

Laboratory work 2

1)

- Find the ID and name of each employee who works for “BigBank”
 $\Pi_{ID, person_name}(\sigma_{company_name='BigBank'}(works))$
- Find the ID, name, and city of residence of each employee who works for “BigBank”.
 $\Pi_{ID, person_name, city}(employee \bowtie_{employee.id=works.id}(\sigma_{company_name='BigBank'}(works)))$
- Find the ID, name, street address, and city of residence of each employee who works for “BigBank” and earns more than \$10000.
 $\Pi_{ID, person_name, street, city}(\sigma_{(company_name='BigBank' \wedge salary > 10000)}(works \bowtie_{employee.id=works.id} employee))$
- Find the ID and name of each employee in this database who lives in the same city as the company for which she or he works.
 $\Pi_{ID, person_name}(\sigma_{employee.city=company.city}(employee \bowtie_{employee.id=works.id} works \bowtie_{works.company_name=company.company_name} company))$

2)

- Find the ID and name of each employee who does not work for “BigBank”.
 $\Pi_{ID, person_name}(\sigma_{company_name \neq 'BigBank'}(works))$
- Find the ID and name of each employee who earns at least as much as every employee in the database.
 $\Pi_{ID, person_name}(\sigma_{works.salary < employee.salary}(employee \times works(employee)))$

3)

Inserting

(14214, Ivanov, Database, 140000)

In the table with *dept_name* absence, integrity will be destroyed because there is no department so the database will violate foreign key

Deleting

(Economics, Ivan, 87000)

From department table, where at least one student or instructor tuple has economics would violate foreign key

4) *employee(person_name, street, city)*

In employee table the *person_name*, in works table *person_name* and in company table *company_name* are the primary keys.