

## Assignment-4

Data Manipulation (DML)-II I: Use of GROUP BY, HAVING, ORDER BY and different in-built functions:

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

```
SQL> 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	SCOTT	3000
7902	FORD	3000
7839	KING	5000

14 rows selected.

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

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

ENAME	SAL	JOB	DEPTNO
BLAKE	2850	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
SCOTT	3000	ANALYST	20
JONES	2975	MANAGER	20
ADAMS	1100	CLERK	20
SMITH	800	CLERK	20

  

ENAME	SAL	JOB	DEPTNO
KING	5000	PRESIDENT	10
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]

```
SQL> select ename,sal,sal*0.12 as PF,sal*0.15 as HRA,sal*0.90 as DA,
2 sal+(sal*0.12)+(sal*0.90)+(sal*0.15) as GROSS from emp;
```

ENAME	SAL	PF	HRA	DA	GROSS
SMITH	800	96	120	720	1736
ALLEN	1600	192	240	1440	3472
WARD	1250	150	187.5	1125	2712.5
JONES	2975	357	446.25	2677.5	6455.75
MARTIN	1250	150	187.5	1125	2712.5
BLAKE	2850	342	427.5	2565	6184.5
CLARK	2450	294	367.5	2205	5316.5
SCOTT	3000	360	450	2700	6510
KING	5000	600	750	4500	10850
TURNER	1500	180	225	1350	3255
ADAMS	1100	132	165	990	2387

ENAME	SAL	PF	HRA	DA	GROSS
JAMES	950	114	142.5	855	2061.5
FORD	3000	360	450	2700	6510
MILLER	1300	156	195	1170	2821

14 rows selected.

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

```
SQL> select MAX(sal) from emp group by job having job like 'SALESMAN';
```

MAX(SAL)
1600

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

```
SQL> select avg(sal) from emp group by deptno having deptno =20;
```

AVG(SAL)
2175

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

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

DEPTNO	COUNT(EMPNO)
20	5
30	6
10	3

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

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

DEPTNO	SUM(SAL)
20	10875
30	9400
10	8750

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

```
SQL> select job,count(empno) as emp_no from emp group by job order by emp_no desc;
```

JOB	EMP_NO
CLERK	4
SALESMAN	4
MANAGER	3
ANALYST	2
PRESIDENT	1

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

```
SQL> select job,sum(sal),max(sal),min(sal),avg(sal) from emp group by job;
```

JOB	SUM(SAL)	MAX(SAL)	MIN(SAL)	AVG(SAL)
CLERK	4150	1300	800	1037.5
SALESMAN	5600	1600	1250	1400
MANAGER	8275	2975	2450	2758.33333
ANALYST	6000	3000	3000	3000
PRESIDENT	5000	5000	5000	5000

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

```
SQL> select job,avg(sal) from emp group by job having job not like 'MANAGER';
```

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

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

```
SQL> select max(sal),min(sal),avg(sal) from emp where deptno=20 group by job;
```

MAX(SAL)	MIN(SAL)	AVG(SAL)
1100	800	950
2975	2975	2975
3000	3000	3000

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

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

AVG(SAL)
950
1400
2975
2850
2450
3000
5000
950
1300

9 rows selected.

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

```
SQL> select avg(sal) from emp group by deptno having count(empno)>=5;
```

AVG(SAL)
2175
1566.66667

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

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

JOB
PRESIDENT

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.

```
SQL> select sum(sal),max(sal),min(sal),avg(sal) from emp where deptno = 20 group by  
2 job having avg(sal)>1000;
```

SUM(SAL)	MAX(SAL)	MIN(SAL)	AVG(SAL)
2975	2975	2975	2975
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.

```
SQL> select sum(sal) as total_sal,max(sal),min(sal),avg(sal) from emp where deptno = 20 group by  
2 job having avg(sal)>1000  
3 order by total_sal desc;
```

TOTAL_SAL	MAX(SAL)	MIN(SAL)	AVG(SAL)
6000	3000	3000	3000
2975	2975	2975	2975

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

```
SQL> select avg(max(sal)) from emp group by deptno;

AVG(MAX(SAL))
-----
3616.66667
```

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

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

STDDEV(SAL)
-----
213.600094
177.951304
274.241378
```

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

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

COUNT(EMPNO)
-----
2
```

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.

```
SQL> select sum(NVL(comm,100)) from emp group by deptno order by deptno desc;

SUM(NVL(COMM,100))
-----
2400
500
300
```

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

```
SQL> select count(empno) from emp group by job having job LIKE 'MANAGER';

COUNT(EMPNO)
-----
3
```

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.

```
SQL> select ename,sal,nvl(to_char(comm),'Not_Applicable') from emp where ename like
2 '%M%' order by ename desc;

ENAME          SAL  NVL(TO_CHAR(COMM), 'NOT_APPLICABLE')
-----
SMITH          800  Not_Applicable
MILLER        1300  Not_Applicable
MARTIN        1250  1400
JAMES          950  Not_Applicable
ADAMS         1100  Not_Applicable
```

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.

```
SQL> select ename,sal,comm,nvl2(comm,sal+comm,sal) Total from emp where ename like
2  '%M%' order by ename;
```

ENAME	SAL	COMM	TOTAL
ADAMS	1100		1100
JAMES	950		950
MARTIN	1250	1400	2650
MILLER	1300		1300
SMITH	800		800

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

```
SQL> select initcap(ename) from emp;
```

```
INITCAP(EN
```

```
-----
Smith
Allen
Ward
Jones
Martin
Blake
Clark
Scott
King
Turner
Adams
```

```
INITCAP(EN
```

```
-----
James
Ford
Miller
```

```
14 rows selected.
```

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

```
SQL> select substr(job,2,3) from emp group by job having job like 'SALESMAN';
```

```
SUBSTR(JOB,2
```

```
-----
ALE
```