

A Checklist for Assignment #1

1. Entities

- List the nouns in the problem statement
- When nouns are synonyms for other nouns, choose the best one.
- Make a note of nouns that describe other nouns. These will be entities' attributes.
- Rule out the nouns that don't relate to the process to be captured.

- Note 1: The information that a database developer or a decision maker in the scenario wants you to "keep track of" or "record" are entities, attributes, and relationships.
- Note 2: If a noun that seems to be an entity but is not characterized or described by other nouns, then it is less likely to be an entity of interest.
- Note 3: You have to decide how many entities to incorporate in your model. Put yourself in the position as a database developer and think if a particular noun is that important as an entity, and if there is enough information you want to record for this entity. If not important and informative, it is less likely to be an entity in the scenario.

2. Attributes

- Identify primary keys by thinking about whether they can uniquely identify an entity.
- Identify only one primary keys even if you think there are more possibilities.
- Create a primary key (e.g., XXXID) if you believe the scenario does not specify it.
- Don't forget to underline primary keys in your ERD!!!

- Read descriptions of an entity carefully and record all attributes in your ERD.
- There might be normalization issues of your ERD. (1) If several attributes seem to characterize a new entity, then create a new entity; (2) Each attribute should be atomic – you can't (logically) break it up any further. Example: firstname/lastname is not an attribute but should be separated into firstname and lastname.

- Identify relationship attributes if you believe that a noun characterizes the relationship between entity A and entity B, instead of characterizing either A or B independently.

3. Relationships

- Start from maximum cardinalities, which (instead of min cardinalities) indicate the types of relationships (1:1, 1:n (or n:1), n:m).
- Maximum cardinalities are mandatory and can only be chosen between 1 and many.
- Minimum cardinalities can be optional (0 or 1) and can be mandatory and only be 1.
- Read the descriptions for entity relationships sentence by sentence to assign both max and min cardinalities to each pair of relationships.
- The max cardinality symbols should be put near the entity, while min cardinality symbols are put far to the entity, compared to max cardinality.
- Cardinalities for relationship A->B and for relationship B->A may not be the same. For A->B relationship, put the cardinality symbols close to B, while for B->A relationship, put the cardinality symbols close to A.
- If the scenario does not give you a clear clue on what would be the cardinalities. Use intuitions and select cardinality types which are most reasonable in the scenario. If you are not sure, make justifications on how you choose cardinality types. I will read your justifications and give you credit if it makes sense.

General Comments:

- Check the Youtube video for ERDPlus if you are not familiar with how to use the tool.
- For Assignment #1, you are just asked to draw ERD. Converting it into schema is NOT required.
- Read the instruction carefully and submit the file using required format. Diagram formats like XXX.erdplus, XXX.jpg, XXX.png are not allowed for submission. Insert your ERD into a Word document and submit a Word or PDF version of your answers.
- Try to submit at least 1 hour before the due time (Monday, September 17, 11:59 pm) so that you can still check your answers, revise and resubmit your work on time.