

```

SELECT MAX(E.SAL) AS MAX_SAL, SUM(E.SAL) AS TOTAL_SAL, D.DNAME AS DEPARTMENT_NAME
2  FROM EMP E INNER JOIN DEPT D
3  ON E.DEPTNO = D.DEPTNO
4  WHERE E.DEPTNO IN (SELECT DEPTNO
5                      FROM EMP
6                      WHERE LOC IN ('CHICAGO', 'DALLAS'))
7  AND E.SAL*12 > (SELECT SAL * 12
8                  FROM EMP
9                  WHERE ENAME='SMITH')
10 AND E.HIREDATE < (SELECT HIREDATE
11                   FROM EMP
12                   WHERE ENAME='MILLER')
13 GROUP BY D.DNAME
14 HAVING SUM(E.SAL) > ALL (SELECT SAL
15                          FROM EMP
16                          WHERE JOB ='CLERK')
17 /

```

MAX_SAL	TOTAL_SAL	DEPARTMENT_NAM
3000	5975	RESEARCH
2850	9400	SALES

```

SQL> SELECT *
2  FROM (SELECT DENSE_RANK() OVER (ORDER BY SAL ASC) AS
RANK, EMPNO, ENAME, TO_CHAR(HIREDATE, 'FMDAY'), TO_CHAR(HIREDATE, 'HH24'), DNAME
3  FROM EMP E JOIN DEPT D
4  ON E.DEPTNO = D.DEPTNO
5  )
6  WHERE RANK IN (2, 4, 5, 6, 7)
7  /

```

RANK	EMPNO	ENAME	TO_CHAR(H	TO	DNAME
2	7900	JAMES	THURSDAY	00	SALES
4	7521	WARD	SUNDAY	00	SALES
4	7654	MARTIN	MONDAY	00	SALES
5	7934	MILLER	SATURDAY	00	ACCOUNTING
6	7844	TURNER	TUESDAY	00	SALES
7	7499	ALLEN	FRIDAY	00	SALES

6 rows selected.

```

SQL> SELECT *
2  FROM (SELECT DENSE_RANK() OVER (ORDER BY EMPNO DESC) AS RANK, EMP.*
3  FROM EMP)
4  WHERE RANK = 4
5  /

```

RANK	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL
4	7876	ADAMS	CLERK	7788	23-MAY-87	1100

20

```

SQL> SELECT *
  2 FROM (SELECT DENSE_RANK() OVER (ORDER BY EMPNO ASC)
  3       AS RANK,E.ENAME,E.SAL - (E.SAL * 0.45),D.DNAME,D.LOC
  4       FROM EMP E INNER JOIN DEPT D
  5       ON E.DEPTNO = D.DEPTNO)
  6 WHERE RANK <= 3
  7 /

```

	RANK	ENAME	E.SAL-(E.SAL*0.45)	DNAME	LOC
1	SMITH	440	RESEARCH	DALLAS	
2	ALLEN	880	SALES	CHICAGO	
3	WARD	687.5	SALES	CHICAGO	

```

SQL> SELECT *
  2 FROM (SELECT DENSE_RANK() OVER (ORDER BY EMPNO ASC) AS RANK,EMP.*
  3       FROM EMP)
  4 WHERE MOD(RANK,2) = 0
  5 /

```

COMM	RANK	DEPTNO	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL
300	2	30	7499	ALLEN	SALESMAN	7698	20-FEB-81	1600
20	4		7566	JONES	MANAGER	7839	02-APR-81	2975
30	6		7698	BLAKE	MANAGER	7839	01-MAY-81	2850
20	8		7788	SCOTT	ANALYST	7566	19-APR-87	3000
0	10	30	7844	TURNER	SALESMAN	7698	08-SEP-81	1500
30	12		7900	JAMES	CLERK	7698	03-DEC-81	950
10	14		7934	MILLER	CLERK	7782	23-JAN-82	1300

7 rows selected.

```

SQL> SELECT COUNT(*)
  2 FROM EMP
  3 WHERE SAL < ( SELECT SAL
  4             FROM EMP
  5             WHERE EMPNO = (SELECT MGR
  6                           FROM EMP
  7                           WHERE ENAME='BLAKE' ) )
  8 /

