-JAN-82	1300		10

12 rows selected.

```
SQL> ED
Wrote file afiedt.buf
```

```
  1 SELECT *
  2 FROM Emp
  3* WHERE Sal > 1100 OR Sal > 2750 OR Sal > 950
SQL> /
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7839	KING	PRESIDENT		17-NOV-81	5000		10
7698	BLAKE	MANAGER	7839	01-MAY-81	2850		30
7782	CLARK	MANAGER	7839	09-JUN-81	2450		10
7566	JONES	MANAGER	7839	02-APR-81	2975		20
7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30
7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	30
7902	FORD	ANALYST	7566	03-DEC-81	3000		20
7788	SCOTT	ANALYST	7566	09-DEC-82	3000		20
7876	ADAMS	CLERK	7788	12-JAN-83	1100		20

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7934	MILLER	CLERK	7782	23-JAN-82	1300		10

12 rows selected.

```
SQL> cl scr
```

```
SQL> SELECT *
  2 FROM Emp
```

Spool Generated For Class of Oracle By Satish K Yellanki

```
3 WHERE Sal >ANY(  
4     SELECT Sal  
5     FROM Emp  
6     WHERE Deptno = 30  
7     )  
8
```

```
SQL> SELECT Sal  
2 FROM Emp  
3 WHERE Deptno = 30;
```

```
SAL  
-----  
2850  
1250  
1600  
1500  
950  
1250
```

6 rows selected.

```
SQL> SELECT *  
2 FROM Emp  
3 WHERE Sal >ANY(  
4     SELECT Sal  
5     FROM Emp  
6     WHERE Deptno = 30  
7     );
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7839	KING	PRESIDENT		17-NOV-81	5000		10
7902	FORD	ANALYST	7566	03-DEC-81	3000		20
7788	SCOTT	ANALYST	7566	09-DEC-82	3000		20
7566	JONES	MANAGER	7839	02-APR-81	2975		20
7698	BLAKE	MANAGER	7839	01-MAY-81	2850		30
7782	CLARK	MANAGER	7839	09-JUN-81	2450		10
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30
7934	MILLER	CLERK	7782	23-JAN-82	1300		10
7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30
7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	30

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7876	ADAMS	CLERK	7788	12-JAN-83	1100		20

12 rows selected.

```
SQL> ED  
Wrote file afiedt.buf
```

```
1 SELECT *  
2 FROM Emp  
3 WHERE Sal >(  
4     SELECT MIN(Sal)
```

Spool Generated For Class of Oracle By Satish K Yellanki

```

5          FROM Emp
6          WHERE Deptno = 30
7*        )
SQL> /

```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7839	KING	PRESIDENT		17-NOV-81	5000		10
7698	BLAKE	MANAGER	7839	01-MAY-81	2850		30
7782	CLARK	MANAGER	7839	09-JUN-81	2450		10
7566	JONES	MANAGER	7839	02-APR-81	2975		20
7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30
7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	30
7902	FORD	ANALYST	7566	03-DEC-81	3000		20
7788	SCOTT	ANALYST	7566	09-DEC-82	3000		20
7876	ADAMS	CLERK	7788	12-JAN-83	1100		20

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7934	MILLER	CLERK	7782	23-JAN-82	1300		10

12 rows selected.

```
SQL> cl scr
```

```
SQL> ED
```

Wrote file afiedt.buf

```

1  SELECT *
2  FROM Emp
3  WHERE Sal >SOME(
4          SELECT Sal
5          FROM Emp
6          WHERE Deptno = 30
7*        )
SQL> /

```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7839	KING	PRESIDENT		17-NOV-81	5000		10
7902	FORD	ANALYST	7566	03-DEC-81	3000		20
7788	SCOTT	ANALYST	7566	09-DEC-82	3000		20
7566	JONES	MANAGER	7839	02-APR-81	2975		20
7698	BLAKE	MANAGER	7839	01-MAY-81	2850		30
7782	CLARK	MANAGER	7839	09-JUN-81	2450		10
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30
7934	MILLER	CLERK	7782	23-JAN-82	1300		10
7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30
7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	30

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7876	ADAMS	CLERK	7788	12-JAN-83	1100		20

Spool Generated For Class of Oracle By Satish K Yellanki

12 rows selected.

SQL> cl scr

```
SQL> SELECT Sal
  2
  3          FROM Emp
  4          WHERE Job = 'CLERK';
```

```
SAL
-----
 950
 800
1100
1300
```

```
SQL> SELECT Empno, Ename, Job
  2 FROM Emp
  3 WHERE Sal < ANY(SELECT Sal
  4                 FROM Emp
  5                 WHERE Job = 'CLERK');
```

```
EMPNO ENAME      JOB
-----
 7369 SMITH       CLERK
 7900 JAMES       CLERK
 7876 ADAMS       CLERK
 7654 MARTIN     SALESMAN
 7521 WARD       SALESMAN
```

SQL> ED

Wrote file afiedt.buf

```
  1 SELECT Empno, Ename, Job, Sal
  2 FROM Emp
  3 WHERE Sal < ANY(SELECT Sal
  4                 FROM Emp
  5*                WHERE Job = 'CLERK')
SQL> /
```

```
EMPNO ENAME      JOB      SAL
-----
 7369 SMITH       CLERK     800
 7900 JAMES       CLERK     950
 7876 ADAMS       CLERK    1100
 7654 MARTIN     SALESMAN 1250
 7521 WARD       SALESMAN 1250
```

```
SQL> SELECT Empno, Ename, Job, Sal
  2 FROM Emp
  3 WHERE Sal < ANY(Select Sal
  4                 FROM Emp
  5                 WHERE Deptno = 20)
  6 AND Job <> 'CLERK';
```

```
EMPNO ENAME      JOB      SAL
```

Spool Generated For Class of Oracle By Satish K Yellanki

```
-----  
7654 MARTIN      SALESMAN      1250  
7521 WARD        SALESMAN      1250  
7844 TURNER      SALESMAN      1500  
7499 ALLEN       SALESMAN      1600  
7782 CLARK       MANAGER       2450  
7698 BLAKE       MANAGER       2850  
7566 JONES       MANAGER       2975
```

7 rows selected.

