Homework #3
CSC 3287 Database Systems Concepts – Spring 2014

Due by email to debra.parcheta@ucdenver.edu by the beginning of class on 2/11/2014. (Send pdf or jpg format please.)

Assignment:

This assignment might up to 8 hours of work. Do not wait to start this assignment on the day before it is due.

Use a drawing program to model the ER diagram for the database described below. Pay careful attention to the descriptions – you will need to make some assumptions from them, but you don't want to violate some feature that must be true when you make your design.

A complete ER diagram includes the formal shapes taught in Chapter 7 of your text and in class, constraints for cardinality and (min, max), assumptions, keys and foreign keys.

Please email me if you have questions.

Draw the formal model known as the ER diagram for the music rental database. Be sure that your model is complete.

The universe of discourse for this database is school instrument rental programs where teachers may rent out musical instruments to their students or loan them to other schools and where the teacher is also responsible for maintaining the condition of the instrument.
The purpose of this database is to automate the rental and repair of musical instruments by school teachers. Instruments have names, a fund where the money came from to buy the instrument, sizes, serial numbers, makers, models and year in which they were made. The teacher may also record comments about the instrument. When a teacher rents out an instrument, the database prepares the rental form that will be signed by a student's parents and helps the teacher to assign instruments according to their condition and availability. The renal form has a contract number and shows the date rented, the date it is due back and the actual return date of the instrument. The teacher can see how many days the instrument has been rented for and, using a cost per day figure, he can see what the total cost was of the rental. Sometimes, he/she has other teachers help with renting instruments so there

is a place to record who authorized the rental, their phone number and their school location. Students are recorded by their grade level, student ID, name (both first and last), and phone number. Their parents names are listed too. The condition of the instrument is recorded each time the instrument is inspected along with the inspection date. The database provides an inspection worksheet to help the teacher evaluate the condition of the instrument. The teacher can also see if students have paid their rental fees and sum up what they owe if there is a balance due. If an instrument needs repairs at any time, the music teacher can use this database to prepare a work order and figure out where to send that instrument for repair. The database holds information about shops that make repairs including their name, address, a contact person, phone number, and any specialty they may have. Our database will also show him the repair history for any particular instrument and the total repair costs for that instrument. A description of the repair is recorded as well as the cost, the repair start date and the repair end date. He marks the instruments in and out according to where they have gone. He needs to know where they are when inventory time comes. The database can show him the entire inventory in a report form. The sources of the data are students, the school, the instruments, the repair shops, and the teacher himself. The only people using the database are the music teachers. This database will be kept at one school and the other schools in that district will be able to access it remotely. There will be monthly backups at least for this data since the school-owned instruments are an asset.