SISTER NIVEDITA UNIVERSITY

DATABASE MANAGEMENT SYSTEM

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ASSIGNMENT 2

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RELATIONAL ALGEBRA

Consider the following tables and give the answer of the following queries:

Person (driver-id, name, address)

Car (license, year, model)

Accident (report-number, location, date)

Owns (driver-id, license)

Participated (report-number, driver-id, license, damage-amount)

Employee (person-name, street, city)

Works (person-name, company-name, salary)

Company (company-name, city)

Manages (person-name, manager-name)

- **Works2**: Works of United Bank of India
- **Employee2**: Employee of United Bank of india

a. Find the names of all employees who work for State Bank of India.

- Πperson-name(σcompany-name = 'State Bank Corporation'(Works))

b. Find the names and cities of residence of all employees who work for State Bank of India.

- Πperson-name, city(Employee ⋈ (σcompany-name = 'State Bank Corporation'(Works)))

c. Find the names, street address, and cities of residence of all employees who work for State Bank of India and earn more than $10,000 per annum.

- Πperson-name, street, city (σ(company-name = 'State Bank Corporation' ∧ salary > 10000) Works ⋈ Employee)

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

- Πperson-name (Employee ⋈ Works ⋈ Company)

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

❖ Πperson-name (Employee ⋈ Manages) ⋈ (manager-name=Employee2.person-name ∧ Employee.street = Employee2.street ∧ Employee.city = Employee2.city) (ρEmployee2(Employee)))

f. Find the names of all employees in this database who do not work for State Bank of India.

❖ Πperson-name (σcompany-name ≠ 'State Bank Corporation' (Works))

g. Find the names of all employees who earn more than every employee of United Bank of India.

❖ Πperson-name (Works) – (ΠWorks. person-name (Works ⋈(Works.salary ≤ Works2.salary ∧ Works2. company-name = 'United Bank Corporation') ρWorks2(Works)))

h. Assume the companies may be located in several cities. Find all companies located in every city in which United Bank of India is located.

❖ Πcompany-name (Company ÷ (Πcity(σcompany-name = 'United Bank Corporation' (Company))))