Databasesystemer, ITU, Forår 2005

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Gruppeprojekt – del 1

Dette er første del af det **obligatoriske** gruppeprojekt. Projektet skal udføres i grupper. Information om gruppedannelse gives via kursushjemmesiden. Det er op til gruppens medlemmer at blive enige om, hvordan de skal arbejde sammen (mødetidspunkter, etc.) Hvis det ønskes, kan I arbejde med projektet og stille spørgsmål til hjælpelærerne under øvelserne. Formuleringen nedenfor er på engelsk, men I må selvfølgelig gerne aflevere på dansk. Besvarelsen skal afleveres **via e-mail** til gruppens hjælpelærer (se kursushjemmesiden) senest:

Torsdag d. 2. marts kl. 23.59.

Formål

Dette er den første af tre delopgaver, der tilsammen udgør et lille databaseudviklingsforløb. Denne første del har til formål at udvikle kompetencer indenfor E-R modellering. Bemærk at besvarelsen forventes at inddrage elementer af udvidet E-R modellering (EER), som først præsenteres en uge før afleveringsfristen. Det må altså påregnes, at et evt. E-R diagram skal revideres en smule, således at EER notationens ekstra udtrykskraft udnyttes.

Case description

The setting of the group project is the newly founded (fictional!) IT University of Atlantis (abbreviated "IT@"). Located in an impressive pyramid made of steel and glass, an increasing number of faculty and students, and a myriad of courses and study lines has made it pressing to implement a database recording all administrative information. As a working group on the project, you have recently visited IT University of Copenhagen, where a similar system exists, with a web-based user interface called `my.itu`. The aim of this first hand-in is to make an initial EER diagram for the IT@ system, based on the below description, and identify a list of issues that need to be clarified before a final EER diagram can be made.

The system should contain:

- Common data about all persons associated with IT@ (students, alumni, faculty, and other employees), including name, address, social security number, birth date, nationality, and e-mail address.
- Data on courses held and planned, including name, manning, course description, association with a study line, location (in time and space), and size in ECTS.
- Data on students, including enrollment (study line, and year), how many ECTS have been passed, and graduation date (if applicable).
- Course and exam information for all students, including location of exams, what courses the students enrolled for, in what courses they qualified for the exam, and how they fared at every exam attempt.

- Information on course dependencies, i.e., on what competences are required to follow each course, and what competences are obtained during each course. The system should also record data on the competences held by the students when entering IT@ (i.e., not obtained in any course of IT@).
- Information on the various study lines, including the competences required to enter a study line, the courses offered by the study line, and the competences required to get a degree from the study line.

If your project group has x members, your system must additionally contain data on $2x - 2$ of the following points (your choice):

- Student projects, including members of each project, project description, exam information, size in ECTS, etc.
- Employment: For each position held, the title of the position, the starting time (and possibly the ending time) of employment, etc. Every faculty and administrative employee is member of a department. This information should be stored, along with information on who is the department head of each department.
- Payment of salaries for employees, including wages (monthly or hourly), bank information, tax rate, amount payed, etc.
- Bodies of IT@, i.e. groups of students and faculty with various areas of responsibility. You should record the members of each body, including historical information (who was in the body earlier).
- Information on tutoring. Tutors are experienced students, who are each assigned a group of at most three (new) students that they are supposed to help in various ways. The IT@ system should contain data on these groups.
- Information on meetings. A meeting consists of a group of people in a room for some period of time. The system should be able to record whether people invited for a meeting confirmed or rejected participation.

What should be handed in

You should hand in a draft data model for the system, including:

- **EER diagram**. An EER diagram for the system, using the notation of MDM. For clarity you may wish to omit attributes from this diagram.
- **Description of entities, relationships and their attributes**. A short description in words for all parts of the EER diagram whose meaning is not **completely** obvious.
- **List of issues to be clarified**. List any choices or interpretations made when making the EER diagram. You will later discuss these with your teaching assistant. The list should contain all questions you need to address before making a final EER diagram in the second group hand-in.

One the first page, clearly specify the members of your group. The project should be sent as a **single file in PDF format**. One easy way to produce a file in PDF format is to use the printers/copiers at ITU to scan all the pages, and e-mail the PDF file to you. This is done in almost the same way as if you were to copy the pages, except that you press "send" and specify your full e-mail address before "copying". Note that this also allows you to include hand-written text and diagrams.