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4. Consider the schema for CompanyDatabase:

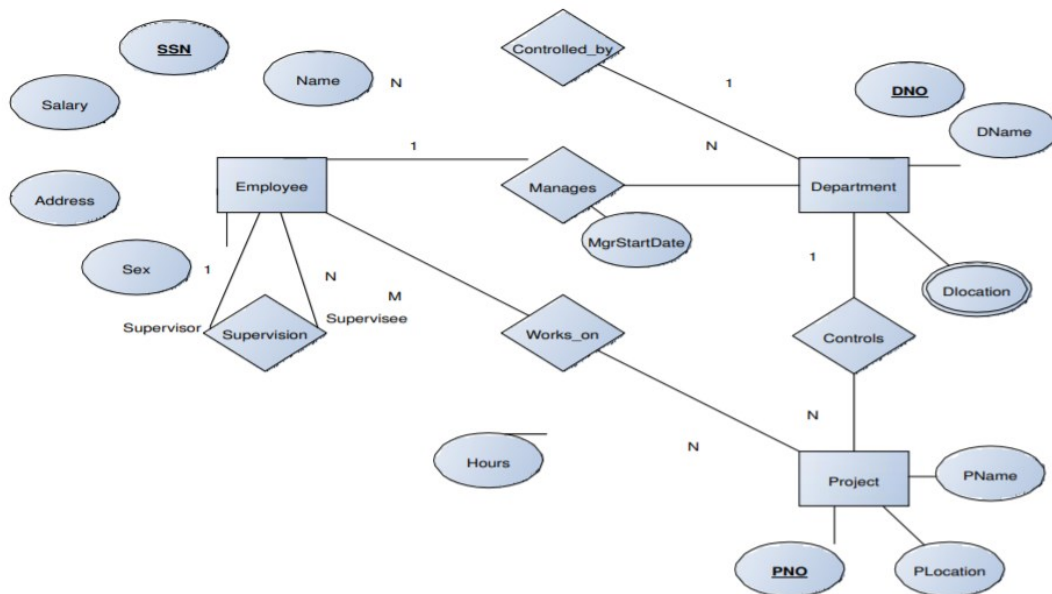**EMPLOYEE (SSN, Name, Address, Sex, Salary, DNo)**
DEPARTMENT (DNo, DName, MgrSSN, MgrStartDate)
DLOCATION (DNo,DLoc)
PROJECT (PNo, PName, PLocation, DNo)
WORKS_ON (SSN, PNo, Hours)

CREATE TABLE DEPARTMENT
(DNO VARCHAR (20),
DNAME VARCHAR (20),
MGRSTARTDATE DATE,
Primary Key (DNO));

CREATE TABLE EMPLOYEE
(SSN VARCHAR (20) PRIMARY KEY,
FNAME VARCHAR(20),
LNAME VARCHAR(20),
ADDRESS VARCHAR (20),
SEX CHAR (1),
SALARY INTEGER,
DNO varchar(20),
FOREIGN KEY (DNO) REFERENCES DEPARTMENT (DNO) ON DELETE SET NULL);

ALTER TABLE DEPARTMENT
ADD MGRSSN VARCHAR(10) REFERENCES EMPLOYEE (SSN);

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```
CREATE TABLE DLOCATION
(DLOC VARCHAR (20),
DNO varchar(20),
FOREIGN KEY (DNO) REFERENCES DEPARTMENT (DNO),
PRIMARY KEY (DNO, DLOC));

CREATE TABLE PROJECT (
PNO INTEGER PRIMARY KEY,
PNAME VARCHAR(20),
PLOCATION VARCHAR (20),
DNO varchar(20),
FOREIGN KEY (DNO) REFERENCES DEPARTMENT (DNO));

