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Lab 1

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1.

1)  $\Pi_{ID, person\_name} (\sigma_{company\_name = 'Big Bank'} (\sigma_{employee.ID = works.ID} (employee \times works)))$

2)  $\Pi_{ID, person\_name, city} (\sigma_{company\_name = 'Big Bank'} (\sigma_{employee.ID = work.ID} (employee \times works)))$

~~3)  $\Pi_{ID, person\_name, city} (\sigma_{employee.ID = work.ID} (employee \times works))$~~

3)  $\Pi_{ID, person\_name, street, city} (\sigma_{company\_name = 'Big Bank' \wedge salary > 10000} (\sigma_{employee.ID = works.ID} (employee \times works)))$

4)  $\Pi_{ID, person\_name} (\sigma_{employee.city = company.city} (employee \bowtie_{employee.ID = works.ID} works \bowtie_{company\_name = company\_company\_name} company))$

2.

1)  $\Pi_{ID, person\_name} (\sigma_{company\_name \neq 'Big Bank'} (\sigma_{employee.ID = works.ID} (employee \times works)))$

2)  $\Pi_{ID, person\_name} (\sigma_{salary > avg(salary)} (\sigma_{employee.ID = works.ID} (employee \times works)))$

3. Inserting:

~~(00038, German, Physics, 400000)~~

(00038, German, Physics, 400000)

Inserting into instructor table Math dept-name which is not in department table will violate the foreign-key constraint

Deleting:

(Chemistry, Central, 5000000)

Deleting Chemistry dept-name where we have at least one instructor will violate the foreign-key constraint!

4. employee (ID, person-name, street, city)

works (ID, person-name, company-name, salary)

company (company-name, city)