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CSC 134-02

Worksheet 2

Due: 3/4/22

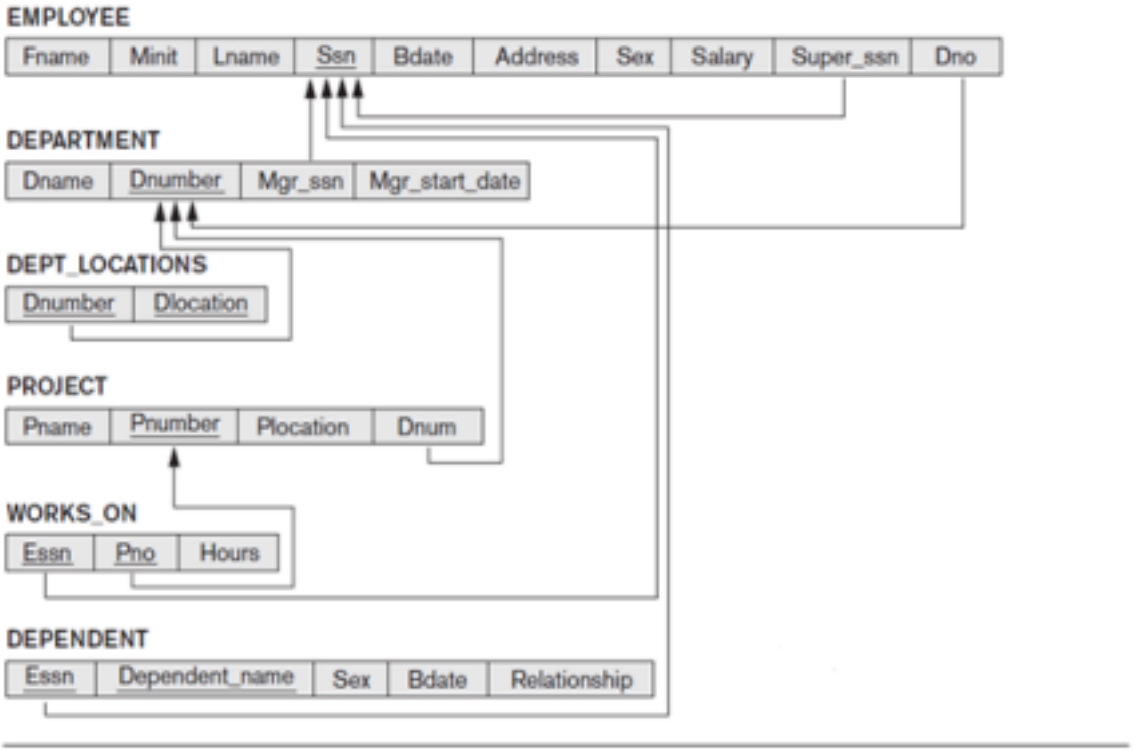
CSC 134-02 Database Management Systems (Spring 2022)

In-class Worksheet 2 (100 points)

Basic SQL

Due at 11:59 pm, Friday, March 4, 2022

Considering the following database schema, answer all the queries.



1. Retrieve the birthdate and address of the employee(s) whose name is John B. Smith

```
SELECT      E.Bdate, E.Address
FROM        EMPLOYEE AS E
WHERE       E.Fname = 'John' AND E.Minit = 'B' AND E.Lname =
```

‘Smith’;

2. Retrieve the name and address of all employees who work for the research department

```
SELECT    E.Fname, E.Minit, E.Lname, E.Address
FROM      EMPLOYEE E, DEPARTMENT D
WHERE     D.Dname = ‘Research’ AND D.Dnumber = E.Dno;
```

3. For every project located in Stafford, list the project number, the controlling department number, and the department manager’s last name and address.

```
SELECT    P.Pnumber, P.Dnum, E.Lname, E.Address
FROM      PROJECT P, DEPARTMENT D, EMPLOYEE E
WHERE     P.Dnum = D.Dnumber AND D.Mgr_ssn = E.Ssn AND
    P.Plocation = ‘Stafford’;
```

4. Retrieve the names of all employees who have two or more dependents.
Hint: use correlated queries

```
SELECT    E.FName, E.Minit, E.Lname
FROM      EMPLOYEE AS E
WHERE     (SELECT   COUNT(*)
           FROM     DEPENDENT AS D
           WHERE    E.Ssn = D.Essn) >= 2;
```

