CIS655, Spring 2016 Assignment 3: Logical Data Modeling and Implementation

This is an individual assignment. You are welcome to discuss the assignment with your colleagues, but the work you turn in must be your own.

Purpose:

The purpose of this assignment is to translate a conceptual EER data model into a logical data model, and implement the model in a database management system (SQL Server). Submit your Visio file, a good PDF printout of it and other documents as necessary.

Requirements:

1. Download the Visio file called "HW3-LawFirm_2016.vsd". This is a Conceptual EERD for the Law Firm we discussed in class. You should NOT make any substantial changes to this design (unless you notice errors, and in that case, fix them and document the fix). I recommend choosing data types/domains for PKs at this point so that FKs in the next step are properly specified.

2. Using Visio, transform this Conceptual EERD into a **Logical ER Diagram**. Clearly indicate primary keys, foreign keys, and whether columns are required or optional. Specify relationship names and full cardinality constraints. Choose and use a consistent naming convention for tables and columns. Note that we ~~do not~~ use the "dynamic connector" tool in Visio for logical modeling!

3. Implement the Logical Model in SQL Server. Create the tables, with attributes and their domain/data types (you do NOT have to complete the "data dictionary" in Visio, but DO implement good choices here, especially implementing the existing DD). Create primary/foreign keys, and specify the relationships between the tables. Enforce integrity constraints.

4. If you make any assumptions or design changes, include them in a separate document. Assumptions are statements you assume to be true in places where the case is unclear or incomplete. Business rules are statements which you know to be true but are not included in the Logical ERD or Data Dictionary.

Evaluation Criteria:

1. Logical ER Diagram correctness and completeness (e.g., all relevant relations, columns, and relationships are included; foreign keys & primary keys are correctly specified; relationships, complex/multivalued attributes are decomposed; diagram is consistent with business rules and assumptions). Doing this will get most of the points.

2. Database implementation completeness (i.e., every table and attribute (with appropriate data types) is defined as specified in the logical model, including relationships and integrity constraints).

Implementation Tips:

1) Remote desktop to elab.business.colostate.edu
2) Start SQL Server Management Studio and connect to server "buscissql\cissql" using Windows Authentication (which should "grey out" the login boxes)
3) Right-click on the Databases folder – choose "New Database"
4) Your DB name should be CIS655_LastName_FirstInitial – press OK
5) Under your DB "folder", right-click on Tables and select "New Table"
6) Create attributes; specify domain/datatypes, primary keys, etc.
7) After all tables have been created, go to the Diagram folder, and specify the relationships, but if this doesn't work, right-click on a table's attribute, select Relationships and choose the correct Tables and Columns Specifications – there is a "…" to the right to click on.
8) Right-click on a column, select Check Constraints (as necessary) and specify any constraints

SAVE EARLY AND OFTEN!