

Laboratory Assignments

Session: 2022-23

MCKVIE/CSE(DS)/PC-CS692

Assignment-4

Following SQL (DML) queries are based on Emp and Dept table: [Use GROUP BY, HAVING, ORDER BY and different inbuilt functions]

1. Display empno, ename, sal in ascending order of salary from emp table.

select empno, ename, sal from emp order by sal;

EMPNO	ENAME	SAL
7369	SMITH	800
7900	JAMES	950
7876	ADAMS	1100
7521	WARD	1250
7654	MARTIN	1250
7934	MILLER	1300
7844	TURNER	1500
7499	ALLEN	1600
7782	CLARK	2450
7698	BLAKE	2850
7566	JONES	2975
EMPNO	ENAME	SAL
7788	SC0TT	3000
7902	FORD	3000
7839	KING	5000
14 rows sel	Lected.	

2. List ename, sal, job and deptno in descending order of deptno and salary.

select ename, sal, job, deptno from emp order by deptno desc, sal desc;

	SAL	J0B	
BLAKE		MANAGER	30
ALLEN	1600	SALESMAN	30
TURNER	1500	SALESMAN	30
WARD	1250	SALESMAN	30
MARTIN	1250	SALESMAN	30
JAMES	950	CLERK	30
FORD	3000	ANALYST	20
SC0TT	3000	ANALYST	20
JONES	2975	MANAGER	20
ADAMS	1100	CLERK	20
SMITH	800	CLERK	20
ENAME	SAL	J0B	DEPTNO
KING		PRESIDENT	
CLARK	2450	MANAGER	10
MILLER	1300	CLERK	10
14 rows	selected.		

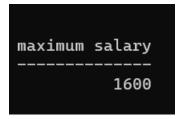
3. List ename, sal, PF, HRA, DA and GROSS in ascending order of Gross. [Here PF is 12% of sal, HRA is 15% of sal, DA is 90% of sal and GROSS is sum of sal, PF, HRA, DA]

select ename,sal,pf,hra,da,sal+pf+da+hra GROSS from (select ename,sal,0.12*sal pf,0.15*sal hra,0.9*sal da from emp) order by GROSS;

ENAME	SAL	PF	HRA	DA	GROSS
SMITH	 800	 96	120	 720	1736
JAMES	950	114	142.5	855	2061.5
ADAMS	1100	132	165	990	2387
WARD	1250	150	187.5	1125	2712.5
MARTIN	1250	150	187.5	1125	2712.5
MILLER	1300	156	195	1170	2821
TURNER	1500	180	225	1350	3255
ALLEN	1600	192	240	1440	3472
CLARK	2450	294	367.5	2205	5316.5
BLAKE	2850	342	427.5	2565	6184.5
JONES	2975	357	446.25	2677.5	6455.75
ENAME	SAL	PF	HRA	DA	GROSS
SCOTT	3000	 360	450	2700	6510
FORD	3000	360	450	2700	6510
KING	5000	600	750	4500	10850
14 rows sele	ected.				

4. List the maximum salary of employee working as a salesman.

select max(sal) "maximum salary" from emp where job='SALESMAN';



5. List the average salary and no of employees working in dept 20.

select avg(sal) "average sal",count(empno) "empno" from emp where deptno=20;

average sal	empno
2175	5

6. Display deptno, no. of employees in each department.

select deptno,count(empno) from emp group by deptno;

DEPTNO	COUNT(EMPNO)
30	6
20	5
10	3

7. List deptno, total salary payable in each department.

select deptno,sum(sal) from emp group by deptno;

DEPTNO	SUM(SAL)
30	9400
20	10875
10	8750

8. List jobs and the no of employees in each job in descending order of no. of employees.

select job, count(empno) from emp group by job order by count(empno) desc;

JOB	COUNT(EMPNO)
CLERK	4
SALESMAN	4
MANAGER	3
ANALYST	2
PRESIDENT	1

9. List total, maximum, minimum and average salary of employee's job wise.

select job,sum(sal) "total sal",max(sal) "max sal",min(sal) "min sal",avg(sal) "avg sal" from emp group by job;

JOB	total sal	max sal	min sal	avg sal
CLERK	4150	1300	800	1037.5
SALESMAN	5600	1600	1250	1400
PRESIDENT	5000	5000	5000	5000
MANAGER	8275	2975	2450	2758.33333
ANALYST	6000	3000	3000	3000

10. List the average salary for each job excluding manager.

select job,avg(sal) from emp where job!='MANAGER' group by job;

