Lab work 1 – Rymbayeva Anelya

1) Task 1

1. Find the ID and name of each employees who works for “BigBank”.
   **ΠID, person_name ( δcompany_name = “BigBank”(employee ⋈employee.person_name = works.person_name works))**
2. Find the ID, name, and city of residence of each employee who works for “BigBank”.
   **ΠID, person_name, city ( δcompany_name = “BigBank”( employee ⋈employee.person_name = works.person_name works))**
3. Find the ID, name, street address, and city of residence of each employee who works for “BigBank” and earns more than $10000.
   **ΠID, person_name,street, city ( δcompany_name = “BigBank” ^ salary > 10000( employee ⋈employee.person_name = works.person_name works))**
4. 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.
   **ΠID, person_name( δemployee.city = company.city(( employee ⋈employee.person_name = works.person_name works ⋈ Works.company_name = company.company_name company))**

2) Task 2

1. Find the ID and name of each employee who does not work for “BigBank”.
   **ΠID, person_name ( δcompany_name ≠ “BigBank”(employee ⋈employee.person_name = works.person_name works))**
2. Find the ID and name of each employee who earns at least as much as every employee in the database.
   **ΠID, person_name ( δsalary >= avg(salary) (employee ⋈employee.person_name = works.person_name works))**

3) Task 3

An example of inserting new values into a table will cause an violation if the user gives new values for nonexistent attributes in this table.
An example of deleting a value in a primary key in a table will cause an error, because other data is directly related to the primary key.

4) Task 4

   In the database employee, there is only one appropriate primary key respectively, it is “ID” attribute.