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Laboratory work 1

1.

- $\Pi_{ID,\ person\_name}(\sigma_{company\_name = \text{"BigBanks"}}(works))$
- $\Pi_{ID,\ person\_name,\ city}(\sigma_{company\_name = \text{"BigBanks"}}(employee \times works))$
- $\Pi_{ID,\ person\_name,\ street,\ city}(\sigma_{company\_name = \text{"BigBank"} \wedge salary > \$10000}(employee \times works))$
- $\Pi_{ID,\ person\_name}(employee \times works \times company)$

2.

- $\Pi_{ID,\ person\_name}(\sigma_{company\_name \neq \text{"BigBank"}}(works))$
- $\Pi_{ID,\ person\_name}(\sigma_{salary > average}(works))$

3. Inserts: 101111, Ostrom, Economics, 110000
As department table doesn't have the department „Economics", it was inserted in the instructor table.

Tuple „Biology, Watson, 90000" was deleted from the depart table. Because, student has dept name „Biology" at least once. Thus, it can cause a violation of the foreign-key constraint.

4.

employee (<u>ID</u>, <u>person_name</u>, street, city)
works (<u>ID</u>, <u>person_name</u>, company_name, salary)
company (<u>ID</u>, <u>company_name</u>, city)

For example, street and city in employee table can't be primary keys, as they might change. These chosen attribute values are never, or are very rarely changed.