Lab 7: Database Design II (6% of total grade)

Submission: Use the included Google Sheets template linked to in 'Assessments > Lab 7 - Database Design II' on Blackboard. Create a copy of this so you can edit your own version. When submitting this lab, select 'Share' and change the setting to 'Anyone with the link' & 'Commenter'. Select 'Copy link' and paste that link in the submission text box on Blackboard.

Name your file: HTTP5126-L7-DatabaseDesign-*LastNameFirstName*, replace *LastNameFirstName* with your name as displayed in Blackboard.

Purpose: To practice database design skills by identifying required tables, columns, data types and keys.

Pre-Lab

Copy over the progress you have made from Lab 6 into a fresh file for lab 7. You may apply any feedback given from Lab 6.

*Ensure all your table and column names follow the all naming convention from class.

Part 1: Identify Relationships (1%)

Using the 'Relationships' sheet in your document.
   A. Specify the relationship types between tables using the template provided. Example: a country has many cities, a city has one country. Therefore this could be shown as:

> *country* one-to-many *city* **OR** *city* many-to-one *country*
> "One country to many city" **OR** "many city to one country"

The column "In other words" is not required but feel free to fill it out to help with your own understanding.
   B. If you identify any many-to-many relationships, create a bridging table in your *'Table Drafts'* sheet to fulfill that relationship. Create a table example in your *'Table Draft Examples'* sheet for the bridge table as well.

Part 2: Specify Foreign Keys (1%)

   A. Identify your Foreign Keys in each table by including **FK** in the left column. While not every table must have a foreign, for the purposes of this lab ensure your tables connect in some way using foreign keys.
   B. Move your identified primary keys **PKs** into this column as well.

Part 3: Add Constraints (1%)

    A. Specify in the same left column as your keys, any *Unique* constraints on columns.

    B. Specify in the same left column as your keys, any *Not Null* constraints on columns.

Part 4: Normalize Step-by-Step (2%)

Using the 'Table Draft Examples' sheet, ensure all your tables meet the 3 Normal Forms.

    A. Ensure all tables conform to the first normal form (1NF).

    B. Ensure all tables conform to the second normal form (2NF).

    C. Ensure all tables conform to the third normal form (3NF).

    D. Update your *'Table Drafts'* sheet to reflect any of the changes from applying the normal forms.

Part 5: Create an Entity Relationship Diagram (1%)

Using the 'ERD' sheet in your document and the template provided.

    A. Create an ERD for each table by combining the *'Table Draft'* and *'Relationships'* sheets together.

    B. Copy the images provided to display the relationships between your tables