COSC 2P32 – Spring 2009
Assignment #1

Due Date: Monday May 25, 2009 4:00pm
Late Date: Thursday May 28, 2009 4:00pm (with 25% penalty)

You have been hired to develop a database system for a local movie store. After a meeting with the owner you have developed the following list of information that needs to be kept track of in the database. We also have been given information regarding the process of account setup as well as movie rental and return.

- Each account is valid for the entire household. The owner of the account must provide their drivers license and a valid credit card. The account must also have their name, address, phone number and the date in which they opened the account. The other members of the household will be able to rent movies by providing their name and account number. For the other members of the family we will also keep record of their date of birth for verification.
- For each employee we need to record their Name, Address, Phone number, date of birth, SIN and date of employment.
- For each individual movie title we want to store the movie title, the production studio, the type (comedy, drama, family, horror), a rental category (new release, academy award winner, children), rating, runtime and a release date.
- We also need to be able to keep track of multiple copies of the same movie title without having to enter all the movie data in for each copy.
- The rental duration and price will be the same for all the movies in the same category and it needs to be easily changed for the entire category.
- When someone rents a movie we record the member's account number, name of the borrower (must be a valid household member), the employee who made the transaction, the identification of the movie (must identify the proper copy), the date it was borrowed and the date it is to be returned.

When a customer rents a movie their balance must be checked in order to make sure there are no outstanding charges that must be paid. The rentals are pre-paid so they pay for the rental at the time of borrowing. When the movie is returned the due date is checked to see if it is late; if it is late the balance of the customer is adjusted to reflect the late charge. When a new movie is set to be rented the employee must check to see if the movie information is in the database and if it is not add it; then the movie is tagged with a unique number for that copy and associated in the database with the proper movie title.

NOTE: Be sure to consider any participation and key constraints that may not be explicitly mentioned. If you find a situation where there could be a choice of different constraints that could be applied you must include with your diagrams or relations an explanation of why you choose to implement it the way that you did.

Question 1 Draw an ER diagram to represent the data model for this project. Include in the data model all entities, relationships, attributes and all possible constraints. In any case where a constraint can not be identified with the ER model please include a description of it in a write-up.

Question 2 Translate your ER diagram from the previous question into a relational schema. Indicate which constraints you could and could not capture in your schema.

Question 3 Write the SQL statements to create the tables as defined by your schema. Make sure to include all possible constraint information in the table definitions statements.

Submission Requirements:

- You must submit a copy of your ER diagram as well as any appropriate discussion concerning it, the of relation schema and the SQL statements.
- The SQL statements should be tested on Oracle for correctness, you can access the Oracle by running 'sqlplus' in the lab.
- A cover page must be submitted or the assignment will not be marked. The cover page is available at: http://www.cosc.brocku.ca/coverpage