**Task 1**

Find those employees whose salary is less than average salary.

select \* from emp

where sal<(select avg(sal) from emp)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **EMPNO** | **ENAME** | **JOB** | **MGR** | **HIREDATE** | **SAL** | **COMM** | **DEPTNO** |
| 7369 | SMITH | CLERK | 7902 | 12/17/1980 | 800 | - | 20 |
| 7499 | ALLEN | SALESMAN | 7698 | 02/20/1981 | 1600 | 300 | 30 |
| 7521 | WARD | SALESMAN | 7698 | 02/22/1981 | 1250 | 500 | 30 |
| 7654 | MARTIN | SALESMAN | 7698 | 09/28/1981 | 1250 | 1400 | 30 |
| 7844 | TURNER | SALESMAN | 7698 | 09/08/1981 | 1500 | 0 | 30 |
| 7876 | ADAMS | CLERK | 7788 | 01/12/1983 | 1100 | - | 20 |
| 7900 | JAMES | CLERK | 7698 | 12/03/1981 | 950 | - | 30 |

**Task 2**

Find THE 3rd minimum Salary.

SELECT \* FROM Emp Emp1

WHERE 2 = (

SELECT COUNT(DISTINCT Emp2.Sal)

FROM Emp Emp2

WHERE Emp2.Sal < Emp1.Sal);

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **EMPNO** | **ENAME** | **JOB** | **MGR** | **HIREDATE** | **SAL** | **COMM** | **DEPTNO** |
| 7876 | ADAMS | CLERK | 7788 | 01/12/1983 | 1100 | - | 20 |

**Task 3**

Find The Union Of Department Number 10 And Department Number 30.

SELECT \* FROM Emp

where deptno=10

union

SELECT \* FROM Emp

where deptno=20

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **EMPNO** | **ENAME** | **JOB** | **MGR** | **HIREDATE** | **SAL** | **COMM** | **DEPTNO** |
| 7369 | SMITH | CLERK | 7902 | 12/17/1980 | 800 | - | 20 |
| 7566 | JONES | MANAGER | 7839 | 04/02/1981 | 2975 | - | 20 |
| 7782 | CLARK | MANAGER | 7839 | 06/09/1981 | 2450 | - | 10 |
| 7788 | SCOTT | ANALYST | 7566 | 12/09/1982 | 3000 | - | 20 |
| 7839 | KING | PRESIDENT | - | 11/17/1981 | 5000 | - | 10 |
| 7876 | ADAMS | CLERK | 7788 | 01/12/1983 | 1100 | - | 20 |
| 7902 | FORD | ANALYST | 7566 | 12/03/1981 | 3000 | - | 20 |

**Task 4**

Find the 2nd maximum salary.

SELECT \* FROM Emp Emp1

WHERE 1 = (

SELECT COUNT(DISTINCT Emp2.Sal)

FROM Emp Emp2

WHERE Emp2.Sal > Emp1.Sal);

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **EMPNO** | **ENAME** | **JOB** | **MGR** | **HIREDATE** | **SAL** | **COMM** | **DEPTNO** |
| 7788 | SCOTT | ANALYST | 7566 | 12/09/1982 | 3000 | - | 20 |
| 7902 | FORD | ANALYST | 7566 | 12/03/1981 | 3000 | - | 20 |

**Task 5**

Find All Employees With Either The Same job As 'Jones' Or Salary Greater Than Or Equal To Ford, Order By Job And Salary

SELECT \* FROM emp

where job like 'JONES' or sal >=(select sal from emp where ename='FORD')

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **EMPNO** | **ENAME** | **JOB** | **MGR** | **HIREDATE** | **SAL** | **COMM** | **DEPTNO** |
| 7788 | SCOTT | ANALYST | 7566 | 12/09/1982 | 3000 | - | 20 |
| 7839 | KING | PRESIDENT | - | 11/17/1981 | 5000 | - | 10 |
| 7902 | FORD | ANALYST | 7566 | 12/03/1981 | 3000 | - | 20 |

**Task 6**

Find the least experienced employee.

