EXPT NO:-7

ORDER BY,GROUP BY AND HAVING CLAUSE

AIM:-Implementation of order by,group by and having clause

1. For each department, retrieve the department number, the number of employees in the department.

```
select Dno, count(*)
from EMPLOYEE
group by Dno;
```

2. For each department, retrieve the department name, the number of employees in the department, and their average salary.

```
select Dname, count(Ssn), avg(Salary)
from EMPLOYEE , DEPARTMENT
where Dno = Dnumber
group by Dname;
```

3. For each project, retrieve the project number, the project name, and the number of employees who work on that project.

```
desc PROJECT;
desc WORKS_ON;

select Pnumber, Pname, count(Essn)
from PROJECT, WORKS_ON
where Pnumber = Pno
group by Pno;
```

4. For each project on which more than two employees work, retrieve the project number, the project name, and the number of employees who work on the project.

```
select Pnumber, Pname, count(Essn)
from PROJECT, WORKS_ON where Pnumber = Pno
group by Pno
having count(Essn) > 2;
```

5. For each project, retrieve the project number, the project name, and the number of employees from department 5 who work on the project.

```
select Pnumber, Pname, count(Essn)
from PROJECT, WORKS_ON where Pnumber = Pno AND Dnum = 5
group by Pno;
```

6. For each department that has more than two employees, retrieve the department number and the number of its employees who are making more than $40,000.

```
select Dno, count(Ssn)
from EMPLOYEE
where Salary < 40000
group by Dno having count(Ssn) > 2;
```

7. For each department that has more than two employees, retrieve the department number , department name and the number of its employees who are making more than $40,000.

```
select Dno, Dname, count(Ssn)
from EMPLOYEE, DEPARTMENT
where Dno = Dnumber AND  Salary < 40000
group by Dno
having count(Ssn) > 2;
```

8. List the total salary paid to employees in each department, but only for departments with a total salary greater than $100000.

```
SELECT Dname, SUM(Salary) as total_salary
FROM DEPARTMENT , EMPLOYEE
where Dnumber = Dno
GROUP BY Dname HAVING total_salary > 100000;
```

9. List all employees name and salary in the Research department, ordered by their last name

```
select Lname, Dname, Salary
from EMPLOYEE, DEPARTMENT
where Dno = Dnumber and Dname = 'Research'
order by Lname;
```

10. Select all staff members SSN, Fname, DepartmentName, Salary in ascending order by their Depatment, then by their salary in Descending order:

```
select Ssn, Fname, Dname , Salary
from DEPARTMENT, EMPLOYEE
where Dno = Dnumber
order by Dname ASC, Salary DESC;
```

11. What is the name of the department with the highest department number?

```
SELECT Dname , Dnumber
FROM DEPARTMENT
ORDER BY Dnumber DESC LIMIT 1;
```

12. Retrieve a list of employees and the projects they are working on, ordered by department and, within each department, ordered alphabetically by last name, then first name

```
SELECT D.Dname, E.Lname, E.Fname, P.Pname
FROM DEPARTMENT D, EMPLOYEE E, WORKS_ON W, PROJECT P
WHERE  D.Dnumber= E.Dno AND E.Ssn= W.Essn AND W.Pno= P.Pnumber
ORDER BY D.Dname, E.Lname, E.Fname;
```

RESULT: Successfully executed the queries using SQL DML Commands.