JOB	AVG(SAL)
CLERK	1037.5
SALESMAN	1400
PRESIDENT	5000
ANALYST	3000

11. List total, maximum, minimum and average salary of employee's job-wise for dept no. 20 only.

SELECT sum(sal) sum_sal,max(sal) max_sal,min(sal) min_sal,avg(sal) avg_sal from emp where deptno=20 group by job;

SUM_SAL	MAX_SAL	MIN_SAL	AVG_SAL
1900	1100	800	950
2975	2975	2975	2975
6000	3000	3000	3000

12. List average monthly salary for each job within department.

select job,deptno,avg(sal) from emp group by deptno,job;

J0B	DEPTNO	AVG(SAL)
CLERK	20	950
SALESMAN	30	1400
MANAGER	20	2975
CLERK	30	950
PRESIDENT	10	5000
MANAGER	30	2850
CLERK	10	1300
MANAGER	10	2450
ANALYST	20	3000
9 rows select	ed.	

13. List average salary for all departments where more than 5 people are working.

select deptno,count(empno) "no of employees",avg(sal) from emp group by deptno having count(empno)>5;

DEPTNO	no of employees	AVG(SAL)
30	6	1566.66667

14. List jobs of all employees where maximum salary is greater than or equal to 5000.

select job,max(sal) from emp group by job having max(sal)>=5000;

JOB	MAX(SAL)
PRESIDENT	5000

15. Display total, maximum, minimum and average salaries of employee's job-wise for department 20 and list only those rows having average salary greater than 1000.

SELECT job, sum(sal) sum_sal,max(sal) max_sal,min(sal) min_sal,avg(sal) avg_sal from emp where deptno=20 group by job having avg(sal)>1000;

JOB	SUM_SAL	MAX_SAL	MIN_SAL	AVG_SAL
MANAGER	2975	2975	2975	2975
ANALYST	6000	3000	3000	3000

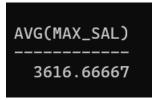
16. Display total, maximum, minimum and average salaries of employee's job-wise for department 20 and list only those rows having average salary greater than 1000 and arrange the above output in descending order of total salary.

SELECT job, sum(sal) sum_sal,max(sal) max_sal,min(sal) min_sal,avg(sal) avg_sal from emp where deptno=20 group by job having avg(sal)>1000 order by sum(sal) desc;

J0B	SUM_SAL	MAX_SAL	MIN_SAL	AVG_SAL
ANALYST	6000	3000	3000	3000
MANAGER	2975	2975	2975	2975

17. Calculates the average of the maximum salaries of all the departments from emp table.

select avg(max_sal) from (select max(sal) max_sal from emp group by deptno);



18. Display the standard deviation (sd) of salary for each job type having sd >0 from emp table.

select job, stddev(sal) from emp group by job having stddev(sal)>0;

JOB	STDDEV(SAL)
CLERK	213.600094
SALESMAN	177.951304
MANAGER	274.241378

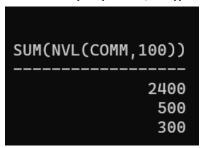
19. Count no. of employees whose commission is greater than 300.

select count(empno) from emp where comm>300;



20. Display sum of commission for each department after substituting 100 in commission if it is NULL and order the result in descending order of department.

select sum(nvl(comm,100)) from emp group by deptno order by deptno desc;



21. Display no. of manager present in employee table.

select count(job) from emp where job='MANAGER';



22. List of employee names and commissions, substituting "Not Applicable" if the employee receives no commission for those whose name has contained a "M" and order this result as descending order of name.

SELECT ename,nvl(to_char(comm),'Not Applicable') from emp where ename like '%M%' order by ename desc;

23. List names, salary and commission of employees whose name has contained a "M" when the income of some employees is made up of salary plus commission, or just salary, depending on whether the comm column of employees is null or not and order the result as ascending order of name.

select ename,sal,nvl2(comm,comm+sal,sal) from emp where ename like '%M%' order by ename;

ENAME	SAL	NVL2(COMM,COMM+SAL,SAL)		
ADAMS	1100	1100		
JAMES	950	950		
MARTIN	1250	2650		
MILLER	1300	1300		
SMITH	800	800		

24. Display the name of the employee where first character of each name is capital one.

select ename from emp where substr(ename,1,1) like upper(substr(ename,1,1));



25. Select the substring of 3 characters long starting form 2nd character of job type from emp table when job is 'SALESMAN'.

select distinct(substr(job,2,4)) FROM emp where job like 'SALESMAN';

