Practical 0
Data modelling

Scenario

A university wishes to store information about students, modules, courses and lecturers.

Courses have a unique course code, course name and an accreditation level, which is an enumeration between 4 and 8. Each course has a coordinator, which is a lecturer. Courses consist of modules; the number of modules vary depending on the number of credit points that can be earned in each module. Modules have a name, unique module code and are delivered by a nominated lecturer. Lecturers have unique employee numbers, forenames, middle names and surnames, a date of birth, an email address and a rank of seniority. The rank of seniority is an enumeration between 1 and 40. Students have unique student numbers, forenames, middle names and surnames, a date of birth, an email address and a current enrollment level, an enumeration between 1 and 20.

Tasks

T0 Produce a list of all attributes that need to be stored. Note the MySQL data type that each attribute will be. A list of available data types is presented in the MySQL manual which is available online at https://dev.mysql.com/doc/refman/5.7/en/data-types.html

T1 Normalize (3NF) the attributes into a number of tables

T2 Explain the rationale for the normalization strategy you produced

T3 Produce an Entity-Relationship model for this database, follow the style shown in https://www.safaribooksonline.com/library/view/learning-mysql/0596008643/ch04s04.html . You may model these using MS Word, MySQL workshop, Lucidchart (online) or using Pen/Pencil and Paper

T4 Read the MySQL database manual and examine the differences between the types of join statements it supports