

## **CM1603 - Database Systems**

### **Week 3**

### **Tutorial 2 - Conceptual Data Modelling**

Carefully read the given problem statements and identify the following in each exercise.

- a. Different types of entities.
- b. Correct relationships between the entities.
- c. Suitable attributes for entity.

#### **Exercise 1**

STUFFY is an online retailer that sells a large number of products to the general public. Customers can view the products on offer, select a specific product and view the product details such as description and price. Then, customers can place an order for several products and repeat this process until they decide to finalise their order and check out. Subsequently, shipments need to be organised so that the correct items of the ordered products are sent to the right customer.

#### **Exercise 2**

ITDream is a start-up company that provides IT solutions to business organisations. It employs a team of highly trained members of staff who have a wide range of technical skills. For every IT solution that needs to be designed and developed, a project is created. Hence, the staff at ITDream work on a variety of different IT projects for which they utilise the skills they have at their disposal to create high-quality products. In order to monitor how projects are undertaken and to optimise the utilisation of skills in these projects, ITDream is seeking to design a database that keeps a record of all the IT solutions being designed and developed, all the projects that are undertaken, all the staff involved in these projects and all the skills that are used on specific projects. ITDream strongly insists on the fact that they need to be able to use the system to determine which skills are being used by which member of the team on which project.

#### **Exercise 3**

CoolUni is a University located in North London. It offers a certain number of undergraduate courses which consist of and share a certain number of modules between them. Some modules may also be taught on a stand-alone basis and not be part of a specific course. Students are registered on a course and take a certain number of modules. These modules are delivered by Full-time Lecturers and Visiting Lecturers. Some of these academic members

of staff can manage a course but not more than one. They can also be responsible for one or more modules (i.e. be the Module Leader for one or more modules) or just teach on them. Some members of staff offer mentoring to their colleagues especially at an early stage of their employment with the University. For each module, lecturers recommend a textbook, and it is essential that a record is kept of which textbook is being recommended by which lecturer for which module.

#### **Exercise 4**

LibraPlus is a university library that employs several librarians. The library offers many academic books, and every book title can have several copies. Librarians are responsible for placing orders for new books or new copies of already existing titles. It is essential that a record is kept of which librarian orders which copies of which book title. As for Libraplus users, they can place a reservation for a book title and, if the book is available, they can then borrow a copy of that book.