

## **ER Modelling Exercise – DVD Rental**

The purpose of this tutorial is to explain how to tackle an ER modelling problem. The scenario is a shop that rents out DVDs & Blu-rays. After explaining the modelling of one scenario there are others for you to try.

Consider the following requirements for a DVD & Blu-ray rental shop:

The rental shop rents out copies of films on DVD or blu-ray. Each film, identified by a unique film ID, has a title and is supplied by a named distributor. The shop owns many copies of each film, each identified by a unique copy serial number, some DVD and some blu-ray. DVD's have a matrix number and a region code. The purchase date and purchase price of blu-ray discs, but not DVDs, has to be recorded. Customers pay a standard rate for each night's rental and customers can rent copies for up to 2 weeks. Customers pay in advance and their name, address and credit card details are recorded, if not already known; the rental date is also recorded. A receipt is issued for each payment, with a unique receipt number and the date. Customers are given a unique customer number. Regular customers are encouraged to become 'club members'. Club members pay a one-off membership fee, which entitles them to a discount on their rentals. Discounts become more generous the more a member rents films. Club members need not pay in advance but are invoiced once a month for the rentals they have made that month; each invoice has a unique invoice number, the month in question and the amount being invoiced.

Derive an E-R model for the above database, being careful to show all attributes, keys, cardinalities, and constraints. Then, translate it into the Relational Model.