SELECT \* FROM Emp Emp1

WHERE hiredate = (select max(hiredate) from emp)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **EMPNO** | **ENAME** | **JOB** | **MGR** | **HIREDATE** | **SAL** | **COMM** | **DEPTNO** |
| 7876 | ADAMS | CLERK | 7788 | 01/12/1983 | 1100 | - | 20 |

**Task 7**

Count all employees who were hired before 22-mar-83

SELECT count(\*) FROM Emp

WHERE hiredate < '3/22/1983'

|  |
| --- |
| **COUNT(\*)** |
| 13 |

**Task 8**

Find Average And Sum Of The Salaries Of Each Job Excluding The Job Of Smith.

SELECT job,avg(sal), sum(sal) FROM Emp

where ename not like 'SMITH'

group by job

|  |  |  |
| --- | --- | --- |
| **JOB** | **AVG(SAL)** | **SUM(SAL)** |
| SALESMAN | 1400 | 5600 |
| ANALYST | 3000 | 6000 |
| CLERK | 1025 | 2050 |
| MANAGER | 2758.33333333333333333333333333333333333 | 8275 |
| PRESIDENT | 5000 | 5000 |

**Task 9**

List those employees who joined before 1985 working under the mgr whose number

is starting with 7 but Should not have a 9

SELECT \* FROM emp

WHERE hiredate <'1/1/1985'

and to\_char(mgr) like '7%'

and to\_char(mgr) not like '9\_\_\_'

and to\_char(mgr) not like '\_9\_\_'

and to\_char(mgr) not like '\_\_9\_'

and to\_char(mgr) not like '\_\_\_9'

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **EMPNO** | **ENAME** | **JOB** | **MGR** | **HIREDATE** | **SAL** | **COMM** | **DEPTNO** |
| 7788 | SCOTT | ANALYST | 7566 | 12/09/1982 | 3000 | - | 20 |
| 7876 | ADAMS | CLERK | 7788 | 01/12/1983 | 1100 | - | 20 |
| 7902 | FORD | ANALYST | 7566 | 12/03/1981 | 3000 | - | 20 |

**Task 10**

Find All Employees In Department Number 20 Whose Jobs Are The Same As The Employees Job In The Sales Department.

SELECT \* FROM emp

where deptno=20

and job in (select job from emp where deptno=(select deptno from dept where dname like 'SALES') )

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **EMPNO** | **ENAME** | **JOB** | **MGR** | **HIREDATE** | **SAL** | **COMM** | **DEPTNO** |
| 7369 | SMITH | CLERK | 7902 | 12/17/1980 | 800 | - | 20 |
| 7566 | JONES | MANAGER | 7839 | 04/02/1981 | 2975 | - | 20 |
| 7876 | ADAMS | CLERK | 7788 | 01/12/1983 | 1100 | - | 20 |

**Task 11**

Find All Employees Who Earn More Than The Average Salary Of Employees In Their Own Department And Sort By Department No.

select \* from emp where sal in(select avg(sal) from emp e  group by job )

ORDER BY deptno

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **EMPNO** | **ENAME** | **JOB** | **MGR** | **HIREDATE** | **SAL** | **COMM** | **DEPTNO** |
| 7839 | KING | PRESIDENT | - | 11/17/1981 | 5000 | - | 10 |
| 7902 | FORD | ANALYST | 7566 | 12/03/1981 | 3000 | - | 20 |
| 7788 | SCOTT | ANALYST | 7566 | 12/09/1982 | 3000 | - | 20 |
| 7900 | JAMES | CLERK | 7698 | 12/03/1981 | 950 | - | 30 |

**Task 12**

Find All Employees Who Earn More Than Any Employee In Department 30.

select \* from emp

where sal > any(select sal from emp where deptno=30)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **EMPNO** | **ENAME** | **JOB** | **MGR** | **HIREDATE** | **SAL** | **COMM** | **DEPTNO** |
| 7839 | KING | PRESIDENT | - | 11/17/1981 | 5000 | - | 10 |
| 7788 | SCOTT | ANALYST | 7566 | 12/09/1982 | 3000 | - | 20 |
| 7902 | FORD | ANALYST | 7566 | 12/03/1981 | 3000 | - | 20 |
| 7566 | JONES | MANAGER | 7839 | 04/02/1981 | 2975 | - | 20 |
| 7698 | BLAKE | MANAGER | 7839 | 05/01/1981 | 2850 | - | 30 |
| 7782 | CLARK | MANAGER | 7839 | 06/09/1981 | 2450 | - | 10 |
| 7499 | ALLEN | SALESMAN | 7698 | 02/20/1981 | 1600 | 300 | 30 |
| 7844 | TURNER | SALESMAN | 7698 | 09/08/1981 | 1500 | 0 | 30 |
| 7521 | WARD | SALESMAN | 7698 | 02/22/1981 | 1250 | 500 | 30 |
| 7654 | MARTIN | SALESMAN | 7698 | 09/28/1981 | 1250 | 1400 | 30 |
| 7876 | ADAMS | CLERK | 7788 | 01/12/1983 | 1100 | - | 20 |

