

Homework 4 problems

CS 4092, Summer 2018

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Problem 8

employee last name and project name for employees who have at least one dependent and work on a project at least 17 hours

```
1  SELECT e.lname,  
2         p.pname  
3  FROM employee e,  
4         project p,  
5         works_on w  
6  WHERE e.ssn = w.essn  
7         AND p.pnumber = w.pno  
8         AND w.hours >= 17  
9         AND e.ssn IN  
10        (SELECT DISTINCT essn  
11         FROM dependent);
```

lname	pname
Smith	ProductX
Wallace	Newbenefits

Problem 9

employee last names for employees who do not work on any projects.

```
1  SELECT lname  
2  FROM employee  
3  WHERE ssn NOT IN  
4        (SELECT essn  
5         FROM works_on  
6         WHERE employee.ssn = works_on.essn);
```

lname

Problem 10

employee last names who have a child the same sex as they are.

```

1  SELECT lname
2  FROM employee
3  WHERE ssn IN
4      (SELECT essn
5       FROM dependent
6       WHERE employee.ssn = dependent.essn
7         AND employee.sex = dependent.sex
8         AND (relationship = 'Son'
9            OR relationship = 'Daughter'));
```

lname
Smith
Wong

Problem 11

employee last names for employees who do not have a child of the same sex as themselves.

```

1  SELECT lname
2  FROM employee
3  WHERE ssn NOT IN
4      (SELECT essn
5       FROM dependent
6       WHERE employee.ssn = dependent.essn
7         AND employee.sex = dependent.sex
8         AND (relationship = 'Son'
9            OR relationship = 'Daughter'));
```

lname
Zelaya
Wallace
Narayan
English
Jabbar
Borg

Problem a

Retrieve the names of employees in department 5 who work more than 10 hours per week on the 'ProductX' project.

```

1  SELECT e.fname,
2         e.minit,
3         e.lname
4  FROM employee e,
5         works_on w,
6         project p
7  WHERE e.ssn = w.essn
8         AND e.dno = 5
9         AND w.hours > 10
10        AND w.pno = p.pnumber
11        AND p.pname = 'ProductX';

```

fname	minit	lname
John	B	Smith
Joyce	A	English

Problem b

List the names of employees who have a dependent with the same first name as themselves.

```

1  SELECT e.fname,
2         e.minit,
3         e.lname
4  FROM employee e,
5         dependent d
6  WHERE e.ssn = d.essn
7         AND e.fname = d.dependent_name;

```

fname	minit	lname

Problem c

Find the names of employees who are directly supervised by 'Franklin Wong'.

```

1  SELECT fname,
2         minit,
3         lname
4  FROM employee
5  WHERE super_ssn =
6         (SELECT ssn
7          FROM employee
8          WHERE fname = 'Franklin'
9                 AND lname = 'Wong');

```

fname	minit	lname
John	B	Smith
Ramesh	K	Narayan
Joyce	A	English

Problem d

For each project, list the project name and the total hours per week (by all employees) spent on that project.

```

1 SELECT p.pname,
2       sum(w.hours) AS total_hours
3 FROM project p,
4       works_on w
5 WHERE p.pnumber = w.pno
6 GROUP BY p.pname;

```

pname	total_hours
Reorganization	25
Newbenefits	55
Computerization	55
ProductY	38
ProductX	53
ProductZ	50

Problem e

Retrieve the names of employees who work on every project.

```

1 SELECT e.fname,
2       e.minit,
3       e.lname
4 FROM employee e,
5       works_on w
6 WHERE e.ssn = w.essn
7 GROUP BY e.fname,
8          e.minit,
9          e.lname,
10         e.ssn
11 HAVING COUNT(DISTINCT(w.pno)) =
12        (SELECT COUNT(DISTINCT pnumber)
13         FROM project);

```

fname	minit	lname

Problem f

Retrieve the names of employees who do not work on any project.

```

1 SELECT e.fname,
2         e.minit,
3         e.lname
4 FROM employee e
5 WHERE NOT EXISTS
6       (SELECT *
7        FROM works_on
8        WHERE essn = e.ssn);

```

fname	minit	lname

Problem g

For each department, retrieve the department name, and the average salary of employees working in that department.

```

1 SELECT d.dname,
2        AVG(e.salary) AS average_salary
3 FROM department d,
4      employee e
5 WHERE d.dnumber = e.dno
6 GROUP BY d.dname;

```

dname	average_salary
Research	33250
Headquarters	55000
Administration	31000

Problem h

Retrieve the average salary of all female employees.

```

1 SELECT AVG(salary) AS average_salary
2 FROM employee
3 WHERE sex = 'F';

```

average_salary
31000

Problem i

Find the names and addresses of employees who work on at least one project located in Houston but whose department has no location in Houston.

```
1  SELECT e.fname,
2         e.minit,
3         e.lname,
4         e.address
5  FROM employee e
6  WHERE e.dno NOT IN
7         (SELECT dnumber
8          FROM dept_locations
9          WHERE dlocation = 'Houston')
10 AND e.ssn IN
11        (SELECT essn
12         FROM works_on w,
13              project p
14         WHERE w.pno = p.pnumber
15              AND p.plocation = 'Houston');
```

fname	minit	lname	address
Jennifer	S	Wallace	291 Berry, Bellaire, TX

Problem j

List the last names of department managers who have no dependents.

```
1  SELECT e.lname
2  FROM employee e
3  WHERE EXISTS
4         (SELECT *
5          FROM department
6          WHERE mgr_ssn = e.ssn)
7  AND NOT EXISTS
8         (SELECT *
9          FROM dependent
10         WHERE essn = e.ssn);
```

lname
Borg

Problem k

Retrieve the names of all employees who work in the department that has the employee with the highest salary among all employees.

```
1  SELECT fname,
2         minit,
3         lname
4  FROM employee
5  WHERE dno =
6         (SELECT dno
7          FROM employee
8          WHERE salary =
9             (SELECT MAX(salary)
10              FROM employee));
```

fname	minit	lname
James	E	Borg

Problem l

Retrieve the names of all employees whose supervisor's supervisor has '888665555' for Ssn.

```
1  SELECT e.fname,
2         e.minit,
3         e.lname
4  FROM employee e
5  WHERE EXISTS
6         ( SELECT *
7          FROM employee super
8          WHERE super.ssn = e.super_ssn
9            AND super.super_ssn = 888665555 );
```

fname	minit	lname
John	B	Smith
Alicia	J	Zelaya
Ramesh	K	Narayan
Joyce	A	English
Ahmad	V	Jabbar

Problem m

Retrieve the names of employees who make at least \$10,000 more than the employee who is paid the least in the company

```
1  SELECT fname,  
2         minit,  
3         lname  
4  FROM employee  
5  WHERE salary >=  
6         (SELECT (MIN(salary) + 10000)  
7         FROM employee);
```

fname	minit	lname
Franklin	T	Wong
Jennifer	S	Wallace
Ramesh	K	Narayan
James	E	Borg