**EXPT NO:-7**

**ORDER BY,GROUP BY AND HAVING CLAUSE**

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

**Schema is as given below.**

**EMPLOYEE(Fname, Minit, Lname, Ssn, Bdate, Address, Sex, Salary, Super\_ssn, Dno)**

**DEPARTMENT(Dname, Dnumber, Mgr\_ssn, Mgr\_start\_date)**

**DEPT\_LOCATIONS ( Dnumber, Dlocation)**

**PROJECT(Pname, Pnumber, Plocation, Dnum)**

**WORKS\_ON(Essn, Pno, Hours)**

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

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

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

# 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.

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

# 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.

# 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.

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

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

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

# 11) What is the name of the department with the highest department number?

# 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

**Schema Definition**

CREATE TABLE EMPLOYEE

( Fname VARCHAR(10) NOT NULL,

Minit CHAR,

Lname VARCHAR(20) NOT NULL,

Ssn CHAR(9) NOT NULL,

Bdate DATE,

Address VARCHAR(30),

Sex CHAR(1),

Salary DECIMAL(5),

Super\_ssn CHAR(9),

Dno INT NOT NULL,

PRIMARY KEY (Ssn));

CREATE TABLE DEPARTMENT

( Dname VARCHAR(15) NOT NULL,

Dnumber INT NOT NULL,

Mgr\_ssn CHAR(9) NOT NULL,

Mgr\_start\_date DATE,

PRIMARY KEY (Dnumber),

FOREIGN KEY (Mgr\_ssn) REFERENCES EMPLOYEE(Ssn) );

CREATE TABLE DEPT\_LOCATIONS

( Dnumber INT NOT NULL,

Dlocation VARCHAR(15) NOT NULL,

PRIMARY KEY (Dnumber, Dlocation),

FOREIGN KEY (Dnumber) REFERENCES DEPARTMENT(Dnumber) );

CREATE TABLE PROJECT

( Pname VARCHAR(15) NOT NULL,

Pnumber INT NOT NULL,

Plocation VARCHAR(15),

Dnum INT NOT NULL,

PRIMARY KEY (Pnumber),

FOREIGN KEY (Dnum) REFERENCES DEPARTMENT(Dnumber) );

CREATE TABLE WORKS\_ON

( Essn CHAR(9) NOT NULL,

Pno INT NOT NULL,

Hours DECIMAL(3,1) NOT NULL,

PRIMARY KEY (Essn, Pno),

FOREIGN KEY (Essn) REFERENCES EMPLOYEE(Ssn),

FOREIGN KEY (Pno) REFERENCES PROJECT(Pnumber) );

**Populate Tables**

INSERT INTO EMPLOYEE VALUES ('John','B','Smith',123456789,'1965-01-09','731 Fondren, Houston TX','M',30000,333445555,5), ('Franklin','T','Wong',333445555,'1965-12-08','638 Voss, Houston TX','M',40000,888665555,5), ('Alicia','J','Zelaya',999887777,'1968-01-19','3321 Castle, Spring TX','F',25000,987654321,4), ('Jennifer','S','Wallace',987654321,'1941-06-20','291 Berry, Bellaire TX','F',43000,888665555,4), ('Ramesh','K','Narayan',666884444,'1962-09-15','975 Fire Oak, Humble TX','M',38000,333445555,5), ('Joyce','A','English',453453453,'1972-07-31','5631 Rice, Houston TX','F',25000,333445555,5), ('Ahmad','V','Jabbar',987987987,'1969-03-29','980 Dallas, Houston TX','M',25000,987654321,4), ('James','E','Borg',888665555,'1937-11-10','450 Stone, Houston TX','M',55000,null,1);

INSERT INTO DEPARTMENT VALUES ('Research',5,333445555,'1988-05-22'), ('Administration',4,987654321,'1995-01-01'), ('Headquarters',1,888665555,'1981-06-19');

INSERT INTO PROJECT VALUES ('ProductX',1,'Bellaire',5), ('ProductY',2,'Sugarland',5),('ProductZ',3,'Houston',5), ('Computerization',10,'Stafford',4), ('Reorganization',20,'Houston',1), ('Newbenefits',30,'Stafford',4);

INSERT INTO WORKS\_ON VALUES (123456789,1,32.5), (123456789,2,7.5), (666884444,3,40.0), (453453453,1,20.0), (453453453,2,20.0), (333445555,2,10.0), (333445555,3,10.0), (333445555,10,10.0), (333445555,20,10.0), (999887777,30,30.0), (999887777,10,10.0), (987987987,10,35.0), (987987987,30,5.0), (987654321,30,20.0), (987654321,20,15.0), (888665555,20,16.0);

INSERT INTO DEPT\_LOCATIONS VALUES (1,'Houston'), (4,'Stafford'), (5,'Bellaire'), (5,'Sugarland'), (5,'Houston');