Development of a web application for courses management

1   Objective

The objective of this task is to design a web application that allows users:

- To manage an on-line courses database

- To rate courses

- To make recommendations based of course rates

- To buy credits on-line

All these objectives are certainly ambitious.

The parts that are marked with [**] are optional and graded as 20%**.**

2   Domain information
This is an enumeration of the most relevant domain information, which the application should deal with:

- A course is defined in terms of:
    - A title,
    - a lector,
    - up to 3 main characters,
    - A major,
    - A year.

- **[**]** In addition, a course has an *average rate*. This *average rate* is calculated using the rates that have been given to it by the users/students of the system.
- A lector is defined in terms of his/her name, topics and date of birth.
- Ths system has a collection of users. Each user is defined in terms of:
    - Its username (identifier)
    - Its name

3   Functionalities:
- There will be two types of users: *employees* and *clients*. For the employees, the bank account number will also be kept.

- *Backstage functionality:*
    - Authenticate an employee.
    - Insert a new course into the system.

- *Client functionality:*
    - Authenticate a client.
    - View a list of all the courses kept in the system.
      For a specific course, the user can click on its title and see its specific information (i.e., title, year, **[**]** average rate, main characters...).
    - **[**]** Perform a *rate tour*.
      During a rate tour, the user is given a list of courses and he/she rates them. **– [**]** Show the Top-10 courses for the student.

      Each user can be given a list of the top-10 best rated courses as recommendation. This list consist of the 10 courses with better average rate excluding those already rated by the user (we assume that users rate courses that they have atended).