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44-460/660 Database Systems
Final Exam Assignment – Spring 2021
120 points

Instructions: Using your imagination, design and implement your own small-scale relational database with the following requirements:

1. Think of a scenario from any domain or industry that might be easily modeled as a relational database. Look back to previous assignments and worksheets from class to help with this, but DO NOT copy any of those scenarios. Your scenario doesn't even have to be real-world (e.g. a gaming world), as long as you can create a relational database to represent it. You can also get tips from the MySQL databases we have been using. *Hint:* have fun with your scenario, and you will have an easier task.
2. Using the modeling and notational practices you learned in this class, create the following **four** items that you will submit as part of the assignment:
 - a) A list of **business rules** pertinent to your database (see previous assignments and worksheets for examples). Your business rules should describe: (30 points)
 - A minimum of five regular entities (feel free to add weak entities and use superclasses/subclasses if appropriate)
 - A reasonable number of attributes of varying types for each entity
 - A mixture of relationship cardinalities, depending on how you imagine your scenario. Just let the business rules describe “how it is”.
 - b) An **ER/EER diagram** modeling your database (use appropriate symbols, and don't forget associative entities where appropriate). This will be based on the business rules you created, so make sure you've written clear rules! (30 points)
 - Feel free to use an appropriate design tool you would like for your ER diagram (e.g. <http://draw.io>), or do it by hand and scan it in; just make sure it is legible and that it follows the notation/style taught in class. Do NOT use other styles, such as “Visio” notation that includes PK/FK.
 - c) A list of **normalized relations** (using the notation from class) that is based on your ER diagram. Be sure to include foreign keys, etc. (30 points)
 - d) Prepare a **MySQL script** that creates your database, tables, and inserts a small sampling of made-up data. Test it out in MySQL before submission. (30 points)
3. Think of your own ideas and do your own work. Given the open nature of this assignment, no two submissions should be alike.
4. For submission, put the first three items into ONE Word doc. The fourth item - your MySQL script - should be a separate text file. Put the Word doc and your MySQL script into a zip file and submit to Canvas by the due date.



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