Laboratory Sessions

Case Study

AcadMgmt

Software Engineering

Computer Science School
DSIC – UPV

Year 2016-2017

A private teaching company needs a management software and they have hired the company ISWSoft for its development. The description of the software is provided below.

The company offers several courses to the students enrolled. The courses are usually taught in its headquarters, although external courses are also available in which the teacher moves to a specific location.

A given course has a name, a description, a start date, a duration in sessions, a teaching schedule, a quota, and a total price. The courses are given by teachers. The company has a group of people hired who can teach different courses. When a course is being set up, a teacher is assigned to it. A teacher cannot teach two courses at once (the company has not been able to find anyone with bilocation abilities yet), which means that no overlaps may exist on the teacher's schedule.

Anyone may enroll in a course. To do that, they must provide the administration staff their personal information: name, address, phone number, and bank account to perform the payments. At any time, a student may withdraw from a course.

The payments for the courses can be of two types: complete payment, in which the student pays for the whole course in advance (this way the student gets a 10% discount); or monthly payment, in which a proportional charge is made to the student's bank account at the beginning of each month (usually on the first day).

The company owns several offices to hold the lectures. Each office has a name (1B, 2F, Meeting Room, etc.) and a maximum capacity.

Before a course begins, an available office must be assigned to it. Of course, there cannot be more people enrolled in a course than the quota determined for it. Moreover, there cannot be overlaps among the schedules of the courses assigned to each office. If the number of enrollments is high, the teaching space of a course can be moved to a bigger office if it is available. The students' attendance is to be controlled, hence the teacher must take it in each session and identify the missing students.

As stated above, the company can also offer courses that are taught outside its headquarters by an external customer. The external customer can offer a course and it is the customer who must provide the premises (site where the course will take place) and manage the attending students. In this case, there is a single payment conducted at the moment of the booking.

The system to be developed should manage everything described above. Besides, it should provide the system administrator with CRUD operations (Create, Read, Update, and Delete) for courses, offices, and teachers. The administration personnel will be in charge of registering the students' enrollments and withdrawals. Queries for the most relevant attributes of courses, students, and schedules are also required. Finally, the system should provide the following reports to any administration member that requires them: courses, students in a given course, a student's courses, the schedule of a certain office, a teacher's schedule, and the list of a student's absences.