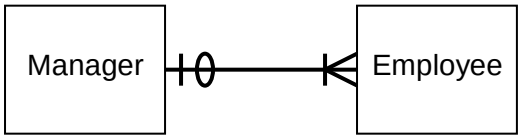
Anthony Basil
CIS 310-02 Exam 1

Exam 1: Problem Solving (15 points)

Instructions:

1. This is an **individual** exam.
2. This is the second part of the two part exam. First part is the multiple choice portion available separately.
3. Provide your responses on this file, save it, and upload the file to the appropriate assignment response in blackboard.
4. You may upload **only one** attempt.
5. Do not handwrite any responses.
6. If you have any additional information you would like me to know about this assignment, you may provide that to me at the end of this document as a note.

Question 1: You are a database designer. You give your manager the following fragment of an ER diagram. Your manager asks you about boxes and funny lines between the two boxes. Explain what those boxes and lines are and what they mean. Remember to explain everything in the diagram, i.e., what are the entities and what type of relationship they are in, and assumptions (if any) that you are making. (5 points)



Answer:
The entities are Manager and Employee. An entity is an object that can be one single thing, person, or place. The lines between the two entities describe their relationship, which is one to many. One manager must manage at least one employee but may manage many employees. One employee may be managed by one manager or may not have a manager at all.

Question 2: Using the diagram in Question 1 as your starting point, draw an ER diagram (including primary keys and attributes) in which the manager supervises both full time and part time employees. For all employees you want to track their employee type ("Full-time" or "Part-time"), SSN, name, address, and phone number. For full time employees you want to track their salary, benefits and 401k matching %. For part time employees you want to track their hourly rate, hours worked per week, and benefits. An employee can only be a part or full time employee. Benefits of a full-time employee are different from the benefits of a part-time employee. *List any assumptions you have made* (10 points).

Answer:
The following ER model was based on the assumptions that each employee has a name, address, and phone number.