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CSC 134-02

Worksheet 3

Due: 3/7/22

CSC 134-02 Database Management Systems (Spring 2022)

In-class Worksheet 3 (100 points)

Complex SQL

Due at 11:59 pm, Monday, March 7, 2022

For the following relation schema:

employee(employee-name, street, city)
works(employee-name, company-name, salary)
company(company-name, city)
manages(employee-name, manager-name)

Assume that the companies may be located in several cities and all people work for at most one company and with at most one manager. Use SQL to answer the following queries (one statement per query):

- 1) Find the names of all employees who live in the same cities and on the same streets as do their managers.

```
SELECT      E.Employee-name

FROM        EMPLOYEE AS E, MANAGES AS M, EMPLOYEE AS
R

WHERE       E.Employee-name = M.Employee-name AND
             M.Manager-name = R.Employee-name AND E.Street = R.Street AND
             E.City = R.City;
```

- 2) Find the names of all employees who do not work for 'Bank of America'.

```
SELECT      W.Employee-name
```

FROM WORKS W

WHERE W.Company-name != 'Bank of America';

3) Find the names of all employees who earn more than every employee of 'Bank of America'.

SELECT W.Employee-name

FROM WORKS W

WHERE W.Salary > **ALL** (**SELECT** P.Salary

FROM WORKS P

WHERE P.Company-name =
'Bank of America');

4) Find all companies located in every city in which 'Bank of America' is located.

SELECT C.Company-name

FROM COMPANY C

WHERE **NOT EXISTS** ((**SELECT** B.City

FROM COMPANY B

WHERE B.Company-name =
'Bank of America')

EXCEPT (**SELECT** T.City

FROM COMPANY T

WHERE C.Company-name =
T.Company-name));

5) Find the names of all employees who earn more than the average salary of all employees of their company.

SELECT W.Employee-name

FROM WORKS W

WHERE W.Salary > (**SELECT** **AVG**(S.Salary)

FROM WORKS S

WHERE W.Company-name =
S.Company-name);

6) Find the name of the company that has the smallest payroll.

SELECT W.Company-name

FROM WORKS W

GROUP BY W.Company-name

HAVING **SUM**(W.Salary) <= **ALL** (**SELECT** **SUM** (Q.Salary)

FROM WORKS Q

GROUP BY
Q.Company-name);

Deliverables

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

Requirements on deliverables

1. Your deliverable should be ***FLastname_W3.doc*** or ***FLastname_W3.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.