

Lab 1 Naryshov Ernar ID: 20B030306

1.

1) $\Pi_{id, person_name}(\sigma_{employee.person_name=works.person_name \wedge company_name= "BigBank"}(employee \bowtie works))$

2) $\Pi_{id, person_name, pCity}(\sigma_{employee.person_name=works.person_name \wedge company_name= "BigBank"}(employee \bowtie works))$

3) $\Pi_{id, person_name, street, pCity}(\sigma_{employee.person_name=works.person_name \wedge company_name= "BigBank" \wedge salary > 10000\$}(employee \bowtie works))$

4) $\Pi_{id, person_name, pCity, cCity}(\sigma_{employee.person_name=works.person_name \wedge works.company_name = company.company_name \wedge cCity = pCity}((employee \bowtie works) \bowtie company))$

2.

1) $\Pi_{id, person_name}(\sigma_{employee.person_name=works.person_name \wedge company_name \neq "BigBank"}(employee \bowtie works))$

2) $\Pi_{id, person_name}(\sigma_{employee.person_name=works.person_name \wedge salary > avg(salary)}(employee \bowtie works))$

3. Inserting a tuple:

(3135, Nazarbaev, Management, 55,000\$)

into the instructor table, where the department table does not have the department Management, would violate the foreign key constraint.

• Deleting the tuple:

(Chemistry, Sherlock, 89,000\$)

from the department table, where at least one student or instructor

tuple has dept name as Chemistry, would violate the foreign key constraint.

4. employee (person name, street, city)

works (person name, company name, salary)

company (company name, city)