Examples of Enhanced ER Diagrams

1.   Draw an EER diagram for the Books

The Bookshop stores the following for each book:
A title, an author, a quantity in stock and an ISBN number. Books can be for Chemistry or Computing. In addition for chemistry books the area of chemistry is listed i.e. organic etc. It stores if there is a DVD or not associated with the book. For each such DVD it stores DVD ID, name and duration. For computing books it stores, the name of the main application (e.g. Excel Word etc.) and the platform the book is associated with for example PC, mainframe etc.

2.   Draw a EER diagram for the Phone Repair Shop..

Ringit is a phone repair shop in Dundrum, Co. Dublin. It repairs all makes of standard landline and mobile phones for its customers. It has six qualified technicians who fix the phones. For each phone they store the phone number and phone make and the service provider, i.e. Vodaphone/O_2 etc. For mobile phones it stores its camera specifications and its memory size. When a customer leaves in a phone for repair they fill out a repair request form.

Each repair request form has a unique reference number. This form must state a brief description of the fault, and the date the phone was left in. When the phone is eventually fixed, the fix date is recorded on the form. The customer is then notified thus we need to store the name, address and contact number of each customer.

Sometimes the phone needs to be sent back to the manufacturer so the name, address and contact telephone numbers of each manufacturer is stored as well as the date the phone was sent to the manufacturer. Some problem phones may be returned to the shop or the manufacturer for repair a number of times. Every time a phone is returned to the shop, a new repair request from is assigned to it.

The technicians' IDs, names, salaries and addresses are also stored.

3.   Draw a UML EER diagram for Tender Care

Tender Care is a small hospital in County Wexford. This hospital consists of three wards, namely ENT (Ear, Nose and Throat) ward, Eye ward and A & ER ward (accident and emergency). The hospitals employees have employee number, name, and address and hire date are stored. The staffs are either clerical of medical. The medical staffs are either nurses or doctors or surgeons. The surgeons have an area of expertise. The clerks have a staff grade. Nurses will have an attribute to indicate if they have a degree or not.

Each ward has twenty beds. Each bed has at most one patient. For each patient it stores number, name and address. Each patient can be either out patient or in-patient. Only in-patients are assigned beds. In patients have an admission date when they arrive and a discharge date when they leave the hospital. Only outpatients have a next appointment date. All patients are assigned a doctor. Each ward is assigned ten nurses.

4.   Draw an EER diagram for FabSpa

FabSpa is a new hotel and spa located in the South East of Ireland. The hotel needs to store the following data on all their hotel rooms: Room Number, Room Function, Room Size, En-suite, and Price per Room. Room function defines if the room is a bedroom, conference room or ballroom room. The room size will have values of Large, Medium, or Small. For Each conference room can have some extra equipment, like PCs, Internet access, Water fountain etc. the ball rooms will have the dance floor size recorded and the maximum capacity recorded. For each bedroom the type of bed is stored twin, double, single or family.

When a guest books a room they must specify their name, address, contact number, start date and end date for booking, and the deposit paid. Each booking is given a unique booking number. Note a booking can only be made for one room at a time but obviously each room could have many bookings. Also each booking would refer to one and only one customer.

Each room has a housekeeping record which has the following data: reference number, date involved, time taken to clean, number of towels changed, number of beds changed. The housekeeper for each room signs off this sheet, when the room is cleaned. The housekeepers clean many rooms but each room is only cleaned by one housekeeper. Each housekeeper has an employee number, employee name and address on file.

5.   Draw an EER diagram for University

   This scenario describes the activities of the Science and Technology faculty in a university in North West England. Students take courses in the university. The University allocates all students with a number, and keeps track of their name, term and home address, date of birth, department and whether the student is either full fee or subsidised. Departments run the courses. It is possible for a course to be run by more than one department. Each department has a limit on the total number of students accepted. Each course consists of a number of subjects. Lecturers teach the subjects, and in some circumstances more than one lecturer will teach a subject. Lecturers, of course teach on more than one subject. Subjects have a code, title and content description: the content is typically updated each year while code and title are fixed.   Since the introduction of 'modular' courses, it is possible for one subject to be included on more than one course. A lecturer may be a course leader for a particular course. The lecturer employee number, name and office room number are also required for each lecturer.