Benjamin Michalowicz, Ian Peitzsch, Veronica Quintana

CSE 305: Principles of Database Systems

Homework 2 Documentation

We decided to use the MySQL RBDMS application for creating and maintaining our tables. This was a choice of simplicity, as the user interface for MySQL Workbench has a very small learning curve and is easy to pick up for quick setup and quick database design. In addition, the syntax highlighting and checks allow for the ability to fix errors quickly and easily.

There were nineteen tables in all for the database, where each is created in a way such that if one were to insert items into them, something would have to exist in the tables created earlier than it. For example, in the “Inventory” table, if there’s no corresponding item in the “Item” table, one cannot create a row in the “Inventory” table. Another example in this case is that an Item cannot be created without a person to sell it, where that was created in the “Customer” table. This reaction goes on for each of the tables in the “create\_tables.sql” file that was submitted. For nearly all the tables, if there was an attribute in it that existed in a previously created table, then it was used as a foreign key to refer to it, and this is to ensure the uniqueness of each item as well as consistency with each entry into the database. If someone tried to cross-reference the different tables in this database, an item in one table with attributes that exist in another table can be found to have the same values for those common attributes.

Employees, Administrators, and Database Administrators were made tables for the time being as well as having a “super class” of worker to illustrate that everyone is a worker, but employees are not employers/administrators, hence why administrators and employees have an “IsA” relationship under “Workers.”

A particularly challenging table to create was the Shopping Cart table, as for one cart, the total items and final price is updated for each of the item added to the cart, which may cause some redundancy. This also applies to the number of items in the cart, which must be updated with each addition of items, as well as updating the quantity of items already existing in the cart. In relationships where an employee helps a customer, a single role key constraint was attempted to try and demonstrate a one-on-one employee/customer aid. A participation key constraint was attempted in the “Oversee” relationship to show that more than one employee can be looking over the inventory of items on this e-commerce website.