CIS761 Class Project - Database Application

Database design

Clearly describe your application domain, desired functionality and constraints in plain English.

Specific requirements for relational database design include:

a. Specify an E/R diagram (or an equivalent modeling language) for your proposed database. Don't forget to underline key attributes for entity sets and properly indicate the multiplicity of relationships. If there are weak entity sets or "is-a" relationships, make sure to mark them appropriately.

b. Using the method for translating an E/R diagram to relations, produce a set of relations for your database. Be sure to underline key attributes in your relations and also specify foreign keys.

c. For each relation in your schema, specify a set of nontrivial functional dependencies for the relation. Any functional dependencies that actually hold in the real-world scenario that you're modeling should be specified, or should follow from the specified dependencies. *Don't worry if you find that some of your relations have no nontrivial functional dependencies.*

d. Is each relation in your schema in BCNF with respect to the functional dependencies you specified? If not, decompose the relation into smaller relations so that each relation is in BCNF. Make sure you underline key attributes in your new relations. Are all functional dependencies preserved? If not, you may need to switch to the 3-NF. *Don't worry if you don't have any BCNF violations - many small databases will not have any.*

e. Is there anything you still don't like about the schema (e.g., attribute names, relation structure, etc.)? If so, modify the relational schema accordingly. You will be working with this schema quite a bit, so it's worth spending some time to make sure you are happy with it.