```

COUNT(*)
13

```

SQL> SELECT *
  2 FROM EMP
  3 WHERE DEPTNO IN (SELECT DEPTNO
  4 FROM DEPT
  5 WHERE DNAME IN ('SALES','RESEARCH'))
  6 AND EMPNO IN (SELECT MGR
  7 FROM EMP
  8 GROUP BY MGR
  9 HAVING COUNT(*) >= 2)
10 /

```

	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM
DEPTNO							
-----	-----	-----	-----	-----	-----	-----	-----
30	7698	BLAKE	MANAGER	7839	01-MAY-81	2850	
20	7566	JONES	MANAGER	7839	02-APR-81	2975	

```

SQL> SELECT ENAME
  2 FROM EMP
  3 WHERE SAL IN (SELECT MAX(SAL)
  4 FROM EMP
  5 GROUP BY JOB)
  6 /

```

```

ENAME
-----
MILLER
ALLEN
KING
JONES
FORD
SCOTT

```

6 rows selected.

```

SQL> SELECT *
  2 FROM (SELECT DENSE_RANK() OVER (ORDER BY HIREDATE ASC) AS RANK ,EMP.*
  3 FROM EMP)
  4 WHERE RANK = 1
  5 /

```

	RANK	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL
COMM	DEPTNO						
-----	-----	-----	-----	-----	-----	-----	-----
20	1	7369	SMITH	CLERK	7902	17-DEC-80	800

SQL> ED

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```
1  SELECT EMP.*,FLOOR(MONTHS_BETWEEN(CURRENT_DATE,HIREDATE) /12) AS NO_OF_EXP
2*  FROM EMP
SQL> /
```

DEPTNO	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM
		NO_OF_EXP					
20	7369	SMITH	CLERK	7902	17-DEC-80	800	
	43						
30	7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300
	43						
30	7521	WARD	SALESMAN	7698	22-FEB-81	1250	500
	43						
20	7566	JONES	MANAGER	7839	02-APR-81	2975	
	43						
30	7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400
	43						
30	7698	BLAKE	MANAGER	7839	01-MAY-81	2850	
	43						
10	7782	CLARK	MANAGER	7839	09-JUN-81	2450	
	43						
20	7788	SCOTT	ANALYST	7566	19-APR-87	3000	
	37						
10	7839	KING	PRESIDENT		17-NOV-81	5000	
	43						
30	7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0
	43						
20	7876	ADAMS	CLERK	7788	23-MAY-87	1100	
	37						
30	7900	JAMES	CLERK	7698	03-DEC-81	950	
	42						
20	7902	FORD	ANALYST	7566	03-DEC-81	3000	
	42						
10	7934	MILLER	CLERK	7782	23-JAN-82	1300	
	42						

14 rows selected.

```
SQL> SELECT UPPER(SUBSTR(ENAME,1,LENGTH(ENAME) * 0.5)) ||
LOWER(SUBSTR(ENAME,LENGTH(ENAME) * 0.5 + 1))
2  FROM EMP
3  WHERE DEPTNO IN (SELECT DEPTNO
4    FROM DEPT
5    WHERE DNAME IN ('RESEARCH','ACCOUNTING'))
6  /
```

UPPER(SUBSTR(ENAME,1

SMith
JOnes
CLark
SCott
KIng
ADams
FOrd
MILler

8 rows selected.

```

SQL> SELECT DNAME
2 FROM DEPT
3 WHERE DEPTNO IN (SELECT DEPTNO
4 FROM EMP
5 WHERE EMPNO IN (SELECT MGR
6 FROM EMP
7 GROUP BY MGR
8 HAVING COUNT(*) >=2))
9 /

```

DNAME

SALES
RESEARCH
ACCOUNTING

