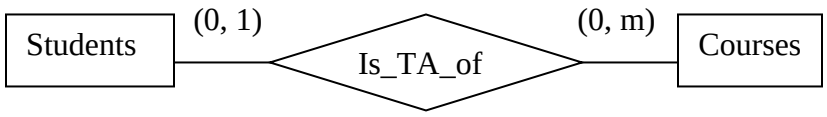
CS532 Homework 2
ER to Relation Transform
Due at the beginning of class on February 21

1. (70%) Transform the provided ER diagram for the Student Registration System to relations using the techniques discussed in class. For composite attributes, use Method 1 (i.e., use the more specific attributes only) to perform the transformation. For each relation obtained, underscore the key, specify other candidate keys (if any) and foreign keys (if any), and specify the constraints associated with this relation (including all constraints that are described in the Requirements Document).

2. (10% for CS532; 20% for CS432) Let A and B be the only attributes of a relation R.
   (a) Suppose neither A nor B is a key of R. Does the combination of these two attributes, (A, B), form a key of R? Why or why not?
   (b) Suppose the combination of these two attributes, (A, B), is a key of R. Can either A or B be a superkey of R? Why or why not?

3. (20% for CS532; 10% for CS432) Consider the following ER Diagram:



   Based on the method discussed in Chapter 4 of the Lecture Notes, this 1-to-many relationship will be transformed into a foreign key attribute in relation Students and null values cannot be avoided in this attribute. If you are a **CS532 student**, propose **two different methods** to tackle this problem such that null values can be avoided in the resulted relations/attributes. If you are a **CS432 student**, propose **just one method** to tackle this problem such that null values can be avoided in the resulted relations/attributes. You can change the ER diagram, if needed, but the changed ER diagram should be logically equivalent to the original diagram.