Homework 4:

3.11

a. select distinct name
    from student natural join takes natural join course
    where course.dept_name =' Comp. Sci.'

b. (select ID, name
    from student)
    except
    (select ID, name
    from student natural join takes
    where year < 2009)

c. select dept_name, max (salary)
    from instructor
    group by dept_name

3.15

a. (select customer_name
    from customer)
    except
    ((select customer_name
    from customer as C1
    where not exists ((select   distinct branch_name
                        from customer natural join depositor natural join account natural join branch
                        where branch_city = 'Brooklyn') =>
                        except
                        (select distinct branch_name
                        from customer natural join depositor natural join account natural join branch
                        as C2
                        where C1.customer_name = C2. customer_name

b. select sum (amount)
    from loan

C. select branch-name

    from branch

    where assets > some (select assets

                               from branch

                               where branch-city = 'Brooklyn')

3.16:

a. select name

    from employee

    where Company_name = ' First Bank Corporation'

b. select employee-name

    from employee natural join works natural join company

    where employee.city = Company.City

c. select employee_name

    from employee as e1, employee as e2, manages

    where e1.employee_name = manages.employee_name

        and e2.employee_name = manages.manager_name

        and e1.city = manages.city and e1.Street = manages.Street

e. select Company.name

    from works

    group by Company_name

    having sum(Salary) <= all (select sum(Salary)

                            from works

                            group by Company_name)

3.21

a. Select name
   from member natural join book natural join borrowed
   where publisher = 'McGraw-Hill'

b. select name
   from member as m
   where not exists ((select distinct isbn
                        from book
                        where publisher = 'McGraw-Hill')
                     except
                     (select distinct isbn
                       from borrowed as b
                       where m.memb_no = b.memb_no))

c. select publisher, name
   from member natural join book natural join borrowed
   group by publisher, name
   having count (distinct isbn) > 5

d. with tot-borrow as (select count (isbn)
                          from borrowed)
    select tot-borrow / count (memb_no)
    from member

d. select employee_name
   from works as w1
   where salary > (select avg(salary)
                   from works as w2
                   where w1.company_name = w2.company_name)