```

SQL> SELECT SUBSTR(ENAME,1,LENGTH(ENAME) -1) || TRANSLATE(SUBSTR(ENAME,-
1,1),'AEIOU','***')
2 AS NEW_ENAME,EMP.*
3 FROM EMP;

```

NEW_ENAME	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL
COMM DEPTNO						
SMITH	7369	SMITH	CLERK	7902	17-DEC-80	800
20						
ALLEN	7499	ALLEN	SALESMAN	7698	20-FEB-81	1600
300 30						
WARD	7521	WARD	SALESMAN	7698	22-FEB-81	1250
500 30						
JONES	7566	JONES	MANAGER	7839	02-APR-81	2975
20						
MARTIN	7654	MARTIN	SALESMAN	7698	28-SEP-81	1250
1400 30						
BLAK*	7698	BLAKE	MANAGER	7839	01-MAY-81	2850
30						
CLARK	7782	CLARK	MANAGER	7839	09-JUN-81	2450
10						
SCOTT	7788	SCOTT	ANALYST	7566	19-APR-87	3000
20						
KING	7839	KING	PRESIDENT		17-NOV-81	5000
10						
TURNER	7844	TURNER	SALESMAN	7698	08-SEP-81	1500
0 30						
ADAMS	7876	ADAMS	CLERK	7788	23-MAY-87	1100
20						
JAMES	7900	JAMES	CLERK	7698	03-DEC-81	950
30						
FORD	7902	FORD	ANALYST	7566	03-DEC-81	3000
20						
MILLER	7934	MILLER	CLERK	7782	23-JAN-82	1300
10						

14 rows selected.

```

SQL> SELECT *
      2 FROM EMP
      3 WHERE EMPNO NOT IN (SELECT MGR
      4                      FROM EMP
      5                      WHERE MGR IS NOT NULL)
      6 /

```

DEPTNO	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM
30	7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0
30	7521	WARD	SALESMAN	7698	22-FEB-81	1250	500
30	7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400
30	7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300
10	7934	MILLER	CLERK	7782	23-JAN-82	1300	
20	7369	SMITH	CLERK	7902	17-DEC-80	800	
20	7876	ADAMS	CLERK	7788	23-MAY-87	1100	
30	7900	JAMES	CLERK	7698	03-DEC-81	950	

8 rows selected.

```

SQL> SELECT COUNT(*)
      2 FROM DEPT
      3 WHERE DEPTNO NOT IN (SELECT DEPTNO
      4                      FROM EMP)
      5 /

```

COUNT(*)
1

```

SQL> SELECT E.ENAME,E.JOB,M.ENAME,M.JOB,MM.ENAME,SUBSTR(MD.DNAME,1,1), M.SAL *
12
      2 FROM EMP E JOIN EMP M
      3 ON E.MGR = M.EMPNO
      4 JOIN EMP MM
      5 ON M.MGR = MM.EMPNO
      6 JOIN DEPT MMD
      7 ON MM.DEPTNO = MMD.DEPTNO
      8 JOIN DEPT MD
      9 ON M.DEPTNO = MD.DEPTNO
     10 WHERE SUBSTR(TO_CHAR(E.HIREDATE,'FMDAY'),1,1) IN ('S','T','M')
     11 AND E.JOB NOT IN ('CLERK','ANALYST')
     12 AND M.SAL > (SELECT SAL
     13              FROM (SELECT DENSE_RANK() OVER (ORDER BY SAL ASC) AS RANK,SAL
     14                   FROM EMP)
     15              WHERE RANK = 3)
     16 AND LENGTH(MMD.LOC) < 12
     17 /

```

ENAME	JOB	ENAME	JOB	ENAME	S	M.SAL*12
WARD	SALESMAN	BLAKE	MANAGER	KING	S	34200
MARTIN	SALESMAN	BLAKE	MANAGER	KING	S	34200
TURNER	SALESMAN	BLAKE	MANAGER	KING	S	34200

