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INFSC\_1022

Homework #1

1. **Question 1 (20 points):**Consider the relational database below.  What are the appropriate primary keys for each table/relation?  Explain your answer and explain what assumptions you had to make to identify the primary key.

employee  (person\_name, street\_address, city, state, zip, phone1, fax, email)

employment (person\_name, company\_name, salary)

company (company\_name, city, state, zip, phone, fax)

The primary key of the first table is the address of the employee. I originally believed the person’s name to be a good choice for the primary key, however that doesn’t work going to the other tables. So instead I chose street\_address as the primary key, however, to make this choice I had to assume that the company doesn’t have multiple employees living at the same address. For the second table I chose person\_name as the primary key going by the same logic as before. Lastly the final table’s primary key is company\_name as it was a foreign key in the previous table and all of the other info is too vague.

**Question 2 (20 points)**:  Identify the relationships between the following entities.  Provide detailed explanation for each answer.

1. Prescription/medication
2. Student/course
3. Student/academic advisor
4. Bank account/customer
5. Rental car / renter (the person who rents a car).
6. Animal / food(s) that the animal consumes (assume you are developing a database

for a zoo)

1. One to One. One prescription can supply one medication. (At least I’m pretty sure you can’t get multiple on the same one)

2. many to many. Many students may take one course. But one student can also take many courses.

3. one to many. Students only have 1 assigned academic advisor, but advisors have many assigned students

4. many to many. One person can have many bank accounts, many people can share joint bank accounts

5. one to many. The car itself can only be rented by one person, but that person can rent multiple cars

6. Many to Many. For example, the Gorilla might eat Apples, Lettuce, bananas and cashew nuts and the camel might eat lettuce, carrots and hay. Animals eat many different foods, the same food is eaten by many different animals.