5. Retrieve the names of all employees who have no dependents.
Hint: use correlated queries

```
SELECT    E.Fname, E.Minit, E.Lname
FROM      EMPLOYEE AS E
WHERE     NOT EXISTS (SELECT    *
                      FROM      Dependent AS D
                      WHERE     E.Ssn = D.Essn);
```

6. Retrieve all employee SSNs

```
SELECT    E.Ssn
FROM      EMPLOYEE E;
```

7. Retrieve the salary of every employee
   Hint: keep the redundant salary values.

```
SELECT    ALL E.Salary
FROM      EMPLOYEE E;
```

8. Retrieve the distinct salary values

```
SELECT    DISTINCT E.Salary
FROM      EMPLOYEE E;
```

9. Retrieve all employees whose address is in Spring, TX.

```
SELECT    E.Fname, E.Lname
FROM      EMPLOYEE AS E
WHERE     E.Address Like '%Spring, TX%';
```

10. Retrieve all employees in department 5 whose salary is between $30,000 and $40,000.

```
SELECT    E.Fname, E.Lname
FROM      EMPLOYEE AS E
WHERE     E.Dno = 5 AND (E.Salary BETWEEN 30000 AND 40000);
```

11. Retrieve a list of employees, ordered alphabetically by last name, first name.

```
SELECT    E.Lname, E.Fname
FROM      EMPLOYEE AS E
```

ORDER BY E.Lname **ASC**, E.Fname **ASC;**

12.Retrieve the social security numbers of all employees who work on project 1, 2 or 3.

SELECT **DISTINCT** W.Essn
FROM WORKS_ON **AS** W
WHERE W.Pno **IN** (1,2,3);

13.Retrieve the names of all employees who do not have a supervisor.

SELECT E.Fname, E.Lname
FROM EMPLOYEE **AS** E
WHERE E.Super_ssn **IS NULL;**

14.Find the sum of the salaries of all employees, the max salary, the min salary and the average salary.

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

15.Find the sum of the salaries of all employees for the research department, as well as the max salary, the min salary and the average salary.

SELECT **SUM**(E.Salary), **MAX**(E.Salary), **MIN**(E.Salary), **AVG**(E.Salary)
FROM EMPLOYEE E, DEPARTMENT D
WHERE E.Dno = D.Dnumber **AND** D.Dname = ‘Research’;

16.Retrieve the total number of employees in the company

SELECT **COUNT**(*)
FROM EMPLOYEE E;

17.For each department, retrieve the department number, the number of employees in the department, and their average salary.

```
SELECT      E.Dno, COUNT(*), AVG(E.Salary)
FROM        EMPLOYEE E
GROUP BY    E.Dno;
```

18.For each project, retrieve the project number, the project name, and the number of employees who work on the project.

```
SELECT      P.Pnumber, P.Pname, COUNT(*)
FROM        PROJECT P, WORKS_ON W
WHERE       P.Pnumber = W.Pno
GROUP BY    P.Pnumber, P.Pname;
```

19.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      P.Pnumber, P.Pname, COUNT(*)
FROM        PROJECT P, WORKS_ON W
WHERE       P.Pnumber = W.Pno
GROUP BY    P.Pnumber, P.Pname
HAVING      COUNT(*) > 2;
```

20.Retrieve the name of each employee who has a dependent with the same sex as the employee. Sort the results on employee last name in the descending order.

```
SELECT      E.Lname, E.Fname
FROM        EMPLOYEE AS E
WHERE       E.Ssn IN (SELECT      D.Essn
                      FROM        DEPENDENT AS D
```

```
                                    WHERE       E.Sex = D.Sex)
    ORDER BY    E.Lname DESC;
```

Deliverables

1. A doc or pdf file containing all your answers.

Requirements on deliverables

1. Your deliverable should be ***FLastname_W2.doc*** or ***FLastname_W2.pdf*** where *F* indicates first letter, in uppercase, of your firstname and *Lastname* indicates your last name where first letter is in uppercase. Please exactly follow the naming rule described above. You will be deducted 5 points for incorrect naming.
2. Clearly state your name, ID, course title, worksheet number, and due date.
3. Submit your doc or pdf file via Canvas.
4. No late submission will be accepted.
5. When grades are returned to you on Canvas, you have 7 days to meet with the instructor for grade changes. Issues and/or disagreements concerning your grade must be resolved in such 7 days window. After 7 days, the grades are written in stone and can't be changed after that point, for whatever reason.