

Database Systems COP 4710

ER Exercise 1 (Ch. 4)

- 1.) Of the following items, determine which could be an entity and state why: automobile, college class, student, name of student, book title, number of dependents.

- 2.) What are attributes? List attributes of the entities you found in question 1 (above).

- 3.) What is a relationship?

- 4.) Draw an entity representation for the entity “building” with the attributes building name, occupancy, and whether or not it has an elevator (yes/no).

- 5.) Embellish the building entity to include the building superintendent’s name (first, middle, last). Does this have to be a composite attribute? Why or why not?

- 6.) Add a multi-valued attribute to the building entity.

- 7.) How do you map multi-valued attributes? (state the appropriate mapping rule)

- 8.) How do you map composite attributes? (state the appropriate mapping rule)

9.) What is a unique identifier? Is it a candidate key? Is it “the” primary key? Discuss.

10.) Exercise 4.2 (pg. 95) – You want to create a database about the books on your shelf. Each book has authors (assume last name only such as Bagui, Earp, etc.), title, publisher, courses used in (course number only such as COP4710).

- Use Title as the primary key for this exercise
- Draw the ER diagram using the Chen-like model
- Write the English description for the ER diagram
- Map the ER diagram to a relational database

Note: You can draw the ER diagrams using the “Draw” feature of Microsoft Word or you can use other software programs such as DIA or Microsoft Visio. If you use any other software then Microsoft Word you will need to import an image of your drawing into MS Word. I have included tutorials at the bottom of the Course Content on how to use Microsoft Word and DIA.

Note: Example of a mapping:

Student(stno, sname, address, phone)

The primary key is underlined.