CS 432/532 Homework 2
ER to Relation Transform
Max total: 4 points

Before you begin, for academic honesty, please read the paragraph below and sign there.

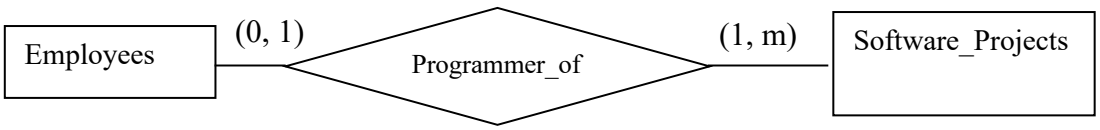
I have done this assignment completely on my own. I have neither copied nor shared my solution with anyone else. I acknowledge that if I engage in plagiarism or cheating, I will sign an official form admitting to the violation, which will be added to my official university record. I also understand that a first offense will result in a grade of 0 for the assignment and a one-level reduction in my course letter grade, and any subsequent offense of any kind will result in a grade of 'F' for the course.

Name: _____
Signature:_____

1. [3 points] 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, do the following:
   - underscore the key
   - specify other candidate keys, if any, and foreign keys, if any
   - specify the constraints associated with this relation, including all the constraints that are described in the Requirements Document.

2. [0.5 points] Let A and B be the only attributes of a relation R. Assume that neither A nor B is a key of R. Given that, answer the questions below.
   (a) [0.25 points] Does the combination of these two attributes, (A, B), form a key of R? Why or why not?
   (b) [0.25 points] 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. [0.5 points]



   Clearly and briefly describe two methods to convert the ER diagram above to relations introducing no null values. Don't create any foreign key in Software Projects, because it will introduce a lot of redundancies. If necessary, you can modify the ER diagram if the resulting ER diagram is logically equivalent to the given one.
   a) [0.25 points] Method 1:

b) [0.25 points] Method 2: