

LAB 1

1.

1. Π ID, person_name (σ company_name = "BigBank" (works))
2. Π ID, person_name, city (σ company_name = "BigBank" (works \bowtie works.person_name = employee.person_name employee))
3. Π ID, person_name, street, city (σ company_name = "BigBank" \wedge salary > \$10000 (works \bowtie works.person_name = employee.person_name employee))
4. Π ID, person_name (σ company.city = employee.city ((employee \bowtie employee.person_name = works.person_name works) \bowtie employee.company_name = works.company_name company))

2.

1. Π ID, person_name (σ company_name \neq "BigBank" (works))

3. (instructor.dept_name \rightarrow department) many-to-one

If we add new tuple in instructor relation with non-existent dept_name in department table, then error may occur.

If we update or delete certain tuple in department relation, then some of our instructor.dept_name will relate to non-existent department.

4. employee_id for employee table

works_id for works table

company_id for company table