SQL> ED

Wrote file afiedt.buf

```
1  SELECT Empno, Ename, Job, Sal  
2  FROM Emp  
3  WHERE Sal < ANY(SELECT Sal  
4                      FROM Emp  
5                      WHERE Job = 'CLERK') AND  
6* Job <> 'CLERK'  
SQL> /
```

```
EMPNO ENAME      JOB          SAL  
-----  
7654 MARTIN     SALESMAN     1250  
7521 WARD       SALESMAN     1250
```

SQL> cl scr

```
SQL> SELECT DISTINCT MGR  
2  
FROM Emp;  
  
MGR  
-----  
7566  
7698  
7782  
7788  
7839  
7902
```

7 rows selected.

```
SQL> SELECT Sal  
2  
FROM Emp  
3  
WHERE MGR IN(SELECT DISTINCT MGR  
4                      FROM Emp);  
  
SAL  
-----  
2975  
2450  
2850  
1250  
950
```

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1500
1600
1250
3000
3000
800

SAL

1100
1300

13 rows selected.

```
SQL> SELECT Empno, Ename, Job, Sal
  2 FROM Emp
  3 WHERE Sal < ANY(SELECT Sal
  4                   FROM Emp
  5                   WHERE MGR IN(SELECT DISTINCT MGR
  6                               FROM Emp)
  7                   );
```

EMPNO	ENAME	JOB	SAL
7698	BLAKE	MANAGER	2850
7782	CLARK	MANAGER	2450
7566	JONES	MANAGER	2975
7654	MARTIN	SALESMAN	1250
7499	ALLEN	SALESMAN	1600
7844	TURNER	SALESMAN	1500
7900	JAMES	CLERK	950
7521	WARD	SALESMAN	1250
7369	SMITH	CLERK	800
7876	ADAMS	CLERK	1100
7934	MILLER	CLERK	1300

11 rows selected.

```
SQL> SELECT Sal
  2           FROM Emp
  3           WHERE Empno IN(SELECT DISTINCT MGR
  4                           FROM Emp);
```

SAL

2975
2850
2450
3000
5000
3000

6 rows selected.

```
SQL> SELECT Empno, Ename, Job, Sal
  2 FROM Emp
```

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```
3 WHERE Sal < ANY(SELECT Sal
4                     FROM Emp
5                     WHERE Empno IN(SELECT DISTINCT MGR
6                                     FROM Emp)
7                     );
```

EMPNO	ENAME	JOB	SAL
7698	BLAKE	MANAGER	2850
7782	CLARK	MANAGER	2450
7566	JONES	MANAGER	2975
7654	MARTIN	SALESMAN	1250
7499	ALLEN	SALESMAN	1600
7844	TURNER	SALESMAN	1500
7900	JAMES	CLERK	950
7521	WARD	SALESMAN	1250
7902	FORD	ANALYST	3000
7369	SMITH	CLERK	800
7788	SCOTT	ANALYST	3000

EMPNO	ENAME	JOB	SAL
7876	ADAMS	CLERK	1100
7934	MILLER	CLERK	1300

13 rows selected.

SQL> cl scr

```
SQL> SELECT Empno, Ename, Job, Sal, Deptno
2 FROM Emp
3 WHERE Sal <ANY (SELECT Sal
4                 FROM Emp
5                 WHERE HireDate IN(SELECT HireDate
6                                     FROM Emp
7                                     WHERE Deptno = 20);
                                     WHERE Deptno = 20)
                                     *
```

ERROR at line 7:
ORA-00907: missing right parenthesis

SQL> ED

Wrote file afiedt.buf

```
1 SELECT Empno, Ename, Job, Sal, Deptno
2 FROM Emp
3 WHERE Sal <ANY (SELECT Sal
4                 FROM Emp
5                 WHERE HireDate IN(SELECT HireDate
6                                     FROM Emp
7                                     WHERE Deptno = 20)
8* )
SQL> /
```

EMPNO	ENAME	JOB	SAL	DEPTNO
-------	-------	-----	-----	--------

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```
-----  
7698 BLAKE      MANAGER      2850        30  
7782 CLARK      MANAGER      2450        10  
7566 JONES      MANAGER      2975        20  
7654 MARTIN    SALESMAN     1250        30  
7499 ALLEN      SALESMAN     1600        30  
7844 TURNER    SALESMAN     1500        30  
7900 JAMES      CLERK        950         30  
7521 WARD      SALESMAN     1250        30  
7369 SMITH      CLERK        800         20  
7876 ADAMS      CLERK        1100        20  
7934 MILLER     CLERK        1300        10
```

11 rows selected.

```
SQL> cl scr
```

```
SQL> SELECT Empno, Ename, Job  
2 FROM Emp  
3 WHERE Sal >ANY(SELECT Sal  
4 FROM Emp  
5 WHERE Job = 'CLERK');
```

```
EMPNO ENAME      JOB  
-----  
7839 KING        PRESIDENT  
7902 FORD        ANALYST  
7788 SCOTT       ANALYST  
7566 JONES       MANAGER  
7698 BLAKE       MANAGER  
7782 CLARK       MANAGER  
7499 ALLEN       SALESMAN  
7844 TURNER     SALESMAN  
7934 MILLER      CLERK  
7654 MARTIN     SALESMAN  
7521 WARD       SALESMAN
```

```
EMPNO ENAME      JOB  
-----  
7876 ADAMS      CLERK  
7900 JAMES      CLERK
```

13 rows selected.

```
SQL> ED
```

Wrote file afiedt.buf

```
1 SELECT Empno, Ename, Job  
2 FROM Emp  
3 WHERE Sal >(SELECT MIN(Sal)  
4 FROM Emp  
5* WHERE Job = 'CLERK')  
SQL> /
```

```
EMPNO ENAME      JOB  
-----
```

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```
7839 KING      PRESIDENT
7698 BLAKE     MANAGER
7782 CLARK     MANAGER
7566 JONES     MANAGER
7654 MARTIN    SALESMAN
7499 ALLEN     SALESMAN
7844 TURNER    SALESMAN
7900 JAMES     CLERK
7521 WARD      SALESMAN
7902 FORD      ANALYST
7788 SCOTT     ANALYST
```

```
EMPNO ENAME     JOB
-----
7876 ADAMS     CLERK
7934 MILLER    CLERK
```

13 rows selected.

SQL> cl scr

```
SQL> SELECT Empno, Ename, Job, Sal
2  FROM Emp
3  WHERE Sal >ALL(SELECT AVG(Sal)
4                FROM Emp
5                GROUP BY Deptno);
```

```
EMPNO ENAME     JOB      SAL
-----
7839 KING      PRESIDENT 5000
7566 JONES     MANAGER   2975
7902 FORD      ANALYST   3000
7788 SCOTT     ANALYST   3000
```

SQL> ED

Wrote file afiedt.buf

```
1  SELECT Empno, Ename, Job, Sal
2  FROM Emp
3  WHERE Sal >(SELECT MAX(AVG(Sal))
4                FROM Emp
5*         GROUP BY Deptno)
```

SQL> /

```
EMPNO ENAME     JOB      SAL
-----
7839 KING      PRESIDENT 5000
7566 JONES     MANAGER   2975
7902 FORD      ANALYST   3000
7788 SCOTT     ANALYST   3000
```

```
SQL> SELECT Empno, Ename Job, Sal
2  FROM Emp
3  WHERE Sal <ALL(SELECT AVG(Sal)
4                FROM Emp
5                GROUP BY Deptno);
```

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```
EMPNO JOB          SAL
-----
7654 MARTIN        1250
7844 TURNER        1500
7900 JAMES          950
7521 WARD           1250
7369 SMITH          800
7876 ADAMS          1100
7934 MILLER        1300
```

7 rows selected.