**Task 13**

Get the minimum salaries of each department using subquery.

select \* from emp

where sal in(select min(sal) from emp group by deptno )

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **EMPNO** | **ENAME** | **JOB** | **MGR** | **HIREDATE** | **SAL** | **COMM** | **DEPTNO** |
| 7369 | SMITH | CLERK | 7902 | 12/17/1980 | 800 | - | 20 |
| 7782 | CLARK | MANAGER | 7839 | 06/09/1981 | 2450 | - | 10 |
| 7900 | JAMES | CLERK | 7698 | 12/03/1981 | 950 | - | 30 |

**Task 14**

Get the maximum, minimum, average and sum of salaries of each employee but make sure to use subquery for each operation.

SELECT MAX(SAL) "max sal",MIN(SAL) "min sal",AVG(SAL) "avg sal",SUM(SAL) "sum" from emp

where SAL IN (SELECT SAL FROM EMP)

group by DEPTNO

|  |  |  |  |
| --- | --- | --- | --- |
| **max sal** | **min sal** | **avg sal** | **sum** |
| 2850 | 950 | 1566.66666666666666666666666666666666667 | 9400 |
| 5000 | 2450 | 3725 | 7450 |
| 3000 | 800 | 2175 | 10875 |

**Task 15**

List the mgrs who are senior to KING and junior to SMITH.

select \* from emp where

mgr is not NULL and empno in

(select mgr from emp

where hiredate<(select hiredate from emp where ename = 'KING' )

and hiredate > (select hiredate from emp where ename = 'SMITH'))

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **EMPNO** | **ENAME** | **JOB** | **MGR** | **HIREDATE** | **SAL** | **COMM** | **DEPTNO** |
| 7698 | BLAKE | MANAGER | 7839 | 05/01/1981 | 2850 | - | 30 |

**Task 16**

Write a query in SQL to display the name of manager who is supervising 2 or more employees.

select \* from emp where empno in (select mgr from emp group by mgr having

count(\*) >=2) ;

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **EMPNO** | **ENAME** | **JOB** | **MGR** | **HIREDATE** | **SAL** | **COMM** | **DEPTNO** |
| 7566 | JONES | MANAGER | 7839 | 04/02/1981 | 2975 | - | 20 |
| 7698 | BLAKE | MANAGER | 7839 | 05/01/1981 | 2850 | - | 30 |
| 7839 | KING | PRESIDENT | - | 11/17/1981 | 5000 | - | 10 |

**Task 17**

Find the 2nd maximum salary of each department.

select deptno,max(sal) from emp

where sal<(select max(sal) from emp)

group by deptno

|  |  |
| --- | --- |
| **DEPTNO** | **MAX(SAL)** |
| 30 | 2850 |
| 10 | 2450 |
| 20 | 3000 |

**Task 18**

Display the employee name, department number, and job title for all employees whose department location is New York.

SELECT e.ename, d.deptno, e.job

FROM emp e, dept d

WHERE e.deptno = d.deptno and d.loc='NEW YORK'

|  |  |  |
| --- | --- | --- |
| **ENAME** | **DEPTNO** | **JOB** |
| CLARK | 10 | MANAGER |
| KING | 10 | PRESIDENT |

**Task 19**

Find the 2nd minimum salary of each job

select deptno,min(sal) as "2nd min sal" from emp

where sal>(select min(sal) from emp)

group by deptno

|  |  |
| --- | --- |
| **DEPTNO** | **2nd min sal** |
| 30 | 950 |
| 10 | 2450 |
| 20 | 1100 |

**Task 20**

The following query throws an error. Choose the correct reason for the error as given in the options.

SELECT empno, ename

FROM emp

WHERE comm= (SELECT min(comm)

FROM emp

GROUP BY deptno);

1. The GROUP BY clause is not required in the sub-query
2. A function cannot be used in a sub-query SELECT statement
3. The single row sub-query gives multiple records
4. The use of "=" operator is invalid; an IN operator will work correctly

**ANS: D**