**EXPERIMENT 5**

**AGGREGATE FUNCTIONS**

AIM:-Implementation of various aggregate functions in SQL

1. Find the number of Employee in the organization.

select count(\*) from EMPLOYEE

1. Find the sum of the salaries of all employees, the maximum salary,the minimum salary, and the average salary.

SELECT SUM (Salary), MAX (Salary), MIN (Salary), AVG (Salary) FROM EMPLOYEE;

1. Find the sum of the salaries of all employees of the ‘Research’ department, as well as the maximum salary, the minimum salary, and the average salary in this department.

SELECT SUM (Salary), MAX (Salary), MIN (Salary), AVG (Salary) FROM (EMPLOYEE JOIN DEPARTMENT ON Dno=Dnumber) WHERE Dname=‘Research’;

1. Retrieve the total number of employees in the company and the number of employees in the ‘Research’ department

SELECT COUNT (\*) FROM EMPLOYEE, DEPARTMENT WHERE DNO=DNUMBER AND DNAME=‘Research’;

1. Count the number of distinct salary values in the database.

SELECT COUNT (DISTINCT Salary) FROM EMPLOYEE;

**EXPT NO:-6**

**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;

1. 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;

1. 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;

1. 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;

1. 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;

1. 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;

1. 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

1. 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;

1. 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;