SQL> ED

Wrote file afiedt.buf

```
1 SELECT Empno, Ename Job, Sal
2 FROM Emp
3 WHERE Sal <(SELECT MIN(AVG(Sal))
4             FROM Emp
5*          GROUP BY Deptno)
SQL> /
```

```
EMPNO JOB          SAL
-----
7654 MARTIN        1250
7844 TURNER        1500
7900 JAMES          950
7521 WARD           1250
7369 SMITH          800
7876 ADAMS          1100
7934 MILLER        1300
```

7 rows selected.

SQL> cl scr

```
SQL> SELECT Ename, Sal, Deptno, HireDate
2 FROM Emp
3 WHERE Sal > (
4             SELECT MAX(Sal)
5             FROM Emp
6             WHERE Deptno = 30
7             ) AND
8     Deptno = (
9             SELECT Deptno
10            FROM Dept
11            WHERE Dname = 'RESEARCH'
12            );
```

```
ENAME          SAL          DEPTNO HIREDATE
-----
JONES          2975           20 02-APR-81
FORD           3000           20 03-DEC-81
SCOTT          3000           20 09-DEC-82
```

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```
SQL> WHERE (Sal, Deptno)SPOOL OFF
SP2-0734: unknown command beginning "WHERE (Sal..." - rest of line ignored.
SQL> SPOOL OFF
SQL> cl scr
```

```
SQL> ED
SP2-0107: Nothing to save.
SQL> cl scr
```

```
SQL> SELECT ProdId, Qty
2
3 FROM Item
WHERE OrdID = 605;
```

PRODID	QTY
100861	100
100870	500
100890	5
101860	50
101863	100
102130	10

6 rows selected.

```
SQL> SELECT OrdID, ProdID, Qty
2 FROM Item;
```

ORDID	PRODID	QTY
610	100890	1
611	100861	1
612	100860	100
601	200376	1
602	100870	20
604	100890	3
604	100861	2
604	100860	10
603	100860	4
610	100860	1
610	100870	3

ORDID	PRODID	QTY
613	200376	200
614	100860	444
614	100870	1000
612	100861	20
612	101863	150
620	100860	10
620	200376	1000
620	102130	500
613	100871	100
613	101860	200
613	200380	150

ORDID	PRODID	QTY
-------	--------	-----

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619	102130	100
617	100860	50
617	100861	100
614	100871	1000
616	100861	10
616	100870	50
616	100890	2
616	102130	10
616	200376	10
619	200380	100
619	200376	100

ORDID	PRODID	QTY
615	100861	4
607	100871	1
615	100870	100
617	100870	500
617	100871	500
617	100890	500
617	101860	100
617	101863	200
617	102130	100
617	200376	200
617	200380	300

ORDID	PRODID	QTY
609	100870	5
609	100890	1
618	100860	23
618	100861	50
618	100870	10
621	100861	10
621	100870	100
615	100871	50
608	101860	1
608	100871	2
609	100861	1

ORDID	PRODID	QTY
606	102130	1
605	100861	100
605	100870	500
605	100890	5
605	101860	50
605	101863	100
605	102130	10
612	100871	100
619	100871	50

64 rows selected.

SQL> SELECT DISTINCT OrdID

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```
2 FROM Item;
```

```
ORDID
-----
601
602
603
604
605
606
607
608
609
610
611
```

```
ORDID
-----
612
613
614
615
616
617
618
619
620
621
```

21 rows selected.

```
SQL> SELECT OrdID, COUNT(*) ItemCnt
2 FROM Item
3 GROUP BY OrdID;
```

```
ORDID    ITEMCNT
-----
601             1
602             1
603             1
604             3
605             6
606             1
607             1
608             2
609             3
610             3
611             1
```

```
ORDID    ITEMCNT
-----
612             4
613             4
614             3
615             3
616             5
```

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617	10
618	3
619	4
620	3
621	2

21 rows selected.

SQL> cl scr

```
SQL> SELECT ProdId, Qty
2
3 FROM Item
WHERE OrdID = 605;
```

PRODID	QTY
100861	100
100870	500
100890	5
101860	50
101863	100
102130	10

6 rows selected.

```
SQL> SELECT OrdID, ProdID, Qty
2 FROM Item
3 WHERE ProdID IN(100861, 100870, 100890, 101860, 101863, 102130) AND
4 OrdID <> 605;
```

ORDID	PRODID	QTY
610	100890	1
611	100861	1
602	100870	20
604	100890	3
604	100861	2
610	100870	3
614	100870	1000
612	100861	20
612	101863	150
620	102130	500
613	101860	200

ORDID	PRODID	QTY
619	102130	100
617	100861	100
616	100861	10
616	100870	50
616	100890	2
616	102130	10
615	100861	4
615	100870	100
617	100870	500
617	100890	500

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ORDID	PRODID	QTY
617	101860	100
617	101863	200
617	102130	100
609	100870	5
609	100890	1
618	100861	50
618	100870	10
621	100861	10
621	100870	100
608	101860	1
609	100861	1
606	102130	1

33 rows selected.

```
SQL> SELECT OrdID, ProdID, Qty
 2 FROM Item
 3 WHERE (ProdID, Qty) IN(SELECT ProdId, Qty
 4                        FROM Item
 5                        WHERE OrdID = 605) AND
 6 OrdID <> 605;
```

ORDID	PRODID	QTY
617	100861	100
617	100870	500
616	102130	10

```
SQL> SELECT OrdID, ProdID, Qty
 2 FROM Item
 3 WHERE ProdID IN(SELECT ProdID
 4                FROM Item
 5                WHERE OrdID = 605)
 6 AND Qty IN (SELECT Qty
 7            FROM Item
 8            WHERE OrdID = 605)
 9 AND OrdID <> 605
10 /
```

ORDID	PRODID	QTY
616	100861	10
621	100861	10
618	100861	50
617	100861	100
618	100870	10
616	100870	50
609	100870	5
617	100870	500
615	100870	100
621	100870	100
617	100890	500

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ORDID	PRODID	QTY
617	101860	100
616	102130	10
620	102130	500
619	102130	100
617	102130	100

16 rows selected.

