HW3

a.

```
[practice2=# select * from instructor;
   id    |     name     | dept_name  |   salary
--------+-------------+-----------+----------
 10101 | Srinivasan | Comp. Sci. | 65000.00
 12121 | Wu         | Finance    | 90000.00
 15151 | Mozart     | Music      | 40000.00
 22222 | Einstein   | Physics    | 95000.00
 32343 | El Said    | History    | 60000.00
 33456 | Gold       | Physics    | 87000.00
 45565 | Katz       | Comp. Sci. | 75000.00
 58583 | Califieri  | History    | 62000.00
 76543 | Singh      | Finance    | 80000.00
 76766 | Crick      | Biology    | 72000.00
 83821 | Brandt     | Comp. Sci. | 92000.00
 98345 | Kim        | Elec. Eng. | 80000.00
(12 rows)
```

```
[practice2=# select * from course;
 course_id |            title             | dept_name  | credits
-----------+-----------------------------+-----------+---------
 BIO-101   | Intro. to Biology           | Biology    |       4
 BIO-301   | Genetics                    | Biology    |       4
 BIO-399   | Computational Biology       | Biology    |       3
 CS-101    | Intro. to Computer Science  | Comp. Sci. |       4
 CS-190    | Game Design                 | Comp. Sci. |       4
 CS-315    | Robotics                    | Comp. Sci. |       3
 CS-319    | Image Processing            | Comp. Sci. |       3
 CS-347    | Database System Concepts    | Comp. Sci. |       3
 EE-181    | Intro. to Digital Systems   | Elec. Eng. |       3
 FIN-201   | Investment Banking          | Finance    |       3
 HIS-351   | World History               | History    |       3
 MU-199    | Music Video Production      | Music      |       3
 PHY-101   | Physical Principles         | Physics    |       4
(13 rows)
```

b.

```
[practice2=# update instructor
[practice2-# set salary = salary * 1.1
[practice2-# where dept_name = 'Comp. Sci.';
 UPDATE 3
```

c.

```
[practice2=# delete from course
[practice2-# where course_id not in
[practice2-# (select course_id from section);
 DELETE 1
```

d.

```
[practice2=# insert into instructor
[practice2-# select ID, name, dept_name, 10000
[practice2-# from student
[practice2-# where tot_cred > 100;
 INSERT 0 3
```

e.

```
practice2=# select * from instructor;
   id  |    name    |  dept_name  |   salary
-------+------------+-------------+-----------
 12121 | Wu         | Finance     |  90000.00
 15151 | Mozart     | Music       |  40000.00
 22222 | Einstein   | Physics     |  95000.00
 32343 | El Said    | History     |  60000.00
 33456 | Gold       | Physics     |  87000.00
 58583 | Califieri  | History     |  62000.00
 76543 | Singh      | Finance     |  80000.00
 76766 | Crick      | Biology     |  72000.00
 98345 | Kim        | Elec. Eng.  |  80000.00
 10101 | Srinivasan | Comp. Sci.  |  71500.00
 45565 | Katz       | Comp. Sci.  |  82500.00
 83821 | Brandt     | Comp. Sci.  | 101200.00
 00128 | Zhang      | Comp. Sci.  |  10000.00
 23121 | Chavez     | Finance     |  10000.00
 98988 | Tanaka     | Biology     |  10000.00
(15 rows)
```

```
practice2=# select * from course;
 course_id |           title            |  dept_name  | credits
-----------+----------------------------+-------------+---------
 BIO-101   | Intro. to Biology          | Biology     |       4
 BIO-301   | Genetics                   | Biology     |       4
 CS-101    | Intro. to Computer Science | Comp. Sci.  |       4
 CS-190    | Game Design                | Comp. Sci.  |       4
 CS-315    | Robotics                   | Comp. Sci.  |       3
 CS-319    | Image Processing           | Comp. Sci.  |       3
 CS-347    | Database System Concepts   | Comp. Sci.  |       3
 EE-181    | Intro. to Digital Systems  | Elec. Eng.  |       3
 FIN-201   | Investment Banking         | Finance     |       3
 HIS-351   | World History              | History     |       3
 MU-199    | Music Video Production     | Music       |       3
 PHY-101   | Physical Principles        | Physics     |       4
(12 rows)
```

Exercise 2

a.

```
practice2=# select employee.ID, person_name, city, street
practice2-# from employee, works
practice2-# where company_name = 'First Bank Corporation'
practice2-# and employee.ID = works.ID;
   id  | person_name |    city    | street
-------+-------------+------------+--------
 12345 | Adams       | Pittsfield | Spring
 22222 | Curry       | Rye        | North
 77777 | Jones       | Harrison   | Main
(3 rows)
```

b.

```
practice2=# select ID, person_name, city, street
practice2-# from employee
practice2-# where ID in
practice2-# (select ID
practice2(# from works
practice2(# where company_name = 'First Bank Corporation'
practice2(# and salary > 10000);
   id   | person_name |    city     | street
-------+-------------+-------------+--------
 12345 | Adams       | Pittsfield  | Spring
 22222 | Curry       | Rye         | North
(2 rows)
```

c.

```
practice2=# select ID
practice2-# from employee
practice2-# where ID not in
practice2-# (select ID
practice2(# from works
practice2(# where company_name = 'First Bank Corporation');
   id
-------
 11111
 33333
 44444
 55555
 66666
 88888
 99999
 00000
 54321
(9 rows)
```

d.

```
practice2=# select ID
practice2-# from works
practice2-# where salary > all(select salary
practice2(# from works
practice2(# where company_name = 'Small Bank Corporation');
   id
-------
 11111
 22222
 33333
 44444
 55555
 99999
 54321
(7 rows)
```

e.

```
[practice2=# select company_name
[practice2-# from company
[practice2-# where city in (select city
[practice2(# from company
[practice2(# where company_name = 'Small Bank Corporation');
      company_name
------------------------
 First Bank Corporation
 Small Bank Corporation
(2 rows)
```

f.

```
[practice2=# select company_name
[practice2-# from works
[practice2-# group by company_name
[practice2-# having count(distinct ID) >= all
[practice2-# (select count(distinct ID)
[practice2(# from works
[practice2(# group by company_name);
      company_name
----------------------
 Big Bank Corporation
(1 row)
```

g.

```
[practice2=# select company_name
[practice2-# from works
[practice2-# group by company_name
[practice2-# having avg(salary) >
[practice2-# (select avg(salary)
[practice2(# from works
[practice2(# where company_name = 'First Bank Corporation');
      company_name
------------------------
 Second Bank Corporation
 Big Bank Corporation
(2 rows)
```