

PHASE 2 – LOGICAL DATABASE DESIGN AND NORMALIZATION

Due: March 4th, 2016

Checklist

✓	Task
	Schema refinement and normalization
	SQL statements
	Technology survey
	Populate data for database

Schema Refinement and Normalization

Based on the Requirement Analysis and ER design you developed in Phase 1 of the project, you will finalize the schema for the HelloWorld database and specify the integrity constraints in this phase. You should produce a refined schema that reduces redundancy to at least in the 3rd Normal Form while not unduly affecting performance. Your schema should also support the enforcement of most, if not all, of the integrity constraints that you identify in this phase (for example, the functional dependencies) and the previous one. I will leave the specific details of how this refinement is done up to you.

SQL statements

You should provide SQL statements to create (specify) all of the relations in your database. I expect your design to be based on

- 1) Transforming ER components (i.e., entity set, relationship set, constraints, etc) to relation schema
- 2) Specifying new integrity constraints such as functional dependency
- 3) Refining the schema through normalization

Even if you decide to use NoSQL for your project, this part is still required. I also expect you to describe how the created tables are related to your ER design and how they meet the requirements you specified in Phase 1.

Technology Survey

I would like you to describe your design approach and the technologies you choose to use (i.e., software, programming languages, and packages). Consider as many aspects of your project as possible, and discuss the reasons, pros and cons of your choices of tools.

Populating Database

Finally, you should start populating the data you want to have in your database. Because the designs proposed by the various groups are not uniform, I will not provide a set of data for you to load. But your data should satisfy the following requirements:

1. Fifteen users. At least five of the users have commented on another. The comments are associated with some auction items.
2. 50 items to be auctioned. These items should cover different statuses, e.g. auction complete, still bidding... etc.
3. 50 direct sale items to be sold directly from the stock.
4. 20 categories that form a browsing (category) tree, at least 3 levels deep. Do not count the root as one of the categories or as one of the three levels.

You do not have to have these data in the database by the time you give your phase 2 presentation, but they should be imported in the database by the first demonstration. Also, you do not have to have the interface ready at this point. However, you should be able to have a rough interface able to communicate with backend by the first demonstration.