SQL> cl scr

```
SQL> SELECT OrdID, ProdID, Qty
 2 FROM Item
 3 WHERE (ProdID, Qty) IN(100861, 100);
WHERE (ProdID, Qty) IN(100861, 100)
*
```

ERROR at line 3:
ORA-00920: invalid relational operator

SQL> cl scr

```
SQL> SELECT Ename, Deptno, Sal
 2 FROM Emp
 3 WHERE (Deptno, Sal) IN (SELECT Deptno, MAX(Sal)
 4 FROM Emp
 5 GROUP BY Deptno);
```

ENAME	DEPTNO	SAL
KING	10	5000
SCOTT	20	3000
FORD	20	3000
BLAKE	30	2850

```
SQL> SELECT Ename, Deptno, Sal
 2 FROM Emp
 3 WHERE Deptno IN (SELECT Deptno
 4 FROM Emp
 5 GROUP BY Deptno) AND
 6 Sal IN (SELECT MAX(Sal)
 7 FROM Emp
 8 GROUP BY Deptno);
```

ENAME	DEPTNO	SAL
KING	10	5000
SCOTT	20	3000
FORD	20	3000
BLAKE	30	2850

```
SQL> INSERT INTO Emp(Empno, Ename, Deptno, Sal)
 2 VALUES(1234, 'SAMPLE01', 10, 3000);
```

1 row created.

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```
SQL> INSERT INTO Emp(Empno, Ename, Deptno, Sal)
  2  VALUES(1235, 'SAMPLE02', 10, 2850);
```

1 row created.

```
SQL> INSERT INTO Emp(Empno, Ename, Deptno, Sal)
  2  VALUES(1236, 'SAMPLE03', 20, 2850);
```

1 row created.

```
SQL> SELECT Ename, Deptno, Sal
  2  FROM Emp
  3  WHERE (Deptno, Sal) IN (SELECT Deptno, MAX(Sal)
  4                               FROM Emp
  5                               GROUP BY Deptno);
```

ENAME	DEPTNO	SAL
KING	10	5000
SCOTT	20	3000
FORD	20	3000
BLAKE	30	2850

```
SQL> SELECT Ename, Deptno, Sal
  2  FROM Emp
  3  WHERE Deptno IN (SELECT Deptno
  4                               FROM Emp
  5                               GROUP BY Deptno) AND
  6          Sal IN (SELECT MAX(Sal)
  7                               FROM Emp
  8                               GROUP BY Deptno);
```

ENAME	DEPTNO	SAL
KING	10	5000
SCOTT	20	3000
FORD	20	3000
SAMPLE01	10	3000
BLAKE	30	2850
SAMPLE03	20	2850
SAMPLE02	10	2850

7 rows selected.

```
SQL> ROLLBACK;
```

Rollback complete.

```
SQL> cl scr
```

```
SQL> ROLLBACK;
```

Rollback complete.

```
SQL> cl scr
```

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```
SQL> SELECT Ename, Sal, Comm
  2  FROM Emp
  3  /
```

ENAME	SAL	COMM
KING	5000	
BLAKE	2850	
CLARK	2450	
JONES	2975	
MARTIN	1250	1400
ALLEN	1600	300
TURNER	1500	0
JAMES	950	
WARD	1250	500
FORD	3000	
SMITH	800	

ENAME	SAL	COMM
SCOTT	3000	
ADAMS	1100	
MILLER	1300	

14 rows selected.

```
SQL> SELECT Ename, Sal, Comm
  2  FROM Emp
  3  WHERE Comm IN(1400, 300, NULL);
```

ENAME	SAL	COMM
MARTIN	1250	1400
ALLEN	1600	300

```
SQL> SELECT Ename, Sal, Comm
  2  FROM Emp
  3  WHERE Comm NOT IN(1400, 300, NULL);
```

no rows selected

```
SQL> cl scr
```

```
SQL> SELECT Ename, Empno, MGR
  2  FROM Emp;
```

ENAME	EMPNO	MGR
KING	7839	
BLAKE	7698	7839
CLARK	7782	7839
JONES	7566	7839
MARTIN	7654	7698
ALLEN	7499	7698
TURNER	7844	7698

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JAMES	7900	7698
WARD	7521	7698
FORD	7902	7566
SMITH	7369	7902

ENAME	EMPNO	MGR
-----	-----	-----
SCOTT	7788	7566
ADAMS	7876	7788
MILLER	7934	7782

14 rows selected.

```
SQL> SELECT E.ename
  2 FROM emp E
  3 WHERE E.empno IN(SELECT M.mgr
  4 FROM emp M);
```

ENAME

JONES
BLAKE
CLARK
SCOTT
KING
FORD

6 rows selected.

```
SQL> ED
Wrote file afiedt.buf
```

```
  1 SELECT E.ename
  2 FROM emp E
  3 WHERE E.empno NOT IN(SELECT M.mgr
  4* FROM emp M)
SQL> /
```

no rows selected

```
SQL> ED
Wrote file afiedt.buf
```

```
  1 SELECT E.ename
  2 FROM emp E
  3 WHERE E.empno NOT IN(SELECT NVL(M.mgr, 0)
  4* FROM emp M)
SQL> /
```

ENAME

SMITH
ALLEN
WARD
MARTIN
TURNER

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ADAMS
JAMES
MILLER

8 rows selected.

SQL> cl scr

```
SQL> SELECT Ename, Sal, Comm
2 FROM Emp
3 WHERE Comm IN(SELECT Comm
4 FROM Emp);
```

ENAME	SAL	COMM
MARTIN	1250	1400
ALLEN	1600	300
TURNER	1500	0
WARD	1250	500

SQL> ED

Wrote file afiedt.buf

```
1 SELECT Ename, Sal, Comm
2 FROM Emp
3 WHERE Comm NOT IN(SELECT Comm
4* FROM Emp)
```

SQL> /

no rows selected

SQL> ED

Wrote file afiedt.buf

```
1 SELECT Ename, Sal, Comm
2 FROM Emp
3 WHERE Comm NOT IN(SELECT NVL(Comm, 0)
4* FROM Emp)
```

SQL> /

no rows selected

SQL> cl scr

```
SQL> SELECT Ename, Deptno, Sal, HireDate
2 FROM Emp;
```

ENAME	DEPTNO	SAL	HIREDATE
KING	10	5000	17-NOV-81
BLAKE	30	2850	01-MAY-81
CLARK	10	2450	09-JUN-81
JONES	20	2975	02-APR-81
MARTIN	30	1250	28-SEP-81
ALLEN	30	1600	20-FEB-81
TURNER	30	1500	08-SEP-81

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JAMES	30	950	03-DEC-81
WARD	30	1250	22-FEB-81
FORD	20	3000	03-DEC-81
SMITH	20	800	17-DEC-80

ENAME	DEPTNO	SAL	HIREDATE
SCOTT	20	3000	09-DEC-82
ADAMS	20	1100	12-JAN-83
MILLER	10	1300	23-JAN-82

14 rows selected.

