CSCI3287 Database Systems

Homework Two – Database Design

Overview

This project is worth 80 points (8% of your final grade, or 80 points out of 1000) toward your final grade. It is due on Sunday, September 18, at 11:59 p.m. Late submissions will be penalized 20% during a 3-day grace period up until Wednesday, September 21, 11:59 p.m. After that time, no late work will be accepted. Your submission should be a PDF document submitted as a file via the link found in the **Homework # 2 Assignment** section of the Week 4 module in Canvas -- which is the same place where you got this file.

This project will give you hands-on practice in working with MySQL Workbench (or similar tool) to create a key-based, fully attributed, 3 NF data model. In this project you will design a database, draw a data model to represent the design, then create a "physical model" of your design in the format of DDL (table create statements.)

Objectives

1. Become familiar with a professional, industrial-strength data modeling tool
2. Demonstrate ability to create a complete data model.
3. Use the data modeling software to generate the DDL to create the database you have designed

Deliverables

1. A key-based, fully-attributed data model depicting your database design using the output of homework number one as your input. Your model should include:
    - All tables with primary key attributes defined
    - All attributes with data type, length, and constraints defined
    - Proper table names, key names and attribute names
    - All relationships between tables showing captions both ways, and proper optionality and cardinality
2. The DDL necessary to create the database you have designed.
3. Documentation of any assumptions you made regarding unclear or missing requirements.

    For example:

- If you are creating surrogate keys, name the key and explain why you are creating the surrogate.
- Note the fact that you are using auto-increment for any created surrogate keys.

Submission

Use the submission link found in the **Homework # 2 Assignment** section of the Week 4 module in Canvas -- which is the same place where you got this file.

Your results for this project assignment can be captured in a document (such as a .txt file, MS Word or similar tool.) Please then save your final deliverable document as a **PDF** for submission. The final deliverable document you submit for this project must consist of **three** sections:

The **first** section is a picture (screen shot) of your complete data model.

The **second** section is text containing all DDL generated by your data modeling software tool necessary to create the database you have designed. You can copy the DDL as text from MySQL workbench, and paste it into your document. The DDL must include create statements for all tables in your database (including definition of all data columns.) Primary and foreign keys must be defined. DDL must include all constraints, including foreign key references. You can remove any extraneous DDL statements, such as the "SET" statements to capture and reset system variables, and/or the "Engine=INNODB" parameter settings.

Third is list (bullet points) of any assumptions you found necessary to support decisions you made about the process and/or database design.

INPUT

For your data model drawing, please use the 3NF result from your homework number one.