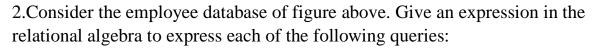
Laboratory Work 1.

Consider the employee database of figure below. Give an expression in the relational algebra to express each of the following queries:

```
employee (person_name, stree, city)
works (person_name, company_name, salary)
company (company_name, city)
```

Figure

- •Find the ID and name of each employee who works for "BigBank".
- •Find the ID, name, and city of residence of each employee who works for "BigBank".
- •Find the ID, name, street address, and city of residence of each employee who works for "BigBank" and earns more than \$10000.
- •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.
- 1) TID, person_name(company_name ="BigBank" (works))
- 2) Π ID, person_name, city(company_name = "BigBank" (employee x works))
- 3) \(\overline{\Pi} \) ID, person_name, street, city(company_name = "BigBank" \(^\chi \) salary > 10000 (employee x works))
- 4) Π ID, person_name(company.city =employee.city (works))



- •Find the ID and name of each employee who does not work for "BigBank".
- •Find the ID and name of each employee who earns at least as much as every employee in the database.
- 1) ∏ID, person_name(company_name ≠"BigBank" (works))
- 2) Π ID, person_name(salary > avg salary (works))

3. Consider the foreign-key constraint from the dept_name attribute of instructor to the department relation. Give examples of inserts and deletes to these relations that can cause a violation of the foreign-key constraint.

- 4. Consider the employee database of figure above. What are the appropriate primary keys?
- 1)In first querie: "person_name" will be primary key, "street"&"city" can repeat.
- 2)In second querie: "person_name" again primary cause "company_name"&"salary" can be same for empoyees.
- 3)In third querie: "company_name" is primary, "city" will not identify company and cities.