CECS 323 HOMEWORK: DESIGNING ENTITIES

OBJECTIVE: Give the student first-hand experience in design.

BACKGROUND: We will soon learn how to structure our tables to capture complex data. For now, you need to observe some rules in your database designs:

- Each column has one and only one value in any given row in the table.
    - Values such as 44, 3.1415926, "Silver Bells" and FALSE are all examples of valid single values.
    - On the other hand, a value like 1, 3, 4, 7, 11, 18 is a **list** of values. We will show you how to structure your tables to keep the members of a list together. This is **not** a valid value for a column in any of our tables.
    - If your column name is plural, it is probably a list. For instance:
        - Employees
        - Hobbies
        - Phone numbers … all represent an attempt to store a **list** as a **value**. To do so is to go to the dark side young Skywalker.
- Every table must have **one and only one** primary key. The primary key is a collection of one **or more** columns that uniquely identify **all** the rows in that table.
- Each row in the table must represent a single thing (think object).
    - A table such as "Enterprise" could be legitimate if each row within that table represented the information about a **particular** enterprise.
    - If you know the value of the primary key information for a particular instance, then you can find the **exact** row in the table that documents that object.

PROCEDURE: Find three things that you want to describe. They do not have to relate to each other. The three things could be "pieces of furniture", "employee", "student". Another three things could be "course", "automobile part", and "library loan". Please **do not use anything from the First Classes lab.** Also, **do not attempt to model associations between classes.** We will get to associations very soon. For now, just stick to individual classes. For each of the things that you select:

- Decide which attributes (columns) you will use to describe them.
- Select the subset of those attributes that you will use to uniquely identify those things. This subset of attributes will be your primary key for the corresponding table.
- Write an English definition for each thing. Note that we call these things "classes" in UML.
- Write an English definition for each attribute.
- Draw UML class diagram for each class.
- Draw a relation scheme diagram for each class.

WHAT TO TURN IN:

- UML.drawio that has all three class models in it.
- RS.drawio that has all three relation scheme diagrams in it.
- Definitions.docx – The textual definitions of the classes **and attributes**.
- Your team's filled out collaboration document. You can find a template for that here.