CREATE TABLE WORKS_ON
(HOURS INT (4),
PNO integer,
SSN  Varchar(20),
FOREIGN KEY (SSN) REFERENCES EMPLOYEE (SSN),
FOREIGN KEY (PNO) REFERENCES PROJECT(PNO),
PRIMARY KEY (SSN, PNO));
```

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INSERT INTO DEPARTMENT VALUES ('D01','Dept1','2015-06-01','EA01');
INSERT INTO DEPARTMENT VALUES ('D02','Dept2','2017-05-02','EA02');
INSERT INTO DEPARTMENT VALUES ('D03','Dept3','2016-06-01','EA03');
INSERT INTO DEPARTMENT VALUES ('D04','Dept4','2015-08-01','EA04');
INSERT INTO DEPARTMENT VALUES ('D02','Dept2','2017-05-02','EA05');

INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY,DNO) VALUES
('EA01','JOHN','SCOTT','BANGALORE','M', 450000,'D01');
INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY,DNO) VALUES
('EA02','JAMES','SMITH','BANGALORE','M', 500000,'D02');
INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY,DNO) VALUES
('EA03','HEARN','BAKER','BANGALORE','M', 700000,'D03');
INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY,DNO) VALUES
('EA04','EDWARD','SCOTT','MYSORE','M', 500000,'D04');
INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY,DNO) VALUES
('EA05','PAVAN','HEGDE','MANGALORE','M', 650000,'D01');
INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY,DNO) VALUES
('EA06','GIRISH','Shetty','MYSORE','M', 450000,'D02');
INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY,DNO) VALUES
('EA07','NEHA','SN','BANGALORE','F', 800000,'D02');
INSERT INTO EMPLOYEE (SSN, FNAME, LNAME, ADDRESS, SEX, SALARY,DNO) VALUES
('EA08','AMULYA','K','MANGALORE','F', 350000,'D04');

INSERT INTO DLOCATION VALUES ('BANGALORE', 'D01');
INSERT INTO DLOCATION VALUES ('BANGALORE', 'D02');
INSERT INTO DLOCATION VALUES ('MANGALORE', 'D03');
INSERT INTO DLOCATION VALUES('Mysore','D04');

INSERT INTO PROJECT VALUES (100,'IOT','BANGALORE','D01');
INSERT INTO PROJECT VALUES (101,'CLOUD','BANGALORE','D02');
INSERT INTO PROJECT VALUES (102,'BIGDATA','MANGALORE','D03');
INSERT INTO PROJECT VALUES (103,'SENSORS','MANGALORE','D03');
INSERT INTO PROJECT VALUES (104,'Machine learning','Mysore','D04');
INSERT INTO PROJECT VALUES (105,'Networks','Mysore','D04');

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INSERT INTO WORKS_ON VALUES (4, '100','EA01');
INSERT INTO WORKS_ON VALUES (6, 101,'EA01');
INSERT INTO WORKS_ON VALUES (8, 102,'EA02');
INSERT INTO WORKS_ON VALUES (10,100, 'EA02');
INSERT INTO WORKS_ON VALUES (3, 100,'EA03');
INSERT INTO WORKS_ON VALUES (4, 101,'EA04');
INSERT INTO WORKS_ON VALUES (5, 102,'EA05');
INSERT INTO WORKS_ON VALUES (6, 103,'EA06');
INSERT INTO WORKS_ON VALUES (7, 104,'EA07');
INSERT INTO WORKS_ON VALUES (5, 105,'EA08');

1. **Display the employee details whose salary is greater than 5 lakh , sorting the records in descending order of SSN.**

   Select * from Employee where salary > 500000 order by SSN DESC;

	SSN	FNAME	LNAME	ADDRESS	SEX	SALARY	DNO
▶	EA07	NEHA	SN	BANGALORE	F	800000	D02
	EA05	PAVAN	HEGDE	MANGALORE	M	650000	D01
	EA03	HEARN	BAKER	BANGALORE	M	700000	D03
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL

2. **Display the number of employees along with project name working on each project.**

   SELECT count(*), P.Pname FROM
   EMPLOYEE E, WORKS_ON W, PROJECT P
   WHERE E.SSN=W.SSN
   AND W.PNO=P.PNO
   group by Pname;

	count(*)	Pname
▶	3	IOT
	2	CLOUD
	2	BIGDATA
	1	SENSORS
	1	Machine learning
	1	Networks

3. **Show the resulting salaries if every employee working on the 'IOT' project is given a10 percent raise.**

   SELECT E.FNAME, E.LNAME, 1.1*E.SALARY AS INCR_SAL FROM
   EMPLOYEE E, WORKS_ON W, PROJECT P
   WHERE E.SSN=W.SSN
   AND W.PNO=P.PNO
   AND P.PNAME='IOT';

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	FNAME	LNAME	INCR_SAL
▶	JOHN	SCOTT	495000.0
	JAMES	SMITH	550000.0
	HEARN	BAKER	770000.0
	JOHN	SCOTT	495000.0
	EDWARD	SCOTT	550000.0
	JAMES	SMITH	550000.0
	PAVAN	HEGDE	715000.0
	GIRISH	Shetty	495000.0
	NEHA	SN	880000.0
	AMULYA	K	385000.0

4. **Find the sum of the salaries of all employees of the 'Dept2' department, as well as the maximum salary, the minimum salary, and the average salary in this department**

SELECT SUM(E.SALARY), MAX(E.SALARY), MIN(E.SALARY), AVG(E.SALARY)
FROM EMPLOYEE E, DEPARTMENT D
WHERE E.DNO=D.DNO
AND D.DNAME='Dept2';

SUM(E.SALARY)	MAX(E.SALARY)	MIN(E.SALARY)	AVG(E.SALARY)
1750000	800000	450000	583333.3333

5. **For each department that has more than two employees, retrieve the department number and the number of its employees who are making more than Rs. 6,00,000.**

SELECT D.DNO, COUNT(*)
FROM DEPARTMENT D, EMPLOYEE E
WHERE D.DNO=E.DNO
AND E.SALARY>600000
AND D.DNO IN (SELECT E1.DNO
FROM EMPLOYEE E1 GROUP
BY E1.DNO HAVING COUNT(*)>2)
GROUP BY D.DNO

	DNO	COUNT(*)
▶	D02	1