SQL> ED

Wrote file afiedt.buf

```
1 SELECT *
2 FROM (
3   SELECT Ename, Deptno, Sal, HireDate
4   FROM Emp
5* )
SQL> /
```

ENAME	DEPTNO	SAL	HIREDATE
KING	10	5000	17-NOV-81
BLAKE	30	2850	01-MAY-81
CLARK	10	2450	09-JUN-81
JONES	20	2975	02-APR-81
MARTIN	30	1250	28-SEP-81
ALLEN	30	1600	20-FEB-81
TURNER	30	1500	08-SEP-81
JAMES	30	950	03-DEC-81
WARD	30	1250	22-FEB-81
FORD	20	3000	03-DEC-81
SMITH	20	800	17-DEC-80

ENAME	DEPTNO	SAL	HIREDATE
SCOTT	20	3000	09-DEC-82
ADAMS	20	1100	12-JAN-83
MILLER	10	1300	23-JAN-82

14 rows selected.

SQL> ED

Wrote file afiedt.buf

```
1 SELECT Ename, Sal, Sal * 12 AnnSal, HireDate
2 FROM (
3   SELECT Ename, Deptno, Sal, HireDate
4   FROM Emp
5* )
SQL> /
```

ENAME	SAL	ANNSAL	HIREDATE
-------	-----	--------	----------

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```
-----  
KING          5000      60000 17-NOV-81  
BLAKE         2850      34200 01-MAY-81  
CLARK         2450      29400 09-JUN-81  
JONES         2975      35700 02-APR-81  
MARTIN        1250      15000 28-SEP-81  
ALLEN         1600      19200 20-FEB-81  
TURNER        1500      18000 08-SEP-81  
JAMES          950      11400 03-DEC-81  
WARD          1250      15000 22-FEB-81  
FORD           3000      36000 03-DEC-81  
SMITH          800       9600  17-DEC-80
```

```
-----  
ENAME          SAL          ANNSAL  HIREDATE  
-----  
SCOTT           3000          36000 09-DEC-82  
ADAMS           1100          13200 12-JAN-83  
MILLER          1300          15600 23-JAN-82
```

14 rows selected.

SQL> SPOOL OFF

SQL> cl scr

SQL> SELECT Deptno, Dname, Loc
2 FROM Dept;

```
-----  
DEPTNO  DNAME          LOC  
-----  
10  ACCOUNTING    NEW YORK  
20  RESEARCH      DALLAS  
30  SALES          CHICAGO  
40  OPERATIONS    BOSTON
```

SQL> cl scr

SQL> SELECT Ename, Deptno, Sal
2 FROM Emp;

```
-----  
ENAME          DEPTNO          SAL  
-----  
KING            10              5000  
BLAKE           30              2850  
CLARK           10              2450  
JONES           20              2975  
MARTIN          30              1250  
ALLEN           30              1600  
TURNER          30              1500  
JAMES           30               950  
WARD            30              1250  
FORD            20              3000  
SMITH           20               800
```

```
-----  
ENAME          DEPTNO          SAL  
-----  
SCOTT           20              3000
```

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```
ADAMS          20          1100
MILLER         10          1300
```

14 rows selected.

```
SQL> SELECT Deptno, AVG(Sal) SalAvg
2  FROM Emp
3  GROUP BY Deptno;
```

```
DEPTNO      SALAVG
-----
10 2916.66667
20      2175
30 1566.66667
```

```
SQL> SELECT Ename, E.Deptno, Sal, AvgSal
2  FROM Emp E, (
3      SELECT Deptno, AVG(Sal) AvgSal
4      FROM Emp
5      GROUP BY Deptno
6      ) E1
7  WHERE E.Deptno = E1.Deptno;
```

```
ENAME          DEPTNO      SAL      AVGSAL
-----
KING            10          5000  2916.66667
BLAKE           30          2850  1566.66667
CLARK           10          2450  2916.66667
JONES           20          2975    2175
MARTIN          30          1250  1566.66667
ALLEN           30          1600  1566.66667
TURNER          30          1500  1566.66667
JAMES           30           950  1566.66667
WARD            30          1250  1566.66667
FORD            20          3000    2175
SMITH           20           800    2175
```

```
ENAME          DEPTNO      SAL      AVGSAL
-----
SCOTT           20          3000    2175
ADAMS           20          1100    2175
MILLER          10          1300  2916.66667
```

14 rows selected.

```
SQL> SELECT E.Ename, E.Sal , E.Deptno, E1.SalAvg
2  FROM Emp E, (SELECT Deptno, AVG(Sal) SalAvg
3      FROM Emp
4      GROUP BY Deptno) E1
5  WHERE E.Deptno = E1.Deptno AND
6  E.Sal > E1.SalAvg;
```

```
ENAME          SAL      DEPTNO      SALAVG
-----
KING            5000          10  2916.66667
BLAKE           2850          30  1566.66667
```


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```
JONES          2975          20          2175
ALLEN          1600          30 1566.66667
FORD           3000          20          2175
SCOTT          3000          20          2175
```

6 rows selected.

```
SQL> cl scr
```

```
SQL> SELECT E.Ename, E.Sal, E.Deptno,
 2  ROUND(E1.SalAvg, 2) DeptAvgSal,
 3  ROUND(E.Sal - E1.SalAvg) DiffSalAvg
 4  FROM Emp E, (SELECT Deptno, AVG(Sal) SalAvg
 5                FROM Emp
 6                GROUP BY Deptno) E1
 7  WHERE E.Deptno = E1.Deptno
 8  ORDER BY Deptno
 9  /
```

ENAME	SAL	DEPTNO	DEPTAVGSAL	DIFFSALAVG
KING	5000	10	2916.67	2083
CLARK	2450	10	2916.67	-467
MILLER	1300	10	2916.67	-1617
JONES	2975	20	2175	800
FORD	3000	20	2175	825
SMITH	800	20	2175	-1375
SCOTT	3000	20	2175	825
ADAMS	1100	20	2175	-1075
BLAKE	2850	30	1566.67	1283
MARTIN	1250	30	1566.67	-317
ALLEN	1600	30	1566.67	33

ENAME	SAL	DEPTNO	DEPTAVGSAL	DIFFSALAVG
TURNER	1500	30	1566.67	-67
JAMES	950	30	1566.67	-617
WARD	1250	30	1566.67	-317

14 rows selected.

