1. Find the ID and name of each employee who works for “BigBank

$$\Pi_{ID,name}(\delta_{company\_name=\text{Big Bank}} = (works))$$

2. Find the ID, name, and city of residence of each employee who works for “BigBank”.

$$\Pi_{ID,name,city}(\delta_{company\_name=\text{"Big Bank"}} \left(employee \bowtie_{\substack{employee.person\_name= \\ works.person\_name}} works\right))$$

3. Find the ID, name, street address, and city of residence of each employee who works for “BigBank” and earns more than $10000.

$$\Pi_{ID,name,street,city}(\delta_{company\_name=\text{"Big Bank"} \wedge \text{salary} > 10000} \left(employee \bowtie_{\substack{employee.person\_name= \\ works.person\_name}} works\right))$$

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.

$$\Pi_{ID,name,street}(\delta_{company.city=employee.city} \left(employee \bowtie_{\substack{employee.person\_name= \\ works.person\_name}} works \bowtie_{\substack{works.company\_name= \\ company.company\_name}} company\right))$$

2.1 Find the ID and name of each employee who does not work for " BigBank".

$$\Pi_{ID,name}(\delta_{company\_name\neg=\text{"Big Bank"}} \ (employee\ X\ works))$$

2.2 Find the ID and name of each employee who earns at least as much as every employee in the database

$$\Pi_{ID,name}(\delta_{salary>=avg(salary)} \ (employee\ X\ works))$$

3. if we insert smth else in dept_name we get violation of foreign keys.

If we delete smth in primary keys it will be also violation.

4. For employee: ID, {ID,NAME};

Works: ID, {ID, company_name};

Company : Company_name