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HW3

2 | 2

3.10

a) Update employee set city = 'Newton' where person_name = 'Jones'

b)> Update works T
set T.salary = T.salary * 1.03
where T.employee_name in (select manager_name
from manages)
and T.salary * 1.1 > 100000
and T.company_name = 'First Bank Corporation'

> Update works T
set T.salary = T.salary * 1.1
where T.employee_name in (select manager_name
from manages)
and T.salary * 1.1 <= 100000
and T.company_name = 'First Bank Corporation'

3.17

a) Update works T
set T.salary = T.salary * 1.1
where T.company_name = 'First Bank Corporation'

b) Update works T
set T.salary = T.salary * 1.1
where T.employee_name in (select manger_name
from manges)
and T.company_name = 'First Bank Corporation'

c) delete works
where company_name = 'Small Bank Corporation'

4.5

```
Create view student_grades(ID, GPA) as
    select ID, total_points / (case
                                 when total_credits = 0 then NULL
                                 else total_credits
                               end)
    from ((select ID, sum(case
                            when grade = NULL then 0
                            else grade
                          end) as total_credits,
                  sum(case
                        when grade = NULL then 0
                        else credit * points
                      end) as total_points
           from (takes natural join course) natural left outer join grade_points
           group by ID)

    union
    select ID, NULL
    from student
    where ID not in (select ID from takes))
```

4.8

a)
```
select ID, name, sec_id, semester, year, time_slot_id, count(distinct building, room_number)
from instructor natural join teaches natural join section
group by (ID, name, sec_id, semester, year, time_slot_id)
having count(building, room_number) > 1
```

b) same as above but we add more.

```
create assertion check not exists
    (select ID, name, sec_id, semester, year, time_slot_id, count(distinct building, room_number)
     from instructor natural join teaches natural join section
     group by (ID, name, sec_id, semester, year, time_slot_id)
     having count(building, room_number) > 1
```

4.14

```
create view tot_credits(year, num_credits) as
    select year, sum(tot_cred)
    from student natural join takes
    group by year
```

4.18

No, this doesn't cause cycle in the authorization graph because A have all authorization on relation r, also to the public. So, when B grants select on r to A, it doesn't effect anything or any conflict because A already have all authorization.