```
SQL> SELECT E.Ename, E.Sal, E.Deptno, E1.SalSum
 2  FROM Emp E, (SELECT Deptno, SUM(Sal) SalSUM
 3                FROM Emp
 4                GROUP BY Deptno) E1
 5  WHERE E.Deptno = E1.Deptno
 6  ORDER BY Deptno;
```

ENAME	SAL	DEPTNO	SALSUM
KING	5000	10	8750
CLARK	2450	10	8750
MILLER	1300	10	8750
JONES	2975	20	10875
FORD	3000	20	10875
SMITH	800	20	10875

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SCOTT	3000	20	10875
ADAMS	1100	20	10875
BLAKE	2850	30	9400
MARTIN	1250	30	9400
ALLEN	1600	30	9400

ENAME	SAL	DEPTNO	SALSUM
-----	-----	-----	-----
TURNER	1500	30	9400
JAMES	950	30	9400
WARD	1250	30	9400

14 rows selected.

SQL> cl scr

```
SQL> SELECT T1.Deptno, Dname, Staff
  2 FROM Dept T1,
  3 (SELECT Deptno, COUNT(*) AS Staff
  4 FROM Emp
  5 GROUP BY Deptno) T2
  6 WHERE T1.Deptno = T2.Deptno
  7 AND Staff >= 5;
```

DEPTNO	DNAME	STAFF
-----	-----	-----
20	RESEARCH	5
30	SALES	6

```
SQL> SELECT E.Deptno, Dname, COUNT(*) Staff
  2 FROM Emp E, Dept D
  3 WHERE E.Deptno = D.Deptno
  4 GROUP BY E.Deptno, Dname
  5 HAVING COUNT(*) >= 5;
```

DEPTNO	DNAME	STAFF
-----	-----	-----
20	RESEARCH	5
30	SALES	6

SQL> cl scr

```
SQL> SELECT Deptno, SUM(Sal),
  2 SUM(Sal)/Tot_Sal * 100 "Salary%"
  3 FROM Emp,
  4 (SELECT SUM(Sal) Tot_Sal
  5 FROM Emp)
  6 GROUP BY Deptno, Tot_Sal;
```

DEPTNO	SUM(SAL)	Salary%
-----	-----	-----
10	8750	30.1464255
20	10875	37.4677003
30	9400	32.3858742

```
SQL> SELECT Job, SUM(Sal),
```

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```
2 ROUND(SUM(Sal)/Tot_Sal * 100, 2) "Salary%"
3 FROM Emp, (SELECT SUM(Sal) Tot_Sal
4 FROM Emp)
5 GROUP BY Job, Tot_Sal;
```

JOB	SUM(SAL)	Salary%
CLERK	4150	14.3
ANALYST	6000	20.67
MANAGER	8275	28.51
SALESMAN	5600	19.29
PRESIDENT	5000	17.23

SQL> cl scr

```
SQL> SELECT Ename, Sal, SUM(Sal)
2 FROM Emp
3 GROUP BY Ename, Sal;
```

ENAME	SAL	SUM(SAL)
FORD	3000	3000
KING	5000	5000
WARD	1250	1250
ADAMS	1100	1100
ALLEN	1600	1600
BLAKE	2850	2850
CLARK	2450	2450
JAMES	950	950
JONES	2975	2975
SCOTT	3000	3000
SMITH	800	800

ENAME	SAL	SUM(SAL)
MARTIN	1250	1250
MILLER	1300	1300
TURNER	1500	1500

14 rows selected.

SQL> ED

Wrote file afiedt.buf

```
1 SELECT Ename, Sal, (SUM(Sal) / OrgSal) * 100
2 FROM Emp, (
3     SELECT SUM(Sal) OrgSal
4     FROM Emp
5     )
6* GROUP BY Ename, Sal, OrgSal
SQL> /
```

ENAME	SAL	(SUM(SAL)/ORGSAL)*100
FORD	3000	10.3359173
KING	5000	17.2265289

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WARD	1250	4.30663221
ADAMS	1100	3.78983635
ALLEN	1600	5.51248923
BLAKE	2850	9.81912145
CLARK	2450	8.44099914
JAMES	950	3.27304048
JONES	2975	10.2497847
SCOTT	3000	10.3359173
SMITH	800	2.75624462

ENAME	SAL	(SUM(SAL)/ORGSAL)*100
MARTIN	1250	4.30663221
MILLER	1300	4.4788975
TURNER	1500	5.16795866

14 rows selected.

SQL> ED

Wrote file afiedt.buf

```
1  SELECT Ename, Sal,
2  TRUNC((SUM(Sal) / OrgSal) * 100, 2)||' % Share' "%Share"
3  FROM Emp, (
4      SELECT SUM(Sal) OrgSal
5      FROM Emp
6      )
7* GROUP BY Ename, Sal, OrgSal
SQL> /
```

ENAME	SAL	%Share
FORD	3000	10.33 % Share
KING	5000	17.22 % Share
WARD	1250	4.3 % Share
ADAMS	1100	3.78 % Share
ALLEN	1600	5.51 % Share
BLAKE	2850	9.81 % Share
CLARK	2450	8.44 % Share
JAMES	950	3.27 % Share
JONES	2975	10.24 % Share
SCOTT	3000	10.33 % Share
SMITH	800	2.75 % Share

ENAME	SAL	%Share
MARTIN	1250	4.3 % Share
MILLER	1300	4.47 % Share
TURNER	1500	5.16 % Share

14 rows selected.

SQL> cl scr

```
SQL> SELECT TO_CHAR(HireDate, 'YYYY') Year,
2  SUM(Sal),
```

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```
3 ROUND(SUM(Sal)/Tot_Sal * 100, 2) "Salary%"
4 FROM Emp, (SELECT SUM(Sal) Tot_Sal
5 FROM Emp)
6 GROUP BY TO_CHAR(HireDate, 'YYYY'), Tot_Sal;
```

YEAR	SUM(SAL)	Salary%
1980	800	2.76
1981	22825	78.64
1982	4300	14.81
1983	1100	3.79

```
SQL> SELECT
  2 TO_CHAR(HireDate, 'YYYY') Year,
  3 TO_CHAR(HireDate, 'Month') "Month",
  4 SUM(Sal),
  5 ROUND(SUM(Sal)/Tot_Sal * 100, 2) "Salary%"
  6 FROM Emp, (SELECT SUM(Sal) Tot_Sal
  7 FROM Emp)
  8 WHERE TO_CHAR(HireDate, 'YYYY') = &GiveYear
  9 GROUP BY TO_CHAR(HireDate, 'YYYY'), TO_CHAR(HireDate, 'Month'), Tot_Sal;
Enter value for giveyear: 1981
old 8: WHERE TO_CHAR(HireDate, 'YYYY') = &GiveYear
new 8: WHERE TO_CHAR(HireDate, 'YYYY') = 1981
```

YEAR	Month	SUM(SAL)	Salary%
1981	April	2975	10.25
1981	December	3950	13.61
1981	February	2850	9.82
1981	June	2450	8.44
1981	May	2850	9.82
1981	November	5000	17.23
1981	September	2750	9.47

7 rows selected.

