Consider the relational database in Fig 1, where the primary keys are underlined. Give an expression in the relational algebra to express each of the following queries:

employee(person_name, street, city)
works(person_name, company_name, salary)
company(company_name, city)
manages(person_name, manager_name)

Fig 1: Relational database

1. Find the names and cities of residence of all employees who work for “First Bank Corporation”.
2. Find the names, street addresses, and cities of residence of all employees who work for “First Bank Corporation” and earn more than $10,000.
3. Find the names of all employees in this database who live in the same city as the company for which they work.
4. Assume the companies may be located in several cities. Find all companies located in every city in which “Small Bank Corporation” is located.
5. Find those companies whose employees earn a higher salary, on average, than the average salary at First Bank Corporation.