

# Question Bank

- employee (person-name, street, city)
- works (person-name, company-name, salary)
- company (company-name, city)
- manages (person-name, manager-name)

Find the names of all employees who work  
for First Bank Corporation

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- $\Pi_{\text{person-name}} (\sigma_{\text{company-name} = \text{"First Bank Corporation"}} (\text{works}))$

Find the names and cities of residence of all employees who work for First Bank Corporation

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- $\Pi_{\text{person-name, city}} (\sigma_{\text{company-name} = \text{"First Bank Corporation"}} (\text{employee} * \text{works}))$

- $\pi_{\text{person-name,city}}(\sigma_{\text{companyname}=\text{"FBC"}}(\text{employee} \bowtie \text{works}))$





Find the names, street address, and cities of residence of all employees who work for First Bank Corporation and earn more than \$10,000 per annum

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- $\Pi_{\text{person-name, street, city}}(\sigma_{\text{company-name} = \text{"First Bank Corporation"} \wedge \text{salary} > 10000} \text{works} * \text{employee})$

. Find the names of all employees in this database who live in the same city as the company for which they work

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- $\Pi_{\text{person-name}} (\text{employee} * \text{works} * \text{company})$

Find the names of all employees who live in the same city and on the same street as do their managers.

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$$\Pi_{\text{person-name}} ((\text{employee} * \text{manages}) * (\sigma_{\text{manager-name} = \text{employee2.person-name} \wedge \text{employee.street} = \text{employee2.street} \wedge \text{employee.city} = \text{employee2.city}})(\rho_{\text{employee2}}(\text{employee})))$$

Find the names of all employees in this database  
who do not work for First  
Bank Corporation



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$\Pi_{\text{person-name}} (\sigma_{\text{company-name} = \text{"First Bank Corporation"}}(\text{works}))$

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- $\Pi_{\text{person-name}}(\text{employee}) - \Pi_{\text{person-name}}(\sigma_{\text{company-name} = \text{"First Bank Corporation"}}(\text{EMPLOYEE}))$

Find the names of all employees who earn more than every employee of Small Bank Corporation

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- $\Pi_{\text{person-name}}(\text{works}) - (\Pi_{\text{works.person-name}}(\text{works} * (\text{works.salary} \leq \text{works2.salary} \wedge \text{works2.company-name} = \text{"Small Bank Corporation"}) \rho_{\text{works2}}(\text{works}))$

Assume the companies may be located in several cities. Find all companies located in every city in which Small Bank Corporation is located.

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$\Pi_{\text{company-name}} (\text{company} \div (\Pi_{\text{city}} (\sigma_{\text{company-name} = \text{"Small Bank Corporation"}}(\text{company})))$