```

SQL> SELECT E.EMPNO,E.ENAME,
  2   M.ENAME,
  3   MD.DNAME,SUBSTR(MMD.LOC,1,2)
  4   FROM EMP E JOIN EMP M
  5   ON E.MGR = M.EMPNO
  6   JOIN EMP MM
  7   ON M.MGR = MM.EMPNO
  8   JOIN DEPT MD
  9   ON M.DEPTNO = MD.DEPTNO
10   JOIN DEPT MMD
11   ON MM.DEPTNO = MMD.DEPTNO
12   WHERE E.JOB IN ('ANALYST','SALESMAN','CLERK')
13   AND E.SAL < (SELECT SAL
14   FROM (SELECT DENSE_RANK() OVER (ORDER BY SAL DESC) AS RANK,SAL
15   FROM EMP)
16   WHERE RANK = 8)
17   AND M.HIREDATE > (SELECT HIREDATE
18   FROM EMP
19   WHERE ENAME='SMITH')
20   AND (INSTR(MM.ENAME,'A',1,1) > 0
21   OR INSTR(MM.ENAME,'K',1,1) > 0
22   OR INSTR(MM.ENAME,'M',1,1) > 0
23   OR INSTR(MM.ENAME,'O',1,1) > 0)
24   AND MMD.LOC IN ('NEW YORK','DALLAS','CHICAGO')
25  /

```

EMPNO	ENAME	ENAME	DNAME	SU
7369	SMITH	FORD	RESEARCH	DA
7521	WARD	BLAKE	SALES	NE
7654	MARTIN	BLAKE	SALES	NE
7876	ADAMS	SCOTT	RESEARCH	DA
7900	JAMES	BLAKE	SALES	NE

```

SQL> SELECT ENAME,JOB,SAL + 1000 AS BONUS,COMM - 20 AS PENALTY
  2   FROM EMP
  3   WHERE (SAL > 1000 OR SAL < 900)
  4   AND JOB IN ('SALESMAN','CLERK','ANALYST')
  5   AND SUBSTR(SAL,1,1) IN (3,2,1,5)
  6   AND SUBSTR(SAL,-1,1) IN (0)
  7   AND TO_CHAR(HIREDATE,'FMDAY') NOT IN ('FRIDAY')
  8  /

```

ENAME	JOB	BONUS	PENALTY
WARD	SALESMAN	2250	480
MARTIN	SALESMAN	2250	1380
SCOTT	ANALYST	4000	
TURNER	SALESMAN	2500	-20
ADAMS	CLERK	2100	
FORD	ANALYST	4000	
MILLER	CLERK	2300	

7 rows selected.

```

SQL> SELECT E.ENAME,E.JOB,E.SAL - 100 AS PENALTY ,E.COMM,E.EMPNO,D.LOC
  2 FROM EMP E JOIN DEPT D
  3 ON E.DEPTNO = D.DEPTNO
  4 WHERE E.JOB NOT IN ('PRESIDENT','CLERK')
  5 AND TO_CHAR(E.HIREDATE,'YY') IN (SELECT TO_CHAR(HIREDATE,'YY')
  6                                FROM EMP
  7                                WHERE ENAME IN ('ALLEN','JONES'))
  8 AND E.MGR IN (SELECT EMPNO
  9                FROM EMP
 10                WHERE ENAME IN ('KING','BLAKE'))
 11 AND E.SAL < ( SELECT SAL
 12                FROM (SELECT ROWNUM AS SLNO,SAL
 13                        FROM (SELECT DISTINCT SAL
 14                              FROM EMP
 15                              ORDER BY SAL DESC))
 16                WHERE SLNO = 10)
 17 AND LENGTH(TO_CHAR(E.HIREDATE,'FMDAY')) BETWEEN 5 AND 9
 18 AND LENGTH(E.ENAME) < 9
 19 /

```

no rows selected

```

SQL> SELECT DNAME
  2 FROM DEPT
  3 WHERE DEPTNO IN (SELECT DEPTNO
  4                  FROM EMP
  5                  GROUP BY DEPTNO
  6                  HAVING COUNT(*) BETWEEN 3 AND 5)
  7 /

```

DNAME

RESEARCH

ACCOUNTING


