



Global Academy of Technology

Growing Ahead Of Time....

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22AML43

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Exercise-5

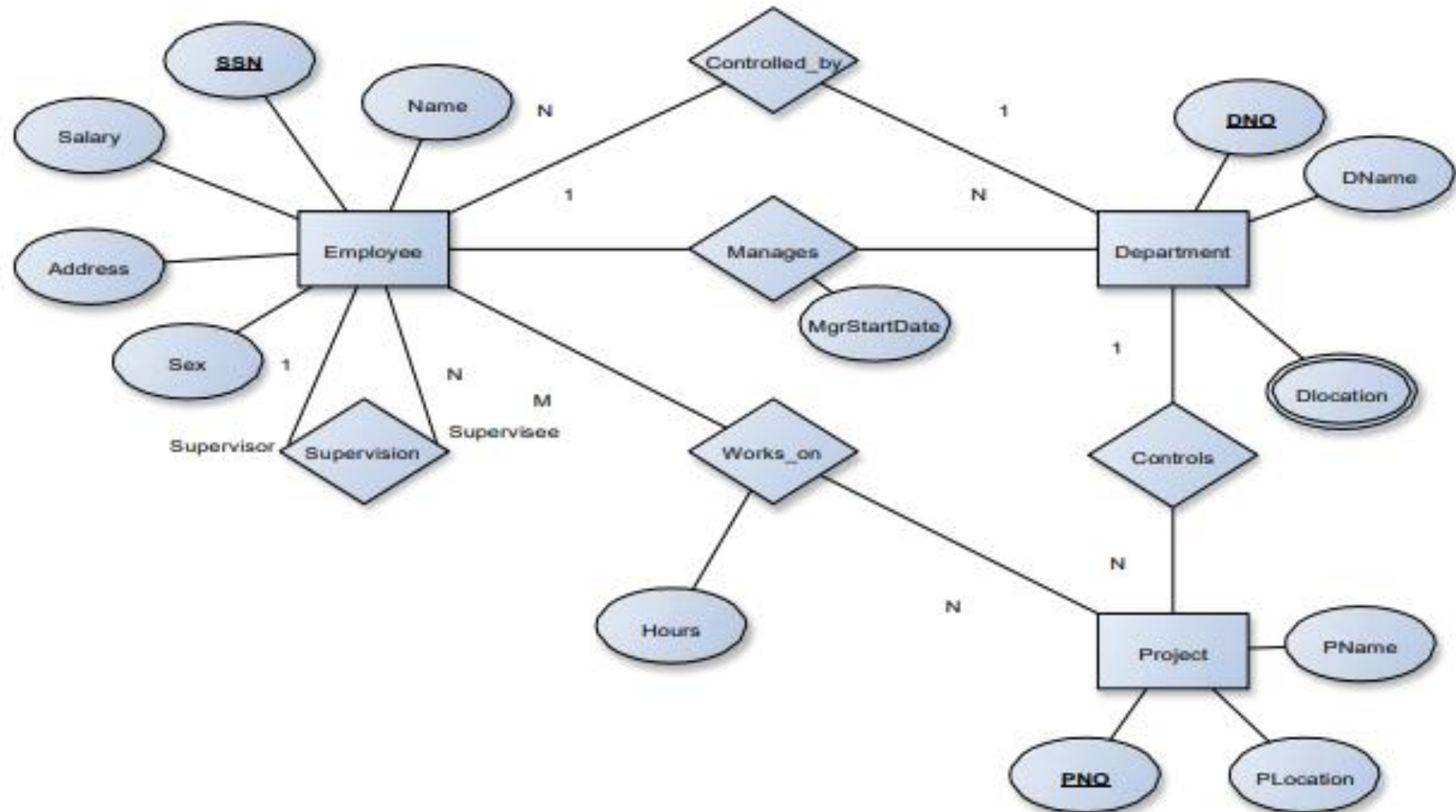
Consider the schema for Company Database:

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

Write SQL queries to

1. Make a list of all project numbers for projects that involve an employee whose last name is 'Scott', either as a worker or as a manager of the department that controls the project.
2. Show the resulting salaries if every employee working on the 'IoT' project is given a 10 percent raise.
3. Find the sum of the salaries of all employees of the 'Accounts' department, as well as the maximum salary, the minimum salary, and the average salary in this department
4. Retrieve the name of each employee who works on all the projects controlled by department number 5 (use NOT EXISTS operator).
5. For each department that has more than five employees, retrieve the department number and the number of its employees who are making more than Rs. 6,00,000.

Entity-Relationship Diagram



Schema Diagram

Table Creation

1. CREATE TABLE DEPARTMENT (DNO VARCHAR2 (20) PRIMARY KEY, DNAME VARCHAR2 (20), MGRSTARTDATE DATE);
2. CREATE TABLE EMPLOYEE (SSN VARCHAR2 (20) PRIMARY KEY, FNAME VARCHAR2 (20), LNAME VARCHAR2 (20), ADDRESS VARCHAR2 (20), SEX CHAR (1), SALARY INTEGER, SUPERSSN REFERENCES EMPLOYEE (SSN), DNO REFERENCES DEPARTMENT (DNO));
3. ALTER TABLE DEPARTMENT ADD MGRSSN REFERENCES EMPLOYEE (SSN);
4. CREATE TABLE DLOCATION (DLOC VARCHAR2 (20), DNO REFERENCES DEPARTMENT (DNO), PRIMARY KEY (DNO, DLOC));

Table Creation

5. CREATE TABLE PROJECT (PNO INTEGER PRIMARY KEY, PNAME VARCHAR2 (20), PLOCATION VARCHAR2 (20), DNO REFERENCES DEPARTMENT (DNO));

6. CREATE TABLE WORKS_ON (HOURS INTEGER, SSN REFERENCES EMPLOYEE (SSN), PNO REFERENCES PROJECT(PNO), PRIMARY KEY (SSN, PNO));

Table Description

- DESC DEPARTMENT;
- DESC EMPLOYEE;
- DESC DLOCATION;
- DESC PROJECT;
- DESC WORKS_ON;

- Insertion of Values to Tables –
DEPARTMENT;
EMPLOYEE;
DLOCATION;
PROJECT;
WORKS_ON;

Query-1

Make a list of all project numbers for projects that involve an employee whose last name is 'Scott', either as a worker or as a manager of the department that controls the project.

```
(SELECT DISTINCT P.PNO
FROM PROJECT P, DEPARTMENT D, EMPLOYEE E
WHERE E.DNO=D.DNO
      AND D.MGRSSN=E.SSN
      AND E.LNAME='SCOTT')
UNION
(SELECT DISTINCT P1.PNO
FROM PROJECT P1, WORKS_ON W, EMPLOYEE E1
WHERE P1.PNO=W.PNO
      AND E1.SSN=W.SSN
      AND E1.LNAME='SCOTT');
```

Query-2

Show the resulting salaries if every employee working on the 'IoT' project is given a 10 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';
```

Query-3

Find the sum of the salaries of all employees of the 'Accounts' 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='ACCOUNTS';
```

Query-4

Retrieve the name of each employee who works on all the projects
Controlled by department number 5 (use NOT EXISTS operator).

```
SELECT E.FNAME, E.LNAME
FROM EMPLOYEE E
WHERE NOT EXISTS(
    (SELECT PNO
     FROM PROJECT
     WHERE DNO='5')
    MINUS
    (SELECT PNO
     FROM WORKS_ON
     WHERE E.SSN=SSN)
);
```

Query-5

For each department that has more than five 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 (*)>5)
GROUP BY D.DNO;
```