```
SQL> cl scr
```

```
SQL> SELECT E.EmpCount, D.DeptCount, S.GradeCnt
  2 FROM
  3 (SELECT COUNT(*) EmpCount
  4 FROM Emp) E,
  5 (SELECT COUNT(*) DeptCount
  6 FROM Dept) D,
  7 (SELECT COUNT(*) GradeCnt FROM
  8 SalGrade) S;
```

EMPCOUNT	DEPTCOUNT	GRADECNT
14	4	5

```
SQL> SELECT
  2 E.EmpCount,
  3 D.DeptCount,
  4 S.GradeCnt,
```

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```

5  E.EmpCount + D.DeptCount + S.GradeCnt TotalRecCnt
6  FROM
7  (SELECT COUNT(*) EmpCount
8   FROM Emp) E,
9  (SELECT COUNT(*) DeptCount
10 FROM Dept) D,
11 (SELECT COUNT(*) GradeCnt
12 FROM SalGrade) S;

```

EMPCOUNT	DEPTCOUNT	GRADECNT	TOTALRECCNT
14	4	5	23

```

SQL> SELECT
2  E.EmpCount,
3  D.DeptCount,
4  S.GradeCnt,
5  E.EmpCount + D.DeptCount + S.GradeCnt TotalRecCnt,
6  GREATEST(E.EmpCount, D.DeptCount, S.GradeCnt) HighRecinTab,
7  LEAST(E.EmpCount, D.DeptCount, S.GradeCnt) LowRecinTab
8  FROM
9  (SELECT COUNT(*) EmpCount
10 FROM Emp) E,
11 (SELECT COUNT(*) DeptCount
12 FROM Dept) D,
13 (SELECT COUNT(*) GradeCnt
14 FROM SalGrade) S;

```

EMPCOUNT	DEPTCOUNT	GRADECNT	TOTALRECCNT	HIGHRECINTAB	LOWRECINTAB
14	4	5	23	14	4

```
SQL> cl scr
```

```

SQL> SELECT A.Deptno "Department Number",
2  (A.NumEmp / B.TotalCount ) * 100 "%Employees",
3  (A.SalSum / B.TotalSal ) * 100 "%Salary"
4  FROM
5  (SELECT Deptno, COUNT(*) NumEmp,
6   SUM(Sal) SalSum
7   FROM Emp
8   GROUP BY Deptno) A,
9  (SELECT COUNT(*) TotalCount,
10  SUM(Sal) TotalSal
11  FROM Emp) B;

```

Department Number	%Employees	%Salary
10	21.4285714	30.1464255
20	35.7142857	37.4677003
30	42.8571429	32.3858742

```
SQL> cl scr
```

```
SQL> SELECT Ename, Sal FROM Emp;
```

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ENAME	SAL
KING	5000
BLAKE	2850
CLARK	2450
JONES	2975
MARTIN	1250
ALLEN	1600
TURNER	1500
JAMES	950
WARD	1250
FORD	3000
SMITH	800

ENAME	SAL
SCOTT	3000
ADAMS	1100
MILLER	1300

14 rows selected.

```
SQL> SELECT SUM(Sal) FROM Emp;
```

SUM(SAL)
29025

```
SQL> SELECT Ename, Sal, (SELECT SUM(Sal) FROM Emp) OrgSal FROM Emp;
```

ENAME	SAL	ORGSAL
KING	5000	29025
BLAKE	2850	29025
CLARK	2450	29025
JONES	2975	29025
MARTIN	1250	29025
ALLEN	1600	29025
TURNER	1500	29025
JAMES	950	29025
WARD	1250	29025
FORD	3000	29025
SMITH	800	29025

ENAME	SAL	ORGSAL
SCOTT	3000	29025
ADAMS	1100	29025
MILLER	1300	29025

14 rows selected.

```
SQL> ED
```

Wrote file afiedt.buf

```
1 SELECT Ename, Sal,
```

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```
2 (SELECT SUM(Sal) FROM Emp) OrgSal,
3 (SELECT AVG(Sal) FROM Emp) OrgAvg
4* FROM Emp
SQL> /
```

ENAME	SAL	ORGSAL	ORGAVG
KING	5000	29025	2073.21429
BLAKE	2850	29025	2073.21429
CLARK	2450	29025	2073.21429
JONES	2975	29025	2073.21429
MARTIN	1250	29025	2073.21429
ALLEN	1600	29025	2073.21429
TURNER	1500	29025	2073.21429
JAMES	950	29025	2073.21429
WARD	1250	29025	2073.21429
FORD	3000	29025	2073.21429
SMITH	800	29025	2073.21429

ENAME	SAL	ORGSAL	ORGAVG
SCOTT	3000	29025	2073.21429
ADAMS	1100	29025	2073.21429
MILLER	1300	29025	2073.21429

14 rows selected.

```
SQL> SPOOL OFF
SQL> cl scr
```

```
SQL> SELECT Ename, Deptno, Sal
2 FROM Emp
3 WHERE Sal > (
4     SELECT AVG(Sal)
5     FROM Emp
6     WHERE Deptno = Deptno
7     )
8
```

```
SQL> ED
```

Wrote file afiedt.buf

```
1 SELECT Ename, Deptno, Sal
2 FROM Emp OE
3 WHERE OE.Sal > (
4     SELECT AVG(Sal)
5     FROM Emp IE
6     WHERE IE.Deptno = OE.Deptno
7*    )
```

```
SQL> /
```

ENAME	DEPTNO	SAL
KING	10	5000
BLAKE	30	2850
JONES	20	2975
ALLEN	30	1600

Spool Generated For Class of Oracle By Satish K Yellanki

```
FORD          20          3000
SCOTT         20          3000
```

6 rows selected.

```
SQL> SELECT Deptno, AVG(Sal) SalAvg
2  FROM Emp
3  GROUP BY Deptno;
```

```
DEPTNO      SALAVG
-----
10 2916.66667
20   2175
30 1566.66667
```

```
SQL> SELECT Ename, OE.Deptno, Sal
2  FROM Emp OE, (
3          SELECT Deptno, AVG(Sal) SalAvg
4          FROM Emp IE
5          GROUP BY Deptno
6          ) IE
7  WHERE OE.Deptno = IE.Deptno AND
8  OE.Sal > IE.SalAvg;
```

```
ENAME          DEPTNO      SAL
-----
KING            10          5000
SCOTT           20          3000
FORD            20          3000
JONES           20          2975
ALLEN           30          1600
BLAKE           30          2850
```

6 rows selected.

