COM 2008 Systems Design Project Team 04 Final Report

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Interpretation of system requirements – Will probably need some edits as we go

The core purpose of the system is to track student’s progress through their degree programme, and their achieved grades for each module at each level and determine if they have achieved the requisite grades to progress.

Data to be stored

* Each department has a full name (EG “Computer Science) and a three-character abbreviated departmental code
* Each degree has a full name (EG “Meng Software Engineering”) and a six-character course code, consisting of the code of the lead department, followed by a “U” or a “P” to indicate undergraduate or postgraduate entry, followed by a two-digit numerical code to distinguish the programme from other courses
* Each degree may or may not be offered with a year in industry, if so, the phrase “with a year in industry” will be added to the full name of the degree, and the course code will be different from the non-industry version of that degree
* Each degree has a number of levels of study, “certificate”, “diploma”, “bachelors” and “masters” corresponding to the numbers 1 to 4 respectively. Bachelors degrees end at level 3, whereas masters and at level 4. Courses that offer a year in industry include “placement” level (‘p’), which lies before the final level of the degree.
* Each degree is composed of a number of modules. Modules can be taught on any number of degrees on varying levels and can be specified as core or optional based on the degree and level they are being taught on.
* Each module has a full name (EG “Systems Design and Security”) and a 7-character module code, consisting of the three-digit code of the department teaching the module, followed by a 4-digit number
* Each student has a title, a surname/family name, and forename, which will consist of one or more given names stored in a single field.
* They also have a registration number and email address, which are generated by the system upon registration
* Each student also has a period of study, which appears to be each own entity. Each period has a label “A”, “B”, “C” (increases alphabetically after each period taken), each period also has the registration number of the corresponding student, EG “0000123A”. If a student resits a year, (for example first year), that period label increments, EG while first year may have a label of “00000123A”, the resit of second year may contain “00000123B”.
* Each period of study contains the modules taken, and the grades achieved for each level.

Automated processes

* Upon student registration, generate a unique student registration number and store in database
* Upon registering any account, generate a password and store this in the database (hashed)
* Upon student registration, generate an email address, consisting of the initial letters of their forename(s), followed by their full surname, followed by a unique numerical identifier (which increments for each student with the same string up until this point), followed by the rest of the university address
* Automatically update students core modules in registration
* Automatically determine subsequent periods of study
* Calculate student mean grade and whether student can progress, registering them for the next year of study if appropriate, calculate overall degree result if end of final year
* When a student resits a year, a new period entry is generated, and all data from the previous period is automatically copied over (all modules and grades). The teacher can then update the grades for the modules being retaken, and leave the ones that are not being retaken at their previous values.

User actions

There are 4 categories of user, each with their own privileges. User privileges are not cumulative, meaning each user can only perform tasks that are specified to be within their category. For example, a system administrator cannot update the achieved grades of the students, as only the teacher category has this privilege.

1. System Administrator

* Add and remove other admins, teachers and registrars,
* Add and remove university departments to the database
* Add and remove modules to the database, these must include the module’s name and code and the number of credits the module carries
* Add and remove degree programmes in the database, these must include associations to the department(s) that teach that degree, indicating the lead department.
* Add, remove and update the modules assigned to each degree, giving the level at which the module is taught within the degree programme, as well as specifying whether the module is core or optional within the programme.
* Editing the associations between degrees and departments, as a department is removed the admin needs to be able to change the lead department of a degree

1. Registrar

* Add and remove students, specifying their degree and their initial period of study (the brief mentions nothing about students switching courses, so presumably if this happened the student should be deleted from the database and added again under a different degree
* Edit the student’s assigned modules as the student elects to take certain optional modules (imagine the student has talked to the registrar and told them what modules they want to take)
* View Student’s degree programme, level of study and all modules they are registered to (with their number of credits), ensuring students are registered correctly

1. Teacher

* Add and update a student’s initial, resit or repeat year grades to the database, corresponding to the appropriate module and level
* View Student’s degree programme, level of study and all modules they are registered to (with their number of credits), ensuring students are registered correctly
* View any student’s status, showing their registered degree, modules and grades achieved at each level, and the result achieved for their degree overall if applicable

1. Student

* View their own status, showing their registered degree, modules and grades achieved at each level, and the result achieved for their degree overall if applicable