```
SQL> ED
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```

1  SELECT EMP.*,DECODE(JOB,
2      'CLERK', 1,
3      'MANAGER', 3,
4      'PRESIDENT', 5,
5      2) AS "JOB-CLASS"
6* FROM EMP
SQL> /
```

	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM
	DEPTNO	JOB-CLASS					
		7369 SMITH	CLERK	7902	17-DEC-80	800	
20	1						
		7499 ALLEN	SALESMAN	7698	20-FEB-81	1600	300
30	2						
		7521 WARD	SALESMAN	7698	22-FEB-81	1250	500
30	2						
		7566 JONES	MANAGER	7839	02-APR-81	2975	
20	3						
		7654 MARTIN	SALESMAN	7698	28-SEP-81	1250	1400
30	2						
		7698 BLAKE	MANAGER	7839	01-MAY-81	2850	
30	3						
		7782 CLARK	MANAGER	7839	09-JUN-81	2450	
10	3						
		7788 SCOTT	ANALYST	7566	19-APR-87	3000	
20	2						
		7839 KING	PRESIDENT		17-NOV-81	5000	
10	5						
		7844 TURNER	SALESMAN	7698	08-SEP-81	1500	0
30	2						
		7876 ADAMS	CLERK	7788	23-MAY-87	1100	
20	1						
		7900 JAMES	CLERK	7698	03-DEC-81	950	
30	1						
		7902 FORD	ANALYST	7566	03-DEC-81	3000	
20	2						
		7934 MILLER	CLERK	7782	23-JAN-82	1300	
10	1						

14 rows selected.

```
SQL> SELECT E.ENAME,M.ENAME,MMD.DNAME,MMD.LOC
2  FROM EMP E JOIN EMP M
3  ON E.MGR = M.EMPNO
4  JOIN EMP MM
5  ON M.MGR = MM.EMPNO
6  JOIN DEPT MMD
7  ON MM.DEPTNO = MMD.DEPTNO
8  WHERE E.COMM IS NOT NULL
9  AND E.JOB IN ('SALESMAN','CLERK')
10 AND M.HIREDATE < (SELECT HIREDATE
11     FROM EMP
12     WHERE ENAME='ADAMS')
13 AND LENGTH(MM.ENAME) BETWEEN 3 AND 9
14 AND LENGTH(MMD.DNAME) BETWEEN 3 AND 9
15 /
```

no rows selected

```
SQL> SELECT COUNT(*)
  2 FROM EMP E JOIN EMP M
  3 ON E.MGR = M.EMPNO
  4 JOIN EMP MM
  5 ON M.MGR = MM.EMPNO
  6 WHERE M.ENAME='BLAKE' AND MM.ENAME='KING'
  7 /
```

```
COUNT(*)
-----
5
```

```
SQL> SELECT E.ENAME,M.ENAME,MM.ENAME,SUBSTR(ED.DNAME,1,3) AS
ED,SUBSTR(MD.DNAME,1,3) AS MD,SUBSTR(MMD.DNAME,1,3) AS MMD,
  2 LOWER(SUBSTR(ED.LOC,1,3)) AS ELOC,LOWER(SUBSTR(MD.LOC,1,3)) AS
MDLOC,LOWER(SUBSTR(MMD.LOC,1,3)) AS MMLOC,TO_CHAR(E.HIREDATE,'HH24') AS TIME
  3 FROM EMP E JOIN EMP M
  4 ON E.MGR = M.EMPNO
  5 JOIN EMP MM
  6 ON M.MGR = MM.EMPNO
  7 JOIN DEPT ED
  8 ON E.DEPTNO = ED.DEPTNO
  9 JOIN DEPT MD
 10 ON M.DEPTNO = MD.DEPTNO
 11 JOIN DEPT MMD
 12 ON MM.DEPTNO = MMD.DEPTNO
 13 WHERE E.SAL IN (SELECT SAL
 14 FROM (SELECT DENSE_RANK() OVER (ORDER BY SAL DESC) AS RANK,SAL
 15 FROM EMP)
 16 WHERE RANK IN (2,4,10))
 17 AND INSTR(E.ENAME,'P',1,2) = 0
 18 /
```

ENAME	ENAME	ENAME	ED	MD	MMD	ELO	MDL	MML	TI
FORD	JONES	KING	RES	RES	ACC	dal	dal	new	00
SCOTT	JONES	KING	RES	RES	ACC	dal	dal	new	00
ADAMS	SCOTT	JONES	RES	RES	RES	dal	dal	dal	00

```
SQL> SPOOL OFF;
```