```
SQL> SELECT Ename, Deptno, Sal
2  FROM Emp OE
3  WHERE OE.Sal > (
4          SELECT AVG(Sal)
5          FROM Emp IE
6          WHERE IE.Deptno = OE.Deptno
7          );
```

```
ENAME          DEPTNO      SAL
-----
KING            10          5000
BLAKE           30          2850
JONES           20          2975
ALLEN           30          1600
FORD            20          3000
SCOTT           20          3000
```

6 rows selected.

```
SQL> ED
```

Wrote file afiedt.buf

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```
1 SELECT Ename, OE.Deptno, Sal, SalAvg
2 FROM Emp OE, (
3             SELECT Deptno, AVG(Sal) SalAvg
4             FROM Emp IE
5             GROUP BY Deptno
6             ) IE
7 WHERE OE.Deptno = IE.Deptno AND
8* OE.Sal > IE.SalAvg
SQL> /
```

ENAME	DEPTNO	SAL	SALAVG
KING	10	5000	2916.66667
SCOTT	20	3000	2175
FORD	20	3000	2175
JONES	20	2975	2175
ALLEN	30	1600	1566.66667
BLAKE	30	2850	1566.66667

6 rows selected.

```
SQL> cl scr
```

```
SQL> SELECT Empno, Ename, E.Deptno, Sal, MGR
2 FROM Emp E
3 WHERE E.Sal > (
4             SELECT M.Sal
5             FROM Emp M
6             WHERE M.Empno = E.MGR
7             );
```

EMPNO	ENAME	DEPTNO	SAL	MGR
7902	FORD	20	3000	7566
7788	SCOTT	20	3000	7566

```
SQL> SELECT Empno, Ename, Sal, MGR
2 FROM Emp
3 WHERE Empno = 7566;
```

EMPNO	ENAME	SAL	MGR
7566	JONES	2975	7839

```
SQL> cl scr
```

```
SQL> SELECT Deptno, Dname
2 FROM Dept D
3 WHERE EXISTS (
4             SELECT *
5             FROM Emp E
6             WHERE E.Deptno = D.Deptno
7             );
```

DEPTNO DNAME

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```
-----  
10 ACCOUNTING  
30 SALES  
20 RESEARCH
```

```
SQL> SELECT Deptno, Dname  
2 FROM Emp, Dept  
3 WHERE Emp.Deptno = Dept.Deptno;  
SELECT Deptno, Dname  
*  
ERROR at line 1:  
ORA-00918: column ambiguously defined
```

```
SQL> ED  
Wrote file afiedt.buf
```

```
1 SELECT Dept.Deptno, Dname  
2 FROM Emp, Dept  
3* WHERE Emp.Deptno = Dept.Deptno  
SQL> /
```

```
DEPTNO DNAME  
-----  
10 ACCOUNTING  
30 SALES  
10 ACCOUNTING  
20 RESEARCH  
30 SALES  
30 SALES  
30 SALES  
30 SALES  
30 SALES  
20 RESEARCH  
20 RESEARCH
```

```
DEPTNO DNAME  
-----  
20 RESEARCH  
20 RESEARCH  
10 ACCOUNTING
```

14 rows selected.

```
SQL> ED  
Wrote file afiedt.buf
```

```
1 SELECT DISTINCT Dept.Deptno, Dname  
2 FROM Emp, Dept  
3* WHERE Emp.Deptno = Dept.Deptno  
SQL> /
```

```
DEPTNO DNAME  
-----  
10 ACCOUNTING  
20 RESEARCH
```

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30 SALES

SQL> ED

Wrote file afiedt.buf

```
1 SELECT Dept.Deptno, Dname
2 FROM Emp, Dept
3 WHERE Emp.Deptno = Dept.Deptno
4* GROUP BY Dept.Deptno, Dname
SQL> /
```

```
DEPTNO DNAME
-----
10 ACCOUNTING
20 RESEARCH
30 SALES
```

```
SQL> SELECT Dept.Deptno, Dname
2 FROM Dept
3 WHERE Dept.Deptno IN (
4     SELECT Deptno
5     FROM Emp
6*    )
SQL> /
```

```
DEPTNO DNAME
-----
10 ACCOUNTING
30 SALES
20 RESEARCH
```

SQL> cl scr

```
SQL> SELECT Deptno, Dname
2 FROM Dept D
3 WHERE NOT EXISTS (
4     SELECT *
5     FROM Emp E
6     WHERE E.Deptno = D.Deptno
7     );
```

```
DEPTNO DNAME
-----
40 OPERATIONS
```

SQL> cl scr

```
SQL> SELECT E.Ename
2 FROM Emp E
3 WHERE EXISTS (
4     SELECT *
5     FROM Emp E1
6     WHERE E1.Empno = E.Mgr
7     );
```

ENAME

Spool Generated For Class of Oracle By Satish K Yellanki

```
-----  
BLAKE  
CLARK  
JONES  
MARTIN  
ALLEN  
TURNER  
JAMES  
WARD  
FORD  
SMITH  
SCOTT
```

```
ENAME
```

```
-----  
ADAMS  
MILLER
```

13 rows selected.

```
SQL> SELECT Ename FROM Emp WHERE MGR IS NOT NULL;
```

```
ENAME
```

```
-----  
BLAKE  
CLARK  
JONES  
MARTIN  
ALLEN  
TURNER  
JAMES  
WARD  
FORD  
SMITH  
SCOTT
```

```
ENAME
```

```
-----  
ADAMS  
MILLER
```

13 rows selected.

```
SQL> cl scr
```

```
SQL> SELECT E.Ename  
2 FROM Emp E  
3 WHERE NOT EXISTS (  
4  
5 SELECT *  
6 FROM Emp E1  
7 WHERE E1.Empno = E.Mgr  
);
```

```
ENAME
```

```
-----  
KING
```

Spool Generated For Class of Oracle By Satish K Yellanki

```
SQL> SELECT E.ename
  2 FROM Emp E
  3 WHERE EXISTS (
  4
  5             SELECT *
  6             FROM Emp E1
  7             WHERE E1.Mgr = E.empno
             );
```

ENAME

KING
BLAKE
JONES
FORD
SCOTT
CLARK

6 rows selected.

```
SQL> SELECT E.ename
  2 FROM Emp E
  3 WHERE NOT EXISTS (
  4
  5             SELECT *
  6             FROM Emp E1
  7             WHERE E1.Mgr = E.empno
             );
```

ENAME

TURNER
WARD
MARTIN
ALLEN
MILLER
SMITH
ADAMS
JAMES

8 rows selected.

```
SQL> SPPOOL OFF
```