databases system hw04

3.10

a.

```
update employee
set city = 'Newtown'
where ID = '12345';
```

b.

```
updata works T
set T.salary = T.salary * 1.03
where T.ID in (select manager_id 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.ID in (select manager_id from manages)
    and T.salary * 1.1 <= 100000
    and T.company_name = 'First Bank Corporation';
```

3.11

a.

```
select distinct student.id, student.name
from student inner join takes on student.ID = takes.ID
            inner join course on takes.course_id = course.course_id
where course.dept_name = 'Comp. Sci.';
```

b.

```
select ID, name
from student as S
where not exists(
    select *
    from take as T
    where year < 2017 and T.ID = S.ID
);
```

c.

```
select dept_name, MAX(salary)
from instructor
group by dept_name ;
```

d.

```
with max_salary(dept_name, max_salary) as (
    select dept_name, MAX(salary)
    from instructor
    group by dept_name
)
select min(max_salary)
from max_salary;
```

3.15

a.

```sql
with branches_in_brooklyn(branch_name) as (
    select branch_name
    from branch
    where branch_city = 'Brooklyn'
);
select ID, customer_name
from customer as c
where not exists (
    (select branch_name from branches_in_brooklyn)
    except
    (
        select branch_name
        from account inner join depositor
            on account.account_number = depositor.account_number
        where depositor.ID = c.ID
    )
);
```

b.

```sql
select SUM(amount)
from loan;
```

c.

```sql
select branch_name
from branch
where assets > some(
    select assets
    from branch
    where branch_city = 'Brooklyn'
);
```