

Name: _____

Homework Set J:

The following is due on: Monday 4/23

The schema below deals with employee and employer information for people who live and work in Cayuga County. Your uncreative and narrow-minded boss created the relation `employeesAndEmployers`, which has the following attributes:

- `eName` - Employee Name
- `eAddress` - Employee Address (implied by `eName`; not unique to person; eg. married couple)
- `ePhone` - Employee Phone (implied by `eName`; not unique to person; eg. home phone)
- `eSalary` - Employee Salary for given company
- `eTitle` - Employee title at given company
- `cName` - Employer's company name
- `cAddress` - Employer's Company address (implied by `cName`, but may not be unique to `cName`)
- `cPhone` - Employer's Company phone (implied by `cName` and unique to `cName`)

We will assume that a company can have many employees and a person can work multiple jobs. Assume each person only has one title/salary per company and thus will only have one tuple per company.

1. Given `employeesAndEmployers`, what anomalies may be present given real world employees and employers.
2. Using a database administrator's mindset, list all keys (there are more than one minimal keys).
3. Using a database administrator's mindset, form functional dependencies between the attributes. You may omit redundant and trivial FDs.
4. Without formally breaking `employeesAndEmployers` into a normal form, decompose the relation into two or more relations that you believe would make a good schema.
5. Decompose `employeesAndEmployers` into Boyce-Codd Normal Form.
6. Decompose `employeesAndEmployers` into 3rd Normal Form.
7. Is there a difference between the three schemas above? Are there advantages to one of them? If you were to implement one of these schemas, which would you implement and why?
8. Ensure all relations in your project's schema adheres to BCNF or 3rd Normal Form. You do not need to change your project code (assuming you are past this point), but we will discuss this at our meeting at the end of the semester.
9. Bonus: There is another schema that will satisfy BCNF, what is different between this one and the one you found above?