

**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,

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Plocation    VARCHAR(15),
Dnum         INT          NOT NULL,
PRIMARY KEY (Pnumber),
FOREIGN KEY (Dnum) REFERENCES DEPARTMENT(Dnumber) );

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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) );

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### **Populate Tables**

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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);

```

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

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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');

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