COMP40725

Entity Relationship Modelling Assignment

Due Date: Wednesday 26th March 11:55pm

A DVD rental shop requires a database to be created to keep track if its business. Within this database, it needs to keep track of its customer (called "members") details. This includes their name, address, telephone number, membership number and the date they joined on. The shop only rents DVDs to registered members. Each rental lasts for one day only, so a DVD can be rented at most once per day. To help customers search the database, the shop also wishes to record details about the films. This includes the film's name, the year it was released, the director, the actors that starred in the film, and the price of renting it. This price can change over time (as the film becomes less popular, for example). The shop will frequently stock multiple copies of popular films. As some customers like to search for the name of the characters that actors play in each movie, the shop wishes to record this information also. In addition to renting DVDs, the shop will sell ex-rental DVDs after they have been rented for a period of time. Unlike rentals, DVDs can be sold to either members or non-members. Obviously, once a DVD is sold it is no longer available to rent. This should be reflected in the database in some way. For revenue purposes, the shop also wishes to record the amount of money they received whenever a DVD was rented or sold.

1. Develop an ER Model of the above situation. Show clearly the process of developing the model and document any assumptions you make. When developing your model, you should state the attributes that each entity type has, but do not include them in the ER Diagram itself.
2. Map the ER Model developed on to a Relational Model. Clearly show the process used and state the reasons for the choice of primary and foreign keys in your model. Again document any assumptions made.
3. Create the database in Oracle and create a backup file for submission. Note that this database does not need to contain any data so only the empty tables are required

Assessment criteria:

Quality of documentation:	5%
Identification of candidate entities:	5%
Validity of final choice of entities:	10%
Identification of relationships:	10%
Identification of cardinality of relationships:	10%
The validity of the final ER diagram:	15%
Documentation of process:	10%
Mapping onto a Relational Schema:	5%
Normalisation (3rd Normal Form)	20%
Valid Oracle database:	10%

Queries:

Any queries (pun intended ☺) can be on the forum on Moodle (particularly if there is any ambiguity in what is required, in which case it will benefit the whole class if they can see the response).